Study to explore the feasibility of creating a fund to cover environmental liability and losses occurring from industrial accidents

FINAL REPORT

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Executive Summary

There have been many recent major industrial accidents involving pollution in the EU and the rest of the world. Some of these accidents have resulted in environmental damage, some in traditional damage, others in both. They provided impetus, directly or indirectly, for the adoption of the Environmental Liability Directive (ELD) 2004/35/EC.

In 2011, Hungary proposed the establishment of a European Union Industrial Disaster Risk-Sharing Facility to be funded by an annual contribution from targeted industries and companies. This proposal was partly in response to a major industrial accident near Kolontár, Hungary in 2010.

The main purposes of this facility would be to respond quickly in the event of a major industrial accident in order to relieve the suffering of persons harmed by a disaster, to remediate environmental and/or traditional damage, and to prevent further damage. The Hungarian proposal is for the facility to respond if traditional and environmental damage from a major industrial accident appears likely to exceed €100 million. The facility would complement private insurance products by providing funding above the €100 million level, that is, above a level for which funding is not otherwise available.

A secondary purpose of the facility would be to limit the financial exposure of each company in any of the targeted industrial sectors to €100 million. It is argued that this limit of liability would not only benefit the operator/company that caused the accident; it would benefit employees who might otherwise lose their jobs due to the company becoming insolvent due to its inability to pay all the costs of the traditional and environmental damage. Member States would also benefit because they would not be called on to bear costs that the company could not pay due to insolvency.

Financial resources dispensed by the facility would be in the form of grants and loans. That is, if a court establishes that a particular operator caused the disaster, the operator would be required to reimburse the facility up to the threshold level. The residual amount of the facility at the end of each calendar year would be used for safety and environmental protection measures.

The proposed facility thus integrates three main functions:

1. Pre-financing tool to give immediate access to funding and relief to communities;
2. Second tier of insurance (private insurance up to a point, then the facility would intervene);
3. Unspent resources to support companies, particularly SMEs, to invest in safety and prevention.

The basic reasoning for the facility can be summarised in the following advantages that are anticipated by its proponents:

1. Some positive economic impact on national budgets and on citizens;
2. Provision for improved safety and enhanced prevention measures in companies;
3. A wide range of damages covered – human health, property, economic activity, etc.;
4. A complement to private insurance, potentially reducing costs for industry;
5. A more rapid response to help areas and people affected by the disaster to recover.
This study explores the feasibility of establishing such a fund (or sectoral funds) or risk-pooling scheme(s) that can be used to cover liabilities for traditional damage and environmental damage from major industrial accidents involving pollution in the EU. Case studies of four major incidents involving pollution resulting from industrial accidents are presented, to help frame the discussion. They are: Kolontár, Hungary; Aznalcóllar, Spain; Buncefield, UK; AZF, France.

Feasibility

As the Hungarian proposal indicates, existing EU legislation does not adequately address the financial implications of major industrial accidents involving pollution. First, the Seveso III Directive (2012/18/EU), which deals with industrial safety, does not address the issue of financial security in the context of industrial activities. Article 29(2) does however state that “in the context of relevant Union legislation, the Commission may examine the need to address the issue of financial responsibilities of the operator in relation to major accidents, including issues related to insurance”.

Second, the Mining Waste Directive (2006/21/EC) provides for “financial guarantee (e.g. in the form of a financial deposit, including industry-sponsored mutual guarantee funds) or equivalent” before operations that involve the deposition of extractive waste in a waste facility may commence. The guarantee or equivalent must cover obligations under the permit and the rehabilitation of land affected by the waste facility. This provision, which necessarily is limited to mining waste, does not cover the full range of liabilities under ELD.

Third, the scope of the EU Solidarity Fund does not include industrial accidents. The only application for funding for a non-natural disaster that has been approved under the Solidarity Fund is for the Prestige oil spill. An application by the Hungarian government for funding for the Kolontár accident was rejected, while another from the UK government in respect of the Buncefield fire was withdrawn. The Commission has stated that legal difficulties would be encountered in using the Solidarity Fund for non-natural disasters and has also commented that “the polluter pays principle and the affected State’s obligation to seek compensation from third parties (third party liability) would seem to exclude other than natural disasters from the Fund”.

The ELD provides the legal framework for an environmental liability system for industrial, commercial and other operations in the EU. It applies to any operator in the EU carrying out an occupational activity that causes an imminent threat of, or actual, environmental damage. The scope of the ELD is limited to environmental damage, thus excluding personal injury, property damage or, when the law of a Member State provides for its recovery, economic loss. The ELD does however require operators to implement measures to prevent adverse effects on human health if their activities result in an imminent threat of, or actual, environmental damage. In addition, measures to remediate environmental damage must take risks to human health into account.

In summary, liability for claims for traditional damage is covered exclusively by the law of individual Member States; EU law is limited to liability for preventive and remedial measures to the environment and natural resources that take account of risks to human health (land) and also the sustainability of the environment.

In 2002, when the Commission submitted the proposal for the Directive that would become the ELD, suggestions for a fund or joint compensation scheme had been dropped in lieu of Member States instituting them if they wished. Instead, the proposed Directive provided that “Member
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States must adopt all necessary measures to ensure that the needed preventive or restorative measures are actually financed through any source that would seem fit to them and can thus be taken ... the institutional and procedural arrangements as to how the prescribed results will be achieved are left, to a very large extent, to the Member States in line with the subsidiarity and proportionality principles”. In view of the Kolontár red sludge disaster, it is timely to examine this issue again.

The potential obviously exists that an operator whose activities cause an industrial accident will not have adequate funding to pay claims for traditional and environmental damage resulting from the accident. The ELD does not include any provisions requiring operators to pay for traditional damage. It provides for financial security for environmental damage after such damage has occurred by stating that “the competent authority shall recover, inter alia, via security over property or other appropriate guarantees from the operator who has caused the damage or the imminent threat of damage, the costs it has incurred in relation to the preventive or remedial actions taken under this Directive”.

The ELD does not, however, require an operator to have financial security before environmental damage has occurred. In lieu of mandatory financial security provisions, the ELD provides that Member States “shall take measures to encourage the development of financial security instruments and markets by the appropriate economic and financial operators, including financial mechanisms in case of insolvency, with the aim of enabling operators to use financial guarantees to cover their responsibilities under this Directive”.

The ELD also prompts the Commission to submit proposals for a system of harmonised mandatory financial security if, on the basis of a report to be submitted by the Commission and an extended impact assessment, the Commission concluded that it was appropriate to do so. In October 2010, the European Commission concluded that there was not sufficient information and justification at that time to introduce a harmonised system of mandatory financial security due, among other things, to the lack of practical experience in the implementation of the ELD resulting from a three-year delay in its transposition in some Member States.

The ELD does not preclude Member States from issuing more stringent provisions. Some Member States have already imposed, or will soon impose, mandatory financial security. The financial security provisions of these Member States do not, however, cover all environmental damage within the scope of the ELD. Furthermore, the financial security provisions do not cover traditional damage, which as noted above is outside the scope of the ELD. Still further, even if the ELD was to be amended to require mandatory financial security, it would not result in a source of funding for a major industrial accident the costs of which exceed €100 million.

Only a limited number of operators in the EU have financial security to cover environmental damage. There are other mechanisms that an operator may use to show evidence of financial security for damage from industrial accidents: letters of credit; trust funds; bank guarantees; bonds; corporate financial test; corporate guarantees. However, in the absence of legislation or other provisions that require an operator to have financial security, few operators will set aside funds.

An operator may be required to have a letter of credit, trust fund, bank guarantee or bond as part of a contractual arrangement. Financial security instruments arising from such arrangements,
however, are dedicated to the purpose set out in the relevant contracts; they do not typically cover claims for traditional damage or environmental damage.

The main financial security instrument in the absence of mandatory financial security legislation is therefore insurance. Insurance cover can be relatively unsophisticated for SMEs, or highly sophisticated for large companies with installations in many locations and countries. A minority of very large companies self-insure.

Relevant stakeholders were consulted and their comments examined to determine if and how operators and the financial/insurance sector could be engaged in the development and implementation of a potential scheme. They identified a number of issues that would need to be addressed for the creation of any potential scheme. In general, there was negative feedback from industry and insurance stakeholders to the creation of a fund or risk-pooling scheme for industrial accidents involving pollution. Typical comments concerned:

- Legal form of the fund, whether it would be based on a convention, treaty, etc.;
- Whether the fund would apply in cases of permit defence, state-of-the-art defence, etc.
- Concerns that the fund or scheme would not include risk assessment and mitigation;
- Potential to hinder the development of the environmental insurance market;
- Implications of the interaction between existing national funds and a new EU fund;
- Legal clarity on the definition of the baseline condition;
- Ensuring that a fund or scheme does not hinder the polluter-pays principle;
- Moral hazard concerns connected with the creation of an EU fund;
- Operation in Member States with widely differing economies, industries, legal liability regimes, history of environmental claims and approaches to such risks;
- Lack of a suitable impact assessment or case having been made;
- General concerns about possible over-regulation of industry.

**Design elements of a possible fund or scheme**

The following key design elements of a fund or risk-pooling scheme for industrial accidents involving pollution are thus discussed and analysed:

- Purpose of the fund or scheme;
- Compliance with the polluter-pays principle;
- Relationship with EU law, other funds, existing financial security requirements and the insurance market;
- Types of damage to be covered;
- Structure of the fund;
- Operational and implementation issues;
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- Limiting the financial exposure of operators;
- Grants for safety and preventive measures.

In order to comply with the polluter-pays principle, the proposed fund or scheme must not affect incentives to operators to avoid damage from their activities and must not allow operators to profit from wrongdoing. In particular, it should not be contrary to the fundamental principle of the ELD “that an operator whose activity has caused the environmental damage or the imminent threat of such damage is to be held financially liable, in order to induce operators to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced”. For example, implementation or enforcement of ELD requirements by competent authorities could be made a condition of eligibility for reimbursement of an EU-wide fund.

Limiting the financial exposure of operators to losses resulting from their activities should be carefully considered:

First, providing such protection to a responsible operator may well breach the polluter-pays principle in that the operator would not be liable for all the damage caused by it but, rather, operators who did not engage in any wrongdoing would have to pay part of the costs due to their contribution to the fund or scheme.

Second, providing such protection to liable operators could result in moral hazard and its consequences, due to their knowledge that their liability was capped.

Third, a cap on liability would only benefit the largest operators and is likely to be opposed by operators who contributed to the fund or scheme but whose assets meant that their liability would never be capped.

Fourth, industrial accidents may result from the culpable behaviour of operators. For example, the companies involved in two of the case studies in this report were held to be criminally liable for their role in the incidents.

Fifth, employees would not necessarily benefit from funding being provided to the operator to enable it to continue to operate rather than having become insolvent. Companies that are responsible for a major industrial accident do not always rebuild at the same location. This is illustrated by the three main case studies examined in this report.

Sixth, industrial accidents often affect the share price of the responsible company, leading in some cases to the weakened company being acquired by a stronger company. In such a case, the company taking over the stricken company would benefit from the protection provided to the latter. In addition, the company that took over the stricken company may also decide not to rebuild in the location of the industrial accident.

Consideration should be given to the relationship between the proposed fund or scheme and other legal and financial instruments, like for instance the Seveso III Directive and EU Solidarity Fund, which have similar purposes in some respects but also important differences. The new Offshore Oil and Gas Directive should also be closely examined for coherence, even though the proposed fund or scheme examined here would not cover accidents involving offshore oil and gas activities unless such activities were considered to be industrial.
At national level, the relationship of the proposed fund or scheme to comparable funds existing at national level (e.g. in Finland) must be considered in its design. The issue also arises as to how a fund or scheme would relate to the existence of mandatory financial security in some Member States (e.g. in Spain) for operators of Annex III activities under the ELD.

A final and perhaps most crucial relationship that needs to be closely examined is that between the proposed fund or scheme and the insurance market, both the market for general liability policies and the market for environmental insurance policies. The proposed fund or scheme must be designed so that it does not discourage operators from buying insurance for the risks they can insure against. The proposed fund or scheme should also be designed so that it does not stifle the growth of the environmental insurance market.

It is unclear whether the proposed fund or scheme should cover the cost of emergency works and/or long-term remedial works. There does not appear to be any fund at EU level or in at least some Member States to cover immediate measures to respond to an industrial accident. The existence of funding that would be immediately available to respond to an accident could substantially reduce the cost of remediating damage and losses resulting from it.

**Size, threshold, tiers of compensation and sectors to be covered**

The size, threshold, tiers of compensation and sectors and operators to include in the proposed fund or scheme must be carefully considered to ensure that they are fit for purpose. The appropriate size of the proposed fund or scheme depends on various factors: potential (economic) magnitude of the loss or damage caused; design parameters, i.e. to what extent total damage should be covered by the fund or scheme; and in the case of a pooling system, any surcharges to cover the pool’s needs.

The size of the fund cannot easily be established in an objective and fully satisfying matter. However, some indications can be found in the past: if the losses from all industrial accidents that took place in the EU over the last 20 years were added together, at least an order of the magnitude of the financial resources needed could be estimated.

Setting a threshold requires a careful assessment of its level and an analysis of the probability of accidents of such a magnitude, including a sensitivity analysis. Development of any fund or scheme should, therefore, be done in consultation with industry and developed to meet a specifically established need. More broadly there are a number of questions in relation to the threshold:

- The basis on which the €100 million would be calculated;
- How it would interact with other financial security;
- Whether there would be a proportionate levy dependent upon industry or size of operator;
- The method by which the fund monies would be collected, managed and distributed.

Mutual risk-pooling arrangements could offer solutions to be considered, as could inclusion of a second tier by which for example the Member State in which the industrial accident occurred could be responsible for compensation between the level for which the operator causing the accident was liable and the threshold of the EU fund or scheme. In that way, the gap between...
private insurance and the high threshold for the proposed fund or scheme would not necessarily mean Member States would have to enact legislation to impose mandatory financial security on operators. Creation of a second tier would also address the issue of responsibility of Member States for damage arising from industrial accidents involving pollution, by competent authorities not implementing and enforcing EU environmental laws. Experience has also shown that tiered systems of compensation work, e.g. under the International Oil Pollution Compensation Fund and the Paris Convention.

According to the Hungarian proposal, the industrial sectors on which a contribution to the fund should be imposed – and, thus, which should benefit from the fund – should depend on which industrial sectors are involved in major disasters. The European Environment Agency (EEA), for example, has identified sectors involved in major industrial accidents involving pollution, drawing its statistics mainly from operators subject to the Seveso Directive and from mining disasters. Another factor to consider is how to identify the relevant operators. If the fund or scheme was established under the ELD, the extent of such operators would be necessarily limited to Annex III.

Recommendations on the basic design elements of a fund can be based on the views of the sectors concerned, efficiency, practicability, solidarity, administrative costs and other criteria. It should be determined whether a single fund or a mix of funds would be most appropriate. Several classifications for the nature of the proposed fund or scheme can be envisaged:

- Sectoral or general funds – can be addressed by taking into account differences between sectors, the financial situation of each sector, and the risk profile of each sector;
- EU-wide fund or regional funds (which could together cover the whole EU) – an EU-wide fund would include elements of EU-wide risk sharing;
- Private or public funds (or a mixture of both) – can be answered by analysing the financial structure of the environmental damage that should be covered.

Factors to consider include whether there should be a fund or scheme for all Annex III operators, for IPPC/IED companies, etc., and the potential exclusion of certain sectors or categories, such as SMEs, low-risk activities, companies certified with EMAS/ISO, etc. Some industrial sectors such as the oil and gas and extractive minerals industry consider that there should not be a single fund or scheme due to mandatory financial security requirements that already exist for these sectors and to potential overlap.

**Risks associated with the Facility or Fund**

There is a risk of targeting too many operators and a more serious risk of leaving some out. If a mandatory risk pool was established under the proposed scheme, the issue of whether to have a sectoral or general fund would be particularly crucial due to the many and varied types of operations subject to the ELD.

Stakeholders’ comments indicated almost universal opposition to a uniform levy on targeted industries and companies indexed in accordance with their annual net corporate income. The Hungarian proposal suggested a contribution of 0.2% of annual net sales revenue. The main objections to the flat rate by stakeholders were that a flat rate could:
Discourage rather than encourage good risk management practices and safety standards;

Change the culture of operators by not encouraging them to undertake proportionate, expeditious risk assessments to identify the potential for environmental liabilities and to ensure that they have sufficient financial security in place to manage this risk.

Some stakeholders suggested that what companies do in terms of risk assessment and risk reduction should be considered in determining the amount they contribute.

The Hungarian proposal states that the financial resources dispensed by the fund or scheme would be in the form of grants and loans. The proposal involves lending as well as relief and compensation for damages. The reasoning for including lending is that it allows the fund to be replenished and would be quicker to be used by the liable operator than seeking bank loans. However, this might raise its own difficulties. Lending should be in some way compatible with national financial rules applicable to the financial sector, as lending with lower/preferential rates may breach competition rules. However, that would depend on the form that the fund would take and specifically if it would be governed by private market rules or established by a special Convention allowing specific rules to be agreed and established.

The procedures for managing the fund or scheme must also be considered carefully. It would be necessary to ensure that such management is at least to the level provided by insurers. In theory such a fund could involve public-private partnership. Various management structures are possible, involving possibly the European Investment Bank, Member States’ public banks, and national banks or other financial actors including insurance and reinsurance companies.

The Hungarian proposal considers that unspent resources of the facility should be used to support operators, particularly SMEs, to invest in safety and prevention measures. A major problem with such grants, however, is that their introduction could lead some operators to delay making improvements to pollution control equipment and safety measures at their installations in the hope or expectation that they would receive grant money to pay for the improvements. Problems could also arise between the provision of such grants and the implementation and enforcement of the IPPC/IED Directive. For example, the conditions of a permit for an operator under the IED regime may require improvements to be carried out by a certain time. There could be dissatisfaction among operators who did not receive the grants, particularly operators who were in competition with recipients of the grants or those who had already carried out improvements so were not eligible for the grants.

Using the residual amount of the fund at the end of each calendar year for grants should also be carefully considered. For example, an industrial accident that exceeded the amount in the fund or scheme could occur early in the following year. In this respect, it is noted that the EU Solidarity Fund sometimes uses monies from the following year if there is insufficient monies in the fund to cover calls on it until the end of that year. Another approach to consider is that of the US Oil Spill Liability Trust Fund, which freezes levies into it when the fund reaches a certain level.

Conclusions

The creation of an EU fund or scheme for industrial accidents involving pollution is an idea that has several positive features to commend it, for example to cover immediate response measures.
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The existence of funding that would be immediately available to respond to an accident could substantially reduce the consequences and, thus, the total cost of remediating damage and losses resulting from that accident.

The purpose of the fund or scheme must, however, be clearly identified and agreed. That is, whether its purpose is to compensate victims of a major accident for bodily injury, property damage or economic loss suffered by them; to provide emergency funding to respond to an industrial accident; and/or to remediate environmental damage. The fund or scheme is only likely to gain acceptance subject to agreement on whether a fund or scheme needs to be established for such purposes and, if so, industrial sectors to be covered by it, the level of the threshold for the fund or scheme, and many other details concerning its design.

The facility proposed by Hungary thus integrates three main functions:

1. Pre-financing tool to give immediate access to funding and relief to communities;
2. Second tier of insurance (private insurance up to a point, then the facility would intervene);
3. Unspent resources to support companies, particularly SMEs, to invest in safety and prevention.

Stakeholders’ comments to this study indicate that the creation of a fund or scheme to limit the financial exposure of a liable operator is not very likely to be accepted by stakeholders for a wide range of reasons such as the potential for moral hazard, conflict with the polluter-pays principle or practical reasons such as feasibility of a (€100 million or other) threshold.

