Main Consequences of Implementation "Polluter Pays Principle" with Analysis of Most Common Causes of Accidents in Czech Republic

Karina Mužáková[1], Pavla Kubová[2]

[1] Technical University of Liberec, Faculty of Economics, Department of Insurance Management
Studentská 2, 461 17 Liberec, Czech Republic

[2] Technical University of Liberec, Faculty of Economics, Department of Insurance Management
Studentská 2, 461 17 Liberec, Czech Republic

ABSTRACT— ***In light of the significant economic, technical, and technological growth are detected environmental risks. A typical example is the contamination of soil, water, air, etc. In practice, there are situations where the polluter does not have sufficient funds to redress and financial responsibility then passes to the state. States, however, decided to deal with this situation through a legislative framework. After years of preparation and negotiation was adopted in April 2004 at the European level legal standard that specifically come to life two very fundamental principles of the protection of the environment, the precautionary principle and the polluter pays principle. These two principles also have strong effects on the financial health of companies, with regard to the cost of remediation of environmental damage. The first of these principles significantly stimulates these businesses' efforts to prevent costly damage. In well-researched work Shavell demonstrates that legal liability for environmental damage stimulates preventive measures often to a much greater extent than regulatory measures.***

In response to the current development of legislation in the environmental field are new commercial insurance products. These products cover the insured's liability for the injury caused to the environment-related damage to property or health of a third party, attorneys' fees and costs of preventive measures. Currently, the much debated is insurance of environmental risks and insurance against damage to the environment. Access to environmental responsibility will be approached by international treaties and conventions at the EU level. The basic idea of legislative changes is the polluter pays principle. Operator whose activity has caused the environmental damage (or the imminent threat of damage) is financially responsible for the damage. We talk about accountability objective, which arises regardless of fault or involuntarily.

Approaches to environmental responsibilities are many. Was considered by a number of different options, tools and the most important of these include: the Community's accession to the Lugano Convention, the regime focused only on transboundary damage, followed by action by Member States, which should follow the recommendations of the Community and individual Directive. Last but not least, the liability relating to the sector (particularly in biotechnology). European Directive was transposed into legislative conditions of the Czech Republic. Among the key concepts that are covered by the Act include economic damage, preventive measures, corrective actions, proceedings on the imposition of preventive and corrective measures and operator.

Keywords— ecological damage, ecological detriment, environmental responsibility, insurance, preventive measures, polluter pays principle, remedial measures

1. INTRODUCTION

Advanced economies (Zikán, 2007) are trying to find the right strategies, policies and actions on the companies in the environment against damage, or at least try to reduce their negative effects. Currently, the environmental protection insurance is much discussed (or insurance risks of environmental damage). A business producing a good or providing a service, its activities may cause some other entity external effects that are unintended. It can be a positive external effect, but also a negative effect, which is more often. Its activity can lead to negative externalities – environmental damage followed by a reduction in the quality of the environment. Available data on the overall impact of environmental regulations on industrial competitiveness say there is no need to worry about any more significant negative impact.

There are also some data on the effects of environmental liability regimes in the United States and in several Member

States, although there are no figures on the total costs of damages to natural resources (in the U.S.). As for the small and medium-sized enterprises (SMEs), it must be said that often cause more environmental damage than would be due to their size expected, which may be due to lack of resources. From this point of view of these enterprises could be a greater impact. Adverse side effects, such as the increase in the proportion of damage caused by SMEs could be targeted to mitigate the use of national support mechanism or mechanisms of EC actions aimed at the implementation of environmentally-friendly processes in SMEs. The proposed approach to liability protects economic entities in the financial sector, which should not bear liability unless they have operational responsibilities. For this reason, the adverse side effects on the sector unlikely. Assuming that provide legal certainty due to accountability and transparency, it should be a particular impact on the insurance industry in the longer term is positive, as it gains experience with working in that mode and will create a new market for new insurance products.

