

**Environmental Liabilities and Insolvent Polluters in
China**

Learning Lessons from the UK and US

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Declaration

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Abstract

Within the context of Enterprises Bankruptcy Law (EBL) in China, this thesis offers an effective means to remedy the issue of how Chinese law ought to ensure that polluters, are held to account for their environmental liabilities.

The 'polluter pays' principle has been implemented by several pieces of environmental legislation in China, as a means to confront the issue of liability in the case of insolvent polluters. The principle requires those responsible for environmental damage or imminent threats of damage to bear the necessary costs of remediation and prevention. However, in practice, the principle has been rendered relatively ineffective due to current Chinese bankruptcy legislation.

Under EBL, an insolvent company externalises its costs associated with its environmental liabilities to society. Firstly, the cost of environmental liability is not specifically mentioned in Chinese EBL and can therefore only be categorised as a general, unsecured liability in the order of distribution during liquidation. Secondly, unsecured liability is difficult to discharge in Chinese bankruptcy cases. This results in environmental liabilities ultimately being borne by the taxpayer, which contradicts with the polluter pays principle. This research references the response of the UK and US to the challenges of environmental liability in insolvency law in order to provide potential solutions for the case of China.

The thesis finds that it may be responsible to Chinese law by reducing the externalisation of environmental liability for insolvent polluters and effectively realising the polluter pays principle. It is suggested that this may be achieved by way of EBL reform and the establishment of a financial assurance mechanism.

As part of the EBL reform, priority should be given to environmental liability, with the addition of environmental representatives in the creditors' meeting, and the subject of insolvent polluters post liquidation. The proposed guidance on financial assurance requires the potential polluter to demonstrate that it has sufficient financial resources to prevent and compensate for possible future environmental damage.

These recommendations in respect of Chinese law are designed to ensure that polluters bear their environmental liabilities.

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Abbreviations

CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability of 1980
CSR	Corporate Social Responsibility
CVA	Company Voluntary Arrangement
CWA	Clean Water Act
EBL	Enterprises Bankruptcy Law
ECJ	Court of Justice of the European Union
ELD	Environmental Liability Directive
EPA	Environmental Protection Agency
EPT	Environmental Protection Tax
HMRC	HM Revenue and Customs
IP	Insolvency Practitioner
LDAR	Leak Detection and Repair
LPA	Law of Property Act
MEP	Ministry of Ecology and Environment
MF	Ministry of Finance
MNR	Ministry of Natural Resource
NDA	Nuclear Decommissioning Authority
OECD	Organisation for Economic Co-operation and Development
RCRA	Resource Conservation and Recovery Act
RPR	Potential Responsible Parties
SDPS	Sewage Discharge Permission System
SLCs	Sites Licence Companies
SMCRA	Surface Mining Control and Reclamation Act
WFD	Waste Framework Directive

Chapter 1

Introduction

1.1 Research Background

In 2019, the Intermediate People's Court of Qiqihar City, Heilongjiang Province, China declared Heihua Co., Ltd (Heihua) insolvent.¹ Despite the fact that Heihua had made great contributions to economic development in the Heilongjiang province, it was also to blame for discharging vast amounts of smoke, dust and heavy metals into the surrounding land and air; which caused subsequent environmental damage, both in terms of land and air pollution, as well as water contamination.² Insolvency was attributable to these environmental issues, as well as the firm's ageing equipment, yet, the aforementioned environmental issues were not resolved following the completion of the insolvency process; with the soil and groundwater at the former Heihua site containing a quantity of heavy metals far in excess of national standards, the site was later identified as being heavily contaminated land.³ It is understood that clean-up and restoration of the contaminated site is in the public interest.⁴ Nevertheless, as the liquidation process of the insolvent firm has since concluded, it follows that any future rectification of consequential environmental damage stemming from the Heihua site must be covered by public funds.

¹ Qiqihar Government [齐齐哈尔政府], 'Insolvency liquidation of Heihua and Qihua officially launched' [黑化集团和齐化集团破产清算正式启动] (Qiqihar Gov, 17 May 2019)

<http://www.qqhr.gov.cn/News_showNews.action?messagekey=171885> accessed 17 July 2019.

² Annual Report of Heilongjiang Heihua Co., Ltd 2000. 3

³ Government of Fularji District, Qiqihar City, [富拉尔基区人民政府] 'Public announcement of the detail findings on the soil contamination status of the former plant of Heilongjiang Heihua Group in Fularji District' [关于富拉尔基区黑龙江黑化集团有限公司原厂区土壤污染状况调查结果显示] (Fularji Gov, 16 December 2021) <<http://www.flej.gov.cn/tzgg/8855.html>> accessed 29 July 2022.

⁴ Ibid.

This particular case highlights a common issue, being that, the polluting company will be rendered insolvent with several of its environmental issues still outstanding; thus passing any such liability on to the public – in other words, the cost of environmental liability will be borne by public funds. Similar outcomes can be found in cases such as that of the Shenyang Smelter factory and Yunnan Copper Company Ltd.⁵

Both the tort chapter of the Civil Code 2020 and the Environmental Protection Law 2014 apply the ‘polluter pays’ principle, which requires polluters to assume responsibility for the cost of environmental clean-up and/or its remediation and restoration.⁶ However, the polluter pays principle is being challenged by Chinese Enterprises Bankruptcy Law (EBL).

In the context of EBL, environmental liability is classed as a general, unsecured liability in the order of distribution during the winding up process. In most cases general, unsecured claims face difficulty in being paid out in the case of winding up, which results in the externalisation or ‘transfer’ of environmental costs from the insolvent polluter to society.⁷ These costs are known to economists as *negative externalities*.⁸

If such environmental costs were to be externalised to society, it would not be fair to the ordinary citizens that would be made to foot the bill on behalf of the insolvent firm.⁹ This externality arises from the fact that those who cause damage to the environment benefit more from their actions than others because the cost of the damage, such as the government-funded clean-up, and the

⁵ See chapter 3 case study 3.3.1, 2,3, 4.

⁶ Civil Code 2020 s1229 -1231, 1233-1235, Environmental Protection Law 2014 s59 and 64.

⁷ Colin Mackie, ‘Corporate Structures and Environmental Liability under EU Law’ (PhD thesis, University of Aberdeen, 2013) 3.

⁸ Ibid 3.

⁹ Alexander Zahar, ‘Implementation of the polluter pays principle in China’ (2018)27 Review of European, Comparative & International Environmental Law 294.

reduction in environmental quality, is not borne by individuals in proportion to their responsibility for the damage, but affects everyone indiscriminately.¹⁰ Likewise, this would render environmental costs free for those polluting firms otherwise responsible for any damage caused, since it can simply be externalised to wider society in the event of insolvency – in other words, companies may be incentivised to seek insolvency in order to avoid any such environmental responsibility.¹¹ As such, if the externality of environmental costs to society was altered so as to charge the respective polluters for the environmental costs they bear responsibility for, it would likely improve social justice with respect to post-insolvency liabilities.¹²

As an emerging economy, China has yet to gain the relevant experience necessary to address effectively the environmental liability of insolvent polluters. It is therefore the core objective of this thesis to find potential, effective measures to reduce the externalisation of environmental liability in insolvency cases.

The first possible solution to consider is the reform of current EBL legislation in China. This thesis considers how such legislation operates in the UK and US, as both respective legal systems have far greater experience handling environmental liability in insolvency cases. The premise of evaluating British and American insolvency/bankruptcy law, is that China could potentially learn from and adopt practices from the respective legislation, so as to reform its EBL in such a way as to reduce the externalisation of environmental costs.

However, if EBL is reformed without other, concurring changes, the extent to which the externalisation of environmental liabilities can be reduced is limited.

¹⁰ Ibid 294.

¹¹ Ibid 294.

¹² Ibid 295.

Firstly, if a company files for insolvency, this means that it does not have enough assets to pay its outstanding debts. Typically, environmental costs are quite high,¹³ which would create some difficulty in ensuring that such costs could in fact be paid off in full.¹⁴ Environmental law, therefore plays a role in increasing the payments from polluters in respect of their environmental costs.

For this reason, financial assurance is now a common measure to reduce the externalisation of environmental costs; as polluters are required to provide effective financial assurance to ensure that any future environmental costs are covered.¹⁵ The purpose of financial assurance could therefore be understood as a means or attempt to internalise the negative externalities of polluters.¹⁶

Financial assurance is a financial tool utilised by a company to ensure timely environmental clean-up or restoration in the event that the owner or operator is unable or unwilling to carry out the required environmental actions. Financial assurance has been implemented into the environmental regulations of many states and territories, such as that of the EU, UK, US and Canada, among others.¹⁷ Nevertheless, financial assurance has yet to be fully established in China and is currently still in its infancy.

¹³ *Friend of Nature, China Biodiversity Conservation and Green Development Foundation v. Jiangsu Changlong Chemical Co., Ltd. Changzhou Changyu Chemical Co., Ltd and Jiangsu Huada Chemical Group Co., Ltd* [自然之友, 中国生物多样性保护与绿色发展基金会诉江苏常隆化工有限公司, 常州市常宇化工有限公司, 江苏华达化工集团有限公司] [2017] (Higher People's Court of Jiangsu Province) [江苏省高级人民法院] Jiangsu Civil final decision No.232 [苏民终 332 号], the cost of restoration of land which suffered environmental damage as a result of Wuhan activities is 280 million yuan (£35 million) , more than 370 million yuan (£45 million)) has been spent on remediation of contaminated land in Changzhou .

¹⁴ Qinyu Zhang, 'Protection of environmental liabilities in bankruptcy companies' [破产企业环境债权的保护] (2016)2 Politics and Law [政治与法律] 141.

¹⁵ Jason Malone and Tim Winslow, 'Financial assurance: environmental protection as a cost of doing business' (2018)93 North Dakota Law Review 3.

¹⁶ *Ibid* 3.

¹⁷ For example, Environmental Liability Directive, UK Landfill Waste Management, Canada guidance for offshore oil exploration and production. USA require financial assurance on some industries, such as waste treatment, storage.

To this end, this thesis examines how Chinese law may mitigate the prospect of environmental liabilities being passed on to wider society in the event of a polluting company entering into insolvency proceedings.

1.2 Research Questions

The central research question of this thesis concerns how Chinese law should mitigate the prospect for environmental liabilities to be passed on to society at the point at which the polluter enters into insolvency proceedings.

The central research question is analysed by way of six sub-questions.

First, is the polluter pays principle implemented in Chinese law?

Second, how does the Chinese law treat environmental liabilities in insolvency proceedings?

Third, how does UK law deal with environmental liabilities in insolvency cases?

Fourth, how does US law treat environmental liabilities of insolvent polluters under the US Bankruptcy Code?

Fifth, could financial assurance mechanisms prevent the externalisation of environmental costs?

Sixth, from the experiences of both the UK and US, how can China learn lessons in effectively dealing with environmental liabilities in the event of the insolvency of polluting companies?

1.3 Thesis Structure Definition

Chapter 2 answers the first question. In response to this question, this chapter will first review the history of the polluter pays principle from an international perspective. Furthermore, this chapter will then analyse the current problems with the definition of the polluter pays principle, such as who is the polluter, and

the scope of environmental liability under the polluter pays principle. After reviewing the polluter pays principle, this chapter will examine whether the polluter pays principle has been reflected in Chinese law, and what problems are found in Chinese environmental legislation.

Chapter 3 responds to the second question. Chapter 3 aims to examine how Chinese law treats environmental liability in insolvency cases. This chapter will reflect on the history of Chinese bankruptcy law, and the features of EBL. Following this, the legal issue of the conflict between environmental law and EBL will be analysed. Finally, this chapter will reveal the issues concerning Chinese EBL through the selected case studies of the Shenyang Smelter Factory, Heihua Co., Ltd, Yongren Tuanshan Copper Mine, and Jinggu Mining and Metallurgical Ltd cases.

Chapter 4 addresses the third sub-question and will examine the environmental liability of insolvent polluters in the UK. This chapter will analyse the rules of the Insolvency Act and review the ways in which the courts have treated environmental liability in insolvency cases. Finally, this chapter will consider four case studies in order to analyse how environmental liability was treated following the insolvency of the respective polluting firms.

Chapter 5 responds to the fourth sub-question and will examine how the environmental liability of insolvent polluters is treated by the US Bankruptcy Code. It will review the US Bankruptcy Code and relevant environmental legislation, before analysing how US law treats environmental liability in the process of winding up. The final part of this chapter will focus on environmental liability in the context of the bankruptcy practices of four case studies.

Chapter 6 aims respond to the fifth question. Financial assurance is considered as a legal tool to realise the internalisation of environmental costs. The first part of this chapter will explore the function of financial assurance as a tool, whereby

the different instruments of financial assurance will be introduced. The practice of financial assurance in different jurisdictions (China, the UK and US) will then be analysed. With regards to the analysis of financial assurance in China, case studies have been used to contextualise the practice of different forms of financial instruments in this jurisdiction. In analysing the UK and US systems, given the maturity of the financial assurance market in comparison to that which exists in China, the case studies used are based on the practice of financial assurance for several different environmental liabilities; for example, waste management, oil spills and mine closures.

Chapter 7 answers the last of the sub-questions for this thesis. The aim of this chapter is to provide some recommendations for potential legal reform in China in order to more effectively internalise environmental costs in insolvency proceedings. These recommendations are divided into two sections; the first focuses on recommendations for reform centred around China's EBL, the latter will consider recommendations with respect to financial assurance legislation.

Chapter 8 is the concluding chapter, which sets out to summarise the findings of the thesis.

1.4 Definition

1.4.1 Legal Concept

As this thesis considers the laws of three different jurisdictions, China, the UK and the US, there will be some differences in the expression of legal terms and these differences will therefore be illustrated in this section.

First, the environmental liability being discussed in this thesis includes two aspects, which are: 1) foreseen liability (For example the closure and restoration costs of landfill, mine and contaminated sites) and 2) unforeseen liability (incidents such as nuclear liability, oil spill).

Second, the terms bankruptcy and insolvency are used interchangeably in this thesis. Bankruptcy in the UK insolvency terminology refers to personal bankruptcy, but in the US and China, both bankruptcy and insolvency can refer to corporate insolvency. Therefore, in this thesis, both bankruptcy and insolvency refer to corporate insolvency.

Third, in this thesis, the term corporate rescue may also be used in place of corporate reorganisation. Corporate rescue in the UK includes formal and informal rescue,¹⁸ in this thesis, however, unless otherwise stated, corporate rescue refers only to formal rescue under the UK insolvency law.

Fourth, the term financial assurance is also commonly expressed as financial provision or financial security.

Lastly, Chinese civil procedure law states four ('representative') bodies that can take environmental public interests' lawsuit; they include the People's Procuratorates,¹⁹ non-government organisations,²⁰ citizens and²¹ environmental resource authorities²². However, within this research, environmental liability in terms of EBL, only concerns the cost of clean-up, remediation, restoration. Environmental regulators in China are responsible for such environmental regulatory activities. These regulatory bodies include the Ministry of Ecology and Environment of China, and environmental protection authorities of local people's governments at or above the county level.²³

¹⁸ Informal rescue takes place outside the courts and is largely driven by business forces, whereas formal rescue is a judicial insolvency procedure aimed at rehabilitating the insolvent company and strictly adhering to procedural and substantive insolvency rules.

¹⁹ Environmental Protection Law s85.

²⁰ Interpretation of the Supreme People's Court on Several Issues Concerning the Application of Law in the Conduct of Environmental Civil Public Interest Litigation 2015 s2 4.

²¹ Civil Procedure Law 2017 s55.

²² Interpretation of the Supreme People's Court on Several Issues Concerning the Application of Law in the Conduct of Environmental Civil Public Interest Litigation 2015 s3.

²³ Ministry of Ecology and Environment of the P.R.China, Mandates, <http://english.mee.gov.cn/About_MEE/Mandates/> accessed 9 January 2023.

Therefore, environmental representatives, as are concerned in this research, are recognised as environmental regulators.

1.4.2 Chinese Legislative System

According to the Constitution and the Legislation Law of China, the National People's Congress (NPC) and its Standing Committee have the ability to exercise the legislative power of the State.²⁴ The NPC enacts and amends fundamental laws concerning the sovereignty of the State as well as the basic political system, the economic system and the fundamental rights and duties of citizens.²⁵ The Standing Committee of the NPC shall enact and amend laws other than those to be enacted by the NPC, and shall, between sessions of the NPC, supplement and amend in part the laws enacted by the NPC, provided that the basic principles of those laws are not violated.²⁶

The State Council draws up administrative regulations in accordance with the Constitution and other relevant laws and, with the authorisation of the NPC, makes temporary regulations and provisions relating to the reform of the economic system and policies relating to China's opening up to the outside world, economically speaking.²⁷

Ministries and commissions of the State Council, the People's Bank of China (the central bank of China), the National Bureau of Statistics and other Bureaus with administrative functions directly under the State Council may, in accordance with respective laws and administrative regulations, decisions and orders of the State Council, formulate regulations within the scope of their authority.²⁸

²⁴ Constitution Law s2 89 92 95 96 Legislation Law s7 56 63.

²⁵ Legislation Law s8.

²⁶ Legislation Law s7.

²⁷ Constitution Law s89.

²⁸ Constitution Law s90, Legislation Law s57.