On the other hand, using the fund to pay for “orphan” shares, that is, the costs that would have been incurred by a liable operator but for its lack of financial viability to cover part or all of the costs, is more likely to be acceptable. In this respect, the ELD does not require Member States to remediate environmental damage if the liable operator does not do so. Depending on the nature or location of the damage, however, a Member State may consider that it has no option but to remediate the damage.

The compensation of victims of the disaster in the event that the liable operator cannot do so would also seem likely to be supported. These payments would be subject to a second tier of responsibility by the Member State for making payments.

Using a fund to provide loans to liable operators may be problematic in that difficulties may be encountered in recovering the loans. This should not mean that a fund or scheme should not be available for providing funding for emergency measures to abate pollution or otherwise to respond immediately to an industrial accident. Environmental authorities commonly carry out such actions and then seek to recover their costs from liable operators. Providing funding for emergency measures or having equipment and resources available to carry out emergency measures in the EU in the event of a major industrial accident would not, of course, be subject to a €100 million threshold because that money would need to be spent before that threshold was reached.

Stakeholders also indicated that the use of a fund or scheme to provide grants to operators to pay for measures to improve pollution control equipment or safety at their installations is also much less likely to be acceptable due to various implications of such grants, such as a perceived potential to penalise companies that have already invested in such improvements.
If the purpose of the proposed fund or scheme could be agreed, many points would need to be considered in more detail in order to ensure that it dovetails with EU law (e.g. Solidarity Fund, Seveso III, Mining Waste, IED and other Directives), other funds (e.g. in Finland), other risk pooling options (e.g. Spain, France, Italy), various initiatives for mandatory financial security requirements at Member State level and the insurance industry, including the growing environmental insurance segment. In addition, the design, management and implementation of the fund or scheme would also need to be given further careful consideration in order to ensure that it operated effectively and efficiently.

Although this report has concentrated on the main part of the Hungarian proposal (an “excess” fund or pool), the other two functions (a pre-financing system, and financing for companies to invest in safety and prevention) may merit further consideration on a standalone basis. Further exploratory studies or detailed Impact Assessments in this area, and environmental liability policy making in general, would benefit greatly from better data on accidents and the feasibility of creating or developing such datasets should be examined.
Introduction

The objective of the study is to examine the feasibility of establishing a fund or a risk-pooling scheme (or possibly multiple funds/schemes for different industrial sectors) to address primarily liabilities for environmental damage (prevention and remediation of damage to natural resources) but possibly also traditional damage (bodily injury, property damage and economic loss) resulting from major industrial accidents involving pollution, with a focus on environmental damage.

The study analyses key design and implementation elements and will provide practical guidance to the European Commission on the possible creation of such a fund or scheme. It also assesses the potential involvement of operators and key players from the financial sector and industry in the development and operation of the fund or scheme. A workshop took place in Brussels on 7 November 2012 to discuss with stakeholders and to help refine with them the design elements of the possible fund or scheme.

This final report first analyses the needs of Member States and operators and the level of potential demand for a fund or risk-pooling scheme. It then explores existing mechanisms in the EU and elsewhere that allow for the creation of a fund or risk-sharing pool. These findings suggest possible approaches for a potential scheme and also analyse key design and implementation elements.
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Chapter 1: Feasibility of establishing and using a fund or pool

This chapter explores the feasibility of establishing a fund (or sectoral funds) or risk-pooling scheme(s)\(^1\) that can be used to cover liabilities for traditional damage and environmental damage from major industrial accidents involving pollution. The feasibility of creating a fund or resource-pooling scheme to address environmental liabilities is assessed based on both existing needs and demand, and analysis of existing schemes.

1.1 The Hungarian proposal

Hungary has proposed the establishment of a European Union Industrial Disaster Risk-Sharing Facility to be funded by an annual contribution from targeted industries and companies. The amount of the contribution would be indexed in accordance with the annual net corporate income of companies in the targeted industrial sector. The proposal is partly in response to a major industrial accident near Kolontár, Hungary in 2010.

The main purpose of establishing the facility would be to respond quickly in the event of a major industrial accident in order to relieve the suffering of persons harmed by a disaster, to remediate environmental damage and to prevent further damage. The Hungarian proposal is for the facility to respond if the traditional and environmental damage from a major industrial accident appears likely to exceed €100 million. The facility would complement private insurance products by providing funding above the €100 million level, that is, above the level for which funding is not otherwise available.

A secondary purpose of the facility would be to limit the financial exposure of each company in any of the targeted industrial sectors to €100 million. It is argued that this limit of liability would not only benefit the operator/company that caused the accident; it would benefit employees who might otherwise lose their jobs due to the company becoming insolvent due to its inability to pay all the costs of the traditional and environmental damage. Member States would also benefit because they would not be called on to bear costs that the company could not pay due to insolvency.

Monies dispensed by the facility would be in the form of grants and loans. That is, if a court establishes that a company/operator caused the disaster, the company/operator would be required to reimburse the facility up to the threshold level. The residual amount of the facility at the end of each calendar year would be used for safety and environmental protection measures.

The proposed facility integrates three main functions:

1. A pre-financing tool to give immediate access to funding and provide relief to communities after a disaster;

\(^1\)We will use the singular form from now on but this does not preclude the possibility of multiple schemes.
2. A second tier of insurance (private insurance up to a certain point, then the facility would intervene thereafter);
3. Using unspent resources of the facility to support companies, particularly SMEs, to invest in safety and prevention measures.

The following advantages are anticipated:
1. Some positive impact on national budgets and on citizens;
2. Rather than merely a tax, the risk-sharing facility would provide a service – providing for improved safety and enhanced prevention measures in companies;
3. A wide range of damages would be covered – human health, property, economic activity, etc.;
4. It would be complementary to private insurance, potentially reducing costs for industry.

1.2 Major industrial accidents involving pollution in the EU

There have been many recent major industrial accidents involving pollution in the EU and the rest of the world. Some of these accidents have resulted in environmental damage, some have resulted in traditional damage, others have resulted in both. Major accidents involving pollution in the EU, some of which provided impetus, directly or indirectly, for the adoption of the ELD are as follows:

- the release of pesticides, solvents and dyes from a warehouse fire at Sandoz, Switzerland into the River Rhine in 1986;²
- the MV Braer oil spill off the coast of Scotland in 1993;³
- the Erika oil spill off the coast of France in 1999;⁴
- the release of cyanide from a dam at a gold mine near Baia Mare, Romania into the Rivers Tisza and Danube in 2000;⁵

² Resolution of the European Parliament on the action to be taken on the recent pollution of the Rhine. OJ C 7/116 (12 January 1987) (“put forward proposals for a Community system governing fault liability for accidents connected with all chemical and high risk activities”). The Resolution commented on voluntary dumping of chemicals into the Rhine after the accident as well as involuntary dumping.
³ The MV Braer oil tanker ran aground off Shetland. It was owned by Braer Corporation, operated by Canadian Ultramar and sailed under a Liberian flag. Although perhaps the largest ever such spill in terms of volume (85 000 tonnes), for a variety of reasons the environmental damage it caused was much more limited than the Exxon Valdez for example. Total damages are estimated at €89 million. See for example Brans, E. (2012) “Where does the ultimate liability lie? Safety of offshore oil and gas activities”, presentation to the European Parliament, 9 July 2012, Pels Rijcken and Drooglever Fortuijn.
⁴ In December 1999, the Maltese tanker Erika broke up into two parts and sank, resulting in the release of 20 000 tonnes of oil into the sea. A 2006 study carried out by the French National Institute for Agricultural Research (INRA) estimated both traditional and environmental costs of the disaster at €370 million spread across the years 2000 and 2001. In 2008, the French Court of Justice held several companies responsible for the sinking of the Erika, including the charterer of the tanker (Total – more than €200 million), the owner of the cargo (Tevere Shipping – €375 000) and the classification company that declared the ship seaworthy (RINA – €75 000). The court’s decision constitutes a legal precedent by holding polluters responsible for the damages caused by their activities on the environment.
⁵ Proposal for a Directive on environmental liability with regard to the prevention and remedying of environmental damage, explanatory memorandum s. 1 (COM(2002) 17 final, 23 January 2002.)
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- explosion of a fireworks storage facility in Enschede, Netherlands in 2000, leading to the death of 23 people, 900 injured, the destruction of 200 houses and the Grolsch beer brewery, and estimated damages of about €450 million;
- the grounding of the Prestige off the coast of Spain in 2002 spilling over 75 million litres of heavy fuel oil;
- fire and explosions at the Chemie-Pack plant in Moerdijk, Netherlands in 2011, where large amounts of toxins were released into the environment, mainly through firewater; clean-up costs have been estimated at least €50 million.

The following sections present case studies of four major incidents involving pollution resulting from industrial accidents, to help set the scene for the discussion that follows. Information that is of particular importance in the context of this report includes: estimated/actual cost of traditional and environmental damage (e.g. does either or both exceed €100 million?); companies involved (e.g. were they large companies to which funding of €100 million would apply? or were they small companies to which it probably would not apply?); was there more than one company involved and, if so, how would the €100 million limit apply to each company or industrial sector (e.g. oil industry, chemical industry)?

Note that the case studies are not intended to be representative of past or future accidents, but were chosen according to relevance and the availability of information.

1.2.1 Kolontár, Hungary

A major industrial accident took place at the MAL alumina factory near Kolontár, Hungary on 4 October 2010. A dam wall on one of the red mud ponds at the factory collapsed, resulting in around one million cubic metres of red sludge and alkaline water spilling from the reservoir. A one to two metre high wave of toxic waters and sludge killed ten people, injured several hundred more, destroyed over 300 homes, contaminated a thousand hectares of land, including 400 hectares of agricultural land, and polluted the Torna Creek and other local waterways.6

MAL was established in 1995 after the privatisation of the Hungarian aluminium industry. The alumina factory, which had operated since 1942, had an Integrated Pollution Prevention and Control (IPPC) permit, issued in 2006. The permit was valid until 28 February 2011. MAL also had a damage prevention plan but this had been designed for a much smaller-scale accident (leakage or overflow of the reservoir), not a disaster that threatened local inhabitants and caused losses on the scale seen after the collapse of the dam wall.

MAL had an insurance policy but cover for claims for traditional damage was limited to certain types of damage and was vastly insufficient for the scale of the event. The limit of the insurance

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was reportedly HUF 10 million (€40 000). The policy did not cover the costs of the environmental damage. The estimated cost of the accident for all damage is around €115 million, though the final figure may be higher.

As a short-term response, the Hungarian government brought MAL under state control and established a fund, called the Hungarian Compensation Fund, in order to help finance the reconstruction of the destroyed villages and homes. An application by Hungary for funding from the EU Solidarity Fund related to the accident was rejected.

### 1.2.2 Aznalcóllar, Spain

On 25 April 1998, a dam at the Los Frailes pyrite mine operated by Boliden Apirsa (Apirsa), a subsidiary of the Swedish mining company Boliden, at Aznalcóllar near Seville, Spain, collapsed resulting in the release of water and slurry from a 1.5 square kilometre tailings pond. Acidic water and heavily contaminated slurry tailings spilled into the Agrio, Guadiamar and Los Frailes rivers. Around 4,500 hectares of agricultural land were contaminated by the polluted water; 2,600 hectares were covered with tailings. The contamination resulted in the closure of over 50 irrigation wells and a ban on the sale of agricultural produce and shellfish affected by the spill. Only the emergency construction of barriers stopped most of the nearby Doñana National Park, a Natura 2000 and World Heritage Site and Spain’s largest park, being contaminated. The disaster had direct economic impacts on the agriculture and fishing industry, on the mining sector and on tourism in the region.

Costs arising from the spill were substantial. Remedial and restoration measures cost local and national authorities around €101 million, including over €50 million for the surface cleaning of affected ground and riverbed and the construction of a depurating (purification) plant for polluted water. Protective measures, mainly the creation of a green corridor as a complementary restoration measure, cost the authorities a further €70 million. Yet a further €10 million was paid by Boliden in compensation for third party bodily injury and property damage claims, including €6 million in compensation to farmers for damage to crops.

Most of the costs associated with environmental damages were paid by public authorities, namely through support from the European Union (around €100 million, used mainly for regional development programmes to provide for the clean-up and restoration of the natural habitats in the area and the improvement of its environmental quality), national and regional authorities (€90 million) and the operator (€50 million). Initial funding for the clean-up came from the EU Regional Fund due to the health risks associated with toxic waste (the Solidarity Fund supports

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only remediation and compensation for damages incurred from natural disasters; industrial accidents are not eligible to apply to this Fund, in order to respect the polluter-pays principle).

The Los Frailes mine closed in September 2001. In August 2002, the Spanish Ministry of the Environment declared Apirsa liable to pay an amount corresponding to approximately €45 million in clean-up costs, damages and fines. Apirsa subsequently entered insolvency proceedings, within the framework of which Apirsa’s parent company, Boliden BV, together with Boliden Mineral AB and Boliden AB were declared liable for Apirsa’s shortfall. By 2002, Boliden had spent €96 million for the clean-up of the spill and the cessation of activity in the aftermath of the disaster. It had received several EU grants valued at €37.7 million.

In 2008, the Svea Court of Appeal in Sweden held that a provisional attachment of €141 million in assets belonging to Boliden Group companies by the Commercial Court in Seville was enforceable in Sweden on condition that the receivers of Apirsa posted security for the €141 million. The purpose of the money was to pay claims arising from the spill. However, Boliden disputed the order of the Svea Court of Appeal, which was eventually quashed in a final ruling by the Court of Appeal in Seville in November 2010.

Meanwhile, the regional government of Andalusia filed both civil and administrative suits requiring Boliden to pay for the restoration costs assumed by the regional government, stated at €89.9 million. In December 2011, following a long drawn-out procedure, the Supreme Court of Spain exempted Boliden from paying the €89.9 million demanded as costs incurred by the regional government, as it ruled that the federal rather than regional authorities had jurisdiction, although it declared the company responsible for the spill. In May 2012, 14 years after the dam failure, a final ruling by the Supreme Court of Spain ordered the judge of first instance to resume the claim of the regional government of Andalusia against Boliden to pay the €89.9 million of restoration costs. Despite these numerous legal proceedings, “Boliden’s overall view is that the company will not suffer any substantial financial damage as a result of the legal proceedings described. The company has made no provisions pending final rulings.” After all this, responsibility for the accident remains unclear.

**1.2.3 Buncefield, UK**

The Buncefield fire occurred on 11 December 2005 at an oil-products storage depot near a motorway at Hemel Hempstead in Hertfordshire, England. The relevant part of the depot was operated by Hertfordshire Oil Storage Ltd (HOSL), a joint venture between Total UK (Total) (60%) and Chevron (40%). It was managed on a day-to-day basis by Total. The depot was regulated under the Control of Major Accident Hazards Regulations 1999, which implemented...

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13 See www.wise-uranium.org/monafif.html.
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the Seveso II Directive (96/82/EC), as amended. Other applicable environmental legislation was a predecessor of the IPPC Directive (2008/1/EC), now superseded by the Industrial Emissions Directive (IED) (2010/75/EU)).

The fire was caused when a tank was overfilled with petrol. The gauge that enabled the operation to be monitored stuck. An independent high-level switch that should have closed down operations automatically if the tank was overfilled was inoperable. As a result, the control room staff were not aware that large amounts of petrol were overflowing from the top of the tank. The overflowing petrol resulted in the formation of a vapour cloud, which then ignited resulting in a huge explosion and fire that eventually involved a total of 1 000 firefighters and 20 large fuel storage tanks and was not extinguished for five days.

The bund and the system of drains and catchment areas that should have contained the 250 000 litres of fuel that overflowed failed to do so due to inadequate design and maintenance, the fire destroying sealant in the bunds, and heave in the concrete panels that formed the floor of the bunds opening up pathways to the ground and groundwater. A deep borehole at the site, together with shallow boreholes, also acted as pathways to the ground and groundwater. As a result, pollutants from the fuel; 786 000 litres of foam concentrate (which included zinc as well as perfluorooctane sulfonate (PFOS)) and 68 million litres of fire-fighting water (15 million gallons of which had been recycled before being used on the fire), entered the environment.

The blast, which measured 2.4 on the Richter scale, resulted in injuries to 43 people and caused 2 000 people to evacuate their homes. The premises of 20 businesses that employed 400 people were destroyed; 60 businesses that employed 3 500 people were badly damaged. In addition, several homes were destroyed and hundreds of others damaged. An area of over one hectare of groundwater was contaminated.17

The Health and Safety Executive (HSE) and the Environment Agency, the competent authorities for Control of Major Accident Hazards (COMAH), prosecuted the companies involved. On 16 July 2010, following guilty pleas and convictions, the St Alban’s Crown Court fined them a total of 9.5 million GBP (approximately €11.8 million) including costs. The charges and fines were as follows:

- HOSL was fined 1.45 million GBP plus 1 million GBP in costs for breaching COMAH and health and safety legislation, and causing fuel and firewater chemicals to enter groundwater;
- Total was fined 3.6 million GBP plus 2.6 million GBP in costs for breaching health and safety laws and causing fuel and firewater chemicals to enter groundwater;
- British Pipeline Agency, a joint venture between BP and Royal Dutch Shell, was fined 300 000 GBP plus 480 000 GBP in costs for breaching COMAH and health and safety legislation, and causing fuel and firewater chemicals to enter groundwater;

16 PFOS is a group of chemicals that have persistent, bioaccumulative and toxic qualities. They do not degrade in the natural environment and are, therefore, widespread in people and the environment. They are used in firefighting foam as an additive to assist its spreading properties.

17 See various reports on the Buncefield investigation website, www.buncefieldinvestigation.gov.uk/reports/index.htm#final.
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- TAV Engineering, the manufacturer of the failed alarm, was fined £1,000 GBP plus £500 GBP in costs for breaching health and safety legislation;
- Motherwell Control Systems 2003 (Motherwell), which was responsible for installing and maintaining the fuel level equipment, was fined £1,000 GBP plus £500 GBP in costs for breaching health and safety legislation. Motherwell had entered administration by the time of the trial.

A large number of claimants brought claims for property damage, and to a lesser extent bodily injury, against Total and HOSL of over 750 million GBP. The two companies, which had joined Chevron, TAV Engineering and Motherwell into the judicial proceedings as third parties, admitted that one of them was liable for the civil claims. Total subsequently failed to prove that HOSL was liable.\(^\text{18}\) TAV Engineering had settled its liability for the civil claims earlier. Legal fees for Chevron and Total totalled around 58 million GBP.\(^\text{19}\) A large number of the civil claims were covered by insurance.

The cost of much of the losses from the incident was 894 million GBP (approximately €1.113 billion). This total consisted of the following:

- 625 million GBP – compensation claims against operators of the site;
- 245 million GBP – losses to the aviation industry (Buncefield provided approximately half of the aviation fuel for Heathrow Airport);
- 15 million GBP – competent authority and government measures to respond to the incident;
- 7 million GBP – emergency response (including costs of the fire and rescue service);
- 2 million GBP – cost of alternative sourcing of drinking water due to the incident necessitating the closure of a public water abstraction supply borehole.\(^\text{20}\)

A further cost, which was the responsibility of the oil companies, was the storage and treatment of 16 million litres of fire-fighting waters contaminated with oil, zinc and PFOS. This water was originally stored at the site, following which it was removed and stored at various treatment works in England prior to being treated so it could be released.\(^\text{21}\)

With regard to environmental damage, the Major Incident Investigation Board reported that “potential environmental impacts are of two sorts, pollution of the air and to the ground. However, these appear not to have been as bad as initially feared...”.\(^\text{22}\) The air pollution, caused by the release of large quantities of airborne pollutants, did not cause significant health and environmental effects because the buoyancy of the high plume and favourable meteorological

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\(^{19}\) “Costs-effective” in *The Lawyer* p. 28, 17 September 2012.


conditions trapped the plume at high levels, thus resulting in minimal mixing of the pollutants with the ground.\textsuperscript{23} A study carried out in 2006 concluded that there was no credible evidence of contamination of soil and grasses from the incident.\textsuperscript{24}

The release of hydrocarbons, including BTEX and MTBE (constituents of motor fuels) and PFOS into groundwater extended up to 2 km north, east and south-east of the site. Investigations into potential groundwater issues were still ongoing over five years after the incident.\textsuperscript{25}

The Environment Agency extensively sampled surface water and groundwater at and around the site. The sampling detected fuel products and other pollutants in the nearby River Ver and River Red. Concentrations of pollutants in surface water began to drop about one month after the incident.