2. MAIN PRINCIPLES OF DIRECTIVE 2004/35/CE AND OF LAW NO. 167/2008 COLL.

In 1992 it was adopted by the Council of Europe Convention on Civil Liability for environmental damage caused by dangerous activities. During the development approach to environmental responsibility was considered many different options and tools – too international agreements. (MŽP, 2013) In April 2004 were also Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage. The basic idea of this Directive is the Polluter Pays Principle (PPP). PPP has become an important component of environmental policy at both the national and international level since its adoption by the Organization for Economic Cooperation and Development (OECD) in 1972 as one of the guiding principles of environmental policies (OECD, 1992a). By Smets (1993) the PPP is recognized worldwide and is referred to in national legislation, as well as in many regional and international declarations and agreements. The Principle was introduced in 1987 in the Single European Act (1987). The importance of the impact of the introduction of PPP report Tobey and Smets (1996), followed by the PPP with regard to dealing with asymmetric information (Wirl and Huber, 1998). This paper compares the polluter pays principle with the PPP in a model of one-sided externalities and asymmetric information. Even allowing for mitigation of environmental impacts through arrangements and agreements, it will not result in perfect information social optimum. Finally, it is important to mention article Mamlyuk (2010) dealing with the critiques important conceptual and practical weaknesses of the PPP.

Economic entity whose activity has caused the environmental damage or imminent threat of damage is financially responsible for the damage. It is the responsibility of the objective. Strict liability is incurred, regardless of fault or involuntarily. Liability under Directive 2004/35/CE is composed of two components: strict liability for specific high-risk activities that are defined in the authorization procedure IPPC (Integrated Pollution Prevention and Control), which is a prerequisite for obtaining a license to operate the equipment. The second component is responsibility tied to certain professional error (Vávrová, 2008).

Examples of huge industrial accidents warn us against delaying the solution of this problem. The statistics (Bernatík, 2006) shows these 530 accidents, the most common causes and consequences of accidents (according to other statistics, accidents cause up to 80 % human error), see in table 1.

Table 1: Most Common causes and Consequences of Accidents

CAUSES:		**CONSEQUENCES:**	
Material defect	48 %	Toxic emission	21 %
Human error	31 %	Fire	21 %
Chemical reaction	12 %	Air pollution	17 %
Other causes	18 %	Explosion	12 %
External effects	7 %	Water pollution	45 %

Source: (Bernatík, 2006)

Directive shall apply to:

- environmental damage caused by any of the occupational activities listed in Annex III in this Directive, and to any imminent threat of such damage occurring by reason of any of those activities;
- damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by
- reason of any of those activities, whenever the operator has been at fault or negligent.

This Directive also introduces the concept of "preventive" and "remedial measures", which:

- preventive measures means any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimizing that damage;
- remedial measures means any action, or combination of actions, including mitigating or interim measures to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services as foreseen in Annex II of this Directive.

The operator is obliged; where environmental damage has not yet occurred but there is an imminent threat of such damage occurring, shall without delay, take the necessary preventive measures. Remedying of environmental damage, in relation to water or protected species or natural habitats, is achieved through the restoration of the environment to its baseline condition by way of primary, complementary and compensatory remediation, where (Marsh, 2011):

- primary remediation is any remedial measure which returns the damaged natural resources and/or impaired services to, or towards, baseline condition;
- complementary remediation is any remedial measure taken in relation to natural resources and/or a service to compensate for the fact that primary remediation does not result in fully restoring the damaged natural resources and/or services;
- compensatory remediation is any action taken to compensate for interim losses of natural resources and/or services that occur from the date of damage occurring until primary remediation has achieved its full effect;
- interim losses means losses which result from the fact that the damaged natural resources and/or services are not able to perform their ecological functions or provide services to other natural resources or to the public until the primary or complementary measures have taken effect. It does not consist of financial compensation to members of the public.

This Directive also introduces the institute of “Financial Security”. 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.

In the Czech legislative conditions of Directive 2004/35/CE was transposed in the Law No. 167/2008 Coll. the prevention of environmental damage and its Remedy and amending certain Laws.