The People's Congresses of provinces, autonomous regions, and municipalities directly under the Central Government and their standing committees may, in accordance with specific conditions and practical needs of their administrative regions, enact local regulations, provided that they do not need contravene the Constitution and other laws and administrative regulations.²⁹ The People's Congresses of the municipalities where the Local People's Governments of provinces and autonomous regions are located, the municipalities where special economic zones are located, and the standing committees of the larger municipalities approved by the State Council may enact local regulations in accordance with the special circumstances and practical needs of the municipalities; provided that such local regulations shall not contravene the Constitution, respective laws, administrative regulations or the local regulations of the province or autonomous region in which they are located.³⁰

The Local People's governments of provinces, autonomous regions, municipalities directly under the Central Government, cities and autonomous prefectures may enact regulations in accordance with the laws, administrative regulations and local regulations of the province, autonomous region or municipality of the province, autonomous region or municipality directly under the Central Government.³¹ The People's Congresses of national autonomous areas have the right to enact autonomous regulations and individual regulations in accordance with the political, economic and cultural characteristics of the local nationalities.³² The People's Congresses and their standing committees of the provinces and municipalities in which the special economic zones are located may, with the authorisation of the NPC, enact regulations within the

²⁹ Legislation Law s63-67.

³⁰ Ibid.

³¹ Legislation Law s69.

³² Ibid.

special economic zones.³³

Therefore, China's legal system could be divided into four categories, which are:

- 1) Fundamental Law: The Constitution Law and related laws,
- 2) Basic Laws: Laws regulating fundamental issues of state and society, including administrative, civil, commercial, economic, social, criminal, and procedural laws.
- 3) Other Laws: other laws based on the basic law, to regulate specific issues, such as Company Law and Enterprises Bankruptcy Law.
- 4) Normative documents: including administrative regulations, local regulations, departmental regulations, and government regulations, as well as autonomous regulations and single-issue regulations of national autonomous areas.³⁴

The effectiveness of these various laws and regulations differ. Generally speaking, the Constitution has the supreme force of law.³⁵ Laws have higher legal force than administrative rules and regulations, including local regulations.³⁶

Administrative rules and regulations have higher legal effect than local rules and regulations.³⁷ Local rules and regulations have higher legal effect than those of local governments at the same or lower level.³⁸ Regulations made by the People's Governments of provinces and autonomous regions have higher legal effect than regulations made by the People's Governments of

³³ Ibid.

³⁴ Ibid s78-80.

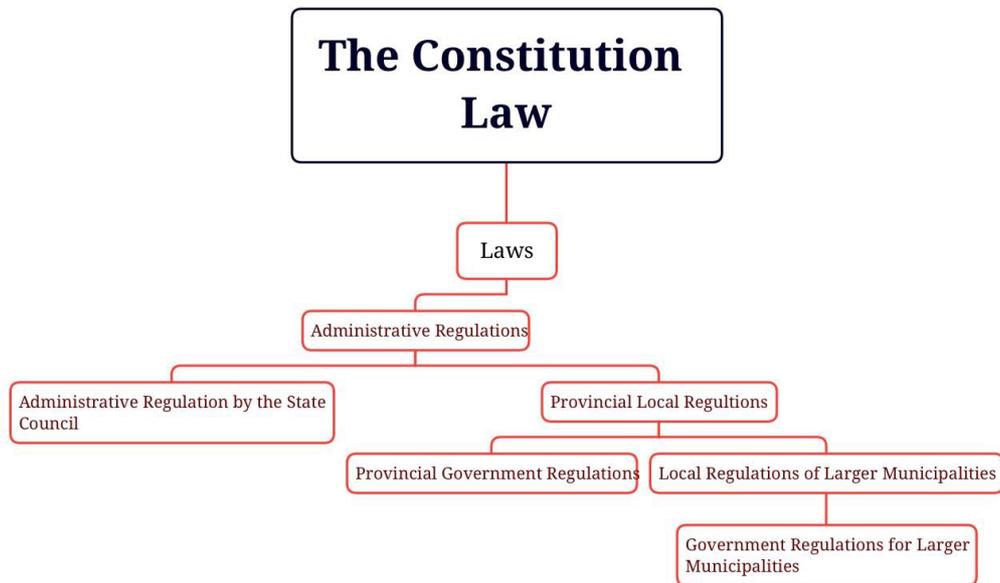
³⁵ Legislation Law s78.

³⁶ Ibid s79.

³⁷ Ibid.

³⁸ Ibid s80.

municipalities and autonomous regions within their respective administrative regions.³⁹ Departmental and local government regulations have the same legal effect and are enforced within their respective jurisdictions.⁴⁰ (see Table 1)



*Table 1

1.4.3 Chinese Judiciary System

Judicial and prosecutorial powers in China are delegated to the People’s Courts and the People’s Procuratorates respectively.⁴¹ The people’s courts are divided into the Supreme People’s Court, local people’s courts as well as specialised courts such as the intellectual property courts.⁴² Local people’s courts at all levels are divided into three levels, namely the higher people’s courts, the intermediate people’s courts and the grass-roots people’s courts.⁴³ The people’s procuratorates are divided into the Supreme People’s Procuratorate,

³⁹ Ibid s81.

⁴⁰ Ibid s82.

⁴¹ Constitution Law s128 134.

⁴² Ibid s129.

⁴³ Ibid s133.

local people's procuratorates at various levels and specialised people's procuratorates such as the Railway Transport Procuratorate.⁴⁴ The grading of local people's procuratorates at all levels is consistent with that of the people's courts.⁴⁵

1.4.4 Anglo-American Legal Transplants to China

Globalisation has had a profound impact on the development of global law and the legal process in China, with China's legal development facilitated by borrowing and transplanting number of foreign laws, among which are a number of commercial and business laws which have been influenced by Western laws.⁴⁶

The Enterprises Bankruptcy Law is one such example whereby China has learned lessons from the legislation of Western countries. The reorganisation regime in Chinese Bankruptcy law has been heavily influenced by US bankruptcy law, with Chinese legislation largely based on provisions of Chapter 11 of the US Bankruptcy Code.⁴⁷ The reorganisation system, including the DIP (debtor in possession) system, the deadline for filing reorganisation plans, the double voting mechanism, the protection of secured creditors and the compulsory approval of reorganisation plans, are all based upon the system outlined by Chapter 11 of the US Bankruptcy Code; with the Chinese system making some modifications, such as the management model of the liquidation group of the administrator and the voting effectiveness of the shareholder class

⁴⁴ Ibid s135.

⁴⁵ Ibid s138.

⁴⁶ Fei Deng, 'Legal transplant as a device of legal change in transitional economies: the case of importing common-law-style corporate fiduciary duties into contemporary China' (PhD thesis, University of Glasgow, 2021) 1.

⁴⁷ Shuguang Li, 'Bankruptcy law in China: lessons of the past twelve years' (2001)5 Harvard Asia Quarterly 1.

group.⁴⁸ The system, in this regard, is unique to China.

Furthermore, many legal scholars have acknowledged the clear superiority of the UK and the US in terms of their commercial and business legislation restating why it is so vitally important to borrow and learn from the common law principles of these jurisdictions, to fortify China's own commercial and business law reform.⁴⁹

1.5 Methodology

1.5.1 Doctrinal Legal Research

This research is primarily based upon library resources, thus the core method applied in this thesis is doctrinal research. According to Duncan and Hutchinson, doctrinal legal research provides a systematic exposition of rules governing a legal category, then analyses the relationship between these laws and regulations to explain areas of difficulty and predict future developments.⁵⁰ In this thesis, doctrinal research plays the uppermost role in the research method, running through all chapters. This methodology will be used to examine the legal systems of environmental law and bankruptcy law in China, and to analyse the financial provision development in the UK, the US and China. The aim is to assess how China's current legal framework and financial provisions protect environmental claims.

Doctrinal research analyses existing laws, related cases, and authoritative

⁴⁸ Ibid 3.

⁴⁹ Ibid, Victoria Barnes and Emily Whewell, 'English contract law moves east: legal transplants and the doctrine of misrepresentation in British consular courts' (2019)7 *The Chinese Journal of Comparative Law* 40. Percy R. Luney JR. 'Traditions and foreign influences: systems of law in China and Japan' (1989)52 *Law and Contemporary Problems* 135. Ling Zhou, 'The independent director system and its legal transplant into China' (2011)6 *International Journal of Innovation and Sustainable Development* 263.

⁵⁰ Terry Hutchinson and Nigel Duncan, 'Defining and describing what we do: Doctrinal Legal Research' (2012)17, *DEAKIN Law Review* 101.

material on a specific matter.⁵¹ In this research, legal literature is utilised to define both environmental liability and the 'polluter pays' principle. In addition, doctrinal research draws on both the law and economics literature to provide the definitions of cost internalisation and externalisation.

1.5.2 Case Study

Case studies are another important research method utilised in this research paper. A case study is a study which investigates a specific research question using a range of different forms of evidence,⁵² which have to be abstracted and collated in order to get the best possible answers to the research questions.⁵³

In-depth, multi-faceted exploration of complex issues in real-life settings is facilitated by a case study approach.⁵⁴ Yin argues that case studies can be used to explain, describe or explore events or phenomena in the daily context in which they occur.⁵⁵ In this thesis, the case study approach follows the view of Stake, whereby the case study establishes a clear view of the phenomenon under study through interpretation and description; identifying current problems with the law.⁵⁶ Cases can take the form of a qualitative study, which must be featured, bounded, coherent and sequential.⁵⁷

Case studies are adopted by this thesis in Chapters 3, 4, 5 and 6. In particular, Chapters 3, 4 and 5 use a case study approach to examine the situation of environmental liability in insolvency practices, for example, the externalisation

⁵¹ Ibid.

⁵² Bill Gillham, *Case Study Research Methods - Real World Research* (6th edn, Continuum, 2000) 1.

⁵³ Ibid 1.

⁵⁴ Sarah Crowe and others, 'The case study approach' (2011)100 *BMC Medical Research Methodology* 2 < <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-11-100#citeas>> accessed 8 August 2022.

⁵⁵ Robert K Yin, *Case study Research: Design and Methods* (4th edn, Sage 1984) 23.

⁵⁶ Robert E Stake, 'The case study method in social inquiry', in Roger Gomm, Martyn Hammersley and Peter Foster (eds), *Case Study Method: Key Issue, Key Text* (Sage, 2000) 102.

⁵⁷ Ibid.

of environmental costs exists in insolvency in different jurisdictions.

Chapter 6 uses a case study approach to describe the practice of financial assurance systems in China, the UK, and US, clarifying the limitations of financial assurance systems for internalising environmental costs and the considerations for their future establishment in China.

More specifically, Chapter 3 will analyse four cases to explain the current situation of environmental liabilities in insolvency. These cases include Shenyang Smelter Factory, Heilongjiang Heihua Co., Ltd, and two subsidiaries of Yunnan Copper. The case study in Chapter 3 is based on the law, social, political and economic contexts of China.

In Chapter 4, a number of cases will be analysed, which are British Steel, Scottish Coal Co., Ltd and Buncefield Fire. These cases will be used to examine the current state of environmental liability in UK insolvency proceedings, based on the UK Insolvency Act and the relevant environmental regime.

Chapter 5 will examine recent cases in the US, such as Chesapeake Energy Corporation, KMCO LLC, and Blackjewel Coal Company. These case studies will be based on the US Bankruptcy Code and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and then assess whether Superfund⁵⁸ can protect environmental claims in bankruptcy and analyse the externalisation of environmental costs in the bankruptcy proceedings in the US.

Lastly, Chapter 6 will present several case studies on financial assurance in different jurisdictions, such as in China, the UK and the US. The purpose of these case studies in Chapter 6 is to examine the problems of financial

⁵⁸ Superfund is the US federal environmental remediation program established by the CERCLA, which will be introduced in chapter 5.

assurance in realising the internalisation of environmental costs.

As most of the information in case studies was collected via the Internet, the issue of reliability of the information should be noted. In order to ensure that the information upon which the research is based is as reliable as possible, sources are limited to government and professional websites, news reports and legal information providers with a good reputation. Articles collected from search engines (Baidu and Google) will be critically evaluated according to author, publishing organisation or year of publication. In general, strict selection criteria will be used in the collection process.

1.5.3 Comparative Study

Comparative study is the other research method that will be used in this thesis. Comparative law is the comparison of various laws.⁵⁹ Generally, macro-comparisons concern the legal system as a whole, whereas micro-comparisons concern specific systems or specific issues.⁶⁰ Therefore, comparative law goes beyond the mere study of a foreign legal system.⁶¹

As a method in legal study, comparative law can also be a means to achieve various ends at a domestic level.⁶² Foreign laws can provide alternate models of how legal rules can be effective in solving a particular problem or pursuing a particular policy.⁶³ Comparative law is therefore an opportunity to learn from other legal systems, after which reforms can be made to domestic law.⁶⁴ When

⁵⁹ Ralf Michaels 'Comparative law' in Jurgen Basedow and others (eds), *Oxford Handbook of European Private Law* (4th edn, Oxford University Press, 2011) 1.

<https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3014&context=faculty_scholarship> accessed 8 August 2022.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Mathias Siems, *Comparative Law* (Cambridge University Press, 2014) 2.

⁶³ Ibid 4.

⁶⁴ Ibid.

a country needs to reform their existing legal regulations, foreign law can be very useful, especially for some developing and emerging countries. This research concerns how Chinese law can reduce the externalisation of environmental costs by learning lessons from the UK and the US. This research therefore addresses the issue of legal transplantation.

The UK and US are selected subjects from which to learn lessons from, for potential adoption by Chinese legislation; since both jurisdictions have far greater experience in addressing the externalisation of environmental costs in insolvency proceedings than China. However, the Chinese legal system is a socialist legal system with Chinese characteristics,⁶⁵ whereas the UK and US are both common law systems within a capitalist system. This means that any lessons that China learns from either of these jurisdictions cannot be copied directly as they exist in UK and US legislation respectively. Any law reform project must therefore consider the limitations of transplanting foreign models, as is often discussed in the legal and social policy literature.⁶⁶ Recommendations for China must take into account China's political system, socio-cultural and current legal framework, as well as suggestions for legal reform that may require legal localisation.

1.6 Originality

This thesis advances knowledge in the following ways:

Firstly, in recent years, China's economic development strategy has shifted from simply pursuing economic growth rates to balancing economic

⁶⁵ Zemin Jiang, Report at the 15th National Congress of the CPC: Hold high great banner of Deng Xiaoping theory for all-round advancement of the case of building socialism with Chinese characteristics to the 21st Century, see the English news report <https://fas.org/blogs/secretcy/2007/10/1997_report_of_the_overseas_ju/> accessed 8 August 2022.

⁶⁶ Uwe Kischel, *Comparative Law* (Oxford University Press, 2019) 58.

development with ecological and environmental protection.⁶⁷ The polluter pays principle is implemented in the tort chapter of the Civil Code and Environmental Protection Law,⁶⁸ however, most environmental costs involved are borne by society in the event of insolvency proceedings.

Current research on the externalisation of environmental costs in insolvency proceedings is limited in China. On the one hand, some environmental experts have made an effort on this issue, such as Dr Liu and Dr Lu, who have affirmed the role of financial assurance in achieving the internalisation of environmental costs and expressed an interest in the impact of insolvency on the externalisation of environmental costs.⁶⁹ However, they lack a broad and in-depth understanding of insolvent polluters in China, both in theory and in practice, so their studies lack an exploration of the issue of EBL itself.

On the other hand, some insolvency scholars have argued environmental liability in their research, such as Prof Zhang and Prof Zhu, whose research only analysed the nature of environmental liability in insolvency cases and whether polluters should be held criminally or civilly liable.⁷⁰ In the research of Prof Qu, she argued the issue of priority of environmental liability in EBL.⁷¹ In fact, the studies of these insolvency scholars only address environmental

⁶⁷ The outline of the 14th Five-Year Plan for economic and social development and long-range objectives through the year 2035 of P.R.China, chapter 1, section 1 and 2.

⁶⁸ For example, Civil Code 2021 s1229, 1234, 1235 and Environmental Protection Law 2014 s44.

⁶⁹ Jing Liu and Michael Faure, 'Risk-sharing agreements to cover environmental damage: theory and practice' (2018)18 *International Environmental Agreement: Politics, Law and Economics* 263. Mengxing Lu and Michael Faure, 'Shift in compensation for environmental damage: reflections on China's new Soil Pollution Law' (2020)23 *Asia Pacific Journal of Environmental Law* 157.

⁷⁰ Xiaoyan Zhu, *Research on the construction of environmental legal liability system of insolvent companies in China* [中国破产公司法律责任体系构建研究] (China Law Publishing House [中国法律出版社] 2012). Qinyu Zhang, 'Protection of Environmental Liabilities in Bankruptcy Companies' [破产企业环境债权的保护] (2016)2 *Politics and Laws* [政治与法律].

⁷¹ Dongmei Qu and Junpeng Qu, 'Research on the priority of environmental tort obligation in bankrupt enterprises under the background of low carbon economy' (2011)4 *Journal of Sustainable Development* 152.

issues around EBL itself, for example, from the perspective of administrative and criminal liability,⁷² which is not sufficient to address the externalisation of environmental costs. Therefore, this thesis will address this gap. This thesis is not only an insightful critique of EBL, but also an analysis of the role of financial assurance regimes in internalising environmental costs. In addition, this thesis proposes reforms to both EBL and environmental law that would maximise the internalisation of environmental costs.