A report by the Buncefield Major Incident Investigation Board noted support that had been provided and recommended, among other things, the merits and mechanisms for providing immediate short-term financial assistance to the communities affected by the incident as well as central government support to assist in recovery of the affected area.\textsuperscript{26} The UK government applied for funding for the consequences of the accident from the EU Solidarity Fund but subsequently withdrew the application.

In July 2012, Total stated that it had decided not to rebuild the part of the depot affected by the explosion and fire. The proposed redevelopment of a combined jet fuel and ground fuels terminal had included around 20 new storage tanks. Total announced that it would “instead conserve the option to study the potential development, in the future, of a separate ground fuels terminal at the site.” A smaller development of six tanks for jet fuel involving a partnership of companies including Total was planned instead.\textsuperscript{27}

\section*{1.2.4 AZF, France}

On 21 September 2001, an explosion, which measured 3.4 on the Richter scale, occurred in a warehouse that stored granular ammonium nitrate at the AZF chemical plant in Toulouse, France. The explosion caused the deaths of 30 people (including 21 employees), injuries to over 4,500 people, and the destruction of 27,000 homes and other buildings.\textsuperscript{28} Telecommunications and electricity networks were severely disrupted for days following the explosion and over 1,200 households had to be relocated. The explosion also resulted in the release of nitric acid and ammonia into the River Garonne, leading to large-scale destruction of aquatic fauna.

\textsuperscript{23}AEA Technology (2006) Initial review of air quality aspects of the Buncefield Oil Depot Explosion, report produced for the Department for Environment, Food and Rural Affairs, the Scottish Executive, the Welsh Assembly Government and the Department of the Environment in Northern Ireland; AEA/ENV/R/2168 Issue 1.


\textsuperscript{25}Environment Agency (2010), The environment in Hertfordshire, p. 21.


\textsuperscript{27}“Total drops plans for a large-scale rebuild at Buncefield” in Hemel Today, available at www.hemeltoday.co.uk/news/focal/total-drops-plans-for-a-large-scale-rebuild-at-buncefield-1-4017114.

AZF, which is the largest fertilizer manufacturer in France, is owned by Grande Paroisse, part of Atofina, the chemical division of Total. Due to its urban location and the nature of the products handled in the plant, the site was classified as high risk and regulated under the Seveso II Directive. The company was also certified with ISO 9000 and ISO 14000 standards.

Several inquiries and expert evaluations were carried out to assess the cause of the explosion. In 2006, the final report of the judicial inquiry supported the theory of an industrial accident, i.e. a human handling error, according to which the accident was caused by the inadvertent mix of a few dozen kilos of sodium dichloroisocyanurate, a product used in treating swimming pool water, and 500 kg of ammonium nitrate spilled in the warehouse 20 minutes before the explosion.

In the immediate aftermath of the accident, the French government released €24 million to help reconstruct houses and public infrastructure. A further €10.4 million was allocated to support companies affected by the explosion and another €1.7 million was provided to affected industries in tax exemptions.

Nearly 1,300 companies located in the vicinity, representing around 20,000 employees, claimed compensation. The claims included 100,000 demands from private individuals and companies. On 3 October 2001, the National Disaster Victim Compensation Committee was established. The Committee was led by the French Ministry of Justice and included, in addition to the Grand Paroisse Group, governmental authorities, elected officials and disaster-victim associations. On 31 October 2001, an agreement, called the National Disaster Compensation Convention, was signed. The agreement established special procedures to provide compensation to victims. The claims were managed by a team of 220 experts (including medical experts), 25 claims managers, and 10 lawyers. Over €2 billion was eventually paid out in compensation for claims for bodily injury and property damage; 16,000 people were compensated for bodily injuries, and 71,000 cases (33,000 of which were for residences, including private and local authority houses and flats) involved compensation for property damage. Other settled claims involved public, commercial buildings and vehicles. A substantial part of the compensation payments were from insurance, a process which resulted in delays to some payments.

Overall, the clean-up pollution operation and the rehabilitation of the site cost an estimated €250 million. Rehabilitation operations, at a cost of over €100 million, were carried out by Grande Paroisse. The focus of the remedial measures was the reduction of concentrations of hydrocarbons, lead, arsenic and mercury in the soil. The measures included excavating over 750,000 cubic metres of soil and concrete, nearly 90% of which was treated on-site by washing and heat treatment at 850°C. The remedial measures were completed in early 2008.

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32 Greenpeace (2002); French Ministry of Sustainable Development (2011).
The public prosecutor’s office in Toulouse instituted an investigation, which led to the prosecution of the Grand Paroisse group and the plant manager for “involuntary homicide and injuries”. The Court of Justice of Toulouse imposed a €225 000 fine against the Grande Paroisse group and sentenced the manager of the plant to a €45 000 fine plus a three year suspended imprisonment. However, the Court ruled that there was not enough evidence to prove the negligence of Grande Paroisse, which led to the discharge of the operator. The sentence was appealed by the public prosecutor. A new trial involving 2 700 plaintiffs, 60 lawyers and over 200 witnesses began in November 2011. On 24 September 2012, the Court of Appeal confirmed the €225 000 fine against the Grande Paroisse group and sentenced the former manager of the plant to a year in prison for manslaughter.

Meanwhile, in 2002, the Grand Paroisse Group decided not to restart operations at the plant. Instead, the land was donated to the Greater Toulouse Urban Community and subsequently developed as a cancer research centre (Cancéropôle de Toulouse), surrounded by 30 hectares of public parks and open spaces.

The AZF explosion had important policy consequences. At national level, it led France to switch emphasis from “risk management” to “risk prevention” with the implementation of a Technological Risks Prevention Plan. At EU level, the disaster contributed to the development of the REACH chemicals regulation.

1.3 Legislative framework with respect to funding for major industrial accidents

As the Hungarian proposal indicates, existing EU legislation does not adequately address the financial implications of major industrial accidents involving pollution. The Seveso II Directive, which dealt with industrial safety, did not address the issue of financial security in the context of industrial activities. Neither does the Seveso III Directive (2012/18/EU) that has superseded it. Article 29(2) of the Seveso III Directive does however state that “in the context of relevant Union legislation, the Commission may examine the need to address the issue of financial responsibilities of the operator in relation to major accidents, including issues related to insurance”.

The Mining Waste Directive (2006/21/EC) provides for “financial guarantee (e.g., in the form of a financial deposit, including industry-sponsored mutual guarantee funds) or equivalent” before operations that involve the deposition of extractive waste in a waste facility may commence. The guarantee or equivalent must cover obligations under the permit and the rehabilitation of land.

35 The manager of the plant was also ordered in 2008 to pay a fine of €8 000 and €28 125 in damages to each of the three environmental NGOs that prosecuted him for authorising the discharge of 3.8 tonnes of liquid ammonia into the Garonne River one month after the AZF explosion. The discharge polluted a 1.5 km stretch of the river and resulted in the deaths of 8 000 fish from 14 species. See www.fne.asso.fr/fr/pollution-de-la-garonne-la-cour-d-appel-de-toulouse.html?cmp_id=33&news_id=118.


37 The European Environmental Bureau (EEB) had suggested that operators of Seveso facilities should contribute to a fund, with the level of funding to be harmonised at EU level and allocated by Member State by means of national qualitative criteria subject to a national tendering scheme. See EEB Briefing on the Proposal for a “Directive of the European Parliament and of the Council on control of major accident hazard involving dangerous substances” (Seveso III Proposal).
affected by the waste facility. This provision, which necessarily is limited to mining waste, does not cover the full range of liabilities under ELD.38

The scope of the EU Solidarity Fund does not include industrial accidents.39 The only application for funding for a non-natural disaster that has been approved under the Solidarity Fund is for the Prestige oil spill. As noted above, an application by the Hungarian government for funding for the Kolontár accident was rejected, while another from the UK government in respect of the Buncefield fire was withdrawn.

In 2005 the Commission submitted a proposal for a new EU Solidarity Fund Regulation that extended the scope to include industrial accidents, other man-made disasters, threats to public health and major terrorist actions. The European Parliament adopted the proposal in its first reading in 2006. The Council, however, opposed the proposal – a situation that remains unchanged to this day.40 The Commission has stated that serious legal difficulties would be encountered in using the Solidarity Fund for non-natural disasters. It interpreted the limitation on payments “to finance measures alleviating non-insurable damages” as meaning the exclusion of private damages. The Commission has also commented that “the polluter pays principle and the affected State’s obligation to seek compensation from third parties (third party liability) would seem to exclude other than natural disasters from the Fund”, noting that these considerations “led to the non-acceptance of the Hungarian application relating to the red sludge spill disaster of 2010”.41

1.3.1 Environmental Liability Directive

The ELD provides the legal framework for an environmental liability system for industrial, commercial and other operations in the EU. The ELD applies to any operator in the EU carrying out an occupational activity that causes an imminent threat of, or actual, environmental damage to:

- Species and natural habitats protected by the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC), including over 26,000 individual sites (the

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38 Various other Directives have mandatory financial security provisions to ensure that operators have adequate funding to pay for known environmental liabilities such as closing a landfill. See for example Council Directive on the landfill of waste (1999/31/EC); Council Directive on high-activity sealed radioactive sources and orphan sources (2003/122/Euratom); Directive of the European Parliament and of the Council on waste electrical and electronic equipment (2002/96/EC). In addition, Regulation (EC) No. 1013/2006 on shipments of waste requires a person who ships waste to have a financial guarantee or equivalent insurance in the event the shipment or recovery of the waste cannot be carried out as intended or the shipment, recovery or disposal is illegal. Furthermore, the Directive on the geological storage of carbon dioxide (2009/31/EC) requires a person who applies for a permit to operate a storage facility for carbon dioxide to provide proof of “financial security or any other equivalent, on the basis of arrangements to be decided by the Member States”. The financial security must cover obligations under the permit, including closure and aftercare provisions as well as any obligations arising from inclusion of the storage site under the EU Emissions Trading Scheme.

39 See Annex A for further description of the EU Solidarity Fund.


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Natura 2000 network) which cover nearly 18% of the land area of the EU as well as about 200,000 km² of its marine area (biodiversity damage);*2

- Waters covered by the Water Framework Directive (2000/60/EC) (water damage);
- Direct or indirect contamination of land that poses a significant risk of an adverse effect on human health (land damage).

The ELD establishes two types of liability: strict and fault based. Strict liability applies to an imminent threat of, or actual, environmental damage caused by activities under legislation listed in Annex III to the Directive. It applies to damage to all natural resources, i.e. biodiversity damage, water damage and land damage. Fault-based liability applies to non-Annex III activities and only to biodiversity damage, not to water or land damage.

Strict liability means that an operator is liable if its activities cause an imminent threat of, or actual, environmental damage regardless of whether the operator is negligent, at fault or even knows that its activities have caused the damage. Fault-based liability, on the other hand, means that an operator is liable if its activities cause an imminent threat of, or actual, environmental damage through a deliberate act, negligence or fault.

Annex III activities that have already resulted in major industrial accidents involving pollution, some before the introduction of the ELD, are as follows:

- Activities that require permits under the IPPC Directive (2008/1/EC) (superseded by the IED (2010/75/EU));
- Waste management operations including disposal sites;
- Extractive minerals waste under the Mining Waste Directive (2006/21/EC);
- Production, storage, use and release of dangerous substances, pesticides and other plant protection products and biocidal products;
- Transport of dangerous or polluting goods.*3

The ELD does not impose liability on operators whose activities cause traditional damage. It specifically states that it does not apply to private parties claiming compensation from environmental damage. The scope of the ELD is limited to environmental damage, thus excluding personal injury, property damage or, when the law of a Member State provides for its recovery, economic loss.

The ELD does however require operators to implement measures to prevent adverse effects on human health if their activities result in an imminent threat of, or actual, environmental damage.

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*2 Habitat banking could be used in the ELD to cover losses from accidental impacts, where located close to the accident and targeting the relevant biodiversity elements. This possibility is foreseen in France in agreements between the Ministry of Environment and pilot banks. See ICF, GHK and Bio Intelligence Service (forthcoming) Exploring potential demand for and supply of habitat banking in the EU and appropriate design elements for a habitat banking scheme, DG Environment.

*3 Other Annex III activities are: authorised discharges into surface and ground water; water abstraction and impoundment; activities related to genetically modified organisms and micro-organisms; and cross-border shipments of waste. Carbon capture and storage facilities are also listed in Annex III; apart from demonstration sites, no such facilities are in operation in the EU as yet.
In addition, measures to remediate environmental damage must take risks to human health into account.

In a similar manner, the Directive on the geological storage of carbon dioxide (2009/31/EC), which is also listed in Annex III of the ELD, does not cover liability for traditional damage. Like the ELD, it requires risks to human health to be taken into account.

In summary:

- Liability for claims for traditional damage is covered exclusively by the law of individual Member States;
- EU law is limited to liability for preventive and remedial measures to the environment and natural resources that take account of risks to human health (land) and also the sustainability of the environment.

### 1.3.2 Proposed establishment of funds or joint compensation schemes under the ELD

Funds and joint compensation schemes were mentioned in the context of civil liability for environmental damage during the long history of what would become the ELD.

In 1987, following the pollution of the Rhine from the warehouse fire at Sandoz, the European Parliament called on the Commission to “study the implementation of a tax scheme for toxic chemical products to finance an international fund for the environment…”.  

In 1991, the amended proposal for a Council Directive on civil liability for damage caused by waste called on the Commission to “study the feasibility of the establishment of a European fund for compensation for damage and impairment of the environment caused by waste” to provide funding when the liable person could not be identified or could not provide full compensation.

In 1993, the Commission’s Green Paper on remedying environmental damage discussed joint compensation schemes. The Green Paper referred to:

> special compensation funds for damage caused by industries posing a particular risk of damage. This type of fund supplements the compensation which can be obtained from the polluters themselves and their insurers. They are used to redress accidental pollution by helping to provide more complete and timely compensation for injured parties.”

The Commission suggested the following approach: a civil liability system would apply if damage was attributable to the action of a single party. If however, the liable person could not be identified, a joint compensation system, as decentralised as possible, could be established to divide the costs of restoration between various economic sectors.

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46 Communication from the Commission to the Council and Parliament and the Economic and Social Committee: Green Paper on remedying environmental damage COM(93) 47 final, s. 3.2.1(14 May 1993).
47 Green Paper, s. 4.2.
The Commission presented the following examples of joint compensation schemes in the Green Paper:48

- The International Fund for Oil Pollution Damage, financed by the oil industry, which “makes payments where the ship-owner is not liable under the Convention, is insolvent, or when the damages exceed the ship-owner’s liability limit. The fund compensates for personal injuries and property damage and for measures actually taken to reinstate the environment”. The Green Paper also referred to parallel financial structures including the Offshore Pollution Liability Agreement (OPOL).

- The US Superfund, which was, at that time, funded by taxes on crude oil and chemical feedstock plus a general environmental corporate tax. The fund enables the United States Environmental Protection Agency (USEPA), among other things, “to respond to short-term emergencies, such as accidental spills of hazardous substances”, with a civil liability system used to recover costs from identified responsible parties.

- The Swedish Environmental Damage Insurance set up under the 1986 Environmental Damage Act and abolished in January 2010, which provided compensation for environmental damage, personal injury and property damage in cases of pollution when the polluter could not be identified, the liable party was insolvent, or liability was time-limited. Each business that had an environmental permit was required to contribute an amount established with respect to the type of business and its size. The businesses were also required to have insurance for their activities. The injured party had to assign his claim for compensation to the insurance company.49

The Swedish mechanism consisted of two types of compulsory insurance:

- Environmental Insurance (EIL), which covered traditional damage (personal injury and property damage) for pollution incidents up to a maximum of SEK50 million (about €6 million) per claim for property damage, SEK5 million (about €600 000) per claim for bodily injury, and SEK100 million (about €12 million) if the damage was the consequence of serial incidents.

- Clean Up insurance (CUL) that covered “expenses for clean-up measures of an urgent nature [ordered by the competent authorities] to counteract environmental damage, as well as expenses for investigations”50 up to a maximum of SEK50 million per claim. The CUL allowed the compensation of public authorities for clean-up costs when the liable party could not pay and when a supervisory authority had requested the assistance of the enforcement service for the enforcement of its decision. Its aim was to reduce public expenses for remediating polluted areas.

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48 There are a number of international civil liability regimes that may cover damage caused by industrial activities. An overview of these international regimes is provided in Annex.


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The publicly fee-funded mechanism was operated by private insurance companies. It was regulated in the Environmental Code with terms approved by the Swedish government. Both types of insurance were eventually abolished because they did not have the broad application that was expected when they were created. This was due to the difficulties faced by supervisory authorities in obtaining funds from insurance policies, which was explained by the narrow scope of some insurance terms and the overly strict application of these terms as well as shortcomings in the possibility of appeal and in the control and reporting of their activities by insurance companies.

- The French fund for noise, which was created in 1973 and funded by companies that used the Paris airports, and which compensated people living near to them due to excessive noise levels. Since 2000, this fund has been divided into two entities, one fund for the Paris Roissy Charles de Gaulle airport and one for the Paris Orly airport. Both funds are financed by a local tax and an annual levy on airline companies that use the airports. Monies are allocated to the cities located in the vicinity of the airports in order to compensate inhabitants from damage caused by noise.\(^{51}\)

- The Netherlands fund for damage from air pollution, which was created in 1972 and which pays compensation when the polluter cannot be identified and, if the victims ceded their rights against a polluter to the fund, when efforts to identify the polluter would have delayed compensation. The fund was originally established by the Air Pollution Act of November 1970 and is now governed by art. 15.2-15.28 of the Environment Management Act. It is funded by Dutch taxes.\(^{52}\)

In 2000, the White Paper briefly mentioned funds in the context of international conventions being based on strict but limited liability with a fund as a second tier of compensation, such as for oil pollution.\(^{53}\) In 2002, however, when the Commission submitted the proposal for the Directive that would become the ELD, suggestions for a fund or joint compensation scheme had been dropped in lieu of Member States instituting them if they wished. Instead, the proposed Directive provided that “Member States must adopt all necessary measures to ensure that the needed preventive or restorative measures are actually financed through any source that would seem fit to them and can thus be taken ... the institutional and procedural arrangements as to how the prescribed results will be achieved are left, to a very large extent, to the Member States in line with the subsidiarity and proportionality principles”.\(^{54}\) In view of the Kolontár red sludge disaster, it is timely to examine this issue again.

### 1.3.3 Financial security under the ELD

The potential obviously exists that an operator whose activities cause an industrial accident will not have adequate funding to pay claims for traditional and environmental damage resulting

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54 Proposal for a Directive on environmental liability with regard to the prevention and remedying of environmental damage, p. 3 (COM(2002) 17 final, 23 January 2002); see also proposed Directive, recital 15.
from the accident. As noted above, the ELD does not include any provisions requiring operators to pay for traditional damage.

The ELD provides for financial security for environmental damage after such damage has occurred by stating that “the competent authority shall recover, inter alia, via security over property or other appropriate guarantees from the operator who has caused the damage or the imminent threat of damage, the costs it has incurred in relation to the preventive or remedial actions taken under this Directive”.