In summary it can be stated that the Law includes four basic principles, namely:

- The principle of prevention,
- The principle of "polluter pays" principle,
- The principle of restitution in kind and
- The principle of strict liability.

Republic is the transposition of Directive 2004/35/CE, because it more fully in the next section we give.

The Law considers only ecological damage such adverse change that is measurable and has serious adverse effects on selected natural resources (protected species of wild fauna and flora, habitats, groundwater and surface water, including natural healing sources and natural mineral waters and soil). In order to constitute environmental damage to which the Law applies must beproved:

- significant adverse effects on reaching or maintaining the favourable conservation status of the species and habitats (in the case of environmental damage to protected species and natural habitats)
- serious adverse effects on the ecological, chemical and quantitative status of water or its ecological potential (in the case of environmental damage to surface or groundwater) or serious risk of adverse effects on human health as a result of direct or indirect introduction of substances, preparations, organisms or micro-organisms onthe surface or below it (in the case of environmental damage to soil).

The Law also specifies the financial security preventive measures or remedial measures asfollows:

- An operator performs operational activity listed in Annex 1 to this Act, is obliged toprovide financial security for reimbursement under this Act (hereinafter referred toas"financial security"). Range of financial collateral must throughout their operations correspond to the range of the operator of the potential costs and the intensity or severity of the risk of environmental damage created. This operator is obliged to assess

the risk of operating activities listed in Annex 1 to this Act, which intends to operate, and continuously update this review in the event of significant changes in operations.

- No security financial collateral under this Act shall be exercised activity listed in Annex 1 to this Act.
- The financial collateral is not required to provide the operator who proves on the basis of risk assessment, operational activities that may cause environmental damage, the axle will require cost less than CZK 20,000,000, or environmental damage, the axle will require higher costs than CZK 20,000,000 and the operator is currently registered in the EMAS or demonstrably initiated activities required to enroll in this program or has a certified environmental management system recognized by a set of standards EN ISO 14000 or demonstrably initiated activities necessary to obtain this certification.
- Financial security is not obliged to provide operator who discharges waste water, which do not contain harmful substances dangerous or especially dangerous substances. These above four bullets came into force on 1st January 2013.

It would be interesting to look at the difference between the institutes of ecological damage and ecological detriment (see in table 2), especially to illustrate the significance of the introduction of ecological detriment in the Czech legislative environment.

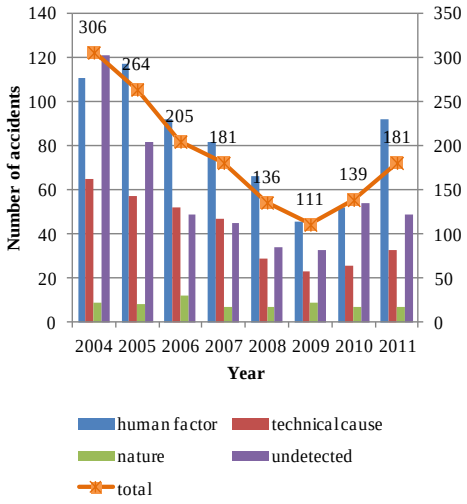
Table 2: Ecological Damage versus Ecological Detriment

ECOLOGICAL DAMAGE	ECOLOGICAL DETRIMENT
Liability for environmental damage	Liability for detriment of environment
Private sector	Public sector
The actual amount of damage and loss of profit is paid	A system of primary, complementary and compensatory remedies is using
Damaged is owner	Damaged id state
Prefers to financial compensation	Prefers the restoration to good condition
Not required special purpose funds from compensation	Everything is bound to restore the original condition
Objects of protection are physical components of the environment that are the subject of property rights	The object of protection of all environmental components are considered as a public good
Damage to non-production functions are not considered property damage, compensation for them cannot be granted	Damage to non-production functions of the environment must be restored to their original condition or offered compensation
Determined in civil proceedings	Determined in administrative proceedings
Initiation control by damaged	Initiation of proceedings by a state government or on the initiative of the natural or legal persons

Source: (Marsh, 2011)

The risk assessment criteria for assessing adequate financial security for operators and detailed conditions for the implementation of financial security and how to implement preventive measures and corrective measures set by the government.