Secondly, the current analysis of environmental liability in Chinese EBL is mostly focused on theoretical analysis and lacks detailed case studies.⁷³ The developed case studies featured in this thesis aim to demonstrate the externalisation of environmental costs in insolvency proceedings. Most of these cases have not been examined by other scholars, such as the Shenyang smelter factory, Heihua group, Yunnan Yongren Tuanshan, Yunnan Jinggu Mining. Furthermore, this thesis also examines some cases in other jurisdictions which have not yet been examined by other scholars, including British Steel, Chesapeake Energy, KMCO Chemical, and Blackjewel. These case studies provide a clear indication of the externalisation of environmental costs in insolvency proceedings. Meanwhile, these case studies also provide further insight into the problems of current insolvency laws in various jurisdictions and provide a visual indication of insolvency law reform.

Thirdly, financial assurance is an effective mechanism to internalise environmental costs. There is current scholarly research on financial assurance

⁷² X Zhu (n 70) 65, Q Zhang (n 70) 144. Feng Dong, Zhongqi Chen and Xiapu Guo, 'A brief of the environmental administrative responsibility of bankruptcy reorganisation enterprises' [浅析破产重组企业环境行政责任] (1997)5 *Environmental Herald* [环境导报] 45.

⁷³ In addition to the scholars mentioned above, also see Jianbo Lou, 'Introducing environmental auditing at the closure of business in China' (2014)11 *European Company Law* 125. Shaozhen Han, Wanhai You and Shijing Nan, 'Zombie firms, external support and corporate environmental responsibility: evidence from China' (2019)212 *Journal of Cleaner Production* 1499-1517.

in China.⁷⁴ Most of these studies by Chinese scholars have focused on environmental compensation systems or environmental insurance,⁷⁵ whereas foreign scholars have considered the issue of environmental costs externalisation and examined the effectiveness of financial assurance system.⁷⁶ However, the studies by foreign scholars have not considered the case of the Chinese jurisdiction due to issues concerning language and cultural barriers. This thesis contributes to the gap in financial assurance system research.

This thesis reviews all existing financial assurance instruments in China and analyses the problem of financial assurance in different jurisdictions. Lastly, this thesis also contributes to the establishment and reform of financial assurance in China.

⁷⁴ There are several Chinese scholars worth mentioning here: Dr Jingliu from Wuhan University, Dr Weiyu Wu from Shanghai University of Political Science and Law, Dr Mengxin Lu from China University of Political Science and Law, Professor Lixin Han from Dalian Maritime University.

⁷⁵ For example, Jing Liu, 'Compensating ecological damage: comparative and economic observations' (PhD thesis, Maastricht University, 2013) 10. Weiyu Wu, 'The reform of the compensation system for Ecological and environmental damage in China: natural resources, environmental enforcement, and legislation' (2020)60 *Natural Resource Journal* 63.

⁷⁶ For example, Colin Mackie and Laurel Besco 'Rethinking the function of financial assurance for the end-of-life obligations' (2020)50 *Environmental Law Reporter* 10588.

Chapter 2

Examination of Polluter Pays Principle in China

2.1 Introduction

This chapter will answer the first research question of this thesis and will explore the polluter pays principle is implemented in Chinese law. The polluter pays principle is generally accepted around the world and holds that those who produce pollution should bear the cost of managing it to prevent damage to the environment.¹ This chapter will explore whether the polluter pays principle is implemented in Chinese law and how to internalise the environmental costs under Chinese law.

This chapter consists of two main parts. The first part revolves explores the polluter pays principle from an international perspective. This part will review the history of the polluter pays principle, consider issues relating to the identification of polluters, and examine the strict liability under the polluter pays principle. The second part will analyse the polluter pays principle in China, including reflections on the polluter pays principle in Chinese law, and the problems of enforcement in Chinese environmental law.

2.2 History of Polluter Pays Principle

The polluter pays principle is a normative doctrine of environmental law.² Although the precise definition of the doctrine is currently vague, its core derives

¹ The London School of Economics and Political Science 'What is the polluter pays principle' (LSE, 18 July 2022) <<https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-polluter-pays-principle/>> accessed 22 August 2022.

² Eric Thomas Larson, 'Why environmental liability regimes in the United States, the European Community, and Japan have grown synonymous with the polluter pays principle' (2005)38 *Vanderbilt Journal of Transitional Law* 545.

from a basic, equitable proposition.³ This proposition is that the parties that generate pollution should bear the environmental costs, rather than the government.⁴ The polluter pays principle was first mentioned in law by the Organisation for Economic Co-operation and Development (OECD) in 1972.⁵ This principle is used for *allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment*.⁶ Early formulations of the principle did not require polluters to internalise all environmental costs, only the costs of 'ensuring that the environment is in an acceptable state'.⁷ This acceptable state was explained as 'the cost of these measure should be reflected in the costs of goods and services which cause pollution in production and/or consumption'.⁸ However, the formulation of the polluter pays principle has changed over time, from 'ensuring that the environment is in an acceptable state' to the full internalisation of the cost of pollution activities.⁹

At an international level, for many years, only the OECD recommendations formally documented this principle. However, from the 1990s onwards it appeared in a number of international documents dealing with issues related to environmental law. For instance, the Rio Declaration on Environment and Development in 1992 was the first to mention the *internalisation* of

³ Jonathan Nash, 'Too much market? Conflict between tradable pollution allowances and the polluter pays principle' (2000)24 *The Harvard Environmental Law Review* 465.

⁴ *Ibid* 466.

⁵ OECD, OECD Council Recommendation on Guiding Principles concerning International Aspects of Environmental Policies C(72) 128 (final), (1972).

⁶ *Ibid* 4.

⁷ *ibid*, Annex A (a) (4) and OECD, OECD Council Recommendation on the Implementation of the polluter-pays principle C(74) 223 (final), (1974).

⁸ *Ibid*.

⁹ OECD, OECD Council Recommendation on the Application of the Polluter-pays Principle to Accidental Pollution C(89) 88 (final), (1989); OECD, OECD Council Recommendation on the Uses of Economic Instruments in Environmental Policy C (90) 177 (final), (1991); Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (OUP 2002).

environmental costs, 'National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments... the polluter should, in principle, bear the cost of pollution'.¹⁰ However, the polluter pays principle is expressed in a particularly soft formulation in international documents, which do not contain state obligations but are premised on the public interest, trade and investment.¹¹ On the one hand, the polluter pays principle has been described as a general principle of international environmental law.¹² On the other hand, however, some scholars are sceptical because most of the binding provisions incorporated into the polluter pays principle are contained in instruments at the regional level and can therefore hardly be called general principles of international environmental law.¹³

At a regional level, the polluter pays principle is well developed in the European Union (EU) region. The principle was first introduced in the Environmental Action Programme in 1973 and its application was set out in Recommendation 75/436.¹⁴ The polluter pays principle now appears in Article 191(2) of the Treaty on the Functioning of the European Union, which puts the EU institutions under an obligation to base their environmental policies upon the polluter pays principle. Meanwhile, the polluter pays principle in the EU is also seen as a way of preventing distortions in competition, ensuring a level playing field and

¹⁰ Report of the UN Conference on Environment and Development (Rio de Janeiro, 3–14 June 1992) A/CONF.151/26 (vol I) 12 August 1992, Annex 1, Principle 16.

¹¹ Julie Adshead, 'The application and development of the polluter pays principle across jurisdictions in liability for marine oil pollution: the Tale of the 'Erika' and the 'Prestige' (2018)30 *Journal of Environmental Law* 428.

¹² Protocol on Preparedness, Response, and Co-Operation to Pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS Protocol, IMO, London) adopted 15 March 2000.

¹³ Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (4th edn, CUP 2018) 240.

¹⁴ 75/436/Euratom, ECSC, EEC: Council Recommendation of 3 March 1975 regarding cost allocation and action by public authorities on environmental matters [1975] OJ L194/1.

achieving a fully functioning single market.¹⁵ This once again reflects the fact that the early polluter pays principle was built on economic theory.¹⁶ However, as the principle has developed, it has taken on redistributive, preventive and restorative characteristics.¹⁷ Instead of focusing solely on trade distortions, the polluter pays principle began to be linked to incentives for environmental improvements.¹⁸ The role of the polluter pays principle as a complement to the precautionary principle has been recognised.¹⁹ In the EU, for example, the principle has developed to support compensatory and restorative actions and the financing of pollution costs for public authorities.²⁰

2.3 Who is the Polluter?

Generally, an environmental pollution case is often complex, and a key issue is how to distinguish the liability of those responsible in order to satisfy the polluter pays principle.²¹ There are cases where no distinction will be made in terms of environmental liability and only a single polluter will be responsible for full responsibilities. This theory was introduced in EU Recommendation 75/436,

In the case of pollution chains, costs could be charged at the point at which the number of economic operators is least, and control is easiest or else at the point where the most effective contribution is made towards improving the environment, and where distortions to

¹⁵ Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (3rd edn, OUP 2009) 92.

¹⁶ J Adshead (N 11) 428.

¹⁷ Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (OUP 2002) 35-37.

¹⁸ J Adshead (N 11) 428.

¹⁹ Ibid.

²⁰ Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage [2004] OJ L143/56 (The Environmental Liability Directive).

²¹ E T Larson (n 2) 548.

*competition are avoided.*²²

This approach has been criticised because the environmental liability is not borne by the polluters who cause the most damage, but those who are the richest.²³ Similarly, this approach could easily lead to the environmental liability being transferred to someone other than the polluter.²⁴ For example, in some marine pollution cases, shipowners are all liable in marine pollution cases, while in some cases fault may lie with the charterer of the vessel or goods owner. Similarly, under a joint and several liability regime, a disproportionate level of liability may be borne by one of a number of polluters.²⁵ However, the ideal allocation of liability for environmental legal experts is for each responsible party to be liable according to its contribution to the pollution.²⁶ In practice, however, this ideal allocation is difficult to achieve, for example by determining the proportion of pollution contribution, and then recovering this from each of the polluters, which is particularly difficult.²⁷ For the polluter pays principle, externalisation of environmental costs can be effectively reduced if only one polluter is required to pay. Conversely, if recovery is based on the contribution of pollution, this can lead to most environmental damage not being repaired in a timely manner, making it hard to internalise environmental costs.²⁸

Furthermore, in addition to the parties directly involved in the pollution cases, there are also parties who are responsible for their activities at the industrial level.²⁹ For example, in waste transport and storage, if the contamination

²² 5/436/Euratom, ECSC, EEC: Council Recommendation of 3 March 1975 regarding cost allocation and action by public authorities on environmental matters [1975] OJ L194/1 Annex, art 3.

²³ J Adshead (N 11) 429.

²⁴ Ibid.

²⁵ Ibid 430.

²⁶ Volker Mauerhofer, Klaus Hubacek and Alastor Coleby, 'From polluter pays principle to provider gets: distribution of rights and costs under payments for ecosystem services' (2013)18 Ecology & Society 41.

²⁷ J Adshead (N 11) 430.

²⁸ Ibid.

²⁹ Ibid.

occurs in transport, then the transporter will be recognised as the polluter and the producer will not be responsible for pollution. In this kind of situation, the producer could then set up a shell company as a waste transport business, so that the producer would not be required to bear environmental liability if the pollution occurred in transport.³⁰ Based on this situation, the European Court of Justice has given the answer as a reference from the case *Commune De Mesquer v Total France SA*. This case concerned an oil spill at sea and whether the producer or the transporter was liable. The ECJ has held on the basis of the polluter pays principle, that a producer can only be held liable if it has 'contributed by his conduct to the risk that the pollution caused by the shipwreck will occur.'³¹ The reason is convincing. Liability for damage caused by the disposal of waste cannot be attributed to the transporter alone and, in general, the owner of the vehicle is usually more likely to be insolvent than the company that hired it.³² In this kind of case, both the transporter and producer should be recognised as polluters.

2.4 Strict Liability under Polluter Pays Principle

One of the discussions surrounding the polluter pays principle revolves around whether environmental liability should be strict. One interpretation is that only the person or entity responsible for the pollution should pay, i.e. only the operator who is at fault in the pollution incident should be liable.³³ This argument can be accepted when there is only a single polluter. The reason for this is that it is a simple case situation, and it is easy to internalise costs in

³⁰ Jose Juste-Ruiz, 'Compensation for Pollution Damage Caused by Oil Tanker Accidents: From "Erika" to "Prestige"' (2010) 1 *Agean Review of the Law of the Sea and Maritime Law* 38.

³¹ *Case C-106/89 Marleasing* [1990] ECR I-4135, para 8, and *Case C-129/96 Inter-Environnement Wallonie* [1997] ECR I-7411, para 40.

³² *Ibid* para 78.

³³ E T Larson (n 2) 549.

theory.³⁴ However, if the pollution case is complex, proving liability at fault is very time-consuming and difficult, which may lead to problems in the allocation of liability and thus to under-compensation for damages and a failure to internalise costs.³⁵

Furthermore, there is the other interpretation that operators who engage in high-risk activities should bear the risk of liability, regardless of fault.³⁶ It has been argued that this approach shifts the full cost of the damage to the person responsible for the damage and that strict liability regimes are more likely to internalise environmental costs.³⁷

The above debate on the polluter pays principle exposes some of the ambiguities of the principle. The polluter pays principle has also been interpreted differently in current developments around the world. For example, the principle is moving internationally towards a complete internalisation of the costs of pollution.³⁸ However, the polluter pays principle in China does not seem to be in step with international developments and the following study will examine how the polluter pays principle has been implemented in Chinese environmental legislation.

2.5 Polluter pays Principe in China

Although the polluter pays principle is not explicitly introduced in Chinese environmental laws, it has been reflected in several pieces of environmental legislation.

³⁴ In this kind of case, if the polluter has enough money to pay for environmental costs, the internalisation of environmental costs can be realised.

³⁵ J Adshead (N 11) 430.

³⁶ E T Larson (n 2) 550.

³⁷ N Sadeleer (n 17) 52.

³⁸ E T Larson (n 2) 550, J Adshead (N 11) 430, Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage [2004] OJ L143/56 (The Environmental Liability Directive).

Firstly, high-risk polluters are charged for pollutant discharge fees under the Environmental Protection Law 2014. Enterprises shall comply with national and local pollutant discharge standards and the total emission control targets for major pollutants.³⁹ After obtaining a pollutant discharge permit, an enterprise should accept responsibility for its polluting behaviour.⁴⁰

Further to this, the Soil Pollution Prevention and Control Law passed in August 2018, has become a milestone for land management and groundwater pollution management in China. The Soil Pollution Prevention and Control Law reflects the polluter pays principle, prompting enterprises to proactively take responsibility for any potential pollution emitted during the course of making business decisions, investments and mergers and acquisitions.⁴¹ Article 3 of the Soil Pollution Prevention and Control Law emphasises the absolute responsibility of polluters to bear the costs of dealing with land pollution and to develop specific plans to remediate contaminated land.

Meanwhile, the environmental protection tax (EPT) has replaced the sewage discharge permission system (SDPS), which is seen by some scholars as an effort by China to further promote the polluter pays principle.⁴² Although the tax rates and tax bases under the new system are similar to those under the old system, the impact is not significant. However, it may result in more stringent scrutiny of companies that emit the pollutants in question.⁴³ The EPT sets out

³⁹ Environmental Protection Law 2014 s44.

⁴⁰ Measures for Pollutant Discharge Permitting Administration (For Trial Implementation) 2019 Amendment s56-58.

⁴¹ Soil Pollution Prevention and Control Law 2018 s35.

⁴² Evan Hamman and others, 'The polluter pays principle in Chinese Environmental Law' (2018)2 Chinese Journal of Environmental Law 69-70.

⁴³ Paul A Barresi, 'The polluter pays principle as an instrument of municipal and global environmental governance in climate change mitigation law: lessons from China, India, and the United States' (2020)10 Climate Law 60.

the taxable base and the range of tax rates that apply.⁴⁴ Compare to the SDPS, the EPT is a more formal legislative process, requiring approval of rates by local People's Congresses and registration by the National People's Congress.⁴⁵ The administration and collection of the EPT is carried out by local tax authorities. Under the EPT Law, local environmental protection authorities monitor pollution levels and provide data and technical support to local tax authorities through a dedicated information exchange platform.⁴⁶

Each of these laws contributes to the establishment of the polluter pays principle in China. If the damage is caused by environmental pollution, the polluter is liable in tort, and the specific types and scope of environmental liability are set out in detail in the Civil Code.⁴⁷

Tort liability for environmental pollution has been further developed in the Civil Code. First and foremost, the tort liability chapter in the Civil Code stipulated the polluter's responsibility for ecological environment restoration. The polluter shall be liable for restoration within a limited period of time.⁴⁸ If the polluter fails to restore within the time limit, the regulator may require a third party to do so at the polluter's expense.⁴⁹ Furthermore, the Civil Code specifies the scope of compensation for environmental pollution, including the cost of cleaning up the pollution and the cost of restoration, as well as the expenses incurred for

⁴⁴ Jian Wu and Alon Tal, 'From pollution charge to environmental protection tax: a comparative analysis of the potential and limitations of China's new environmental policy initiative' (2018)20 *Journal of Comparative Policy Analysis: Research and Practice* 229.

⁴⁵ Because there is no national legislation on SDPS, all regulations are set out in local rules. This has resulted in local regulators enforcing regulations that are not standardised and are not strict on polluting companies.

⁴⁶ J Wu and A Tal (n 44) 232.

⁴⁷ These regulations used to regulate on Tort Liability Law, but the Tort Liability Law has been accepted into Civil Code 2020.

⁴⁸ Tort Liability Chapter Civil Code 2020 s1229.