The ELD does not, however, require an operator to have financial security before environmental damage has occurred, a proposal by the European Parliament to include such provisions having been deleted by the Council during the legislative process. In lieu of mandatory financial security provisions, the ELD provides that Member States “shall take measures to encourage the development of financial security instruments and markets by the appropriate economic and financial operators, including financial mechanisms in case of insolvency, with the aim of enabling operators to use financial guarantees to cover their responsibilities under this Directive”. The ELD also directed the Commission to submit proposals for a system of harmonised mandatory financial security if, on the basis of a report to be submitted by the Commission and an extended impact assessment, the Commission concluded that it was appropriate to do so.

In October 2010, the European Commission concluded that there was not sufficient justification at that time to introduce a harmonised system of mandatory financial security due, among other things, to the lack of practical experience in the implementation of the ELD resulting from a three-year delay in its transposition in some Member States.

The ELD does not preclude Member States from issuing more stringent provisions. Some Member States have already enacted legislation to introduce mandatory financial security for ELD liabilities. Bulgaria, the Czech Republic, Portugal and Slovakia have brought the legislation into effect although the requirements are not widely observed or enforced in at least some of those Member States. Spain will soon bring its mandatory financial security legislation into effect. Greece and Romania will also do so, currently anticipated to be later in 2013 and January 2014, respectively. Hungary also plans to introduce mandatory financial security. Finland and Lithuania are considering the issue.

In Bulgaria, an operator carrying out occupational activities listed in Annex III must financially secure its activities by one or more of the following: insurance, bank guarantee, pledge, or mortgage. The latter three instruments entered into force with the law on 29 April 2008; Insurance entered into force as a financial instrument on 1 January 2011. The financial security

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56 For more detailed information on this point, see the project website for the study Implementation challenges and obstacles of the Environmental Liability Directive, http://eldimplement.biois.com/.
should be commensurate with the potential cost of remediation measures, as determined through risk assessment.\(^{57}\)

The Czech Republic introduced mandatory financial security on 1 January 2013. It applies to Annex III operators, with the amount of financial security based on estimated remedial costs. As with the other systems, financial security mechanisms are not limited to insurance.

In Portugal, mandatory financial security was introduced from 1 January 2010. The Portuguese government has subsequently published *Technical Guidelines for the Evaluation of Environmental Damage and Imminent Threat of Environment Damage* to implement the mandatory financial security requirements and has been preparing a *Guide for the Constitution of Financial Guarantees*. When the regime is fully operational, there will be a methodology for carrying out risk assessments, with minimum amounts of mandatory financial security and an exemption for low-risk activities.

Slovakia introduced mandatory financial security on 1 July 2012. The regime applies to Annex III operators in a similar manner to the other systems. The amount of financial security is based on estimated remedial costs, with operators obliged to carry out a risk assessment. Financial security mechanisms include insurance and bank guarantees.

Spain will begin phasing in mandatory financial security in the near future. The system will apply to Annex III operators and will cover all ELD liabilities except complementary and compensatory remediation in respect of pollution. The operator must carry out an independently verified risk assessment, with the competent authority decides the level of financial security according to the report. The maximum required level is €20 million. There are exemptions for potential estimated primary remediation costs of less than €300,000, as well as between €300,000 and €2 million provided that an operator’s activities are certified by ISO 14001:1996 or the EU Eco-management and audit system (EMAS). Financial security includes many possible instruments and it is not limited to insurance (e.g. Spain has one of the most active environmental risk (re)insurance pools).

In Greece, financial security mechanisms will include insurance policies and other forms of financial guarantees including mechanisms in case of insolvency. The transposing legislation states that the date to begin phasing in mandatory financial security is 1 May 2010, but this was postponed until 31 December 2012. Mandatory financial security is now anticipated to be brought into effect in mid-2013.

The financial security provisions of these Member States do not, however, cover all environmental damage within the scope of the ELD. Furthermore, the financial security provisions do not cover traditional damage, which as noted above is outside the scope of the ELD. Still further, even if the ELD was to be amended to require mandatory financial security, it would not result in a source of funding for a major industrial accident the costs of which exceed €100 million.

1.3.4 Voluntary financial security

Whilst most operators in the EU have financial security to cover traditional damage from industrial accidents, a much more limited number have financial security to cover environmental damage. There are many mechanisms that an operator may use to show evidence of financial security for damage from industrial accidents. The main ones are:

- Letters of credit;
- Trust funds;
- Bank guarantees;
- Bonds;
- Corporate financial test (minimum level of tangible net worth or net working capital);
- Corporate guarantees (typically provided by a parent company meeting corporate financial test with location of substantial proportion of assets in relevant jurisdiction);
- Insurance.\(^5\)

In the absence of legislation or other provisions that require an operator to have financial security, most if not all operators will not set aside funds in letters of credit, trust funds or bank guarantees. This is because doing so necessarily precludes the operator from using the funds for other purposes. Further, operators are highly unlikely to purchase bonds to cover the cost of performing works following an industrial accident or to pay for such costs because an accident is a fortuity and not a certainty for which funds must be set aside.

An operator may be required to have a letter of credit, trust fund, bank guarantee or bond as part of a contractual arrangement. Financial security instruments arising from such arrangements, however, are dedicated to the purpose set out in the relevant contracts; they do not typically cover claims for traditional damage or environmental damage. Examples include the owner of a warehouse requiring companies that store goods in it to have financial security in respect of those goods and governmental entities requiring construction companies that are building a road or building to have a bond to ensure its completion in the event the companies become insolvent.

Also in the absence of legislation that mandates financial security, an operator would not need to show that it has satisfied the corporate financial test or that it has a corporate guarantee; there would simply not be any governmental entity to which the information would need to be shown.

The main financial security instrument in the absence of mandatory financial security legislation is insurance. Most operators have insurance policies to cover risks associated with their activities. Such insurance cover can be relatively unsophisticated for small- and medium-sized businesses (SMEs). It can be highly sophisticated, with many layers of primary and excess policies in an insurance programme, for large companies with installations in many locations and countries. A

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minority of very large companies self-insure (that is, they do not take out insurance cover due to their large size and thus capacity to pay any claims against them), but this is not the norm.

Most insurance policies are underwritten by commercial insurers. A minority are underwritten by captive insurers (that is, an insurance company affiliated with the operator) or mutuals, which tend to be formed by operators in a particular sector.\footnote{A well-known example of a mutual is the International Group of Protection and Indemnity Clubs (P&I Clubs) for marine risks.}

\footnotetext{59}{A well-known example of a mutual is the International Group of Protection and Indemnity Clubs (P&I Clubs) for marine risks.}
Chapter 2: Stakeholders’ views on the idea of a risk-sharing facility to cover industrial risks and potential disasters

This chapter examines and analyses comments by stakeholders to the Hungarian proposal for an EU fund or risk-pooling scheme for industrial accidents involving pollution. The aim is to determine if and how operators and the financial/insurance sector could be engaged in the development and implementation of the potential scheme.

Consultation of stakeholders involved a number of key steps:

- A background document was prepared and circulated for comment to all relevant stakeholders (over 300);
- Questionnaires were published online, one for the industry/operators and one for the insurance sector;
- A workshop was held in Brussels to discuss the issues.

Around 35 detailed responses were received, either via the online questionnaires (12 insurers, 3 operators) or in written form by email or letter (around 20 insurers and operators). Around 50 participants attended the workshop (see presentations and minutes at http://eldfund.biois.com/meetings). Annex D lists those who replied to the survey, while the online responses and the written contributions are submitted on a CD-ROM attached to this report.

2.1 Which sectors need or could be interested in a fund or risk-pooling scheme?

The following criteria to establish whether a specific sector needs or is interested in a fund or risk-pooling scheme to cover industrial accidents involving pollution will be discussed in turn:

- Whether mandatory financial security requirements for accidents involving pollution currently exist in an industry sector;
- If such requirements do not exist in an industry sector, whether financial security for the risk of accidents involving pollution is currently available;
- Whether operators in the various industrial sectors are aware of the financial risks from industrial accidents involving pollution and currently have insurance or some other financial security mechanism for such accidents;
- Whether there is sufficient capacity in the insurance market to cover the existing demand for insurance policies for liabilities arising from an industrial accident involving pollution;
- The size profile of companies in the sector.
Whether mandatory financial security requirements for accidents involving pollution currently exist in an industry sector

Some stakeholders commented that a single fund for all industrial sectors would not be appropriate. The main reason focused on the concept that “no one-size-fits-all” due to environmental risk profiles varying widely between companies, depending on their activities, age of installations, location, preventive mechanisms carried out by them, etc.

In particular, representatives of some industry sectors commented that they are already subject to mandatory financial security for accidents involving pollution. Stakeholders from the oil and gas industry commented that the Department of Energy and Climate Change (DECC) in the UK was developing guidelines on a process for operators of offshore oil and gas operations and their co-venturers to assess the potential cost of drilling a relief well to bring a well under control following an incident, and the cost of remedial measures and payments of compensation to third parties for pollution damage. The figures resulting from these two estimates are then aggregated to produce the total amount of financial resources that should be demonstrated to DECC. They stated that the process, which does not limit the legal liability of the operator and its co-venturers, was expected to be operational in early 2013.60

Similarly, stakeholders from the minerals industry commented that the Mining Waste Directive (2006/21/EC) requires operators in the extractive industries to have financial security to cover obligations arising under the permit, including closure and post-closure of the waste facility, and to ensure that funds are readily available to rehabilitate the land affected by the facility. The financial security mechanism must be in place before operations begin.

The stakeholders in the oil and gas industry and the extractive minerals industry considered, therefore, that it would not be appropriate for members of those industries to be required to contribute to a fund. They further considered that a fund or risk-pooling scheme would have a negative effect on their industries by protecting bad operators and allowing them to continue operating. For example, it was noted that one problem with a scheme would be that it would mutualise liabilities amongst all industry players.

If such requirements do not exist in an industry sector, whether financial security for the risk of accidents involving pollution is currently available

Insurance tends to be the main type of financial security mechanism used by most operators, in particular SMEs, for losses from industrial accidents. There are two main types of insurance policies that provide cover to companies in the event of an industrial accident involving pollution: general liability policies (also known as public liability policies); and environmental insurance policies.

General liability insurance policies

The vast majority of operators have general liability insurance policies to cover third-party claims for bodily injury and property damage caused by their activities, including industrial accidents involving pollution. Depending on the jurisdiction, the policies also provide cover for economic

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loss. In addition, most companies have employers’ liability, motor and other specialised policies for certain risks.

This does not mean that operators have cover for all third-party claims that arise from industrial accidents involving pollution. For example, general liability policies in some Member States contain a pollution exclusion. This exclusion may be absolute or qualified. An absolute exclusion means that the policy does not provide cover for any claims from pollution. A qualified exclusion bars cover for claims from pollution, with the exception of claims from sudden and accidental pollution. That is, claims from gradual pollution are not covered. The exclusions vary; some are more extensive and robust than others.

Qualified exclusions in general liability policies across the EU are more common than the use of absolute exclusions. General liability policies with qualified pollution exclusions provide cover for bodily injury and property damage claims (as well as claims for economic loss when the relevant law provides for such claims) arising from an industrial accident involving pollution.

There are, of course, limits to such cover. Insurance policy wordings include deductibles or self-insured retentions as well as limits of liability. In the same way as no operator has unlimited capacity to pay damages from a major industrial accident; no insurance policy provides unlimited liability. For example, an SME operator may have general liability insurance cover of €5 million for each and every industrial accident and in the aggregate. It would not make economic sense for such an operator to pay the premium for an insurance policy with a limit of say €100 million from an industrial disaster caused by its operations.

Whereas, as noted above, general liability policies provide cover for claims for bodily injury and property damage from sudden and accidental pollution incidents (as well as other types of incidents), they tend not to provide cover for remediating pollution or other environmental damage or for reimbursing a governmental authority for such costs. This is because the purpose of general liability policies tends to be the provision of cover for compensatory damages claimed against an insured by third parties who suffer bodily injury, property damage and other specified losses due to the insured’s activities.

Coverage in any particular case necessarily depends on the wording of the individual policy and the jurisdiction in question. For example, most States in the United States have concluded that the standard commercial general liability policy provides cover for remedial costs, whether incurred by an insured or reimbursed by the insured to a governmental authority. An English court, however, did not adopt this line of thought, concluding instead that remedial costs claimed by the competent authority for remediating water pollution were not covered by the policy in question.

Some general liability policies include endorsements that provide cover for remediating pollution. Many of these endorsements, however, are very limited in scope. In order, therefore, for an operator to be certain that it has financial security for remediating pollution and other environmental damage from industrial accidents, the operator must have an environmental insurance policy.

61 See Bartoline Ltd v Royal & Sun Alliance Insurance plc [2006] EWHC 3598 (QB) (policy did not provide cover for statutory liabilities in remediating harm caused by pollutants to two water courses).
In summary, general liability policies do not cover all losses from an industrial accident involving pollution. In particular, they do not cover the following:

- First-party cost of remediation of the insured company’s own property due to pollution;
- First-party cost of repairing damage to the insured company’s own buildings due to pollution, although this cost is likely to be covered by any property policy;
- Tort liability for injury or illness to employees caused by pollution of air, water or soil, although they may be covered by other insurance such as compulsory employers’ liability requirements.

**Environmental insurance policies**

As highlighted by the 2009 study on the implementation effectiveness of the ELD and related financial security issues, the availability of environmental insurance policies was fairly limited in the EU at that time. Since then, availability has increased, and is continuing to increase as more carriers enter the market, the scope and variety of environmental insurance policies broadens, and capacity increases.

There are no reported figures for the overall amount of environmental insurance policies that are in place in the EU. Insurance industry sources indicate that annual premiums for environmental insurance policies worldwide, not including environmental liability endorsements to general liability policies, are about USD 200 million (€248.5 million). This figure does not include the German environmental insurance market, which is tied to casualty, the annual premiums for which may be as high as €200 million.

The availability of environmental insurance policies does not mean that they are necessarily widely available in all Member States or that they cover the full scope of ELD liabilities. For example, the policies are generally not available to operators for claims arising from environmental damage caused by genetically modified organisms; a small though significant aspect of liabilities under the ELD. They are, however, widely available across the EU for claims for traditional and environmental damage caused by industrial accidents involving pollution. They are also widely available in many Member States to provide cover for liabilities arising from all environmental damage in the ELD including the costs of complementary and compensatory remediation as well as primary remediation. As noted above, however, no insurance policy (just as no operator) has unlimited funds. The level of indemnity is necessarily limited.

There is strong growth in the market and a wide and competitive range of insurance products are now offered in EU markets. In addition to the standard pollution cover for environmental impairment liabilities, an increasing number of insurers are providing cover for ELD-driven exposures such as biodiversity damage. The environmental insurance market has attracted a number of major new entrants in the last few years and the capacity and sophistication of products will almost certainly continue to develop.

Whether financial security is available to operators in a given sector in respect of liabilities under the ELD depends on various factors. For example, BIO (2009) identified two sectors as then being open to ELD risks:

affected by limitations in ELD-related insurance policies: first, the use of chemical and other hazardous products in agriculture, and second, nuclear activities (nuclear activities are not covered by the ELD as the relevant conventions apply, see below).

There have however been major changes since 2009. For example, today many farmers have financial security for ELD liabilities in the UK under the National Farmers Union insurance policy and other environmental insurance policies. Further, a major accident involving pollution is unlikely to result from agricultural activities, in particular when farms are small.

In respect of nuclear activities, Article 4(4) of the ELD provides that the ELD does not cover environmental damage caused by nuclear risks and activities if such liability is covered by the major nuclear Conventions, i.e. the Paris and Vienna Conventions and the Brussels Supplementary Convention. Whilst the Conventions cover claims for bodily injury and property damage from a nuclear incident; they will not cover the costs of preventing and remediating environmental damage until the 2004 Protocol is ratified.\(^{64}\) Insurance for operators (which is part of a multi-layered system that also involves direct funding by the relevant government and funds contributed by governments that are party to the Brussels Supplementary Convention), is provided by pools that work together in insuring and reinsuring nuclear risks.

The structure of pools in this sector may be worth considering as an example of a fund along the lines suggested by Hungary, subject of course to the significant differences between the nuclear sector and the myriad of businesses that operate under legislation listed in Annex III of the ELD.

\[\textbf{\textit{Whether operators in the various industrial sectors are aware of the financial risks from industrial accidents involving pollution and currently have insurance or some other financial security mechanism for such accidents}}\]

The ELD should arguably have sufficiently incentivised operators to ensure that they had cover for environmental damage without an obligation to do so, that is, without harmonised mandatory financial security, which the EU has not implemented to date. Many operators, however, are still not aware of the need for financial security for environmental damage.

The awareness of the financial risks from industrial accidents involving pollution varies depending on the industrial sector. Stakeholders responded that operators in industries that are exposed to a high level of risk tend to be more aware of such risks. Furthermore, there are higher levels of awareness regarding the ELD in industries with historically high public awareness on environmental issues, activities of industry associations or insurance companies and brokers such as those in Germany, or within large international companies with state-of-the-art risk management processes.

Stakeholders noted, however, that there is far less awareness at the smaller, particularly regional, SME level. They considered that this mainly results from: the lengthy introduction of the ELD in some Member States; the relatively small number of incidents under the ELD in Member States other than Poland; the tendency of competent authorities to use pre-existing

\(^{64}\) When the 2004 Protocol is ratified, the current term “damage” will be superseded by the term “nuclear damage” which is defined to include the following in addition to bodily injury and property damage: economic loss from injury or damage; costs of “measures of reinstatement” of the impaired environment unless the impairment is insignificant; loss of income derived from a direct economic interest in any use or enjoyment of the environment; and the cost of “preventive measures” including any further loss or damage caused by such measures.
environmental legislation rather than the ELD; and the relative complexity in respect of a risk management perspective of concepts and potential types of remediation established by the ELD.

Moreover, stakeholders reported that the level of awareness differs between Member States. For example, in mature insurance markets and in Member States such as Germany that transposed the ELD close to the deadline for transposition (i.e. 30 April 2007), a variety of insurance solutions are available and bought. In emerging insurance markets on the other hand, liability insurance penetration and ELD awareness still tends to be low and consequently the demand for insurance solutions is low as well.

In respect of awareness in the insurance industry, stakeholders noted that commercial and industrial insurers, particularly in the London market, have a high level of awareness of the ELD, partially as a result of efforts by brokers, (re)insurers and insurance industry associations. It was considered that large international brokers have a high level of awareness but that awareness among local/regional brokers is much lower. The low level of awareness among many smaller brokers has resulted in operators erroneously believing that they have cover for environmental liabilities under their general liability policies. The level of awareness of the ELD among loss adjusters also varies, with the result that the handling of environmental claims by smaller firms (in Member States where loss adjusters handle such claims) is particularly affected.

Lack of awareness and misconceptions about insurance cover may have unintended consequences. Whereas, as noted above, insurance for ELD liabilities is widely available; that availability may start to contract if insurers who currently offer policies do not have adequate demand for them. If such a situation continues, some environmental insurers may decide to exit the market.

**Whether there is sufficient capacity in the insurance market to cover the existing demand for insurance policies for liabilities arising from an industrial accident involving pollution**

The responses to the questionnaire indicate a broad consensus that there is sufficient capacity for liabilities arising from an industrial accident involving pollution in the EU market. One stakeholder noted, however, that environmental insurance was not readily available in Romania due to the environmental insurance industry in that Member State being at an early stage of development.

**Can all operators in Member States in which environmental insurance policies are readily available, obtain such policies?**

The availability of environmental insurance policies in a Member State does not mean that all operators in that State will necessarily be able to purchase them. For example, an underwriter may well decline cover to a company that has a long history of convictions for environmental offences or a long history of environmental claims arising from its operations. In addition, an underwriter may decline cover to a company whose pollution-control measures are non-existent or sub-standard.