What is very important, so even though some operators by Law under certain conditions by this Act may not have the financial backing for their business, so they are not deprived of responsibility for the damage caused to the environment, it would only have to pay for the damage on their own. An important positive aspect of this Law is the fact that these operators must carry out risk assessments of their activities on the environment. Basic scheme of risk assessment is illustrated in figure 1.



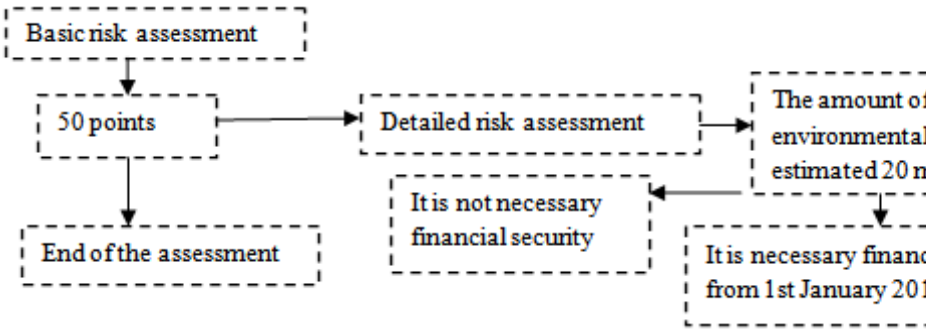


Figure 1: Basic scheme of risk assessment

Source: Self elaboration from (Act No. 295/2011, 2011)

If the operator does not have a secure financial security, even though it is required by Law (from 1st January 2013), thus:

- not carry out the activity (which is listed in Annex 1 of the Act);
- can be fined up to CZK 5,000,000.

From the introduction of financial security by this Act given space not only in the construction of commercial insurance products, environmental insurance, but also gave Bank area as Government Decree of 14th September 2011 (No. 295/2011) admits that the financial collateral can be done for multiple products, namely:

- accumulation of insurance and banking products,
- accumulation of insurance and other products,
- accumulation of banking and other products.

As for the number of registered cases of environmental damage under Act No. 167/2008 Coll., And yet according to information published by the Czech Environmental Inspectorate (which is one of the first-instance authorities to bring proceedings as to the storage of preventive and corrective actions, record cases environmental damage, to decide on costs or impose fines) on its website, no case is registered.

Now look at the analysis of accidents on the waters for the period 2004–2011 for the solution of which participated in the Czech Environmental Inspectorate.

accidents
according

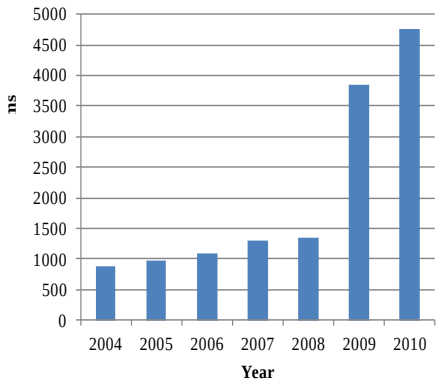


Figure 3: Analysis of total number of establishments reported the required data to the IRP in 2004–2010

Source: (ČIZP, 2004–2010)

3. ANALYSIS OF ACCIDENTS ON WATERS IN YEARS 2004–2011

In an analysis of accidents on the waters are four basic reasons, namely: human factor, technical cause, nature and the cause undetected (see in figure 2).

The total number of accidents on the waters fell from number 306 in 2004 to 186 in 2011; it is an overall increase of 120 accidents during this reporting period.