⁴⁹ *Ibid* s1234.

preventing any damage from occurring and subsequently expanding.⁵⁰

In addition to these general pieces of legislation, there are also specific environmental statutes that include provisions for environmental liability, for example, the Water Pollution Prevention Act,⁵¹ the Air Pollution Prevention Act⁵² and the Solid Waste Pollution Prevention Act.⁵³ These acts explicitly state that polluters should be held responsible for their polluting activity, though there are no relevant specific provisions, such as those determining damages and liability.⁵⁴

With respect to the soil and water contamination issue under consideration, China currently lacks specific regulations on the matter, and relies only on general rules laid out by the Civil Code. Additionally, regulations which relate to specific clean-up and restoration are fragmented in nature.⁵⁵ Most of these regulations are documents issued by local governments and are oftentimes too abstract to address specific issues in practice.⁵⁶

Generally speaking, the polluter pays principle is reflected in China's environmental legislation, but it is not introduced explicitly rather by implication. Environmental protection tax is generally recognised by academics as the polluter pays principle.⁵⁷ However, some scholars are sceptical about whether the tax will realise the Chinese version of the polluter pays principle.⁵⁸ For

⁵⁰ Ibid s1234 1235.

⁵¹ Water Pollution Prevention Act 2008 s85.

⁵² Air Pollution Prevention Act 2000 s62.

⁵³ Solid Waste Pollution Prevention Act 2004 s85.

⁵⁴ Jing Liu, 'Compensating Ecological Damage: Comparative and Economic Observation' (PhD Thesis, Maastricht University 2013) 347.

⁵⁵ Dekui Yan, 'The Formation of Chinese Environmental Legislations and its Systematic Construction' (2020)26 Journal of Chongqing University Social Science Edition 159.

⁵⁶ J Liu (n 54) 347.

⁵⁷ Alexander Zahar, 'Implementation of the polluter pays principle in China' (2018)27 Review of European, Comparative & International Environmental Law 296. J Wu and A Tal, (n 44) 224.

⁵⁸ P Barresi (n 43) 61.

instance, the EPT Law authorises each province to increase the tax rate to no more than 10 times the base rate and to increase the types of taxable pollutants, depending on social, economic, environmental and development conditions.⁵⁹ This different strategy may create a risk that some regions will choose to offer more lenient standards and lower tax rates, creating pollution haven.⁶⁰

Furthermore, the expression of the polluter pays principle in China's environmental law is implicit, so there is a certain gap with this principle in other jurisdictions. For example, some common pollution situations do not reflect the polluter pays principle, such as some contaminated lands and brownfield lands. In other jurisdictions, such cases have been introduced into their national laws, and the polluter pays principle has been explicitly emphasised, meaning that the polluter is subject to remediation obligations.⁶¹ However, in China, public funds still play a dominant role in such remediation cases.⁶²

2.6 The problem of Chinese environmental legislation

First, the courts play a decisive role in environmental cases. Regulators are given the power by law to recover the cost of environmental liabilities, for example, regulators can require polluters to pay the cost of environmental clean-up and restoration and the cost for pollution prevention.⁶³ However, all cost recovery cases must be accepted by the court. In accordance with the Chinese court system, the filing division decides whether or not to accept the case.⁶⁴ On January 9, 2013, Handan Winter Swimming Associate in Hebei Province officially filed a lawsuit against Shanxi Tianji Coal Chemical Group.

⁵⁹ J Wu and A Tal (n 44) 232.

⁶⁰ Ibid 230.

⁶¹ For example, Environmental Liability Directive 204/35/CE (2).

⁶² Yiming Sun and others, 'Redevelopment of urban brownfield sites in China: motivation, history, policies and improved management' (2022)1 *Eco-Environment & Health* 64.

⁶³ Tort Liability chapter civil code 2011 s1235.

⁶⁴ Civil Procedure Law 1991 as amended 2021 s112.

The reason is that an aniline leakage (a compound used in chemical manufacturing) occurred in the aniline tank area of Shanxi Tianji Coal Chemical Group caused by the rupture of the conveying hose, which resulted in the pollutants (the aniline in question) flowing directly into the Zhuzhang River. The pollution affected Handan City in Hebei Province and Anyang City in Henan Province, in all, affecting areas up to 80 kilometres from the site of the incident, across three provinces. However, 24 hours after the filing of the complaint, the case was withdrawn without success.⁶⁵

Another example is that of an explosion which occurred at a petrochemical plant in Jilin in 2005, due to an operational error. The explosion led to direct economic losses amounting to RMB 1.5 bn (£186 million) as well as huge ecological damage. Following this incident, some experts filed a civil public interest lawsuit with the Heilongjiang High People's Court, naming nature (Fish, River, and Island) as a co-plaintiff. Unfortunately, under Chinese law, nature had no standing and the experts did not suffer direct damages.⁶⁶

In other jurisdictions, however, there are relevant cases that have been upheld by court judgement. For instance, the *Sierra Club v. Morton* case is a US Supreme Court case on the issue of standing under the Administrative Procedure Act. The Court rejected the Sierra Club's claim to block the development of a ski resort at the Mineral King Valley. Justice William O. Douglas wrote a dissenting opinion in which he argued that in response to ecological concerns, environmental objects such as valleys, alpiners, rivers, and

⁶⁵ Liu Yang [杨柳], 'Handan Winter Swimming Association files public interest litigation' [邯郸冬泳协会提起公益诉讼] (China's Daily [中国日报] 12 January 2013) <http://covid-19.chinadaily.com.cn/hqgj/jryw/2013-01-12/content_8011587.html> accessed 3 March 2022.

⁶⁶ Time Business Daily [时代商报], 'Teachers and students of Peking University sued CNPC for 10 billion yuan (£1.2 billion) for Songhua River, but the court did not file a case' [北大6师生替松花江起诉中石油索赔金额高达100亿元 法院并未立案] (Time Business Daily,[时代商报] 26 December 2014) <<http://news.sina.com.cn/o/2005-12-22/05307769580s.shtml>> accessed 18 March 2022.

lakes should be granted legal personhood by the public.⁶⁷ However, this kind of opinion has not been accepted in China, so the outcome of the case Songhua River⁶⁸ remained unchanged and the case was unsuccessful in China.

All in all, the court in China holds great power in deciding whether or not an environmental pollution case is filed, which in turn affects the realisation of the regulator's power to some extent, thus making it difficult to recover the cost of restoration.

Secondly, negligence on the part of the regulator has led to difficulties in recovering environmental costs. In China, environmental laws do not impose mandatory obligations on regulators, such as regularly reviewing the polluting status of operators. As a result, in some cases, regulators' negligence resulted in a failure by polluters to pay for their environmental costs.

One such example is that of *the People's Procuratorate of Fenggang County, Guizhou Province v. Natural Resources Bureau of Fenggang County* (Environmental Bureau). Fenggang County Western Cement Company Limited (Western Ltd) had obtained a mining license but had not carried out environmental protection, treatment and restoration work in accordance with the 'Mine Geological Environmental Protection and Treatment and Restoration Program (Guizhou Province)'; ultimately resulting in serious damage to land and vegetation resources in the mine extraction area.⁶⁹ Although the Environmental Bureau received the proposal in writing, it failed to perform its duties in strict accordance with the law, resulting in the continued infringement

⁶⁷ *Sierra Club v. Morton* 405 US 727 (1972).

⁶⁸ See case in the footnote 66.

⁶⁹ High People's Court, Guizhou Province, '2020-2021 Ten typical cases of environmental resources trials: Fenggang County People's Procuratorate of Guizhou Province v. Fenggang County Natural Resources Bureau for negligence in performing its administrative public interest litigation on mine restoration supervision'.

of national and social public interests.⁷⁰ The local people's court held in the first instance that the Bureau, as the administrative department in charge of natural resources, was responsible for supervising and managing the geological environment protection work of the mines within its jurisdiction, and the environmental violations of the company in accordance with the law.⁷¹ After the Procuratorate issued recommendations, the Bureau failed to take effective supervisory measures to urge the company to complete the geological environment restoration, which was an act of negligence in performing its statutory supervisory and management duties.⁷²

2.7 Conclusion

The polluter pays principle was introduced in a soft way in international documents that were initially intended to internalise environmental costs. This principle has been implemented in many jurisdictions. However, this seems to be a simple principle that is not clearly defined in complex environmental cases. The polluter pays principle is developing, although the direction of development is different in different countries. In some jurisdictions, however, the polluter pays principle is clearly expected to expand the scope of application of the principle. In some jurisprudence, judges are looking to internalise environmental costs by making more responsible parties liable.

In China, the polluter pays principle was introduced into the Chinese legal system, but not in an explicit way. Generally, the polluter pays principle has been expressed in Chinese environmental law and tort liability in the Civil Code. However, the polluter pays principle is expressed implicitly in China, so this makes it difficult to truly internalise the environmental costs in Chinese

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Ibid.

environmental legislation.

Finally, there are a number of general problems following a review of Chinese environmental legislation. For example, the courts play a decisive role in environmental cases, but in some cases do not play a positive role, while negligence on the part of the regulator has led to difficulties in recovering environmental costs. Therefore, if environmental costs are to be internalised under Chinese law, these issues should be addressed first. In the next chapter, will examine how Chinese law treats environmental liabilities in insolvency proceedings.

Chapter 3

Environmental Liabilities in Chinese Bankruptcy Law

3.1 Introduction

This chapter will answer the second research question. In this chapter, the way Chinese law addresses environmental liabilities in insolvency proceedings will be explored. Under relevant Chinese legislation, polluters are liable for environmental costs, including remediation, clean-up, restoration. Nevertheless, the relevant environmental liability remedies are missing from the Chinese bankruptcy law.

This chapter will include four parts. Firstly, the China Enterprises Bankruptcy Law 2006 will be introduced, then environmental liabilities in insolvency cases will be analysed through 4 case studies. The third part will analyse the current issues existing in Chinese bankruptcy Law. The last part will be a summary for this chapter.

3.2 The Main Features of the China Enterprises Bankruptcy Law 2006

3.2.1 The Advances of the EBL 2006

The current bankruptcy law, China Enterprise Bankruptcy Law 2006, was enacted in 2006, taking effect on 1st June 2007. Compared with the previous bankruptcy law, China Enterprise Bankruptcy Law 1986 (For Trial Implementation) (the EBL 1986), the EBL 2006 is more comprehensive and sophisticated. The EBL 1986 consists of only 6 chapters and 43 provisions, which primary deal with the insolvency of state-owned enterprises. By contrast, the EBL 2006 is more inclusive and upholds many contemporary insolvency principles.

First, the EBL 2006 applies to a wider range of business entities. The old EBL

1986 can only be used by state-owned enterprises, whereas the new EBL 2006 is open to almost all types of enterprises, including state-owned and private companies. Article 2 of the EBL 2006 states that 'where an enterprise with independent legal personality fails to pay its debts that are due, or where such an enterprise's liabilities exceed its assets, it may be liquidated according to the relevant provisions of this law'.¹ This means that the EBL 2006 is intended to create an equal access to bankruptcy law for all enterprises.

Second, the EBL 2006 establishes, for the first time in China, the profession of insolvency practitioners. Under the EBL 1986, it was routinely a government-organised liquidating committee full of officials serving as the liquidator in the insolvency of state-owned enterprises. Therefore, there is little room for professionals, like accountants and lawyers, to play a role. The government involvement in the insolvency of state-owned enterprises was criticised for violating market norms.² To build a market-based corporate bankruptcy system, the EBL 2006 relies on independent and qualified insolvency practitioners to manage the estate of bankrupt companies.³ Under the EBL 2006, many law and accounting firms have been qualified to practise corporate insolvency.⁴ However, the Article 24 of EBL 2006 still retains the liquidation committee organised by the government, as well as qualified insolvency practitioners, who will be appointed as insolvency representatives. Although lawmakers aim at a committee formed by the government to solve the issue of insolvency of state-owned enterprises, this is not clearly defined in EBL 2006, and some scholars concern that it may lead to confusion or abuse in practices.⁵

¹ PRC Enterprises Bankruptcy Law 2006 s2.

² Charles D Booth, 'The 2006 Enterprises Bankruptcy Law: The Wait is Finally Over' (2008)20 Singapore Academy of Law Journal 282.

³ Zinian Zhang, 'Resolving corporate insolvencies in China: the gap between law and reality' (2020)27 University of Miami International and Comparative Law Review 371.

⁴ PRC Enterprises Bankruptcy Law 2006 s24.

⁵ Z Zhang (n 3) 378.

Third, the EBL 2006 embraces international best practice by promoting corporate rescues. Chapter 8 of the EBL 2006 specifies how a corporate reorganisation/rescue procedure can be conducted to avoid devastating company liquidations.⁶ Reorganisation means that the insolvent debtor does not need to enter into the liquidation proceedings; on the contrary, a rescue plan will be pursued so as to revive a beleaguered company.⁷ This rescue mechanism is under the guidance of the court and is designed to ensure that the debtor and its creditors reach an agreement on the reorganisation plan. This means that the bankruptcy law not only facilitates companies to exit the market but also to prevent viable companies from being unnecessarily liquidated. The reorganisation mechanisms give an opportunity to financially insolvent but economically viable companies to seek rehabilitation.⁸

Fourth, the EBL 2006 sets up the clear rules to respect and honour securities. Under the EBL 1986, employee claims trump securities.⁹ And this inevitably harms the interests of secured creditors, most of them banks, and is not in line with the trend of international bankruptcy law. The new EBL 2006 gives priority to secured claims in insolvency proceedings: secured assets must be used to pay secured creditors first, and if there is a balance after fully paying secured creditors, the balance can go to the general estate of the company which is to meet the claims of all unsecured creditors, including employees.¹⁰ Especially for Chinese banks, they are the major creditors for Chinese companies.¹¹ The bank charges the company's assets as security and then provides the loan. If

⁶ Jan Adriaanse, 'The Uneasy Case for Bankruptcy Legislation and Business Rescue' (2014)2 Nottingham Insolvency and Business Law e-Journal 119.

⁷ Emily Lee, 'The reorganisation process under China's Corporate Bankruptcy System' (2011)45 The International Lawyer 940.

⁸ Ibid 941.

⁹ China's Enterprises Bankruptcy Law (trial) 1986 s37.

¹⁰ PRC Enterprises Bankruptcy Law 2006 s109.

¹¹ Chuyi Wei and Yongwei Chen, 'The predicament of bank creditors in Chinese bankruptcy and the way out' (2018)27 International Insolvency Review 110.

secured creditors are not protected in the event of insolvency, it means that these losses are passed on to the bank.¹² Obviously, the Chinese legislators have recognised the importance of securities to support the sustainability of China's banking sector.¹³

3.2.2 The Rescue Procedure: Reorganisation

Reorganisation is the main rescue procedure under the EBL 2006 Chapter 8. According to the provisions of the bankruptcy law, the debtor or its creditor may file directly to the court for reorganisation.¹⁴ To promote more rescues, even if there is an involuntary liquidation, the company or its shareholders¹⁵ can request the court to convert it into a reorganisation procedure.¹⁶ When the applicant submits an application for reorganisation to a court of competent jurisdiction, the court may approve the application for reorganisation and appoint an administrator to supervise reorganisation.¹⁷ The court will then notify all creditors. At the same time, the court informs the creditors of the deadline of submitting claims and of the first creditor meeting issues.¹⁸ This provision demonstrates how bankruptcy law protects the equality of creditors.¹⁹ Creditors shall declare their claims to the administrator, who shall examine the claims upon receipt of the declaration materials and submit them to the first creditors' meeting for verification.²⁰ After the examination of the claims, the debtor or

¹² Ibid 128.

¹³ Emily Lee and Karen Ho, 'China's new enterprises bankruptcy law- a great leap forward, but just how far' (2010)19 *INSOL International Insolvency Review* 170.

¹⁴ PRC Enterprises Bankruptcy Law 2006 s70.

¹⁵ Its capital contributor whose capital contribution makes up 1/10 or more of the debtor's registered capital.

¹⁶ PRC Enterprises Bankruptcy Law 2006 s70.

¹⁷ Ibid s22.

¹⁸ Ibid s14.

¹⁹ Thomas Roman, 'The Conceptual Structure of China's New Corporate Bankruptcy Law' in Yongqian Xu, Haizheng Zhang and Rebecca Parry (eds) in *China's New Enterprises Bankruptcy Law* (Routledge 2020) 41.

²⁰ PRC Enterprises Bankruptcy Law 2006 s57 58.

administrator will begin to formulate a reorganisation plan.²¹

Generally, during the preparation of the reorganisation plan, the debtor may continue to operate and manage the property and prepare a draft reorganisation plan under the supervision of the administrator.²² The administrator may also carry out the entire process.²³ The draft reorganisation plan should be submitted to the court within six months, and creditors shall vote on whether or not to approve it at the creditors' meeting.²⁴ If the reorganization plan has been voted down by creditors, the debtor or the administrator may still file to the court for a cram-down approval.²⁵ When the reorganisation plan is approved, the debtor shall implement the plan under the supervision of the administrator.²⁶ In the event that the reorganization plan is rejected by both the creditors and the court or that the company's businesses deteriorate further during the implementation of an approved reorganisation plan, the rescue procedure may be terminated, with the company placed into liquidation eventually.²⁷

3.2.3 Liquidation

Liquidation provides an orderly route for failed companies to exit the market so as to protect a wide range of stakeholders, such as creditors and employees.²⁸ If the reorganisation of the company fails, the court declares the debtor insolvent in accordance with the provisions of the bankruptcy law.²⁹ The court

²¹ Ibid s80.

²² Ibid s73.

²³ Ibid s74.

²⁴ Ibid s79.

²⁵ Ibid s79.

²⁶ Ibid s94.

²⁷ Ibid s93.

²⁸ Shleifer Andrei and Robert W. Vishny 'Liquidation Values and Debt Capacity: A Market Equilibrium Approach' (1992)47 The Journal of Finance 1346.