There was a strong consensus among stakeholders responding to the questionnaire that this situation should not be changed. Stakeholders considered that insurers must be allowed to assess the risk of offering a policy and, if they decide that the risk is too high, decline cover. The resolution, of course, is for a putative insured to improve its environmental practices and, for
example, to institute a robust environmental management system. The resolution is not to allow a company with poor environmental management practices to continue to threaten human health and the environment by its practices. As stated in recital 2 of the ELD, the reason for imposing liability on an operator who has caused an imminent threat of, or actual, environmental damage is “to induce operators to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced”.

The size profile of companies in the sector

Stakeholders in the oil and gas and extractive minerals industries tended to consider that companies should be subject to mandatory financial security requirements in order to be permitted to operate. These stakeholders suggested that an alternative solution to a proposal for a fund or a risk-sharing pool is a multi-tiered approach that allows companies to use their balance sheets if their corporate credit rating and their size are sufficient to indicate evidence of their liquidity or a parent company undertaking. They commented that companies without an investment grade credit rating may need to obtain third-party collateral, such as insurance, a voluntary mutual insurance fund or other credit support arrangements including letters of credit and bilateral arrangements with larger joint venture partners.

It should, of course, be noted that the ability of a large company to satisfy mandatory financial security requirements by providing evidence of its net worth or a guarantee from a parent or other affiliated company means that the cost of satisfying the requirement is lower than the cost to a small- or medium-sized company. That is, an SME must generally provide evidence of financial security from a third party, such as a policy purchased from an insurer or a guarantee obtained from a bank. A large company, meanwhile, does not need to involve an unrelated third party.

They further noted, in this respect, the need for a strengthening of controls over the financial credibility of individual companies at the time licences or permits to operate are granted, commenting that at such a time, it is appropriate for companies to carry out detailed risk assessment (for example as part of the Environmental Impact Assessment process) and to analyse in particular the potential financial consequences of a low-risk/high-impact event. An example of a detailed risk assessment that was proposed was a requirement to prepare Emergency Response Plans including mitigation for environmental events and an assessment of financial consequences. Such financial consequences differ according to factors such as the location of the operational site, the geography and climate conditions, other proximate industries or agriculture and pertaining legal requirements.

Various stakeholders noted other concerns for an industry-wide fund or scheme such as certain industrial activities being inherently more risky than others and levels of economic loss varying greatly depending on the sector concerned. In this respect, it was noted that the risk profiles, exposure and existing measures for accident prevention are very different from industry to industry, as is the financial viability of the companies which are active in each sector. Thus, a medium to major incident in one sector, which causes say €1 million of damages could have severe economic impacts for that industry whereas the same level of damage would be well within the ability of even minor operators in another industry sector.
2.2 Issues that would need to be addressed

In addition to addressing the questions in section 2.1, the stakeholders that provided input to the online consultation or through written comments identified a number of issues that would need to be addressed for the creation of any potential scheme. These issues are key elements for the design of a fund and associated procedural arrangements; they also provide the baseline for the establishment of the fund. In general, there was negative feedback from stakeholders to the creation of a fund or risk-pooling scheme for industrial accidents involving pollution. Typical comments include:

- The legal form of the fund, whether it would be based on a convention, treaty, etc.;
- Would the fund still apply in cases of permit defence, state-of-the-art defence, etc.?
- Concerns that the fund or scheme would not include risk assessment and mitigation;
- The potential that a fund or scheme would hinder the development of the environmental insurance market and the incentive for insurers to continue to develop new and innovative products;
- Implications of the interaction between existing national funds (whether for industrial accidents or more general environmental protection funds) and a new EU fund;
- Legal clarity on the definition of the baseline condition – would it still be up to Member States to decide or would the manager of the fund define it for the whole EU?
- Ensuring that a fund or scheme does not hinder the operation of the polluter-pays principle;
- Moral hazard concerns connected with the creation of an EU fund;
- The operation of a fund or scheme in Member States with widely differing economic climates, sophistication of industry, legal liability regimes, history of environmental claims and cultural approaches to such risks;
- The lack of a suitable impact assessment or case having been made for a fund or scheme that could potentially apply to all industrial sectors and include traditional and environmental risks;
- General concerns about possible over-regulation of industry.

2.2.1 Prevention

A major objection by responding stakeholders to the creation of such a fund or scheme was the potential for it to deter operators from carrying out preventive measures. As stakeholders pointed out, the over-riding aim should be the prevention of a disaster. Any obligations imposed
on operators should primarily ensure that they focus on effective prevention of environmental damage and take all available measures to mitigate the risk of incidents. An EU-wide fund would not properly consider individual risk assessment and risk minimisation efforts at plant or installation level, and could diminish the incentive to take risk prevention and improvement measures.

The need to ensure that preventive measures are encouraged has several aspects. First, stakeholders noted that establishing a uniform fee of 0.2% of annual net turnover on all operators would not provide an incentive to encourage good risk management practices and safety standards at installation but could instead deter them. In the view of some stakeholders, such a premium could be considered as simply an additional “tax”; and that a flat rate does not incentivise better performance and risk reduction among operators.

Second, such a fee could change the culture of operators in that it would not encourage them to undertake proportionate, expeditious risk assessments to identify the potential for environmental liabilities and to ensure that they had sufficient financial security in place to manage this risk.

Third, the potential to receive payments from the proposed fund could lead some operators to wait to receive such payments before making any improvements. Conversely, operators that paid upfront to improve the safety standards of their installations would not be happy to pay 0.2% of their annual net turnover for a fund that would pay other operators (i.e. competitors) that have not implemented similar safety standards (and have thus made cost savings) to make improvements, or pay for a disaster caused by such an operator. The result may be an increase in unsafe, risk-prone activities and a reluctance to improve pollution avoidance measures. A way to ensure that this scenario does not occur would be to have differences in the level of the fee, which could act as an incentive for good operations. The cost differential, however, might have to be substantial to outweigh any cost savings a company could make from undertaking a poorly managed activity.

Some stakeholders linked the need for risk assessments and risk management practices to mandatory financial security and insurance. In respect of the former, it was noted that if an operator was required to obtain financial security before it could operate, it would result in the operator ensuring that it had good risk management practices in place. In respect of the latter, it was similarly noted that insurers evaluate the risk posed by putative insureds, with the result that operators would ensure that such practices were in place. That is, an insurer’s “risk appetite” (i.e. business decision to cover a particular risk) is highly dependent on the quality of the risk (i.e. the risk severity/frequency and ability to quantify losses). If an operator does not have or maintain high security standards, the risk grows more severe and becomes uninsurable.

An example was given of the entry into force of the Environmental Liability Act 1992 in Germany, which led operators to increase their efforts to reduce environmental risk in order that they could obtain insurance, while the insurance industry hired environmental engineers to check the installations.

Member States that have introduced, or are introducing, mandatory financial security have adopted a risk-based approach. That is, in some of these Member States, operators whose activities are low risk or that are certified by ISO 14001 or EMAS may be exempt from a requirement to have financial security. Furthermore, the Member States tend to require
operators to carry out risk assessments in order to determine the estimated cost of remediating environmental damage and thus the amount of financial security that they need to evidence. A similar approach could be followed for contributions to a fund. A potential exemption for ISO 14001 or EMAS would encourage operators to adopt these standards and thus further the polluter-pays principle. In this respect, however, the proposed threshold of €100 million would need to be examined closely.

**2.2.2 Moral hazard**

The issue of moral hazard in respect of the creation of a fund or scheme is closely tied to a failure by an operator to carry out preventive measures due to the existence of the fund or scheme. Stakeholders noted that, in theory, a general fund could have a perverse effect by increasing moral hazard, i.e. by affecting the behaviour of operators so that they adopt a more lax approach to risk management because they know that the fund will make payments for claims from a major industrial accident.

Moral hazard could be reduced if an operator’s contribution to the fund depends on the stringency (or not) of its environmental management system. In such a case, there would be a strong impetus for the operator to improve its practices so as to avoid a pollution incident. This issue raises an important issue in that the manager of the proposed fund would have to have enough information to assess the environmental management systems of insured parties in order to reward good practices and punish bad ones. Further, there would need to be effective and regular supervision of operators’ activities.

It was also noted that a consequence of a fund with a standard fee or premium for all operators could lead to an increase in accidents which, in turn, could lead to a significant increase in premiums in order to compensate for the increase in risk, which would place an additional financial burden on operators.

**2.2.3 Avoiding negative impacts of a fund or risk-pooling scheme**

A proposed fund or scheme would need to avoid unintended consequences. Stakeholder responses identified the following consequences in particular.

First, the fee should not cause a financial burden that could instead be invested in preventive measures. Transaction costs may also be significant and could add to the level of fees.

Second, major disruption of the insurance market must be avoided. The market currently allows different layers of protection as deemed necessary. Insurance is available to companies that have the plans, equipment, staff and other resources needed to operate safely and respond to an accident.

In contrast, a mandatory risk pool could be open to everyone, including companies with a history of unsafe operations and violations, companies that have no experience in the relevant field and companies that simply lack the resources to operate safely. Mandatory risk-sharing pools could actually increase the risk of accidents if they enable companies with inadequate experience and
resources to undertake work they are not qualified to perform. Whereas the relevant permitting regime should ensure that companies that are not qualified to carry out operations are not permitted to carry them out, the history of industrial accidents indicates that this has not always been the case.

If there is a catastrophic accident, and the responsible company does not have the resources for a timely or appropriate response, the lack of timely action may also increase the damage that is suffered by others. It is difficult for a regulator or contractor to step into a plant and effectively control it. Recent accidents involving chemical plants, nuclear power plants, offshore drilling operations and other complex operations have demonstrated the importance of having an operator who can effectively respond to an accident at its own site.

Additionally, a mandatory risk pool may not provide an incentive for operators to operate to the highest standards, and instead give rise, as noted earlier, to moral hazard. This could occur if the risk pool is used to relieve the operator from its liability and responsibility for a catastrophic accident and for costs above a certain threshold, e.g. €100 million. The operator has no incentive to invest time or resources in steps that may be needed to prevent accidents that have a low probability of occurring but will have catastrophic consequences if they do occur. In any risk-pooling system, it is essential for the responsible companies to bear the cost of the accidents they cause.

Member States deal with harm caused by industrial accidents by using different methods that factor in political culture, risk management practices, national liability legislation and judicial practices (differences that are evidenced by the case studies in this report). This is due to the fact that Member States – and even the industrial sectors within those Member States – require different solutions based on their markets and potential risk exposure. The available insurance products correspond to these national differences.

It must also be shown that the proposed fund or scheme would work more efficiently or effectively than insurance. The private insurance sector is experienced in risk assessment, risk transfer and claims management, meaning it is likely to be in a better position to respond to the effects of an industrial accident than a fund or scheme. The introduction of a fund or scheme should not be allowed to contradict the aim of the ELD to avoid environmental damage. This potential includes the need to ensure that persons managing the fund have the same level of risk expertise as insurers, which may be difficult to accomplish. If not, the establishment of a fund could potentially lead to more market difficulties and administrative problems than benefits.

### 2.2.4 Avoiding hindrance of insurance market development

The creation of any fund or scheme must avoid disruption of the development of the environmental insurance market. Faced with the requirement of contributing to an EU fund, industrial operators may be less inclined to seek out innovative, insurance solutions that can aid in covering their liabilities should an accident occur. As a result, the proposed fund or scheme could stifle the growth of the environmental insurance market by lowering the demand for products. Insurers could then be faced with little reason to continue to develop their products and increase the available financial capacity in order to increase cover in the future.
Additionally, general liability insurance markets have gained significant expertise in handling industrial disasters and are already in a more knowledgeable position to handle traditional damage. The introduction of a fund or scheme must not be allowed to deter investment by operators in this market, as they could face budget constraints by the proposed fee.

Competition in the market remains particularly important for the environmental insurance sector, considering the current state of economic and competitiveness conditions that exist across many Member States. Operator uptake of environmental liability insurance is currently low compared to more traditional covers. A fund may compound this problem by forcing operators to reassess their budgetary constraints before purchasing both environmental insurance and paying a mandatory annual levy to the fund, possibly concluding that they cannot afford both.

### 2.2.5 Complying with the polluter-pays principle

A critical issue is to ensure that the establishment of a risk-sharing facility, pool, fund or similar scheme or instrument complies with the polluter-pays principle. The fund could not subsidise operators in preventing or remedying environmental damage or in paying claims for bodily injury or property damage caused by their activities because this would be in breach of the principle.

The explanatory memorandum to the Commission’s proposal for the ELD stated that:

> “The main benefit expected from the proposal is improved enforcement of environmental protection standards in line with the “polluter pays” principle. This should bring an indirect but not less important benefit: a move towards more efficient levels of prevention. …

Because potential polluters are made liable for the costs of remedying damage they may cause, liability gives good incentives for avoiding damage. When EUR 1 spent on prevention is likely to avoid damage whose restoration costs more than EUR 1, the parties responsible for the potential damage are encouraged to invest in prevention rather than pay for the higher restoration cost. Therefore the proposal should lead the economy towards socially efficient prevention levels environment-wise.”

It must be ensured, therefore, that a fund or scheme that spreads the risk and pre-financing of claims from a major industrial accident will not relieve the liable operator from the financial consequences of its act and its legal liabilities. Subsequently a fund founded on the solidarity principle would appear to be in conflict with the polluter-pays principle.

In addition, operators whose activities comply with legislative requirements should not be financially accountable for the activities of operators who are not in compliance with such requirements. Operators should be responsible and accountable for their own activities.

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Chapter 3: Design elements of a possible fund or scheme

This chapter identifies the key design elements of a fund or risk-pooling scheme for industrial accidents involving pollution by discussing and analysing the following issues from the Hungarian proposal and stakeholders’ comments:

- Purpose of the fund or scheme;
- Compliance with the polluter-pays principle;
- Relationship with EU law, other funds, existing financial security requirements and the insurance market;
- Types of damage to be covered;
- Size, threshold and related elements of the fund;
- Sectors or operators to include;
- Levy for the proposed fund or scheme;
- Operational and implementation issues;
- Limiting the financial exposure of operators;
- Grants for safety and preventive measures.

3.1 Purpose

The Hungarian proposal states that the main purpose of the fund or scheme is a way to respond quickly in the event of a major industrial accident in order:

- To relieve the suffering of persons harmed by the disaster;
- To remediate environmental damage;
- To prevent further damage.

The proposal thus envisages covering traditional damage and environmental damage. There are two main types of public funds and schemes for traditional and environmental damage:

- Guarantee fund: Protects against the potential insolvency of the operator or its insurer. Provides cover for risks for which no insurance is available;
- General compensation fund: Generally operates as a substitute to insurance.

If the purpose of the proposed fund or scheme is a guarantee fund, which it appears to be, the very high threshold at which it is triggered must be carefully considered. If a partial or sole purpose of the proposed fund or scheme is a general compensation fund, its implications for the growing market for environmental insurance policies must also be carefully considered. The additional purpose of the fund or scheme to provide grants or lending is also an issue that needs to be resolved.
The Hungarian proposal states that a secondary purpose of the fund or scheme is to limit the financial exposure of each company in any of the targeted industrial sectors to €100 million. The proposal states that this limit of liability would benefit not only the operator/company that caused the accident; but also employees who might otherwise lose their jobs if the company became insolvent due to its inability to pay all the costs of traditional and environmental damage from the accident. The proposal further states that Member States would also benefit because they would not be called on to bear costs that the company could not pay due to insolvency.

Relieving the suffering of persons harmed by the disaster echoes a recommendation by the Buncefield Major Incident Investigation Board for immediate short-term financial assistance to the communities affected by the incident and central government support to assist in the recovery of the affected area (see section 1.2.3).

All the above purposes are discussed and analysed below.

### 3.2 Compliance with the polluter-pays principle

A challenge for the proposed fund or scheme would be to ensure that it complied with the polluter pays principle. For example, when the Commission proposed the ELD, it noted that “[t]he main benefit expected from the proposal is improved enforcement of environmental protection standards in line with the ‘polluter pays’ principle. ... Because potential polluters are made liable for the costs of remedying damage they may cause, liability gives good incentives for avoiding damage” (see Annex A).

Subsequently, in discussing the EU Solidarity Fund, the Commission noted that “the polluter pays principle and the affected State’s obligation to seek compensation from third parties (third party liability) would seem to exclude other than natural disasters from the Fund”.

In order to comply with the polluter-pays principle, therefore, the proposed fund or scheme must not affect any incentives to operators to avoid damage from their activities and must not allow operators to profit from wrongdoing.

### 3.3 Relationship with EU law, other funds, existing financial security requirements and the insurance market

The proposed fund or scheme would not operate in a vacuum. Instead, its introduction must take account of EU law, other funds, existing financial security requirements and the insurance market.

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3.3.1 Environmental Liability Directive

As emphasised in section 3.2 above, the proposed fund or scheme must not breach the polluter-pays principle. In particular, it should not be contrary to the fundamental principle of the ELD “that an operator whose activity has caused the environmental damage or the imminent threat of such damage is to be held financially liable, in order to induce operators to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced”.

Some stakeholders raised the issue of whether the fund or scheme would still apply in cases of permit or the state-of-the-art defence. It is unlikely, however, that adoption of the permit and state-of-the-art defences by some Member States would cause a problem because it is highly unlikely that either of these defences would apply to a major industrial accident causing pollution. In such circumstances, the operator would almost certainly be in breach of its permit. Further, the state-of-the-art defence would almost certainly not apply to such a pollution incident because the results of a spill or explosion caused by inadvertently mixing two chemicals, etc. would almost certainly be known when it occurred.

In this respect, it is noted that national competent authorities are responsible for implementation and enforcement of the ELD. If a Member State fails to ensure that its competent authority implements or enforces ELD requirements, that could be made a condition of eligibility for reimbursement of an EU-wide fund.

3.3.2 Other EU law

The Seveso II Directive (96/82/EC) did not address the issue of financial security in the context of industrial activities. Article 29(2) of the Seveso III Directive, however, states that “in the context of relevant Union legislation, the Commission may examine the need to address the issue of financial responsibilities of the operator in relation to major accidents, including issues related to insurance” (see section 1.3 above).

Many, if not most, companies in the industrial sector are subject to the IPPC Directive (2008/1/EC) / IED (2010/75/EU). Although these Directives do not require mandatory financial security, some Member States, such as Ireland, have transposed the Directives to require it. Moreover, mining companies must have financial security.

Further, as noted in section 1.3 above, Directive 92/606/EC on the management of waste from extractive industries directs competent authorities to require a financial guarantee or equivalent before operations that involve the deposit of extractive waste in a waste facility may commence.

Consideration should, therefore, be given to the relationship between the proposed fund or scheme – and any requirements for the financial responsibility of the operator in respect of major

67 ELD, recital 2.
68 The European Environmental Bureau (EEB) had suggested that operators of Seveso facilities should contribute to a fund, with the level of funding to be harmonised at EU level and allocated by Member State by means of national qualitative criteria subject to a national tendering scheme. See EEB Briefing on the Proposal for a “Directive of the European Parliament and of the Council on control of major accident hazard involving dangerous substances” (Seveso III Proposal).
accidents related to it, as well as to any proposed new requirements under the Seveso III Directive.

### 3.3.3 EU Solidarity Fund

The relationship between the EU Solidarity Fund and the proposed fund or scheme must be considered. The purpose of both is rather similar. A major purpose of the Solidarity Fund (see Annex A) is for the EU to provide “financial assistance [to people in regions affected by a natural disaster] to contribute to a rapid return to normal living conditions”.\(^6\) Similarly, a major purpose of the latter is to relieve the suffering of people harmed by an industrial disaster and to assist them in rebuilding their communities.

There is an obvious difference, of course, between the Solidarity Fund and the proposed fund or scheme in that the Solidarity Fund responds to disasters caused by natural forces such as earthquakes or flooding, whereas the proposed fund or scheme would respond to man-made industrial accidents.\(^7\) The Solidarity Fund responds only in cases where the damage and costs incurred pass a threshold set for the region’s or Member State’s GDP.