Except for annual reports Czech Environmental Inspectorate is an important tool for information on releases and transfers of pollutants in industrial and agricultural emissions discharged into the environment is the Integrated Pollution Register (IPR). The total number of establishments reported the required data to the IRP in 2004–2010 are shown in figure 3.

Integrated Pollution Register (IPR) is an information system of public administration. It is a publicly accessible database of businesses for which it is ushered in the amount of pollution produced, which exceeded the set limit. The operator of IPR, under the authority of the Ministry of Environment CENIA, is Czech Environmental Information Agency. Main goal of Czech Environmental Inspectorate (CEI) is checking compliance with reporting obligations to the IRP.

Range of the reported data in 2004–2010 varied, changes related mainly to the adoption of the E-PRTR. In the reporting period 2004–2006 ushered all operators (users registered substances) the same range of data on releases and transfers. In 2007–2008, has depended on what activities are operated on the premises and also added a new requirement to notify operators also shows the amount of waste transferred off-site.

From reporting year 2009, reported releases and transfers of pollutants and transfers the amount of waste if they exceed the threshold established for the substance regardless of the activity or activities performed by the shop. This is the main reason for the sharp increase in the number of operators who reported to the IPR data for 2009 in 2010.

4. ENVIRONMENTAL INSURANCE IN THE CZECH MARKET

Businesses have the Law No. 167/2008 Coll. Prevention of environmental damage and its Remedy and amending certain Laws and ensuring financial obligation in the event that the operator whose activities may cause environmental damage, the axle will require higher costs than CZK 20,000,000 with effect from 1st of January 2013.

In the Czech insurance market offering insurance following environmental risks insurance – Chartis Europe s.a., Respect a.s., Allianz pojišťovna, a.s., Renomia, a.s. etc.

Generally speaking, the insurance of environmental damage:

- is an effective and inexpensive way of financial security to cover the costs incurred in connection with environmental damage;
- is a way to fulfill the obligation of financial security for the operator specified in Act No. 167/2008 Coll., Which can cause environmental damage, which will require rectification costs are higher than CZK 20,000,000;
- is appropriate for cases which are not covered by the obligation of financial security – the Law is applied the principle of "polluter pays" principle.

Environmental damage insurance usually covers:

- the costs of remediation/rehabilitation of environmental damage, according to the Law of environmental damage;
- cost of implementation of preventive measures;
- damage resulting from the sudden and unexpected pollution;
- damage caused by gradual pollution;
- bodily injury and property damage caused to third parties due to pollution;
- interruption;
- costs of legal representation.

Individual insurance products differ from each other not only with regard to the scope of coverage, but also with regard to the price of insurance protection, de facto, the greatly depends on the skill of the selected broker (ACEEUROPE, 2013).

5. CONSLUSIONS

The significance of environmental insurance is significantly strengthened by legislation into the Czech legal area also introduced the institute of PPP other three basic principles, namely: the principle of prevention, the principle of restitution in kind and the principle of strict liability. Selected firms must be from 1st of January 2013 insured, upon fulfillment of the criteria, ensuring its financial operations.

Damage to the environment is very costly damage to their rehabilitation, especially in the long run. According to research conducted Bernatík (2006) shows that the leading causes of accidents include 48 % of defects in materials and 31 % are caused by human error. These two causes of the large accounts generate almost 80 % of the causes of accidents. Our research then showed that the most important causes of accidents on the water in 2004–2011 belong: in 2004 it was unknown causes in the period of 2005–2011; it was the cause of the human factor. The most common

accidents on the water are caused by petroleum products, chemicals and waste water free of heavy metals. Of the total number of accidents have petroleum products more than 50 % of these accidents in years 2005, 2007, 2010 and 2011.

The state deprives part of responsibility for damage to the environment and thus directly delegates this responsibility to the polluter and thus reduces its spending on remediation of such damage. The principle has enormous impact on the financial health of companies. The polluter pays principle is used for allocating costs and control measures and to promote the rational use of limited natural resources and to avoid disruption of international trade and investment. In other words, the cost of measures should be reflected in the costs of goods and services, which cause pollution.

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