²⁹ PRC Enterprises Bankruptcy Law 2006 s107.

shall make a public announcement and notify the relevant creditors and administrator within the prescribed time.³⁰ In addition, the court shall appoint the insolvency administrator, and all creditors will declare their claims to the administrator at this time.³¹ Third, the administrator will fully take over the insolvent enterprise, and be responsible for the liquidation, valuation, disposal and distribution of the insolvent property under the supervision of the court.³² Fourth, the administrator will prepare a plan for the distribution of the insolvency estate and submit it to the creditors' meeting for discussion.³³ If the plan passes the creditors' meeting, it will be submitted to the court for approval. Lastly, the administrator will dispose of and distribute the insolvency property according to the distribution plan.³⁴ This marks the end of the insolvency proceedings where the company officially withdraws from the market.

To sum up, EBL 2006 is a modern bankruptcy law and established a bankruptcy legal framework in China.³⁵ However, the EBL 2006 is not suited to claims for environmental liability. In the liquidation procedure, the provisions of the EBL 2006 focus more on traditional debts.³⁶ Environmental claims are not provided for in this bankruptcy law. This undoubtedly increases the difficult of environmental liabilities claims in insolvency cases.³⁷ Furthermore, the EBL 2006 provides for a new order of distribution and confirms that priority claims are in Articles 43 and 113.³⁸ However, the environmental liability is not

³⁰ Ibid s107.

³¹ Ibid s22.

³² Ibid s22.

³³ Ibid s111.

³⁴ Ibid s116.

³⁵ Z Zhang (n 3) 380.

³⁶ For example, section 8, 19, 20, 38, 43, 113 of Enterprises Bankruptcy Law 2006.

³⁷ Xiaoyan Zhu, *Research on the construction of environmental legal liability system of insolvent companies in China* [中国破产公司法律责任体系构建研究] (China Law Publishing House [中国法律出版社] 2012) 65.

³⁸ Article 43: The expenses for bankruptcy proceedings and the debts incurred for the common good of

mentioned in the priority claims, which means it should be classified as general claims. Therefore, the environmental liability of insolvent polluters has become an issue because the provisions on environmental liabilities in the EBL 2006 are blank.³⁹ It will result that the environmental liability of insolvent polluters is ignored and transferred to public funds.⁴⁰

3.3 Case Study

EBL 2006 for China was a milestone in legislation, which established a market-based corporate insolvency profession and for the first time, mentioned cross-border insolvencies. China promulgated the modern EBL 2006 in order to provide an orderly exit for bankrupt enterprises and to protect creditors.⁴¹ From this point of view, the promulgation of EBL 2006 was undoubtedly successful.⁴² However, in the insolvency practices in the past decade, a number of problems have emerged and these issues have exposed defects within the EBL 2006. The environmental liability of insolvent polluters is one such defect.

3.3.1 Shenyang Smelter Factory

Shenyang Smelter was declared insolvent in 2000 and was the first state-owned enterprise in China to go insolvent due to environmental problems.⁴³ In the past, Shenyang Smelter accounted for one-tenth of China's total output of

creditors shall be paid off with the debtor's property at any time. Article 113: The bankruptcy property shall, after the expenses for bankruptcy proceedings are defrayed and the debts incurred for the common good of creditors are repaid first, be liquidated according to the following order: (1) the wages, (2) the social insurance and the taxes and (3) the common bankruptcy claims.

³⁹ X Zhu (n 37) 61.

⁴⁰ Ibid

⁴¹ Ravi Bendapudi, 'People's Republic of China Bankruptcy Law' (2008)6 Santa Clara Journal of International Law 206.

⁴² Ibid 209.

⁴³ Bin LI, 'Bankruptcy of Shenyang Smelter'[沈阳冶炼厂破产了] *Shenyang Evening News* [沈阳晚报] (Shenyang, 1st Sep.2000). Songlin YU and others 'Current situation evaluation and pollution control measures of soil pollution in the main plant area of Shenyang Smelter' [沈阳冶炼厂主厂区土壤污染现状评价及污染控制措施] (2005)06 Environmental Protection Science [环境保护科学] 65.

non-ferrous metals.⁴⁴ Shenyang Smelter has a high output of gold and silver, and Shenyang Smelter became the production base of gold and silver in China.⁴⁵ Shenyang Smelter has built a complete heavy metal processing system, including copper, lead, zinc, gold and silver, sulphuric acid and high purity metal semiconductor materials, which together form a large and comprehensive heavy non-ferrous metal smelting enterprise.⁴⁶ These prominent achievements have also produced a very serious pollution problem, however. A significant problem relates to exhaust fumes. According to relevant statistics, Shenyang Smelter emits more than 2000 tons of dust in the air every year.⁴⁷ In these fumes, the average concentration of sulphur dioxide in the atmosphere around the factory is 1 to 4 times higher than the national standard, and the content of lead exceeds the standard by 150 times.⁴⁸ Furthermore, Shenyang Smelter releases 26,000 to 27,000 tons of sewage every day, and more than 370 tons of heavy metals are discharged from sewage each year.⁴⁹ Lastly, waste residue pollution is also an important pollutant arising from the business of Shenyang Smelter. Shenyang Smelter produces 260,000 tons of waste residue every year.⁵⁰ This waste seriously pollutes the surrounding land and agriculture.⁵¹

After the 1980s, although Shenyang Smelter introduced some measures to reduce environmental pollution, the effect of these measures is not obvious for

⁴⁴ Liaoning Province Archives [辽宁省档案馆], 'The first large-scale Comprehensive Nonferrous Metals smelter to resume Construction in New China-the first Series of New China Industry' [新中国第一座大型综合有色金属冶炼厂复工-新中国工业的第一季] (2017)24 Lantai World [兰台世界] 2.

⁴⁵ Ibid 2.

⁴⁶ Ibid 4.

⁴⁷ Fu Jin, 'suggestion on solving the pollution problem of Shenyang Smelter'[解决沈阳冶炼厂污染问题的建议] (1998)03 Environmental Science [环境科学] 48.

⁴⁸ Chuntai CHEN [陈春台], 'Prevention and control of environmental pollution in Shenyang Smelter' [沈阳冶炼厂环境污染防治] (1980)09 Heavy metals and non-ferrous metals [重金属和有色金属] 12-14.

⁴⁹ Ibid 14-16.

⁵⁰ Ibid 15.

⁵¹ Ibid 15.

two reasons. Firstly, Shenyang Smelter set up an internal environmental protection department. Secondly, for the company to strengthen pollution control, the treatment costs would be close to 10 million yuan per year.⁵² However, these measures did not solve the pollution problem of Shenyang Smelter. First of all, the internal environmental protection department is under the internal supervision and leadership of Shenyang Smelter. This means that it lacks independence and mandatory powers, and cannot effectively assume responsibility for supervision. Moreover, 10 million yuan is a relatively small amount and is in no way sufficient to solve environmental problems.⁵³ The main cause of pollution in Shenyang Smelter is its outdated production equipment. Shenyang Smelter would require significantly more funds if it were to upgrade the production equipment to reduce pollution.⁵⁴

Unfortunately, despite the fact that China began to pay attention to environmental protection during the 1990s, China lacks relevant skill how to reduce pollution in the processing in the 1990s.⁵⁵ On the other hand, the Shenyang Smelter lack funds due to the serious shortage of raw materials, and local governments are also unable to save the smelters due to a lack of funds.⁵⁶ In the end, the environmental problem was not solved and Shenyang Smelter went insolvent. The lack of funds was disclosed in an interview with the manager Shaogong Bai of Shenyang Smelter. He said the Shenyang Smelter had three plans at that time, i.e. pollution control, relocation and insolvency.⁵⁷

⁵² Lin Yang, 'Talking about Tiexi'dialogue smelter original factory leader Bai Shangong' [讲述铁西区：对话冶炼厂原厂领导白少功] (Tencent News, 7 November 2014)

<<https://ln.qq.com/a/20141107/036686.html>> accessed 15 July 2019.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Xihong LIU, 'Environmental pollution investigation in 1970s and start of environmental protection in China' [20 世纪 70 年代环境污染调查与我国环境保护的启动] (2015)22 *Study of Contemporary Chinese History* [中国现代史研究] 126.

⁵⁶ L Yang (n 52).

⁵⁷ Ibid.

However, there are technical difficulties in pollution control, and relocation was therefore a better plan. The smelter was moved out of Shenyang, but the relocation cost nearly 600 million yuan (£747k).⁵⁸ Based on reduced market demand and outdated industrial technology, neither the company nor the government had the money needed to save it.⁵⁹ It was for this reason that Shenyang Smelter went insolvent in 2000.⁶⁰

The liquidation of Shenyang Smelter was done according to the old bankruptcy law.⁶¹ This meant that the bankruptcy case of Shenyang Smelter focused primarily on employees' interests. In this case, the Shenyang government promulgated the implementation plan of employee placement in Shenyang Smelter on the 18th August 2000. In fact, because of the lack of relevant details in the old bankruptcy law, this plan only addressed the issue of distribution. In this plan, all the bankruptcy estates were used to solve meet the interests of the companies' employees.⁶² However, Shenyang Smelter went insolvent because of environmental problems, and it caused a lot of environmental problems that were not mentioned in the plan. After insolvency, the government wanted investors to redevelop the business of Shenyang Smelter. However, the government wanted the new enterprises to establish a modern enterprises system that would not result in new pollution.⁶³ However, the government did not address how the contaminated land should be repaired in the future. No investors wanted to take over the Smelter's business, and the Smelter's land had been left idle. According to the relevant investigation, a few years after the

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Old Bankruptcy Law is Enterprise Bankruptcy Law (trial) 1986.

⁶² Shenyang Night Newspaper [沈阳晚报], 'assets reorganisation of Shenyang Smelter after bankruptcy' [沈阳冶炼厂破产后的资产重组] (People's daily, 1 September 2000)

<<http://www.people.com.cn/GB/channel4/973/20000901/212122.html>> accessed 15 July 2019.

⁶³ Ibid.

insolvency of Shenyang Smelter, the original land of the Shenyang smelter is still seriously polluted.⁶⁴ A large number of heavy metals remain in the soil, over an area of 360, 000 square meters. According to the soil environmental quality standard of China, the land of Shenyang Smelter is seriously polluted.⁶⁵ If the land is redeveloped, it must be repaired first.

In 2002, the government began to prepare for the restoration of land at the Shenyang Smelter. Restoration of the land was done to develop the local economy, so the Shenyang government could prepare to sell the land of Shenyang Smelter. The cost of restoration amounted to more than 50 million yuan, which was borne by the Shenyang government.⁶⁶ As the old bankruptcy law applied, all of the company's assets were distributed to the employees.⁶⁷ This means that taxpayers bore the cost of restoration, while the polluter, Shenyang Smelter,⁶⁸ only bore the cost of land restoration, which in this case, was nearly zero yuan.

3.3.2 Heilongjiang Heihua Co., Ltd

Heilongjiang Heihua Co., Ltd (Heihua) is a Chinese listed company. Its main products are coke products and chemical fertilizers. The direct predecessor of Heihua was Heilongjiang Chemical General Plant. Heihua was founded in the

⁶⁴ Wei Song, 'study on the present situation of site pollution in the relocation of enterprises in Shenyang old industrial zone' [沈阳老工业区企业搬迁现场污染现状研究] (2007) 08 Modern Science [今日科苑] 118.

⁶⁵ Songlin Yu and others, 'current situation evaluation and pollution control measures of soil pollution in the main plant area of Shenyang Smelter' [沈阳冶炼厂主厂区土壤污染现状评价及污染控制措施] (2005) 6 Environmental Protection Science [环境保护科学] 65.

⁶⁶ Shenyang Night Newspaper [沈阳晚报], 'the project of treating land in the original site of Shenyang Smelter' [沈阳冶炼厂原址土地治理工程] (Er-China, 18 February 2011) <<http://www.er-china.com/PowerLeader/html/2011/01/20110112160536.shtml>> accessed 15 July 2019.

⁶⁷ Ibid.

⁶⁸ The owner of Shenyang Smelter is China Copper, Lead and Zinc Group, a central enterprise in China. It is a state-controlled enterprise, which means the state capital is not the only source of capital, but also private or foreign capital.

context of China's economic system reform, which aimed to move the economy from state-owned enterprises to modern companies.⁶⁹ Heihua was founded in 1997 and successfully listed in 1998. According to the relevant data from the annual financial report of Heihua, Heihua has grown rapidly since its listing. For example, the total assets of Heihua increased from 950 million yuan to 3.2 billion yuan; industrial output value increased from 230 million yuan to 1.5 billion yuan; sales income increased from 500 million yuan to 2.2 billion yuan, and profits tax increased from 5 million yuan to 500 million yuan.⁷⁰ Thus, Heihua became one of the top 500 enterprises in China, and one of the top ten enterprises in Chinese chemical system.⁷¹

Unfortunately, because of China's adjustment of its industrial structure, two of Heihua's main chemical/mineral products, coke and urea, have been over-produced. This led to market saturation in 2011, and consequently low demand and value in the Chinese market.⁷² This led to four consecutive years of losses in the financial statement disclosed by Heihua.⁷³ The price of coke and urea in China fell particularly sharply in 2014 further reducing Heihua's profits.⁷⁴ Furthermore, in 2014, the Chinese government had promulgated a new Environmental Protection Law, which is regarded as the strictest environmental law in Chinese history.⁷⁵ Heihua has seriously violated the new environmental protection law, and received 29 environmental fines over a two year period

⁶⁹ The Prospectus of Heilongjiang Heihua Co, Ltd [黑龙江黑化集团上市招股书].

⁷⁰ Annual Report of Heilongjiang Heihua Co., Ltd 2000 3.

⁷¹ Ibid.

⁷² 2011 Annual Report of Heilongjiang Heihua Co., Ltd 2.

⁷³ 2011-2014 Annual Report of Heilongjiang Heihua Co., Ltd.

⁷⁴ China Research Network [中研网] 'coke prices hit a seven-year low in some parts of China 2014' [今年国内焦炭价格降至七年来最低] (China-IRN 13 January 2014)
<<http://www.chinairn.com/news/20140416/180025332.shtml>> accessed 17 July 2019.

⁷⁵ Polaris Energy Saving and Environmental Protection Network (PESEPT) [北极星节能环保网] 'the eight highlights of the implementation of the new environmental protection law which is the strictest in history' [新环保法史上最严明年 1 月 1 日起实施, 八大亮点] (PESEPT, 25 April 2014)
<<http://news.bjx.com.cn/html/20140425/506418.shtml>> accessed 17 July 2019.

(2015-2016).⁷⁶ The major factor in this was that the levels of pollution produced by Heihua significantly exceeded the new national standards. Prior to 2014 emissions from Heihua met the existing standard, but in 2014, the allowable emission rate of atmospheric pollutants in thermal power plants was lowered from 200mg/m³ to 30mg/m³, which led to the emission of Heihua far exceeding the new national standards. Thus, Heihua was fined 15 times for air pollution alone.⁷⁷ Therefore, in the case of overcapacity and environmental problems, Heihua suffered a cumulative loss of 766 million yuan, with an asset-liability ratio of 99.61%.⁷⁸

Heihua began to look for opportunities of reorganisation in order to repay its debts and rescue the company. Heihua announced its restructuring plan in May 2015. In the restructuring plan, Heihua disclosed the restructuring for the sale of major assets and the issuance of shares to buy assets and raise supporting funds.⁷⁹ After this reorganisation, Heihua sold the listed shell to Antong Holdings, and the parent company of Heihua became China Haohua Chemical Co., Ltd (Haohua).⁸⁰

However, this reorganisation failed to rescue Heihua. Instead, Heihua became a 'zombie company' after reorganisation.⁸¹ A 'zombie company' in China means a company that loses the ability to develop itself and must rely on government

⁷⁶ Yan, Chen, 'Heihua received 29 environmental fines in two years' [黑化集团两年被开环保罚单 29 张] (Global Times [环球网] 5 February 2016) <<https://news.sina.cn/gn/2016-02-05/detail-ifxpftya4333577.d.html>> accessed 17 July 2019.

⁷⁷ Pengpai News [澎湃新闻], 'Heihua will end up with 29 fines' [黑化集团连吃 29 张罚单终退场, 环保称企业困难也得罚] (Sina, 25 April 2016) <<http://finance.sina.com.cn/stock/s/2016-04-25/doc-ifxrpvcy4428750.shtml>> accessed 17 July 2019.

⁷⁸ 2014 Annual Report of Heilongjiang Heihua Co., Ltd.

⁷⁹ 2015 Reorganisation Plan of Heihua.

⁸⁰ Ibid.

⁸¹ Qiqihar government [齐齐哈尔政府] 'Insolvency liquidation of Heihua and Qihua officially launched' [黑化集团和齐化集团破产清算工作正式启动] (Qiqihar Gov, 17 May 2019) <http://www.qqhr.gov.cn/News_showNews.action?messagekey=171885> accessed 17 July 2019.

subsidies or bank renewal loans to survive.⁸² Heihua became a notorious zombie company in China, and has been out of production since 2016. Although Heihua repaid some of its debts after reorganisation, the pollution problems remain unsolved. For example, Heihua invested 60 million yuan to reduce environmental pollution before the reorganisation, but did not pay more money to reduce environmental pollution after reorganization.⁸³ A cumulative environmental fine of 33.7968 million yuan (£4.2m) has not been paid.⁸⁴ What is especially interesting is that Haohua, the parent company of Heihua, seems to be evading its environmental obligations. In the reorganisation plan, Haohua receives all assets and debts of Heihua. But, Haohua did not bear the relevant environmental liabilities of Heihua. Haohua did not give Heihua relevant financial support, and indeed Heihua ultimately shut down production and was unable to meet any of its remaining liabilities.⁸⁵ For example, Qiqihar Environmental Protection Bureau applies for court procedures to force Heihua to pay its environmental fines. However, the local court assessment found that Heihua did not have enough funds to do this.