It is impossible to prevent earthquakes or flooding although governmental authorities can take measures to reduce their effects such as requiring the construction of earthquake-proof structures or restricting the construction of buildings in floodplains. It is also impossible to prevent all industrial accidents because there will always be human error. It is, however, possible to reduce the risk of human error. For example, Member States can ensure that their competent authorities implement and enforce EU environmental laws such as the IPPC Directive (2008/1/EC) and the IED (2010/75/EU) to reduce the potential for harm to human health and the environment. Member States can also enact legislation that requires operators to have financial security to ensure that the cost of carrying out measures to abate and remediate damage caused by them does not fall on the public purse.

Due to these differences, the design of the proposed fund or scheme must take the Solidarity Fund conditionalities and design into consideration.

### 3.3.4 Suggested fund for traditional damage from offshore oil and gas incidents

A study by the European Commission (DG Energy) on civil liability and financial security of offshore oil and gas activities is currently taking place.\(^7\) The study includes a review and analysis of funds, guarantees, insurance products, etc. to cover the cost of liabilities arising from a major accident concerning offshore oil and gas activities in EU waters (such as the Macondo incident) and to enable early compensation of claims for bodily injury, property damage and economic loss by victims of such an incident.


\(^7\) There is also a third category of disasters known as NATECH, that is, natural hazards triggering technological accidents. Examples include earthquakes that have triggered fires at refineries or spills of toxic chemicals.

\(^7\) No. ENER/B3/2012/154-1.
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The Commission in 2011 proposed a Regulation on safety of offshore oil and gas prospection, exploration and production activities. Article 37 of the proposed Regulation would amend the ELD to include marine waters. This proposal has now been adopted by the Council and the Parliament and the new Offshore Oil and Gas Directive will soon be put in place.

The proposed fund or scheme for industrial accidents would not cover accidents involving offshore oil and gas activities (unless such activities were considered to be industrial). Due to the potential for both funds to cover claims for traditional damage, however, the relationship between them – including similarities, differences, overlaps or gaps – needs to be closely examined in designing both of them.

3.3.5 National funds

The relationship of the proposed fund or scheme to relevant national funds must also be considered in its design. For example, Spain has introduced a fund under legislation transposing the ELD. The purpose of the fund, which is financed by contributions from a surcharge on the premiums for insurance policies used to provide evidence of financial security, is to cover:

- environmental damage from an operator’s authorised activities during the period of the insurance policy but which did not manifest themselves, or for which a claim was not brought, during the policy period;
- the liability of insured operators whose insurers have been declared bankrupt or insolvent or who no longer exist.

Until mandatory financial security is introduced, and insurance policies to provide evidence of financial security are likewise introduced, the fund will not become active.

Finland also has a fund, established by the Finnish Environmental Damage Insurance Act of 1998. The fund, which is financed by special premiums that are compulsory for operators of high-risk activities subject to environmental permits, compensates persons suffering from environmental damage and funds measures to prevent or limit damage as well as measures to restore the environment to its state before the damage occurred (see Annex A). There was also a fund in place in Sweden until 2010 (see section 1.3.2).

In designing the fund or scheme for industrial accidents, the existence of funds such as those in Spain and Finland would need to be examined closely to avoid any clashes and overlaps.

3.3.6 Mandatory financial security requirements

The issue also arises as to how a fund or scheme would relate to the existence of mandatory financial security in some Member States for operators of Annex III activities under the ELD.

In Spain, for example, the following persons are exempt from the requirement to have mandatory financial security under legislation that transposed the ELD:

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operators of activities liable to cause damage when a verified environmental risk assessment carried out pursuant to the guidelines in UNE Standard 150,008 or equivalent rules indicates that any remedial works will not exceed €300,000;

operators of activities liable to cause damage when a verified environmental risk assessment carried out pursuant to the guidelines in UNE Standard 150008 or equivalent rules indicates that any remedial works will be between €300,000 and €2,000,000 and the operator has an EMAS certificate (EU Eco-management and audit scheme) or ISO 14001 (UNE-EN ISO 14001:1996);

persons who use plant protection products and biocides for agricultural and forestry purposes provided the products and biocides are defined in applicable Spanish legislation.

In designing the proposed fund or scheme, therefore, the above criteria and other differences in Member State criteria for mandatory financial security under the ELD must be carefully considered to avoid clashes.

### 3.3.7 Insurance market

The relationship between the proposed fund or scheme and the insurance market, both the market for general liability policies and the market for environmental insurance policies, also needs to be closely examined.

**General liability insurance policies**

Premiums for general liability insurance policies are based, to a large extent, on operators’ risk profiles. Risk differentiation and risk spreading is highly developed by (re)insurers. Further, the differentiation in premiums encourages operators to take preventive measures in order to reduce risk, and thus, their premiums. The proposed fund or scheme must be designed so that it does not discourage operators from buying insurance for the risks they can insure against. This could not only lead to an overwhelming demand on the fund’s or scheme’s assets; it would also discourage insurers from offering suitable products.

Further, if the proposed fund or scheme established substantially different criteria, this could potentially lead operators to encounter problems in taking the fund or scheme’s criteria into account when placing their insurance.

**Environmental insurance policies**

The proposed fund or scheme must also be designed so that it does not stifle the environmental insurance market. This consideration is critical for the design of thresholds and the levy for the fund or scheme. For example, the introduction of State funds that paid for the remediation of contamination from underground storage tanks in the United States in the early 1990s resulted in insurers withdrawing policies for such risks because of the lack of demand. In turn, some State funds became insolvent due to overwhelming demands on them.73

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3.4 Types of damage to be covered

The proposed fund or scheme contemplates covering traditional as well as environmental damage. As noted above, this is not an entirely original or unachievable goal. For example, some existing schemes, such as the United States Oil Pollution Act and the Paris Convention (when the 2004 Protocol is brought into force), cover both. Further, insurance for both types of damage is widely available in most Member States.

It is, however, unclear whether the fund or scheme should cover the cost of emergency works and/or long-term remedial works. Some funds provide for both. For example, the US Oil Spill Liability Trust Fund has two funds; an emergency fund which provides money for the cost of removing oil and assessing damage, and the principal fund which provides, among other things, money to pay claims for removal costs, claims for bodily injury, property damage and pure economic loss and other damages that have not been paid by the responsible party.

There does not appear to be any fund at EU level or in at least some Member States to cover immediate measures to respond to an industrial accident such as an explosion, fire or oil spill, regardless of whether damage from the accident is confined to a single Member State or whether it affects other Member States due, say, to transboundary waters. The existence of funding that would be immediately available to respond to an accident could substantially reduce its consequences and, thus, the cost of remediating damage and losses resulting from it.

If the proposed fund or scheme is to cover emergency measures, the question arises as to whether it should perhaps establish equipment ready to be applied in the event of a major industrial accident involving pollution. An example of the stocking of equipment is the Subsea Well Response Project organisation, which has been established and has commissioned four well-capping stacks to be stored at strategic locations around the world. This is in addition to the Marine Well Containment Company established in the United States. The UK for example has also developed a capping stack that is stored in Aberdeen.

Stocking equipment would, of course, be much more difficult for a fund for industrial accidents due to the many types of incidents that may lead to the accident, including an explosion, rupture of the dam for a tailings pond, a burst pipeline, etc.

3.5 Size, threshold and related elements of the fund

The size, threshold, tiers of compensation and sectors and operators to include in the proposed fund or scheme must be carefully considered to ensure that they are fit for purpose.

3.5.1 Size

The appropriate size of the proposed fund or scheme depends on various economic factors. The following elements should be considered:
Potential magnitude of the loss or damage caused, i.e. economic cost that will need to be covered, and amounts likely to be paid out in claims. Economic evaluation of environmental damage is an important issue, as the amounts likely to be paid out in claims need to be calculated in monetary terms;

Design parameters, i.e. to what extent total damage should be covered by the fund or scheme and what shares should be covered by the public sector and industry;

In the case of a pooling system, any surcharges to cover the pool’s needs.

Assessing the potential damage and other losses that should be covered by the proposed fund or scheme is not an easy task. In contrast to insurance, where comparable risks are distributed over many individuals, it will be difficult to assess exactly how overall annual damage should be covered by the fund or scheme because it would cover events that may occur only once in a lifetime. For example, the risk of flooding in the Netherlands is continuously reduced by maintaining dikes, etc. Complex models have been developed to assess the probability of flooding (with standards such as one flood in a thousand years). If a flooding event occurs, however, it may well be that the cost of the damage will be several billion euros. If the annual contribution to a flooding fund was only one thousandth of the total potential damage, the money collected through annual contributions would be inadequate to cover the total damage from the disaster for a thousand years. Of course this is an extreme example, and even large industrial accidents with massive environmental damage occur more often than that in the EU. But the example shows that even with a large fund, the money collected by it may not be sufficient to cover the damage from a single event, e.g. in the case of a nuclear power plant accident such as occurred in Japan in 2011. Lessons can perhaps be learnt from existing funds for natural disasters, e.g. the Consorcio de Compensacion Seguros in Spain (part of the Spanish Pool of Environmental Risks since 1998).74

However, although it may be that the magnitude of the fund cannot be established in an objective and fully satisfying matter, some indications can be found in the past: if the losses from all industrial accidents that took place in the EU over the last 20 years are added together, at least an order of the magnitude of the financial resources needed can be estimated. The EEA’s report, *Mapping the impacts of natural hazards and technological accidents in Europe: An overview of the last decade*, provides an estimate of €3.7 billion for known costs associated with major industrial accidents for the period 1998-2009 (p. 115).75 The report notes, however, that the estimate is conservative. Furthermore, it includes only known costs.

Swiss Re’s report on losses from natural and man-made accidents in 2011,76 meanwhile, estimates the losses from man-made accidents at USD 6 billion (€4.6 billion) in 2011 alone. A major reason for the difference in figures is the nature of the classification of industrial or man-made accidents. For example, the Swiss Re report includes aviation and maritime accidents in its figures.

74 See www.consorseguros.es/web/guest/ad_ma.
As the proposed fund or scheme would focus on the future, such an assessment should also take on board dynamics of the economy such as a larger industrial output, an increase that would need to be balanced against the effect of improved environmental and health and safety standards, in order to arrive at an appropriate estimate.

### 3.5.2 Threshold

In considering a threshold, various issues must be considered including the diversity of stakeholders, which means there is a wide range of what can be considered appropriate. On the one hand the main stakeholders should continue to be encouraged to deal with their own liability and not to fall back on EU facilities, but as the losses in Hungary and at Moerdijk in the Netherlands show, the real world can be different.

The proposed fund or scheme would lend to companies in order to allow them to meet liabilities arising from a major industrial accident up to a level of €100 million. This threshold should be considered carefully.

The proposal for the fund or scheme to lend to operators should also be considered. Experience in the United States showed that the US Environmental Protection Agency had great difficulty in recovering amounts that it had spent on cleaning up sites under the Superfund programme and then seeking reimbursement of these costs from the identified liable parties. This difficulty led the Agency to change its strategy to an “enforcement first” policy in the 1980s, which it continues to follow.

The fund or scheme could carry out emergency efforts together with the liable operator(s); this is frequently done by Member State environmental authorities in order to abate pollution and reduce or avoid its effects. Reimbursement of these costs could then be sought. A lending programme for long-term remedial works or compensation payments to victims of an industrial accident, however, could be difficult to administer and, perhaps, costly in trying to retrieve payments from the liable operator which may challenge some of the monies spent.

A triggering amount of €100 million implies that it would be mandatory for companies to have financial security up to that level. Industry and financial security providers, in particular insurers, would not, however, agree to provide financial security to this level for all businesses even if the operators concerned wanted – or could afford – the premiums. Resolution of this issue is likely to prove especially difficult in view of the history of the ELD and opposition by some stakeholders – and Member States – to mandatory financial security for ELD liabilities.

In addition, it would not be feasible to require SMEs to obtain financial security that exceeded their total assets. That is, it would not make sense for an operator with assets of say €10 million to pay a levy into a fund or scheme that was not triggered until €100 million. Such an operator would never benefit from the fund or scheme. Instead, only the largest companies would benefit, which has obvious fairness implications. There is, therefore, an issue of the limited number of companies that would be required to pay into it. A threshold of €100 million suggests that this number would be very limited. It would thus seem desirable to reduce that figure.

Another issue is how to handle joint ventures entered into by companies whose combined net worth exceeds €100 million. The Buncefield case study shows that the operator may be a joint venture that may (or may not) have assets that exceed €100 million.
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A further issue raised by the Buncefield case study would be how to account for smaller companies that caused damage. If such companies did not have substantial assets, would they be able to participate in the proceeds from a fund? Furthermore, again as shown by the Buncefield case study, would the fund prevent the insolvency of smaller companies that were also at fault for the accident?

The ELD does not specify that parent companies are liable if their subsidiaries cannot pay to remediate environmental damage. The Aznacóllar case study, however, shows that claims may be brought against the assets of parent companies, depending on the jurisdiction at issue. The recovery process may be long, complicated and difficult but it must be considered how the fund or scheme would respond to such claims.

It is possible to suggest a more feasible threshold level. Setting a threshold requires a careful assessment of its level and an analysis of the probability of accidents of such a magnitude, including a sensitivity analysis. Development of any fund or scheme should, therefore, be done in consultation with industry and developed to meet a specifically established need. More broadly there are a number of questions in relation to the threshold:

- The basis on which the €100 million would be calculated and interact with other financial security;
- Whether there would be a proportionate levy dependent upon industry or size of operator;
- The method by which the fund monies would be collected, managed and distributed.

In the context of environmental liability for one particular type of industrial accident, namely spills from an offshore oil rig, mutual risk-pooling arrangements have been widely discussed. This stems from the existence in the North Sea of the Offshore Pollution Liability Association (OPOL) – a voluntary arrangement under which oil rig operators in that region accept strict liability for damage caused by a spill from their installation (up to a cap), and agree to pay each others' liabilities if a member of the Association cannot meet its obligations due, for example, to insolvency.

Such mutual risk-pooling arrangements could offer solutions to be considered in a proposed fund or scheme. Such consideration must be careful and critical, as the example of OPOL illustrates some significant potential pitfalls of such schemes. These pitfalls mainly concern the voluntary nature of the OPOL fund, and the fact that its administration is not independent but handled by the polluting company. This has major implications for the likelihood of a claimant for environmental damage successfully recovering costs as can be seen from the proceedings that were brought against the claims handling facility for the Deep Water Horizon claims.

As discussed below, however, many problems concerning the high threshold for an EU fund or scheme could be resolved by including a second tier in which the Member State in which the industrial accident occurred would be responsible for compensation between the level for which the operator causing the accident was liable and the threshold of the EU fund or scheme.
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3.5.3  Tiers of compensation

The Hungarian proposal indicates a two-tier insurance system composed of private insurance and EU compensation, with the fund or scheme being linked to a threshold of €100 million or another figure.

As discussed above, the threshold figure for the proposed fund or scheme is critical because most companies do not have private insurance that even approaches €100 million. An example is the Kolontár incident in which the operator’s insurance covered only a very small percentage of the losses.

Most, but not all, operators have general liability insurance, as discussed in section 2.1. The limit of such insurance, however, varies. As also discussed in section 2.1, most companies do not have insurance for remediating pollution. Unless there is mandatory financial security (including but not limited to insurance) for traditional damage and environmental damage from an industrial accident involving pollution, compensation from the first tier of compensation may not be feasible.

As stakeholders in the oil and gas and extractive minerals industries commented, operators in those industries must provide evidence of financial security in order to be permitted to operate. The stakeholders in these industries considered this requirement to be appropriate (see section 2.1). In addition, some Member States have enacted legislation to impose mandatory financial security for environmental damage under the ELD. It is also not unknown for mandatory financial security to cover both traditional and environmental damage. Indeed, this requirement exists in the nuclear and marine conventions, as well as in United States legislation (see Annex C).

The gap between private insurance and the high threshold for the proposed fund or scheme does not mean that a Member State must enact legislation to impose mandatory financial security on operators. An alternative to enacting such legislation would be for a Member State to use public funds to provide a second tier of compensation.

Further, and importantly, creation of the second tier would answer the issue of any responsibility of a Member State for damage arising from an industrial accident involving pollution. That is, as noted in section 1.7.3, Member States have the power to ensure that their competent authorities implement and enforce EU environmental laws, such as Directive (2008/1/EC) on integrated pollution prevention and control and the IED (2010/75/EU), to reduce the potential for harm to human health and the environment. If an accident results due to the competent authority not having exercised this power or having done so properly, the issue arises as to the level of State responsibility for the accident.

Experience has also shown that three tier systems of compensation work. For example, such systems exist and operate well under the International Oil Pollution Compensation Fund and the Paris Convention (see Annex B).

3.5.4  Sectors and operators to include

According to the Hungarian proposal, the industrial sectors on which a levy to the fund should be imposed – and, thus, which should benefit from the fund – should depend on which industrial
sectors are involved in major disasters. The United States Congress employed similar reasoning when it enacted the Comprehensive Environmental Response, Compensation and Liability Act and established the Superfund Trust Fund to fund the programme to remediate seriously contaminated sites (see Annex A). The Trust Fund was funded by taxes on crude oil, imported petroleum products, chemical feedstock used in the production of hazardous substances, and an environmental corporate income tax. The identity of the chemical feedstock on which the tax was levied was based on such chemicals having been located on contaminated sites that had required, or were likely to require, remediation under the Superfund programme. The taxes were, thus, imposed on persons who benefited from the manufacture and sale of substances commonly found on Superfund sites in order to avoid the costs falling on the public purse.77

As indicated above, the European Environment Agency has produced a report identifying the industrial sectors involved in major industrial accidents involving pollution, having drawn its statistics mainly from operators subject to the Seveso Directive and from mining disasters, using the MARS database.78 Such statistics could be used to identify the relevant industrial sectors to include in the proposed fund or scheme. Reinsurance companies also regularly produce reports discussing industrial accidents and industrial sectors in which they have occurred.79

There is also the issue of the scope of the classification of an industrial accident. For example, in addition to identifying industrial accidents, the European Environment Agency identified the two main sources of major oil spills in Europe between 1998 and 2009 as ships and pipelines.80 The Buncefield incident began from a spill of petrol from a tank. If oil spills were to be included in the proposed fund or scheme, this raises the issue of the relationship between it and the ELD. The ELD does not apply to marine oil spills subject to the conventions listed in Annex IV of the ELD provided that the applicable convention is in force in the Member State at issue.81 Also, oil pipelines are not an activity that is subject to Annex III of the ELD.

Another factor to consider is how to identify the relevant operators. If the fund or scheme was established under the ELD, the extent of such operators would be necessarily limited to Annex III. This is because it is not possible to identify all non-Annex III operators and, thus, require them to contribute to the fund or participate in the scheme.

Several classifications for the nature of the proposed fund or scheme can be envisaged:

- Sectoral or general funds;
- EU-wide fund or regional funds (which could together cover the whole EU);
- Private or public funds (or a mixture of both).

The question as to whether an environmental liability fund should be organised by sector or for the whole economy can be addressed by taking into account differences between sectors, the

77 Authorisation to levy the taxes lapsed in 1996. Efforts in the United States Congress to reinstate the taxes have so far failed.
81 ELD, art. 4(2).
financial situation of each sector (averaged across firms), and the risk profile of each sector. For each of these issues, advantages and disadvantages can be assessed, and sectors that could be covered by such a scheme identified.

The possibility of regionally organised funds (i.e. covering different parts of the EU) should also be considered. An EU-wide fund would include elements of EU-wide risk sharing.

The question of whether the fund should be the sole responsibility of the industries involved or whether there should also be a funding role for the public sector can be answered by analysing the financial structure of the environmental damage that should be covered.