The environmental liabilities for Heihua were not simply about environmental fines. In fact, the groundwater pollution around the Heihua plant remains very serious. In an investigation, the groundwater pollutants around the Heihua exceeded the standard, including as stated in the permanganate index, volatile phenols, anionic synthetic detergents and other indicators that evaluate serious pollution. These pollutants seriously affect the health of the surrounding residents. However, Haohua did not address these environmental problems after the sale of the listed shell of Heihua. In the end, neither Heihua nor the

⁸² Fan He and He Zhu, *Economic Judgment of Zombie Enterprises* [僵尸企业的经济判断] (Renmin University Publishing House [中国人民大学出版社] 2018) 213.

⁸³ Pengpai News (n 77).

⁸⁴ Ibid.

⁸⁵ Ibid.

government has repaired the groundwater around Heihua. If the groundwater will be repaired in the future, the cost of rehabilitation, like environmental fines, may not be recovered. This is again because Heihua lacked sufficient solvency.⁸⁶

Heihua filed for insolvency and began the claim declaration process in May 2019, and its liquidation was completed in December 2019. According to the relevant information, no environmental liability has been imposed on Heihua or Haohua.⁸⁷ Throughout the liquidation process, environmental liability was not mentioned. Moreover, there is no information that the government will remediate the contaminated site of Heihua after the insolvency liquidation is concluded, which means that Heihua's site is currently in an abandoned and unmanaged state.

3.3.3 Yunnan Yongren Tuanshan Copper Mine

Yunnan Yongren Tuanshan Copper Mine (Tuanshan) was founded in 1990 and specialises in the mining and sale of copper concentrate. Tuanshan is a subsidiary company of Yunnan Copper. Tuanshan began insolvency liquidation proceedings in 2017. The reason for the insolvency was that it exhausted its resources and had no prospect of generating more.⁸⁸ In recent years, Tuanshan mainly depended on mining sporadic small ore and recovering residual ore in order to maintain its business. But this kind of business put Tuanshan into a state of sustained loss.⁸⁹

⁸⁶ Ibid.

⁸⁷ S&P Law Firm (Liquidator) 'New achievement for the liquidation of zombie enterprises – S&P Law Firm successfully completed the insolvency liquidation of Xintai' (S&P Law Firm, 31 December 2019) <<https://www.splf.com.cn/CN/07/0000000000000002144.aspx>> accessed 6 September 2022.

⁸⁸ Yunnan Copper [云南铜业] 'announcement on the acceptance of insolvency liquidation application by the court of Yongren Tuanshan Copper Mine' [关于永仁团山铜矿法院受理破产清算申请的公告].

⁸⁹ Ibid.

Tuanshan lost more than 5.5 million yuan in total from 2015 to 2017.⁹⁰ Furthermore, Tuanshan has been looking for a receiver since 2015, but without success.⁹¹ By the end of May 2017, the total assets of Tuanshan were 9.19 million yuan, but the debt scale was as high as 37.69 million yuan, and the asset-liability ratio was nearly (-)410%.⁹² It has insufficient assets for repaying all its debts and it is apparently insolvent. Therefore, if Tuanshan completes bankruptcy liquidation, it can effectively reduce long-term losses and is conducive to the overall healthy development of Yunnan Copper in the future.⁹³

The high pollutant mining activities of Tuanshan caused significant environmental damage. According to Article 64 of the Environmental Protection Law, the mine is responsible for mining land remediation.⁹⁴ Unfortunately, according to the relevant information disclosed by Yunnan Copper, such as its Corporate Social Responsibility (CSR) report and annual report, Yunnan Copper and its subsidiaries have repaired some mining land after 2014, but they did not repair the mining land in Tuanshan.⁹⁵ Although there is no direct evidence that Yunnan Copper deliberately evaded responsibility for the restoration of Tuanshan, some indirect evidence seems to show this.

Firstly, it is an interesting thing in the CSR report of Yunnan Copper that the mines repaired by Yunnan Copper are profitable. These subsidiaries include Yuxi Mining Industry, Diqing Mining Industry and Chuxiong Mining Industry, and

⁹⁰ Ibid.

⁹¹ Souhu Financial [搜狐财经] 'Yunnan Copper to accelerate disposal of loss assets Tuanshan Copper Mine insolvent will be liquidated' [云南铜业加速处置亏损资产, 团山铜矿资不抵债将被清算] (Soho, 30 October 2017) <http://m.sohu.com/a/201229399_99904063> accessed 19 July 2019.

⁹² Yunnan Copper [云南铜矿] 'announcement on the acceptance of insolvency liquidation application by the court of Yongren Tuanshan Copper Mine' [关于永仁团山铜矿法院受理破产清算申请的公告].

⁹³ 2018 Annual Report of Yunnan Copper.

⁹⁴ PRC Environmental Protection Law 2014 s64.

⁹⁵ 2014-2021 Corporate Social Responsibility of Yunnan Copper.

these have all shown excellent profitability in recent years.⁹⁶ The profits of Yuxi Mining exceeded more than 50 million yuan in the first half of 2017.⁹⁷ Diqing Mining achieved sustained profits in 2018.⁹⁸ And Chuxiong Mining has rich mineral resources to be exploited.⁹⁹ Compared with these companies, Tuanshan's mineral resources are exhausted, without economic and profit value and the company's asset-liability ratio is 410%.¹⁰⁰ One of the important goals of the company is profit.¹⁰¹ Yunnan Copper, as the parent company, is not willing to provide funds to support worthless companies, and has reduced its commitment to environmental liability. It can be speculated from this behaviour that Yunnan Copper wants to evade environmental liabilities. Because Yunnan Copper is a Chinese listed company, it is likely to be affected by business and profits due to the environmental liability of its subsidiaries. Although this inference cannot be directly confirmed, this inference has been confirmed in the past case. Yunnan Copper sold Lanping Yun Mine at a low price in 2012. Many researchers believe that sale Lanping Yun mine is a measure by Yunnan Copper to avoid China's regulation of the mining environment.¹⁰²

Furthermore, in China, all mining companies need to pay a deposit before mining.¹⁰³ The deposit, named the mine deposit, is used to fund mine

⁹⁶ Ibid.

⁹⁷ 2017 Annual Report of Yunnan Copper.

⁹⁸ 2018 Annual Report of Yunnan Copper.

⁹⁹ Ibid.

¹⁰⁰ Yunnan Copper (n 88).

¹⁰¹ Andrew Keay and Peter Walton, *Insolvency Law Corporate and Personal* (4th edn, Jordan Publishing 2017) 55.

¹⁰² Meng Yang, 'Yunnan Copper sells Mineral Deposits at a low price and makes a grotesque loss on assets transferred' [云南铜业低价卖矿存蹊跷, 转让资产离奇亏损] (Beijing Business Newspaper [北京商报] 18 June 2012) <http://www.cs.com.cn/ssgs/gsxw/201206/t20120618_3375156.html> accessed 19 July 2019.

¹⁰³ Regulations on Geological Protection of Mines No.44 Order of the Ministry of Land and Resources of P.R.China, which came into effect in 2009 and expired in 2017. The mine deposit was established according to the guidelines of the Ministry of Land and Resources P.R.China, and each province and

restoration after mining.¹⁰⁴ The nature of the deposit is like a mandatory financial assurance. A mining company can pay this deposit by instalments.¹⁰⁵ These deposits are owned by the enterprise, supervised by the local government and stored in a dedicated account only for the remediation of the mine post closure.¹⁰⁶ However, even if they pay all of the deposit, it is still less than the cost of restoration after mining.¹⁰⁷ It is worth noting that the payment of the deposit can be provided in instalments, and many companies do not complete the full instalment when they go insolvent or close down.¹⁰⁸ As a result, some companies give up the deposit after insolvency. According to the relevant data from Ministry of Natural Resource (MNR), nearly 70% of companies have not paid the fees for clean-up or remediation.¹⁰⁹ Similarly, an interview in the Economic Observer can support this supposition. Mr Lin, who is the manager of a mine said that 'Before I paid all instalments of the deposit, the company went insolvent...and I did not want the deposit to come back, because it wasn't enough to cover the cost of repair'.¹¹⁰ In essence, if a mining company forfeits their deposit then they do not need to repair the mined land.¹¹¹ Three national departments (MF, MNR and MEP) jointly issued guidance in 2017, which abolished the mine deposit system and established the fund for the mine

city set their own fees standard, but the fees are generally low, for example, 3-9 yuan (£0.37- £1.11) per square metre in Jiangsu Province.

¹⁰⁴ Regulations on Geological Protection of Mines No.44 Order of the Ministry of Land and Resources of P.R.China s18.

¹⁰⁵ The method and mode of deposit is regulated by each province and city, but the rules are mostly the same from province to province. For example, Interim Measure for the Management of Mine Geological Environment Restoration Deposit in Yunnan Province 2006 s6.

¹⁰⁶ Ministry of Land and Resources (n 104) s18.

¹⁰⁷ Shouguang Yan, Weishou Shen and Gangxin Zou, 'Deposit system for mine environmental control and recovery in China'[中国矿山环境控制与恢复保证金制度] (2013)37 Environmental Science and Management [环境科学与关系] 3.

¹⁰⁸ Shouyun Mine [首云矿业], 'More than 70% of Mines give up deposits' [七成矿山放弃了修复保证金 银行财政都要出手] <<https://www.kanzhun.com/news/386140.html>> accessed 19 July 2019.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ S Yan, W Shen and G Zou (n 107) 4.

remediation.¹¹² However, according to the retroactivity principle, Tuanshan entered insolvency liquidation in 2017. Thus, Tuanshan does not need to establish the fund for mine remediation. In the end, the government has to undertake the environmental remediation of Tuanshan, which means that environmental costs will be transferred to the society. Based on the ‘Measures for the Administration of Special funds for the recovery and treatment of Mine Geological Environment’, the government should bear the responsibility for remediation if the polluter is insolvent.¹¹³

Lastly, if the local government pays Tuanshan’s costs to repair the mine land, the government can file a lawsuit to demand that Tuanshan pay the cost for the restoration.¹¹⁴ But, the end result may be that the government will probably win the lawsuit but still not get back the compensation money. Things are actually moving in this predicted direction. In 2021, the local government began work on cleaning up and remediation the mine site of Yongren Tuanshan, and put it out to public tender.¹¹⁵ In 2022, clean-up and remediation work has already begun, but according to the local government press reports, it is public funds that will pay for this environmental costs.¹¹⁶ This means that by the time the government had completed the repair and calculated how much this repair cost,

¹¹² MF MNR MEP ‘Guiding on abolishing the deposit for the recovery of mine geological environment and establishing the recovery fund for mine geological environment control’ [关于取消矿山地质环境治理恢复摆正斤 建立矿山地质环境恢复基金的指导意见] MF: Ministry of Finance MNR: Ministry of Natural Resources MEP: Ministry of Ecology and Environment.

¹¹³ PRC Measures for the administration of special funds for the recovery and treatment of mine geological environment.

¹¹⁴ Judicial Interpretation of Supreme People’s Court ‘system of compensation for damages to the ecological environment’ 2018 [最高人民法院 2018 年生态环境损害赔偿制度司法解释].

¹¹⁵ Yongren County Government, ‘Yongren County Tuanshan Copper Mine Solid Waste Treatment and Ecological Restoration Project’ <<http://m.biaokezhan.com/detail/62cbcb4f416e2338b0dc76b2.html>> accessed 7 September 2022

¹¹⁶ Yongren Media, [永仁传媒] ‘Wu Yangfeng: responsibility in mind, responsibility in action, high quality completion of mine remediation treatment’ [吴亚峰：担责于心，履责于行，扎实做好尾矿库治理的后半段文章] (Yongren County Government [永仁县人民政府] 11 July 2022) <<http://www.yr.gov.cn/info/1040/45824.htm>> accessed 7 September 2022.

Tuanshan will have already completed their insolvency liquidation. Tuanshan is an independent legal entity, whose debt has nothing to do with Yunnan Copper.¹¹⁷ In the end, Yongren Tuanshan and its parent company, Yunnan Copper, are successful that their environmental liability has been transferred to the society.

3.3.4 Yunan Jinggu Minging and Metallurgical Co., Ltd

The main business of Yunnan Jinggu Mining and Metallurgical Co., Ltd (Jinggu) is the mining and production of non-ferrous metal mines, and the sale of copper concentrate and electrolytic copper products.¹¹⁸ Jinggu became the subsidiary company of Yunnan Copper in 2011. The first year of Yunnan Copper's acquisition of Jinggu was profitable, and made 5.738 million yuan.¹¹⁹ However, over the next 4 years, the profitability of Jinggu reduced significantly, and it lost money consistently between 2012 and 2016.¹²⁰ Yunnan Copper also said that Jinggu made a profit of 573.08 million yuan in 2011, mainly due to the high price of electric cooper in the market. But the fall in copper prices in the following years led to continued losses.¹²¹ Therefore, Yunnan Copper decided to liquidate Jinggu in order to avoid further expansion of losses.

According to the Yunnan Copper announcement, as of June 2017, the total assets of Jinggu were 12.75 million yuan, the total debts were 58.52 million yuan, and the asset-liability ratio was 461%.¹²² As a result, Jinggu would not have the ability to repay its maturing debts and instead would continue to suffer

¹¹⁷ PRC Company Law 2005 as amended 2018 s14.

¹¹⁸ Yunnan Copper 'Announcement on the acceptance of the bankruptcy liquidation application by the court of wholly owned subsidiaries' [云南铜业关于全资子公司法院受理破产清算申请的公告] 29 September 2017.

¹¹⁹ 2011 Annual Report of Yunnan Copper.

¹²⁰ Yunnan Copper (n 118).

¹²¹ Ibid.

¹²² Ibid.

from losses into the future. Thus, Jinggu decided to file for insolvency.

As above noted, one of Jinggu's main businesses is mining. Therefore, like Tuanshan discussed above, Jinggu also did not repair the land of the damage caused by mining. Fortunately, Jinggu did pay the cost of another environmental remediation case in one lawsuit, as described below.

In 2015, a pipeline in Jinggu broke, causing copper sulphate to leak through the spillway. The leak contaminated part of the farmland and river in a village. After the pollution accident, Jinggu reached a compensation and mediation agreement with local villagers in relation to the direct economic losses caused by pollution. In the agreement, Jinggu Company paid a total of 514,900 yuan (£64,147) to the injured villagers. However, Jinggu did not pay the costs of environmental remediation. According to the judicial expertise opinion issued by Yunnan Desheng Judicial expertise Centre, the cost of the environmental pollution damage was 1.3583 million yuan (£16.9k), including 528,600 yuan (£65,853) for farmland environmental pollution damage and 829,700 yuan (£10.3k) for ecological environment damage repair.¹²³ This amount does not include Jinggu's compensation for the direct economic losses of injured villagers through the mediation agreement. In April 2016, the Pu'er City People's procuratorate¹²⁴ filed a civil public interest lawsuit with the Pu'er Intermediate People's Court. In this case, the procuratorate asked Jinggu Company to pay 829,700 yuan (£10.3k) for the restoration of ecological and environmental damage.¹²⁵ In the end, procuratorate and Jinggu voluntarily reached a settlement agreement. Jinggu Company agreed to pay environmental repair costs of 829,700 yuan (£10.3k), and Jinggu did pay these

¹²³ Tie Li, Junbo Zou, 'Environmental Civil Public Interest Litigation Case of Pu'er People's Procuratorate v. Jinggu Mining and Metallurgical Co.,Ltd' [普洱市人民检察院民事公益诉讼案 诉景谷冶矿股份有限公司] (2018)302 The Chinese Procuratoras [中国检察] 3.

¹²⁴ Procuratorate is the office of a procurator.

¹²⁵ Ibid 4.

costs.¹²⁶

In the lawsuit described above, firstly, the procuratorate filed environmental public interest litigation in accordance with article 55 of the Civil Procedure Law. In addition, Article 64 of the Environmental Protection Law provides that the polluter shall be liable for damage if it pollutes or damages the environment. Similarly, Article 65 of the Tort Liability Law provides that the polluter shall bear tort liability. Therefore, under the circumstances of clear facts, Jinggu and the procuratorate reached a mediation agreement.¹²⁷ This case was fortunate for protecting environmental liabilities, because it took place before the company filed for insolvency and mediation agreement was received before the company went into liquidation. This meant that the cost of environmental remediation did not classify to the general claims in liquidation. This claim was independent of other bankruptcy claims. If the procuratorate took a lawsuit when Jinggu entered insolvency liquidation, the result would have been very different. This is because, in the liquidation, the claim of environmental remediation would have been classified as general claims. If environmental liabilities are to be paid off, it must be done after the bankruptcy expenses and the interests of employees are distributed. Even if the bankruptcy estate can pay off a portion of the general claim, the asset-liability ration of Jinggu was 461%, which means that only a small portion or even zero of environmental liability can be paid off. Therefore, in this case, it is fortunate that Jinggu paid full compensation.

This case can prove that the relevant laws of China can really protect or support the environmental liability. However, in insolvency proceedings, environmental liabilities are still hard to meet.¹²⁸ If the government, public welfare organisations or procuratorate can file a lawsuit before the polluter enter the

¹²⁶ Ibid 4.

¹²⁷ Ibid 5.

¹²⁸ Qinyu Zhang, 'Protection of Environmental Liabilities in Bankruptcy Companies' [破产企业环境债权的保护](2016) 2 Politics and Law [政治与法律] 143.

insolvency liquidation, there is a good chance that the polluter will pay the full environmental liabilities. However, the staff of the government, public welfare organisation and procuratorate, must be able to sensitively determine environmental liabilities and file environmental public interest litigation in a timely manner. Thus, these relevant staff members must have professional skills and knowledge in environmental science and law. In China, however, most relevant staff do not have the dual background of environmental science and law, so in most cases, they cannot file the relevant environmental public interest litigation in time.¹²⁹

Because of a range of issues described above, the current situation of environmental liability is that most cases cannot be compensated in insolvency proceedings, as indicated by the cases described here, such as Shenyang Smelter, Heihua Group, Yongren Tuanshan, and the restoration of mining in Jinggu. In the end, these environmental liabilities can only be borne by public funds. Even if the government can file an environmental claim to court, the insolvent polluter has often already completed the liquidation and they no longer possess the money to pay for environmental liabilities. Thus, the government is still unable to receive compensation from insolvent polluters. However, if the insolvent polluter cannot pay their environmental liability, it still violates environmental protection law, environmental protection taxes law and tort law in China, which make provisions for the polluter pays policy. Thus, further research is required to better understand how bankruptcy law and environmental law should be connected in China.

3.3.5 Some Reflections on Case Study

The case study section of this thesis describes how Chinese law treats environmental liability in insolvency proceedings and considers three core

¹²⁹ X Zhu (n 37) 342.

findings.

The first finding from case study is the public funds paid for the environmental costs of insolvent polluters. Although polluters are required to pay environmental costs, the government still plays a major role in paying for environmental costs in the event of insolvency. Even in some companies that have gone insolvent due to pollution, environmental costs have not been paid by polluters in the liquidation process, such as Shenyang Smelter, and Yongren Tuanshan as described both. It is clear that the legislator did not take into account the conflicting relationship between the Enterprises Bankruptcy Law (EBL) and Environmental Law.¹³⁰ Although environmental law provided a number of remedies against environmental cost recovery, these are ineffective in insolvency cases. For example, environmental law allows regulators to take environmental action to require polluters to pay environmental costs. In case study 4, the regulator was successful in recovering the environmental costs of the Jinggu site. However, another possible scenario was also considered in case study 4, i.e. If the environmental litigation occurs after an insolvency, then it is likely that the regulator will win the case but not be able to recover environmental costs.¹³¹ The other example is the mine deposit, which is a kind of mandatory financial assurance and was introduced in case study 3. The mine operators in this case were required to prepare a deposit to cover the cost of the mine's remediation, but before 2017, the deposit could be paid by instalment.¹³² However, many mine operators fail to complete payment of the deposit at the time of mine insolvency, and the recovery of the deposit is not considered by the judge, or insolvency practitioner in insolvency cases.¹³³ This

¹³⁰ Q Zhang (n 128) 142.

¹³¹ See case study 3.3.4.

¹³² The method and mode of deposit is regulated by each province and city, but the rules are mostly the same from province to province. For example, Interim Measure for the Management of Mine Geological Environment Restoration Deposit in Yunnan Province 2006 s6.

¹³³ Shouyun Mine (n 108).

idea has been demonstrated in case study 3. In the end, environmental costs are not internalised in practice and therefore have to be transferred to society.

The second finding is that there may be no one to clean up or remediate the sites of insolvent polluters. Although a proportion of the environmental costs of insolvent polluters are covered by public funds, a significant proportion of contaminated sites are not being remediated. For example, in the Heihua case study, Heihua completed its liquidation and its environmental liability was not mentioned in winding up, meaning that the contaminated site is in an unmanaged (abandoned) state. If this contaminated site is not remediated and cleaned up, it can result in the long-term persistence of pollutants that can have an ongoing negative impact on the surrounding environment and human health.¹³⁴ Another significant issue related to this is that there are a large number of zombie enterprises in China, and the polluting ones, represented by Heihua, are a problem that the Chinese government has wanted to focus on in recent years.¹³⁵ However, in documents issued by the Chinese government relating to the bankruptcy of zombie companies, the interests of employees are the priority.¹³⁶ In this case, the amount of abandoned contaminated sites will only increase and is undoubtedly a huge challenge for the internalisation of environmental costs.

The third finding is that EBL is a haven for polluters. The parent company separates subsidiaries with depleted mining resources and high debts by way of liquidation. The parent company focuses on environmental remediation

¹³⁴ Tadhg O'Mahony, 'Cost-benefit analysis and the environment: the time horizon is of the essence' (2021)89 Environmental Impact Assessment Review 106587.

¹³⁵ Xinhua, 'China holds key economic meeting to plan for 2019' (The State Council of P.R.China, 21 December 2018)

<http://english.www.gov.cn/news/top_news/2018/12/21/content_281476445128423.htm> accessed 5 September 2022.

¹³⁶ The National Development and Reform Commission and other 12 National Development, 'The Reform Plan for Accelerating Improvement of the Exit System for Market Participants' (CLI Code) s2.2.

obligations for some valuable subsidiaries, such as those rich in mineral assets. The parent company uses this approach to escape its environmental obligations. This approach is demonstrable in case studies 3 and 4. This is the mode adopted by Yunnan Copper. Yongren Tuanshan and Jinggu, were both subsidiaries of Yunnan Copper and were declared bankrupt as their mines were no longer profitable while they were heavily in debt. After Yongren Tuanshan and Jinggu completed their insolvency, their environmental liabilities were not mentioned and were not at all present in the relevant insolvency disclosures of Yongren Tuanshan and Jinggu. On the other hand, other valuable subsidiaries have environmental remediation processes positively presented in Yunnan Copper's annual reports.¹³⁷

Meanwhile, it is suspected that some companies may also use reorganisation to escape their environmental obligations. Typically, companies with environmental liabilities are automatically 'released' when they are taken over by other buyers.¹³⁸ The buyer, in turn, usually refuses to pay the environmental costs owed by the previous company.¹³⁹ Government officials, in order to facilitate the success of corporate reorganisation, usually do not force buyers to assume the seller's previous environmental liability, with the ultimate environmental costs being borne by the government.¹⁴⁰ Heihua is a classic example. When Heihua was acquired by Haohua, Haohua did not pay anything for Heihua's environmental costs as well as not paying the environmental

¹³⁷ For example, in 2020 annual environmental report by Yunnan Copper, there are several subsidiaries have been remediated, such as Diqing Ltd.

<http://file.finance.sina.com.cn/211.154.219.97:9494/MRGG/CNSESZ_STOCK/2021/2021-3/2021-03-30/6991274.PDF> accessed 5 September 2022.

¹³⁸ Mary J. Koks and Tim Million, 'Environmental issues in Bankruptcy' (2009)40 Texas Environmental Law Journal 46.

¹³⁹ See case study 3.3.2, Heihua and Haohua.

¹⁴⁰ M Koks and T Million (n 138) 46. Although the author's study is based on US bankruptcy law, the role of the government in bankruptcy will be more powerful in China.

damage fines.

Overall, there is a strong conflict between environmental law and bankruptcy law. Internalisation of environmental costs is difficult to achieve in Chinese insolvency proceedings and in most cases, public funds have to cover the environmental costs of insolvent polluters.

3.4 Existing Problems of the EBL 2006.

EBL 2006 was successful when China first enacted this law, as it addressed the country's corporate insolvency issues. However, this law is unable to meet the needs and demands of current societal development.¹⁴¹ One clear problem is that environmental liabilities are ignored in insolvency cases, which would be in breach of the polluter pays principle and regulation of environmental laws.¹⁴² In the past 15 years, the implementation of EBL 2006 has remained considerably weak.¹⁴³ The implementation of EBL 2006 did not mention the issue of environmental liabilities, despite it deserving greater attention from Chinese legislators. This part will analyse the shortcomings of EBL in terms of environmental liability, and will focus on reorganisation, liquidation, and post-liquidation.

3.4.1 Reorganisation

One purpose of bankruptcy law is to rescue the insolvent company.¹⁴⁴ Reorganisation is a vital means of rescue for insolvent companies,¹⁴⁵ as is often the case for many insolvent industrial companies in China. Nevertheless, their

¹⁴¹ Z Zhang (n 3) 394.

¹⁴² Carolyn Shelbourn, 'Can the insolvent polluter pay? Environmental licenses and the insolvent company' (2000)12 *Journal of Environmental Law* 210.

¹⁴³ Z Zhang, (n 3) 394.

¹⁴⁴ Gary A.S. Cook, Naresh R. Pandit and David Milman, 'A Resource- Based Analysis of Bankruptcy Law, SMEs and Corporate Recovery' (2011)30 *International Small Business Journal* 275.

¹⁴⁵ Zinian Zhang, *Corporate Reorganisation in China: An Empirical Analysis* (Cambridge University Press, 2018) 12.

reorganisation plans do not typically mention environmental liability. For example, in the first reorganisation of Heihua, there was no mention of any environmental liability in the reorganisation plan. As such, reorganisation lacks the relevant provision of environmental liabilities protection in bankruptcy law.

Firstly, there are shortcomings with the creditor committee system. The creditor committee has only nine members and there are no representatives for environmental claims. It is therefore difficult, in these cases, to guarantee the realization of environmental liability. In fact, the creditor committee plays a dominant role in the supervision of debtors' property, as the members of the creditor committee represent the interests of the various creditors in the meeting.¹⁴⁶ For example, China's bankruptcy law provides that one of the members of the creditor committee must be an employee representative or a representative of the work union.¹⁴⁷ Thus, employees are given preferential protection in China's bankruptcy law. Environmental liability can be given preferential protection in the creditor committee at present, though there is still uncertainty about the protection of environmental claims in the selection of members making up the creditor committee and the system approved by the court.¹⁴⁸ In practice, few representatives of environmental claims become members of the creditor committee. While the environmental liability of insolvent polluters covers a wide range of areas, and the cost of environmental claims is high,¹⁴⁹ representation for such environmental claims in insolvency proceedings is not proportionate. They are then unable to respond quickly to the number of environmental claims, such as in the cases of Jinggu and

¹⁴⁶ Rebecca Parry and Yingxiang Long, 'China's enterprises bankruptcy law, building an infrastructure towards a market- based approach' (2020)20 *Journal of Corporate Law Studies* 167.

¹⁴⁷ PRC Enterprises Bankruptcy Law 2006 s67.

¹⁴⁸ Shengfeng Xu, 'The deficiency and perfection of creditor committee system in insolvency proceedings in China' [我国破产程序中债权人委员会制度的不足和完善] (2018)5 *Journal of China University of Political Science and Law* [中国政法大学学报] 110.

¹⁴⁹ Tuula Linna, 'Insolvency proceedings from a sustainability perspective' (2019)28 *International Insolvency Review* 228.

Tuanshan. In the absence of representatives for these environmental claims, it is difficult to protect environmental liability in the creditor committee and meeting of creditors.

Secondly, there is a problem with the voting system in bankruptcy law. The representative of an environmental claim can join the creditors' meeting only after the environmental claim has been confirmed, upon which the representative has the right to vote on the reorganisation plan.¹⁵⁰ If the environmental claim can be paid off, the representative of the environmental claim needs to join the creditors' meeting. However, environmental liabilities are hidden at some points, such as for Shenyang Smelter, so it is not easy for the government or relevant environmental reorganisation to identify relevant environmental liabilities. The result is that environmental claims cannot be declared at the creditors' meeting.

If the vote has been completed, can a special vote be taken?

The answer is possibly. However, according to China's Bankruptcy Law, the representatives who vote on the reorganisation plan are limited to secured claims, labour claims, taxes and ordinary claims. The representative for environmental claims can only vote as an general unsecured creditor and can therefore not guarantee whether environmental liabilities will be incorporated into the reorganisation plan or not.¹⁵¹

Thirdly, there is an absence of relevant laws for the assessment of the results of environmental claims. In practice, professional environmental appraisal institutions evaluate environmental claims, and the assessment report serves as the basis for judges to determine the monetary value of environmental

¹⁵⁰ PRC Enterprises Bankruptcy Law 2006 s59.

¹⁵¹ Ibid s59 64.

claims.¹⁵² For example, in the case of Pu'er City Procuratorate v. Jinggu, the evidence of the environmental claim is the environmental claim report issued by the professional institution. However, there is a problem that environmental pollution is a continuous process, and therefore the result of previous assessments has the potential to change with time.¹⁵³ Therefore, it is necessary to establish a review system for the assessment of environmental claims. This will help to assure environmental liabilities and uphold the fairness principle.

3.4.2 Liquidation

As analysed above, environmental liabilities do not have priority in relation to liquidation in Chinese insolvency cases. This means that environmental liabilities are in a disadvantageous position when it comes to liquidation, and are not in line with China's national development policy in regards to the green economy¹⁵⁴. Generally speaking, the monetary value of environmental liability involved is high. If environmental liabilities were to equate to general, unsecured claims, then environmental liabilities cannot be realised in the course of insolvency proceedings. This will lead to more companies taking up environmental costs as free costs and avoiding environmental liability through insolvency liquidation after polluting activity has occurred, as was the case with Tuanshan.¹⁵⁵ Such behaviours constitute a serious violation of the polluter pays principle and corporate social responsibility.

In addition to the problem described above, in Chinese law, the bankruptcy estate is used for the liquidation of corporate debts and the distribution to

¹⁵²Bing Han, 'Discussion on the application of inspection report in environmental tort litigation' [论检验报告在环境侵权中的运用] (2018)11 Legal System and Society [法制与社会] 109.

¹⁵³ Ibid 110.

¹⁵⁴ Dongmei Qu 'Low carbon economy and the priority of environmental tort liability in bankrupt enterprises' (2011)5 Energy Procedia 1815.

¹⁵⁵ Ibid 1816.

shareholders.¹⁵⁶ The company no longer owns any property, and this distribution does not take into account whether the company will have new debt after liquidation. This mode of distribution is not conducive to environmental liability.¹⁵⁷ If environmental liability is discovered after bankruptcy, but the company does not have any property to compensate for environmental liability, then even if environmental liability is supported by the claim, it cannot be compensated.

Environmental liability should be given priority in winding up according to the values of equality and justice.¹⁵⁸ The insolvency regime is designed to meet the requirements of equitable distribution, which is the primary purpose of insolvency legislation.¹⁵⁹ The long-term, latent, and complex nature of environmental damage makes it particularly difficult to protect the public interest represented by environmental liabilities compared to other creditors.¹⁶⁰ Indeed, these environmental costs are closely linked to people's lives and health. If an enterprise is unable to pay its debts as they fall due and its assets are insufficient to pay all of its claims or it clearly lacks the ability to pay and enters into insolvency liquidation proceedings, prior payment of claims for environmental costs is conducive to achieving a fair distribution in insolvency and protecting public interest.¹⁶¹ In particular, these environmental liabilities are paid for to avoid pollution and it will reduce the risk of pollution to the public.

In addition, the fact that environmental liabilities are paid upfront also means

¹⁵⁶ PRC Enterprises Bankruptcy Law 2006 s30.

¹⁵⁷ D Qu (n 154) 1815.

¹⁵⁸ Dongmei Qu and Junpeng Qu, 'Research on the priority of environmental tort obligation in bankrupt enterprises under the background of low carbon economy' (2011)4 *Journal of Sustainable Development* 152.

¹⁵⁹ Daniel A. Austin and Chengto Lin, 'Bankruptcy with Chinese characteristics: insolvency administration in the People's Republic of China' (2000)94 *American Bankruptcy Law Journal* 96.

¹⁶⁰ Q Zhang, (n 128) 143.

¹⁶¹ D Qu (n 154) 1815.

that the requirements of sustainable development are met.¹⁶² If environmental liabilities are not paid, much of the contaminated land will not be cleaned and the pollution created will persist, if not spread, which is unquestionably detrimental to sustainable development.

Lastly, the polluter pays principle has been accepted and implemented into Chinese environmental legislation.¹⁶³ Its purpose is to consign the responsibility of dealing with and preventing the worsening of pollution to the polluter.¹⁶⁴ Therefore, even if an enterprise becomes insolvent or declares insolvency, it should still bear the corresponding environmental liability. Otherwise, the effect of simply not paying for environmental liability would be equivalent to allowing the enterprise to use bankruptcy to avoid assuming environmental responsibility, and therefore, the majority of such environmental responsibility would be passed yet again onto the state and wider society. This would inevitably make the use and subsequent abuse of environmental resource a free cost to the enterprise.¹⁶⁵ This is clearly not in line with the economic development policy in China which endeavours to balance the demands of both economic development and environmental protection.¹⁶⁶

Therefore, China's bankruptcy law must pay special attention to environmental liabilities in the course of insolvency liquidation. This can not only protect public interests and maintain social stability, but also help to implement sustainable development and the green economy.

¹⁶² Ibid.

¹⁶³ Evan Hamman and others, 'The polluter pays principle in Chinese Environmental Law' (2018)2 Chinese Journal of Environmental Law 69-70.

¹⁶⁴ Ibid.

¹⁶⁵ D Qu (n 154) 1815.

¹⁶⁶ China's National Development and Reform Commission, '14th Five-Year Plan for circular economy development'.