Recommendations on the basic design elements of a fund can be based on the views of the sectors concerned, efficiency, practicability, solidarity, administrative costs and other criteria. It should be determined whether a single fund or a mix of funds would be most appropriate.

As noted above, some industrial sectors such as the oil and gas and extractive minerals industry consider that there should not be a single fund or scheme due, in large part, to mandatory financial security requirements that already exist for these sectors and to potential overlap. The determination of which industrial sectors to include in the proposed fund or scheme must thus take into account the nature of the mandatory financial security and its scope, including whether it includes compensation for traditional and environmental damage and whether financial security for environmental damage is limited to the costs of closing an installation or facility.

If these industries are not included in the scheme – at least to the extent that their liabilities are covered by mandatory financial security schemes, it is still important to consider the other sectors to be covered and whether there should be a single scheme or multiple schemes. Factors to consider include whether there should be a fund or scheme for all Annex III operators, for IPPC/IED companies, etc., and to examine the potential exclusion of certain sectors or categories, such as SMEs, low-risk activities, companies certified with EMAS/ISO, etc. There is a risk of targeting too many operators and an even more serious risk of leaving some out.

If a mandatory risk pool was established under the proposed scheme, the issue of whether to have a sectoral or general fund would be particularly crucial. A mandatory risk pool could increase the number of industrial accidents if it enabled companies with inadequate experience and resources to carry out activities that they were not qualified or financial competent to carry out. Implementation and enforcement of the relevant permitting regime would help alleviate this risk but it would not avoid it entirely. This issue is particularly important due to the many and varied types of operations subject to the ELD.

3.6 Contribution to the proposed fund or scheme

Stakeholders’ comments indicated almost universal opposition to a uniform levy on targeted industries and companies indexed in accordance with their annual net corporate income. The Hungarian proposal suggested a contribution of 0.2% of annual net sales revenue.

The main objections to the flat rate by stakeholders were that a flat rate could:
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- Deter rather than encourage good risk management practices and safety standards at installations;
- Change the culture of operators due to not encouraging them to undertake proportionate, expeditious risk assessments to identify the potential for environmental liabilities and to ensure that they had sufficient financial security in place to manage this risk.

Rather than a flat rate, some stakeholders suggested that a company’s risk assessment and risk reduction measures should be considered in determining the amount they contribute. The contribution, therefore, would need to include a cost differential that is sufficiently substantial to outweigh any cost savings a company could make from carrying out a poorly managed activity.

The amount of the contribution, whether flat or differential, must also be carefully considered. If it is too high, it could be a financial burden on some operators. In addition, a large contribution could deter some operators from purchasing additional insurance cover for environmental liabilities.

The proposed fund or scheme assumes that operators would pass on the cost of financing the fund to consumers in the form of increased prices, without any loss of competitiveness for the companies concerned. However, to achieve that implies that the contribution should also apply to imports of similar products, a feature that could fall foul of WTO rules. It would also imply that all companies contribute to the fund in order to prevent free-riders being able to produce and sell goods at a reduced cost. As also indicated, the proposal also implies that operators with assets of less than €100 million would not benefit from the fund.

3.7 Operational and implementation issues

The Hungarian proposal states that monies dispensed by the fund or scheme would be in the form of grants and loans. The proposal involves lending as well as relief and compensation for damages. The reason for including lending is that it allows the fund to be replenished and would be quicker to be used by the liable operator than seeking bank loans (note that even cohesion funding for emergencies can take 4-5 months to disburse). However, this might raise its own difficulties. Lending should be compatible in some way with national rules applicable to the financial sector, as lending with lower/preferential rates may breach competition rules. However, this would depend on the form that the fund would take and specifically if it would be governed by private market rules or established by a special Convention allowing specific rules to be agreed and established.

There would, of course, be costs in managing and implementing the proposed fund or scheme. These costs would need to be kept as low as possible in order not to increase the amount of the contribution to pay for them.\(^\text{82}\)

In respect of environmental damage, the identity of contractors, consultants and other relevant persons (whether government or private) to respond to the damage and prevent further damage

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would need to be established in advance so that such persons could respond immediately if a major industrial accident occurred. A Member State facility would also need to establish a mechanism for dealing with transnational claims if the accident affected more than one Member State.

In theory such a fund could involve public-private partnership. Various management structures are possible, involving possibly the European Investment Bank, Member States’ public banks, and national banks or other financial actors including insurance and reinsurance companies. There may be symbolic value to having EU backing of some kind; the Hungarian proposal would see the European Commission involved in actually administering the fund.

The proposal states that the fund facility could recover monies paid out by it when the operator’s responsibility has been established in court. This could be extended to an admission by an operator that it was liable for damage from its activities although the financial consequences of such an admission could discourage an operator from making it.

Management of the fund or scheme

The procedures for managing the fund or scheme must also be considered carefully. It would be necessary to ensure that such management is at least to the level provided by insurers. Key issues to be considered are:

- Establishment and management of the fund or scheme;
- Elements that will trigger the applicability of the fund or scheme;
- Monitoring procedure.

It would be valuable when examining the way in which to manage a risk-pooling scheme to examine the P&I Clubs. Each Group club is an independent, non-profit making mutual insurance association, providing cover for its ship-owner and charterer members against third party liabilities relating to the use and operation of ships. The mutualitys are run on a non-profit basis and only require sufficient contributions in each year to cover costs, expenses and claims for that particular year. At the beginning of each year contributions are made and in case these are insufficient, an additional call follows. The different P&I Clubs buy reinsurance on a collective basis, which means that their members are covered by three tiers: First the Club itself will pay claims of up to USD 5 million, secondly the Pool of all Clubs will pay the next tranche of USD 25 million and thirdly claims in excess of USD 30 million are reinsured as one collective outwards reinsurance contract. 83

Payments by the fund or scheme

Procedures to disburse payments from the fund should be sophisticated and capable of being deployed quickly and efficiently in the event of a major industrial accident. Loss adjusters, which are about to be regulated under the upcoming Insurance Mediation Directive (IMD2) could potentially contribute in an EU-recognised loss-adjusting role to the fund or scheme.

The following are key issues that must be addressed in considering the methodology for making payments from the proposed fund or scheme:

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- an appropriate administrative facility to assess and pay claims, noting that more than one Member State could be affected by a major industrial accident;
- the level of substantiation for claims accepted for payment by the mechanism;
- procedures for the swift payment of compensation including advance payments;
- whether the claims facility is the sole facility for claims for bodily injury, property damage and pure economic loss or whether a claimant may pursue a judicial action in lieu of claiming against, and settling under, the fund or scheme;
- the existence of any mechanism for off-setting claims by businesses such as hotel chains whose loss at a hotel in the damaged area may result in an increase in tourists at another of its hotels (depending, of course, on the location of the industrial accident)? In a similar manner, whether there is a mechanism for offsetting claims by an employee whose employer has closed as a result of the accident but who is hired to assist in remediating the pollution;
- methodologies used to value claims such as the value of the loss of guests staying at a hotel due to the hotel’s location in an area affected by the accident;
- whether the mechanism provides for direct claims against guarantors / insurers or whether claims must be made against the operator and any other responsible parties;
- the existence of a monetary limit to the mechanism and if so, its effect on claims against it, both in the amount paid and the speed with which substantiated claims are paid. For example, whether the potential exists that a potentially inadequate level of funds in the mechanism can result in the fund administrator holding back payment of some or all claims or paying only a percentage of them;\(^8\)
- whether the mechanism prioritises claims, e.g., with a proportion of the funds being dedicated to paying a certain type of claim such as bodily injury claims, and whether claims by a governmental entity have a lower priority than other claims in the case of funds covering different types of claims;
- the capability of the mechanism to deal with transnational claims;
- whether the same funding mechanism that pays compensation claims also funds clean-up costs, the restoration of natural resources and other claims;
- whether the mechanism can recover compensation for claims paid by it and, if so, the liability system for recourse actions.

Consideration of the above issues could include, among other things, research into the operation of the US National Disaster Recovery Framework and assistance provided by it to individuals who suffer harm from a national disaster. The programme, which is administered by the Federal Emergency Management Agency, includes assistance such as temporary and permanent housing, repair and replacement of damaged property, small business loans, disaster unemployment assistance and crisis counselling.

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\(^8\) See the discussion of compensation payments in respect of the *Sea Empress* and *Braer* oil spills below.
3.8 Limiting the financial exposure of operators

The issue of limiting the financial exposure of operators to losses resulting from their activities should be carefully considered. For example, limiting liability for oil spills has been criticised from an economic perspective.85

First, providing such protection to a responsible operator may well breach the polluter-pays principle in that the operator would not be liable for all the damage caused by it but, rather, operators who did not engage in any wrongdoing would have to pay part of the costs due to their contribution to the fund or scheme.

Second, providing such protection to liable operators could result in moral hazard and its consequences, due to their knowledge that their liability was capped.

Third, a cap on liability would only benefit the largest operators and is likely to be opposed by operators who contributed to the fund or scheme but whose assets meant that their liability would never be capped.

Fourth, industrial accidents may result from the culpable behaviour of operators. For example, the companies involved in two of the case studies in this report were held to be criminally liable for their role in the incidents. In the Buncefield incident, prosecutions against the five operators resulted in convictions and fines of approximately €11.8 million (see section 1.2.3). In the AZF incident, the operator was fined €225 000 and the former manager of the installation was sentenced to a year in prison for manslaughter (see section 1.2.4).

Fifth, employees would not necessarily benefit from funding being provided to the operator to enable it to continue to operate rather than having become insolvent. Companies that are responsible for a major industrial accident do not always rebuild at the same location. This is illustrated by the three main case studies examined in this report. The operator closed the mine at Aznacollar about 2.5 years after the failure of the dam (see section 1.2.2). A final decision was taken 6.5 years after the Buncefield incident not to rebuild the destroyed part of the terminal (see section 1.2.3). About one year after the explosion at the AZF installation, the operator decided not to rebuild it but to donate the land for the development of a cancer research centre surrounded by 30 hectares of public parks and open spaces (see section 1.2.4).

Sixth, industrial accidents often affect the share price of the responsible company, leading in some cases to the weakened company being acquired by a stronger company.86 In such a case, the company taking over the stricken company would benefit from the protection provided to the latter. In addition, the company that took over the stricken company may also decide not to rebuild in the location of the industrial accident.

3.9 Grants for uptake of safety and preventive measures

The Hungarian proposal considers that unspent resources of the facility should be used to support operators, particularly SMEs, to invest in safety and prevention measures.

A major problem with such grants, however, is that their introduction could lead some operators to delay making improvements to pollution control equipment and safety measures at their installations in the hope or expectation that they would receive grant money to pay for the improvements. Such a delay may not only affect individual operators but could affect entire industrial sectors or businesses of a certain size or location depending on the identity of the recipients of the grants and the expectations of similar operators to receive grants in the future. In turn, this would be likely to lead to less improvements being made and, consequently, the potential for more industrial accidents with the result that not only would more accidents occur but the levy for the fund would need to be increased.

Problems could also arise between the provision of such grants and the implementation and enforcement of the IPPC Directive/IED. For example, the conditions of a permit for an operator under the IPPC/IED regime may require improvements to be carried out by a certain time. One operator, with a later deadline, could thus benefit from a grant whereas an operator with an earlier deadline may not.

An effect of providing grants to some operators would be the dissatisfaction of operators who did not receive the grants, particularly operators who were in competition with recipients of the grants or those who had already carried out improvements so were not eligible for the grants.

Using the residual amount of the fund at the end of each calendar year for grants should also be carefully considered. For example, an industrial accident that exceeded the amount in the fund or scheme could occur early in the following year. In this respect, it is noted that the EU Solidarity Fund sometimes uses monies from the following year if there is insufficient monies in the fund to cover calls on it until the end of that year (see Annex A). Another approach to consider is that of the US Oil Spill Liability Trust Fund, which freezes levies into it when the fund reaches a certain level (see Annex A).
3.10 Conclusions

The creation of an EU fund or scheme for industrial accidents involving pollution is an idea that has several positive aspects to commend it, for example to cover immediate response measures. The existence of funding that would be immediately available to respond to an accident could substantially reduce the consequences and, thus, the total cost of remediating damage and losses resulting from that accident.

The purpose of the fund or scheme must, however, be clearly identified and agreed. That is, whether its purpose is to compensate victims of a major accident for bodily injury, property damage or economic loss suffered by them; to provide emergency funding to respond to an industrial accident; and/or to remediate environmental damage. By including all these elements of compensation, the fund would provide for more coverage of damages than that covered under the Environmental Liability Directive.

The fund or scheme is only likely to gain acceptance subject to agreement on whether a fund or scheme needs to be established for such purposes and, if so, the industrial sectors to be covered by it, the level of the threshold for the fund or scheme, and many other details concerning its design.

The risk-sharing facility proposed by Hungary integrates three main functions:

1. Pre-financing tool to give immediate access to funding and relief to communities and affected stakeholders;
2. Second tier of insurance (coverage of damages by private insurance/financial security instrument up to a point, then the facility would intervene);
3. Unspent resources of the facility to support companies, particularly SMEs, to invest in safety and prevention.

Stakeholders’ comments during this study indicate that they are not likely to accept the creation of a fund or scheme to limit the financial exposure of a liable operator, for a wide range of reasons such as the potential for moral hazard, conflict with the polluter-pays principle, competition with similar products offered by private insurance schemes or practical reasons such as feasibility of a (€100 million or other) threshold, or the feasibility of establishing such a facility at European level rather than at Member State level.

On the other hand, using the fund to pay for “orphan” shares, that is, costs that would have been incurred by a liable operator but for its lack (or low level) of financial viability to cover part or all of the costs, is more likely to be acceptable. In this respect, the ELD does not require Member States to remediate environmental damage if the liable operator does not do so. Depending on the nature or location of the damage, however, a Member State may consider that it has no option but to remediate the damage.

The compensation of victims of a disaster in the event that the liable operator cannot do so would also seem likely to be supported. These payments would be subject to a second tier of responsibility by the Member State for making payments.

Using a fund to provide loans to liable operators may be problematic in that difficulties may be encountered in recovering the loans. This should not mean that a fund or scheme should not be available for provision of funding for emergency measures to abate pollution or otherwise to
respond immediately to an industrial accident. Environmental authorities commonly carry out such actions and then seek to recover their costs from liable operators.

Stakeholders also indicated that the use of a fund or scheme to provide grants to operators to pay for measures to improve pollution control equipment or safety at their installations is also much less likely to be acceptable due to various implications of such grants, such as a perceived potential to penalise companies that have already invested in such improvements.

If the purpose of the proposed fund or scheme could be agreed, many points would still need to be considered in more detail in order to ensure that it dovetails with EU law (e.g. Solidarity Fund, Seveso III, Mining Waste, IED and other Directives), other national funds (e.g. in Finland), or pooling mechanisms (e.g. Spain, France, Italy) various initiatives for mandatory financial security requirements at Member State level and the insurance industry, including the growing environmental segment of private insurance. In addition, the design, management and implementation of the fund or scheme would also need to be given further careful consideration in order to ensure that it operated effectively and efficiently.

The size, threshold, tiers of compensation and sectors and operators to include in the proposed fund or scheme would have to be given further careful consideration. The appropriate size of the proposed fund or scheme depends on various factors: potential magnitude of damages; to what extent total damage should be covered by the fund or scheme; and in the case of a pooling system, any surcharges to cover the pool’s needs.

The optimum size of the fund cannot easily be established in an objective and fully satisfying matter. However, some indications can be found in the past: if the losses from all industrial accidents that took place in the EU over the last decade or so were added together, for example (probably more than EUR 1 billion), at least an order of magnitude of the financial resources needed could be estimated. Setting a threshold also requires a careful assessment of its level and an analysis of the probability of accidents of different magnitudes. More broadly there are a number of other questions: how it would interact with other financial security, whether there would be a proportionate contribution dependent upon industry or size of operator, the method by which the fund would be collected, managed and distributed, etc.

Mutual risk-pooling arrangements could offer solutions to be considered, as could inclusion of a second tier by which for example the Member State in which the industrial accident occurred could be responsible for compensation between the level for which the operator causing the accident was liable and the threshold of the EU fund or scheme. In that way, the gap between private insurance and the high threshold for the proposed fund or scheme would not necessarily mean Member States would have to enact legislation to impose mandatory financial security on operators. Creation of a second tier would also address the question of responsibility of Member States for damage arising from industrial accidents involving pollution, by competent authorities not implementing and enforcing EU environmental laws.

According to the Hungarian proposal, the industrial sectors on which a contribution to the fund should be imposed – and, thus, which should benefit from the fund – should depend on which industrial sectors are involved in major disasters. Another factor to consider is how to identify the relevant individual operators. If the fund or scheme was established under the ELD, the extent of such operators would be necessarily limited to its Annex III.
Recommendations on the basic design elements of a fund can be based on the views of the sectors concerned, efficiency, practicability, solidarity, administrative costs and other criteria. A decision would have to be reached as to whether a single fund or a mix of funds would be most appropriate. Several classifications for the nature of the proposed fund or scheme can be envisaged:

- Sectoral funds or a general fund – can be addressed by taking into account differences between sectors, the financial situation of each sector, and the risk profile of each sector;
- EU-wide fund or regional funds (which could together cover the whole EU) – an EU-wide fund would include elements of EU-wide risk sharing;
- Private or public funds (or a mixture of both) – can be answered by analysing the financial structure of the environmental damage that should be covered.

Factors to consider include whether there should be a fund or scheme for all Annex III operators, for IPPC/IED companies, etc., and the potential exclusion of certain sectors or categories, such as SMEs, low-risk activities, companies certified with EMAS/ISO, etc. Some industrial sectors such as the oil and gas and extractive minerals industry consider that there should not be a single fund or scheme due to mandatory financial security requirements that already exist for these sectors and to potential overlap.

The Hungarian proposal states that monies dispensed by the fund or scheme would be in the form of grants and loans. The reason for including lending is that it allows the fund to be replenished and could be drawn upon by the liable operator more quickly than bank loans. However, this might raise its own difficulties. Lending should be compatible in some way with national rules applicable to the financial sector, as lending at lower/preferential rates may breach competition rules. However, this would depend on the form that the fund would take and specifically whether it would be governed by private market rules or established by a special Convention allowing specific rules to be agreed and established.

There would, of course, be costs in managing and implementing the proposed fund or scheme, which would need to be kept as low as possible in order to limit the amount of the contribution to pay for them. In respect of environmental damage, the identity of contractors, consultants and other relevant persons to respond and prevent further damage would need to be established in advance so that such persons could respond immediately if a major industrial accident occurred. A Member State facility would also need to establish a mechanism for dealing with transnational claims if the accident affected more than one Member State.

In theory such a fund could involve public-private partnership. Various management structures are possible, involving possibly the European Investment Bank, Member States’ public banks, and national banks or other financial actors including insurance and reinsurance companies. There may be a value to having EU backing of some kind, for example by giving the European Commission some role in administration.

Although this report has concentrated on examining the feasibility of the main part of the Hungarian proposal (an “excess” fund or pool), the other two functions (a pre-financing system, and financing for companies to invest in safety and prevention) may merit further consideration on a standalone or supplementary basis. Further exploratory studies or detailed Impact
Assessments in this area, and environmental liability policy making in general, would benefit greatly from better data on accidents and the feasibility of creating or developing such datasets should be examined.
Annex A

Annex A – Selected existing funds

EU Solidarity Fund

The EU Solidarity Fund was established in 2002 following severe flooding in Austria, the Czech Republic, France and Germany. Council Regulation (EC) No 2012/2002 sets out the terms and conditions of the Fund.

The purpose of the Fund is for the EU to “show its solidarity with the population of the regions concerned by providing financial assistance to contribute to a rapid return to normal living conditions in the disaster-stricken regions” (recital 1). The Fund’s focus is on enabling the EU “to respond [to a major natural disaster] in a rapid, efficient and flexible manner” (art. 1). The Fund provides for a single grant to a State to help with a major natural disaster (art. 3(1)).

Grant assistance from the Fund “may be mainly mobilised when a major natural disaster with serious repercussions on living conditions, the natural environment or the economy in one or more regions or one or more countries occurs on the territory of that State” (art. 2(1)). The term “major disaster” is defined as “any disaster resulting, in at least one of the States concerned, in damage estimated either at over EUR 3 billion in 2002 prices, or more than 0.6% of its GNI [gross national income]” (art. 2(2)). There is an exception from a requirement for a “natural disaster” if “under exceptional circumstances [a] region has been affected by an extraordinary disaster, mainly a natural one, affecting the major part of its population, with serious and lasting repercussions on living conditions and the economic stability of the region”. In such a case, the total annual assistance from the Fund may not exceed 7.5% of the annual amount available to the Fund (art. 2(2)). There is also an exception for a disaster in a “neighbouring country”, that is a Member State that has been affected by a major natural disaster in a neighbouring state (art. 2(2). Nearly two-thirds of applications to the Fund since its creation concern these two exceptions.

The Fund does not provide grants to a Member State in lieu of the State providing funding. Rather, the Fund aims to complement the State’s efforts by providing a share of the funding necessary to carry out the following “essential emergency operations”, the identity of which depends on the type of disaster:

87 Recital 2 provides that the EU should be able “to act swiftly and efficiently to help, as quickly as possible, in mobilising emergency services to meet people’s immediate needs and contribute to the short-term restoration of damaged key infrastructure so that economic activity can resume in the disaster-stricken regions”.

88 European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The Future of the European Union Solidarity Fund s. 1, p. 3 (COM(2011) 613 final, 6 October 2011). Fifty-three applications were for an “extraordinary regional disaster” and four were for the “neighbouring country” exception. Ibid. This account of the EU Solidarity Fund draws from the Commission Communication.
immediate restoration of energy, water, waste water, telecommunications, transport health and education infrastructure and plant;

- the provision of temporary accommodation and rescue services in order to meet the immediate needs of the affected population;

- immediate securing of preventive infrastructures and measures immediately to protect the cultural heritage;

- immediate clean-up of natural areas and other areas affected by the disaster (art. 3(2)).

Payments from the Fund are, in principle, only to be used “to finance measure alleviating non insurable damages”. If a third party pays the cost of repairing damage from the disaster, the Commission shall require the State receiving the grant to reimburse that amount (arts. 3(3), 8).

The Member State requesting monies from the Fund must submit an application as soon as possible and, at the most, 10 weeks after the disaster first causes damage. Most applications are not received until near or at the 10-week deadline. The Commission may require further information for its assessment of the application, which extends the time before a grant is approved. The average time for the 23 successful applications to the Fund to receive aid by 2008 was 375 days, with the assessment taking an average of 148 days of this period.\(^8\)

The application must include:

- the total amount of damage and its impact on the population and economy;

- the estimated cost of the “essential emergency operations” set out above;

- any other sources of EU funding;

- “any other sources of national or international funding, including public and private insurance coverage which might contribute to the costs of repairing the damage” (art. 4(1)).

The grant to a Member State from the Fund must be used within one year of the European Commission’s disbursement of it or returned to the Commission. The State that receives the grant “shall seek all possible compensation from third parties” (art. 8(1)). The State must report to the Commission on its disbursements from the grant by no later than six months after the one year period expires (art. 8(2)).

As of 1 October of each year, at least a quarter of the annual amount in the Fund must remain in it to ensure that there is sufficient money to cover any calls on the Fund until the end of that year (art. 4(2)).

In “exceptional cases”, the Commission may propose using monies from the following year’s Fund if there are insufficient monies in the Fund to provide payments for a disaster in the year in which such a proposal is made. The total amount of funding in the two years must not, however, exceed the total for those two years (art. 10(1)).

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Annex A

The State that receives monies from the Fund is responsible for co-ordinating payments for essential emergency operations, assisted by the European Investment Bank and any other EU financing instruments (art. 6(1)).

The “polluter pays” principle applies to payments from the Fund. The Regulation provides that “Community action should not relieve third parties of their responsibility who, under the ‘polluter-pays’ principle, are liable in the first instance for the damage caused by them, or discourage preventive measures at both Member State and Community level” (recital 7).

The annual ceiling of the Fund is €1 billion, an amount that has never been insufficient. Monies for the Fund are raised by an extra financial effort of the Member States above their normal EU contributions. Before a grant is made, the Commission must ask the European Parliament and the Council to approve an amending budget, which usually takes six to twelve weeks but may take longer.

*Oil Spill Liability Trust Fund (OSLTF)*

The OSLTF was established by the United States Oil Pollution Act (OPA) in 1990. The OSLTF had been created by the United States Congress in 1986 but did not authorise the collection of revenues for it or payments from it until the OPA became law in 1990. The OSLTF was originally financed by an oil barrel tax levied on the production and importation of petroleum in the United States. In 1993 the fund reached its statutory cap of USD 1 billion and the tax was suspended. One year later, it was reinstated when the amount fell to USD 800 million.

The tax ceased in December 1994 due to a sunset provision in the OPA. It was reinstated by the Energy Policy Act of 2005, coming into force again on 1 January 2009. In November 2008, the tax was increased from USD 0.05 per barrel to USD 0.08 per barrel by the Energy Improvement and Extension Act of 2008. The Act also increased the tax to USD 0.09 per barrel from 31 December 2016 until 31 December 2017. Other revenues include interests on the fund, costs recovery from parties responsible for spills and any fines or civil liabilities collected.

The OSLTF is administered by the National Pollution Funds Centre of the United States Coast Guard in the coastal zone of the United States, designated ports on inland rivers and the United States exclusive economic zone including the Great Lakes. The main focus of the OPA and the OSLTF is the removal of oil spills in the coastal zone of the United States. In addition, the USEPA receives approximately USD 15 million a year from the OSLTF to carry out its responsibilities and duties under the OPA; in a typical year the USEPA monitors or responds to 300 significant oil spills.

*Hazardous Substance Response Trust Fund (Superfund Trust Fund)*

In 1980, the United States Congress established the Hazardous Substance Response Trust Fund (more commonly known as the Superfund and similar to the OSLTF) in order to provide the financial means for the USEPA and other federal authorities to enforce the Superfund programme and to pay for cleaning up contaminated sites as necessary. The USEPA then seeks reimbursement of its costs from potentially responsible parties.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) did not establish a liability system for claims for bodily injury, property damage or economic loss. Bills to create such liability failed in the Congress. Such claims must therefore be brought under the common law of the various States.
In 1980 the fund was established at USD 1.6 billion for five years. Until 1996, when the relevant legislation lapsed, the main sources of funding were four taxes:

- an excise tax per barrel of crude oil that was purchased by refineries in the United States, crude oil that was produced in the United States and used there or exported and petroleum products that were imported into the United States for consumption, storage and use;
- a chemical feedstock excise tax paid by companies that purchased any of 42 specified chemicals and metals that are inherently dangerous and could generate hazardous by-products or are used to produce hazardous products;
- a chemical derivatives excise tax levied on companies that imported chemicals that were derived from the 42 chemicals and metals that were subject to the chemical feedstock tax;
- an environmental corporate income tax additional to the general corporate tax levied on the income of companies with an annual taxable income of over USD 2 million.

In 1986, when it had become clear that the number of contaminated sites had been significantly underestimated, Congress reauthorised the fund at USD 8.5 billion for five years. This was followed by another reauthorisation in 1990 at USD 5.1 billion for three years; the fund has not been reauthorised since. Instead, Congress has appropriated between USD 1.3 billion and USD 1.7 billion each year to the USEPA to implement the Superfund programme. Importantly, this money includes general revenues as well as money remaining in the trust fund. While in 1995 general tax revenues accounted for 18% of the trust fund’s budget, by 2004 they accounted for 100% of the money for the Superfund programme. The programme can therefore no longer be said to be based on the polluter-pays principle except to the extent that persons who are liable under Superfund reimburse the USEPA as well as directly paying for remedial measures.

**Paris Convention (nuclear)**

The Paris Convention provides that the operator of a nuclear installation is strictly liable for bodily injury and property damage caused by a nuclear incident\(^\text{90}\) up to a fixed limit of liability.\(^\text{91}\) In 2004, the Paris Convention and the Brussels Supplementary Convention were amended to increase the limits of liability, the time during which claims concerning a nuclear incident may be made and the scope of damage for which claims may be brought.\(^\text{92}\)

The provisions of the 2004 Protocol by which the scope of liability – and financial security – is increased concern the term “damage”. That term will be superseded by the term “nuclear

\(^{90}\) Paris Convention, art III, reprinted in International Documents, p. 141.

\(^{91}\) Paris Convention, art VII(b). The Paris Convention fixes the amount in SDRs.

damage”. Nuclear damage is defined to include the following, in addition to bodily injury and property damage:

- economic loss from injury or damage;
- loss of income derived from a direct economic interest in any use or enjoyment of the environment;
- costs of measures of reinstatement of the impaired environment unless the impairment is insignificant;
- the cost of preventive measures including any further loss or damage caused by such measures.

Price Anderson Act (nuclear)

The United States Price Anderson Act requires the operator of a nuclear installation to have insurance for liability for bodily injury and property damage from a nuclear accident for USD 375 million for each installation operated by them. If compensation for claims from an accident exceeds this amount, the other licensed nuclear installations in the United States must provide up to USD 111.9 million each. The current number of such installations is 104, which means that the total limit is USD 11.6 billion. If compensation claims result in 15% of the second tier of funds being expended, a federal district court would prioritise the remaining claims. If the second tier is exhausted, the United States Congress would determine whether to provide additional disaster relief.

Only one pool of insurers, American Nuclear Insurers, underwrites insurance to cover the risk of the operator of a nuclear installation in the United States.

Environmental Guarantee Fund

The Philippines’ Environmental Guarantee Fund (EGF) is a mandatory fund attached to the implementation of the Philippines Environmental Impact Statement System (PEISS). Introduced in 1977, the PEISS involves environmental assessment of proposed projects and subsequent government review of the environmental assessment report, which results in either issuance or denial of an environmental compliance certificate. The Environmental Guarantee Fund requirement was first introduced as part of the environmental compliance certificate conditions in some projects before it was adopted as standard requirement in 1995 and subsequently as a discretionary requirement in 1996.93

EGFs should be established for all co-located or single projects that have been determined by the authorities to pose a significant public risk or where the project requires rehabilitation or restoration.94 It consists of an amount negotiated on a per project basis, to be set up by a project proponent, who shall be readily accessible and disbursable for the immediate clean-up or rehabilitation of areas affected by damages to the environment and the resulting deterioration of environmental quality as a direct consequence of a project’s construction, operation or

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abandonment.95 The fund can be used to compensate parties and communities for negative impacts associated with the project and to finance environmental related projects including information, education, awareness raising campaigns, etc.

The EGF is made up of three parts:

- a multisectoral fund set aside for environmental monitoring;
- an Environmental Guarantee Trust Fund aiming to compensate for environmental damages and to restore and rehabilitate the environmental quality of areas affected by environmental damage as a direct consequence of project construction, operation or abandonment;
- an Environmental Guarantee Cash Fund available for immediate use and allocated to operators implementing environmental enhancement measures, clean-up operations, damage prevention programmes, etc.

Damages covered by the EGF include damages to life and property as well as environmental damages caused by the construction, operation or abandonment of a project or damages requiring rehabilitation or restoration measures. In addition, it will also cover expenses for damage prevention measures, environmental education, scientific or research studies, information education campaigns and training.

The overall amount of the EGF varies among projects. It is determined by the Department of Environment and Natural Resources (DENR) in charge of managing the Fund, based on the environmental risks associated to the particular activities or processes involved in the project.

▶ Environmental Damages Fund

Introduced by the government of Canada in 1995, the Environmental Damages Fund (EDF) is a specified purpose account, administered by Environment Canada to provide a mechanism for directing funds received as a result of statutory fines, court orders96 and voluntary payments to priority projects benefiting the environment.97 Monies are used to fund projects that focus on environmental restoration and improvement, research and development, and education and awareness related to environmental restoration and compliance with regulation. However, priority is always given to restoration projects that address the damage caused by the original incident. Since 1995, the EDF collected over CAN 4.5 million from 154 awards and has funded 149 projects across Canada.

▶ International Oil Pollution Compensation Funds (IOPC Funds)

The IOPC Funds are three intergovernmental organisations which provide compensation for oil pollution damage resulting from spills of persistent oil from tankers:98

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96 For instance, all fines collected under the Migratory Birds Convention Act, 1994 must be directed to the EDF by virtue of subsection 13(6) of the Act.
98 See www.iopcfund.org/intro.htm.
Annex A

- the 1971 Fund;
- the 1992 Fund; and
- the Supplementary Fund.

They are part of an international regime of liability and compensation under which the owner of a tanker is liable to pay compensation up to a certain limit for oil pollution damage following a persistent oil spill. If that amount does not cover all the admissible claims, further compensation is available from the 1992 Fund or the Supplementary Fund if the damage occurred in member countries of these funds. Each fund has different maximum amounts of compensation and has different member countries.

The IOPC Funds are financed by levies on certain types of oil carried by sea. The levies are paid by entities which receive oil after sea transport, and normally not by States. Anyone who has suffered pollution damage in a member country of an IOPC fund may make a claim for compensation.

**Toxic Waste Guarantee Fund**

The Belgian Toxic Waste Guarantee Fund was established within the framework of the Act on Toxic Waste of 22 July 1974, which imposes strict liability on the producer of toxic waste for any damage resulting from the activities. The fund was to assume, in case of default, the obligations of the producer of the toxic waste with respect to the disposal of the waste and the compensation of damages. However, this fund was never set up in Belgian legislation.99

**Environmental Damage Insurance Act**

Finland’s Environmental Damage Insurance Act of 1998 created a fund whose aim is to guarantee full compensation for environmental damage, including the costs of measures taken to prevent or limit the damage and to restore the environment to its previous state in cases where those liable for compensation are insolvent or the liable party cannot be identified.

The Finnish scheme is financed by special premiums that are compulsory for operators of high-risk activities subject to environmental permits.100 It is run by insurance companies, who have established an Environmental Insurance Centre that handles all claims for compensation under the scheme.

The scheme guarantees full compensation to those suffering from environmental damage, but also covers the costs of measures taken to prevent or limit damage and measures to restore the environment to its previous state. The Act does not cover compensation for oil spills, because there is a specific Oil Pollution Compensation Fund (since 2004) from which compensation for oil spills is paid.

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Annex B – Selected conventions showing tiers of compensation

► Paris Convention

The Paris Convention has a three-tier system of compensation. The operator of a nuclear installation is required to have ‘insurance or some other means’ to cover its potential liability up to at least 5 million Special Drawing Rights (SDRs). The government for the State in which the nuclear installation is located pays any claims that exceed this amount up to 175 million SDRs. If a claim exceeds 175 million SDRs, a third and final tier of 125 million SDRs may be paid jointly by funds contributed by contracting parties to the Brussels Supplementary Convention. The total amount of compensation available under the Convention is thus 300 million SDRs.

Insurance for the operators of nuclear installations in States that are contracting parties to the Conventions is provided by insurance pools. During the 1950s, for example, several insurance companies and Lloyd’s syndicates formed a pool, known as Nuclear Risks Insurers Limited, to underwrite cover for operators of nuclear installations in the UK and, in association with similar entities in other countries, to reinsure nuclear installations outside the UK.

When the 2004 amendments to the Paris Convention and the Brussels Supplementary Convention (as described above), are brought into force, they will increase the current level of 5 million SDRs for which an operator is liable to €700 million. The ‘insurance or other financial security’ to be provided by operators will also increase to cover the increased scope of liability covered by the amended Conventions. The period during which claims may be brought following a nuclear incident will increase from 10 to 30 years.

► International Oil Pollution Compensation Fund

The International Oil Pollution Compensation Fund (IOPCF) was established by the Fund Convention. There are three tiers of compensation in the event of an incident. The first tier is provided by the owner of the ship, the second tier is provided by the IOPCF, and the third tier is provided by the Supplementary Fund Protocol. The total for all three tiers is 750 million SDRs.

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101 Convention Supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy, reprinted in International Documents, p. 163.
102 Not all Member States are parties to the Paris Convention. Some Member States are parties to the Vienna Convention on Civil Liability for Nuclear Damage, reprinted in International Documents, p. 181.
103 See www.nea.fr/html/law/paris-convention-protocol.html
104 2004 Protocol, para J.
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Annex C

Legislation with financial security for traditional as well as environmental damage

Mandatory financial security provisions in EU legislation do not include requirements for financial security for traditional damage. Member States have ratified conventions with mandatory financial security provisions for traditional as well as environmental damage. The EU is not, however, a party to either the Liability Convention or the Funds Convention (see Annex A).\footnote{See Commune de Mesquer v Total France SA and Total International Ltd para. B5 (C—188/07, 2008) ("the Community is not bound by the Liability Convention or the Fund Convention ...the Community has not acceded to those international instruments").} Thus, there is no EU legislation based on those conventions. Further the ELD does not overlap with the conventions (ELD, article 4(2), Annex IV).\footnote{See Commune de Mesquer v Total France SA and Total International Ltd paras. 18-19 (C—188/07, 2008).}

In order to provide examples of legislation with financial security for traditional, as well as environmental, damage, this Annex therefore sets out such legislation in non-EU jurisdictions, namely the United States, where such legislation exists.

- **Oil Pollution Act**

  The United States’ Oil Pollution Act established the OSLTF, which consists of an emergency fund and a principal fund. The emergency fund provides money for removing the oil and assessing the damage; the principal fund provides, amongst other things, money to pay claims for removal costs, claims for bodily injury, property damage and pure economic loss and other damages that have not been paid by the responsible party.\footnote{Fogleman, V. (2009) The increasing use of mandatory financial security provisions in environmental legislation, Liber Amicorum for Hubert Bocken, pp. 349-370, die Keure; Fogleman, V. (2005) Environmental Liabilities and Insurance in England and the United States, pp. 94-111, Witherbys.}

  As a general rule, a claimant must claim first against the responsible party for the oil spill. An exception is the case of States, which may claim first against the OSLTF. If the party to whom the claim is made denies liability, or the claim is not settled within 90 days after it has been submitted, the claimant may commence a judicial action against the responsible party or submit the claim to the OSLTF. The limit that the OSLTF may pay for any one incident is USD 1 billion. If the OSLTF pays a claim, it is subrogated to the claimant’s rights under any law other than the OPA.

- **Resource Conservation and Recovery Act**

  The Resource Conservation and Recovery Act (RCRA) in the United States requires owners or operators of hazardous waste treatment, storage and disposal facilities to provide evidence of financial responsibility during the operational, closure and post-closure phases of the facility. During the operational phase, the owner or operator must demonstrate that it is financially responsible for ‘bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. If the facility is a land disposal facility, the owner or operator must also demonstrate that it is financially responsible for ‘bodily injury and property damage to third parties caused by non-sudden accidental occurrences...
arising from operation of the facility or group of facilities'. The financial security instruments that may be used are a letter of credit, insurance, a surety bond, a trust fund, or a combination of them.

In addition to bringing an action against the owner or operator of the facility, a claimant may bring a claim directly against the guarantor who provides evidence of financial responsibility if the owner or operator is involved in bankruptcy proceedings or cannot be located in order to be served.

RCRA also requires owners or operators of underground storage tanks or have evidence of financial responsibility. The level of financial responsibility required depends on various factors including the number of underground storage tanks owned or operated.

RCRA does not impose liability for bodily injury or property damage; such claims must be brought under the law of the various States.
# Annex D – List of stakeholders contributing to the study

The following stakeholders contributed either by attending the workshop, by completing one of the questionnaires or by submitting other written comments. Note that their participation does not imply endorsement of this report in any way.

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