3.4.3 Post-Liquidation

First and foremost, the subject of environmental liability remains unclear after the completion of the insolvency liquidation process. According to traditional company law theory, the subject of the company is dissolved upon the completion of insolvency liquidation, and its records are removed from the company registration system.¹⁶⁷ However, in many cases, environmental liability is hidden, and as such, it is difficult for administrative reorganisation or judicial reorganisation to supervise it.¹⁶⁸ The issues created by the emission of pollutants has not been resolved, but the insolvent polluter is able to escape its environmental liability; with the government subsequently assuming such liability. Some scholars believe that the government should be the bearer of such environmental liability, as it is owing to government negligence that the polluting firms are able to escape their environmental liability.¹⁶⁹ However, this argument is unreasonable and seriously detrimental to both public interest and environmental sustainability.¹⁷⁰

Furthermore, there is no environmental liability relief system in China's bankruptcy law following the completion of the insolvency liquidation process. First of all, China's bankruptcy law has no established corporate representative system after the liquidation procedure has been completed. If the insolvent polluter needs to assume environmental liability in the future upon completion of the liquidation process, in accordance with the polluter pays principle, then there will be a series of difficulties, such as the sourcing of funds and the

¹⁶⁷ PRC Company Law 2005 as amended 2018 s188.

¹⁶⁸ X Zhu (n 37) 433.

¹⁶⁹ Yanling Xiao and Zhaoyang Miao, 'Problems and countermeasures of enterprises environmental liability information disclosure in China' [我国企业环境责任信息披露存在的问题及对策] 2017(14) Journal of Economic Research [经济研究] 16.

¹⁷⁰ PRC Environmental Protection Law 64 and other relevant environmental laws.

manner of audit and audit personnel.¹⁷¹ In insolvency procedures, because of the supervision of the courts, creditors and administrator, even if there are various problems in practice, the different parties can negotiate and compromise with each other. However, if environmental liability has to be resolved following liquidation, it is difficult for the government or the environmental reorganisation to submit an environmental claim. As such, China needs to establish a corporate representative system, which can represent the company in dealing with outstanding debts within a period after the completion of liquidation.¹⁷²

Moreover, the scope of the preservation system¹⁷³ is too narrow. Articles 118 and 119 of the Bankruptcy Law provide details of this preservation system. In accordance with the preservation system, the distribution shares of the insolvent assets that have not been collected by creditors shall be preserved by the relevant bankruptcy administrator in advance. Where if the creditor did not collect insolvent assets or the action is not being settled as a creditor's right. The bankruptcy administrator shall distribute the preserved distribution share to other creditors. However, some pollution is often discovered after insolvency.¹⁷⁴ For example, at Wuhan brown site, the pollution was discovered a few years after the insolvency of Wuhan Pesticide Factory. Even if the provincial government of Wuhan were to take a lawsuit for remediation of the brown site, they would not receive the compensation from Wuhan Pesticide Factory. This is not only detrimental to the protection of the interests of wider society, but it is also a violation of the polluter pays principle.¹⁷⁵ Therefore, if

¹⁷¹ Li Xiao, 'A probe into the environmental tort liability of insolvent company' [破产公司环境侵权责任探析], (2015)30 Legal EXPO [法制博览] 86.

¹⁷² Ibid 87.

¹⁷³ The preservation system is often used for certain specific creditors, for example, in s117: as to any creditor's right subject to the requirement for effectiveness or rescission, a bankruptcy administrator shall preserve the distribution share in advance.

¹⁷⁴ Ibid 87.

¹⁷⁵ X Zhu (n 37) 224.

similar environmental liabilities are to be received in the future, the preservation system must expand its scope of application in the future, so that environmental liabilities are accounted for.

3.5 Conclusion

It is undeniable that EBL 2006 is a milestone in the history of China's legal system. It has created a new and modern bankruptcy legal framework in China, such as the establishment of rescue company measures, creditors committee, and applicable to all type of companies in China. It is a sign of the times that a market-leading insolvency system has gradually been introduced in China in place of a government-leading insolvency system. However, with the development of the economy, China has had to change their economic strategy to adapt to the development of global economic investment. Therefore, the current bankruptcy law can no longer meet certain development criteria of some courses of development. The handling of environmental liabilities is one such example of this.

Through the case study and review of EBL 2006, this paper discusses several issues with EBL 2006. Environmental liability in insolvency cases is often ignored, even if the cause of insolvency is pollution. In cases of liquidation or reorganisation, such as those of Shenyang Smelter, Heihua, Jinggu, and Tuanshan, environmental liabilities remain ignored. In most cases, environmental costs of insolvent polluters were paid by public funds, while in some other cases, contaminated sites are left in their abandoned and unmanaged state. Some companies may even use bankruptcy fraud to escape their environmental liabilities.

Therefore, there are a number of issues with the EBL that arise in different insolvency proceedings, such as reorganisation, liquidation, and post-liquidation.

Firstly, in reorganisation, there are weaknesses with the creditors' committee. The number of members on the creditors' committee is limited and there is a lack of environmental representatives. Furthermore, the issue of voting system must also be reconsidered. Environmental representatives are not included in the voting procedure, resulting in a dead-end situation wherein environmental representatives cannot join the creditors' committee. Moreover, China currently lacks a law for the assessment of environmental cost claims, which prevent judges or insolvency practitioners from assessing environmental cost claims.

Secondly, environmental liabilities are not given priority in the process of insolvency liquidation in China, which is the primary reason why many environmental costs cannot be paid during the course of insolvency proceedings. Therefore, China's EBL needs to reconsider the placing of environmental liabilities within the order of distribution in winding up.

Thirdly, the subject of the environmental liability is unclear upon completion of insolvency liquidation. After insolvency is completed, environmental costs can only be transferred to the society as a last resort.

In summary, the internalisation of environmental costs is seriously challenged by the insolvency regime in China, and Chinese EBL must be reformed if the Chinese government expects to achieve internalisation of environmental costs. This chapter has analysed how Chinese law treat environmental liabilities in insolvency proceedings. The next two chapters will examine how environmental liabilities are treated in insolvency proceedings in other jurisdictions.

Chapter 4

Environmental Liability in the UK's Insolvency Law

4.1 Introduction

This chapter will answer the third research question. In this chapter, the way British law addresses environmental liabilities in insolvency proceedings will be explored.¹

This chapter comprises of four main sections. The first part of this chapter will review the relevant insolvency law in the UK, including how insolvency law works in the UK, and the order of distribution in liquidation. The second part will analyse how insolvency law in the UK treats environmental liabilities, through the use of three case studies to analyse how the UK laws deal with environmental liabilities once polluting firms enter insolvency. The final part of this chapter evaluates and reflects on the issues that exist with regards to current British insolvency law.

4.2 Review the Insolvency Law in the UK

Insolvency Act 1986 is the principal statute governing insolvency and liquidation in the UK, and was introduced following the recommendations of the Cork Report.² In addition, further changes to insolvency and liquidation proceedings in the UK were introduced by the Insolvency Act amendments and Enterprises Act.³ These changes include a moratorium for companies at risk of insolvency and additional relief for businesses adversely affected by the COVID-19

¹ The jurisdictions in this chapter involved England, Wales and Scotland.

² Vanessa Finch and David Milman, *Corporate Insolvency Law Perspective and Principle* (3rd edn, Cambridge Press 2017) 301.

³ *Ibid.*

pandemic.⁴ In accordance with these laws, insolvency procedures in the UK may be classified into two distinct categories, those including liquidation procedures, which include Voluntary Liquidation and Compulsory Liquidation, and those including rescue procedures; which include Company Voluntary Arrangement (CVA), Administration, and Receivership.

4.2.1 The Insolvency Procedures in the UK

CVA is a legal agreement signed between a company and its creditors.⁵ The reason may be that the company has issues regarding short-term cash flow, and it needs more time to pay its debts. The purpose of CVA is to prevent the creditors putting the company into winding up, whereas creditors could be offered a better deal than liquidation.⁶ The CVA procedure was regulated in Sections 1 to 7 Insolvency Act 1986. Under the provisions, an Insolvency Practitioner (IP) plays a supervisory role in CVA procedures in order to reach a settlement or voluntary arrangement with creditors.⁷ If the CVA could be agreed by more than 75% (by debt value) of creditors who vote on it and no more than 50% of unconnected creditors may vote against the CVA, the agreement will be binding on others.⁸ After the proposal is completed, no further legal action can be taken against the debtor company and the creditors will receive the distributions described in the proposal from the supervisor.⁹ After approval, the company must make the agreed contribution to the trust account managed by the supervisor.¹⁰ If the contribution is not kept up, it is deemed to be in default

⁴ Section 1 to 6 and schedules 1 to 8 amended the Insolvency Act 1986 for a moratorium for companies. Section 10 and 11 and Schedules 10 and 11 provide temporary provision to limit statutory demands and winding up petitions issued against companies during the COVID-19 pandemic in the UK.

⁵ Andrew Key and Peter Walton, *Insolvency Law Corporate and Personal* (4th edn, LexisNexis 2017) 81.

⁶ *Ibid.*

⁷ V Finch and D Milman (n 2) 310.

⁸ Insolvency Act 1986 s5(2) Insolvency Rules 2016 Rule 15.34(3).

⁹ Insolvency Act 1986 s4(2) and (3).

¹⁰ Insolvency Act 1986 s7 (4).

and the CVA can be suspended. This will usually result in liquidation.¹¹

If a company was under the context of insolvency, administrative receivership could occur. Before the 1980s, receivership was the only procedure available to companies in financial distress.¹² This procedure is a remedy for the holder of a floating charge.¹³ When a company breaches the terms of a loan, or when a company does not comply with the agreed terms, it is placed in receivership.¹⁴ Receivership allows a qualified holder of a floating charge who is owed money by the company to appoint an administrative receiver.¹⁵ Only a qualified insolvency practitioner can be appointed a receiver and then have the power to manage and sell the company's assets.¹⁶ This appointment results in the 'crystallisation' of the floating charge, which means that the company can no longer deal with the property that is the subject of the floating charge.¹⁷ The receiver's primary responsibility is to take control of the secured assets and realise them in full payment of the creditors who have appointed him.¹⁸ However, this model of administrative receiver is not a collective debt discharge procedure for the benefit of all creditors, but only serves floating charge holders. For this reason, the function of the administrative receiver procedure in dealing with collective debts would be affected.¹⁹ Therefore, the UK Enterprises Act 2002 changed the administrative receiver model to an insolvency

¹¹ Ibid.

¹² Jadesola Tiwalola Faseluka, 'A critical analysis of the effectiveness of corporate rescue in retail sector insolvency cases' (PhD thesis, University of Leeds, 2022) 117.

¹³ Roy Goode, *Commercial Law* (3rd edn, Penguin Books, 2004) 845.

¹⁴ A Keay and P Walton (n 5) 75.

¹⁵ Ibid.

¹⁶ Insolvency Act 1986 s230 (2). Louis Gullifer, 'The reform of the Enterprises Act 2002 and the floating charge as a security device' (2008)46 *Canadian Business Law Journal* 402.

¹⁷ Secured creditors must hold a qualifying floating charge created before 15 September 2003. After that date creditor cannot have recourse to the procedure as it was terminated with the introduction of the Enterprise Act 2002.

¹⁸ L Gullifer (n 16) 407.

¹⁹ Sandra Frisby, 'Making a silk purse out of a pig's ear. *Medforth v Blake & Ors*' (2000)63 *The Modern Law Review* 413.

administration.²⁰ This change simplifies the legal formalities for entering the administration order procedure and expands the rights of unsecured creditors as well as the company rescue regime and the role of the insolvency administrator in insolvency proceedings.²¹

Administration is a new insolvency procedure which was established in Insolvency Act 1986 that adopted a suggestion by the Cork Committee.²² In the process of administration, administrators restore profitability by restructuring all or part of the company's business.²³ This process may involve proposals to liquidate the company's assets in order for creditors to achieve better results than what can be obtained by immediate liquidation.²⁴ In principle, the qualification of an administrator is the same as a liquidator, which can only be held by IPs. The court may appoint a qualified IP as the administrator according to the request of creditors or company directors.²⁵ The administrator is the agent of the company and replaces the duties of the board of directors, they are responsible to all creditors.²⁶ The administrator needs to deal with all corporate affairs according to the suggestions of all creditors, this includes managing businesses, property, etc.²⁷ Furthermore, when the company has appointed an administrator, it can no longer appoint a liquidator unless the administration order is withdrawn by the court.²⁸ In administration, the administrator may also be appointed by the holder of a qualifying floating charge held over the property of the company without application to the court.²⁹

²⁰ Enterprises Act 2002 s72A.

²¹ Sandra Frisby, 'In search of a rescue regime: the Enterprises Act 2002' (2004)67 *The Modern Law Review* 247.

²² V Finch and D Milman (n 2) 301.

²³ A Keay and P Walton (n 5) 81.

²⁴ *Ibid* 82.

²⁵ Insolvency Act 1986 s13 Part II.

²⁶ *Ibid* s14.

²⁷ *Ibid*.

²⁸ A Keay and P Walton (n 5) 96.

²⁹ *Ibid*.

In principle, administrators need to operate the company after administration has been approved; administrators need to develop company arrangements or company reorganization.³⁰ If creditors are not satisfied with the performance of an administrator, they may dismiss the administrator.³¹ Once administration is revoked, the creditors need to vote on the deadline for administration; the company then proceeds to go into liquidation. The measure of administration provides an extension to the company which is experiencing financial difficulties.³² The administrator can try his best to save the company in order to achieve the realisation of the company's assets more effectively, so that it may repay its debts and even bring the company back to life.³³

Liquidation is the end of the road for a company which is experiencing financial trouble. If a debtor company fails in CVA, Receivership, or Administration, it will go into liquidation. In the UK, not only debt companies can apply for voluntary liquidation in court, but creditors can also apply for compulsory winding up to the court.³⁴ In the UK, there are many subjects who can apply for liquidation according to different laws, such as the Bank of England, or the Financial Conduct Authority.³⁵ Liquidators play an indispensable role in all liquidation procedures.³⁶ In the UK, only IPs have the right to be a liquidator and act in the name of the insolvent company. In creditors' voluntary liquidations, the liquidator is essentially appointed by the creditors, whereas in compulsory liquidations, the liquidator is appointed by the court, then the liquidator needs to take control of the business.³⁷ This could consist of selling the company's assets and distributing the proceeds to its creditors with a statutory order. Of

³⁰ Ibid.

³¹ Insolvency Act 1986 s20 Part II.

³² A Keay and P Walton (n 5) 80.

³³ Ibid 81.

³⁴ V Finch and D Milman (n 2) 453.

³⁵ The Banking Act 2009 requires the procedures of bank insolvency

³⁶ V Finch and D Milman (n 2) 453.

³⁷ Insolvency Act 1986 s165-170 Part VII.

course the liquidator may also consider the continued operation of the insolvent company: his rights take precedence over the receiver in this situation.

4.2.2 The Order of Distribution in Insolvent Estate

When a company goes into insolvency, it means that it is unable to pay its debts as they fall due, and the value of the company's assets is less than that of its liabilities.³⁸ At this time, IP will distribute company's assets to creditors under the requirements of Insolvency Act 1986.

According to the relevant insolvency regulations, as long as the IP holds sufficient funds, in addition to retaining the necessary amount for the payment of bankruptcy expenses, the IP shall declare and distribute the insolvent estates on the basis of debts declared by the creditors respectively.³⁹ Meanwhile, the IP must serve or announce a notice to the creditor who has not declared their claims but whose residential address is known to the IP.⁴⁰ The notice must involve the deadline for filing claims, but the deadline must not be less than 21 days from the date of notice.⁴¹

The IP is not obliged to deal with proof submitted after the final proof date, but he may do so if he sees fit.⁴² Furthermore, if there are debts payable that are still in litigation or in dispute, the IP shall also prepare in advance.⁴³ If there is property that is not suitable for sale or is not conducive to the sale, the IP shall, with the consent of the creditors' committee, distribute the property directly according to the value of the property.⁴⁴

³⁸ Insolvency Act 1986 s123.

³⁹ A Keay and P Walton (n 5) 505.

⁴⁰ The Insolvency (England and Wales) Rules 2016 rule 14.30.

⁴¹ Ibid.

⁴² Insolvency Act 1986 s11.3 (2).

⁴³ A Keay and P Walton (n 5) 302.

⁴⁴ Insolvency Act 1986 s326 The Insolvency (England and Wales) Rules 2006 rule 14.13.

Once an officeholder has collected enough assets and completed all notice works, he or she will begin to distribute the insolvent estates to creditors.⁴⁵ The general rule that officeholders need to follow in winding up is the 'pari passu' principle. It means equal distribution in insolvency procedures and, as a fundamental principle, has been noted in the Insolvency Act 1986.⁴⁶ For example,

*Subject to the provisions of this Act as to preferential payments, the company's property in a voluntary winding up shall on the winding up be applied in satisfaction of the company's liabilities pari passu.*⁴⁷

As stipulated in section 107, Insolvency Act 1986, the distribution of unsecured creditors follows the principle of 'pari passu'. The 'pari passu' principle means that in the course of insolvency proceedings, such as administration, liquidation and bankruptcy, all unsecured creditors must equally share any available assets of the company or person, or any proceeds from the sale of any such assets, in proportion to each creditor's share of the debt.⁴⁸ In addition to the remuneration of the liquidator, bankruptcy expenses, such as those reasonably incurred in the maintenance; realisation, or acquisition of the company's asset, are allocated first in the order of distribution.⁴⁹ If a liquidator does not have enough funds to pay all bankruptcy expenses, it is necessary to consider which expenses will be paid first. Rules 6.42(4) and 7.108(4) have listed the order in which various kinds of costs ought to be paid (see the Table I).

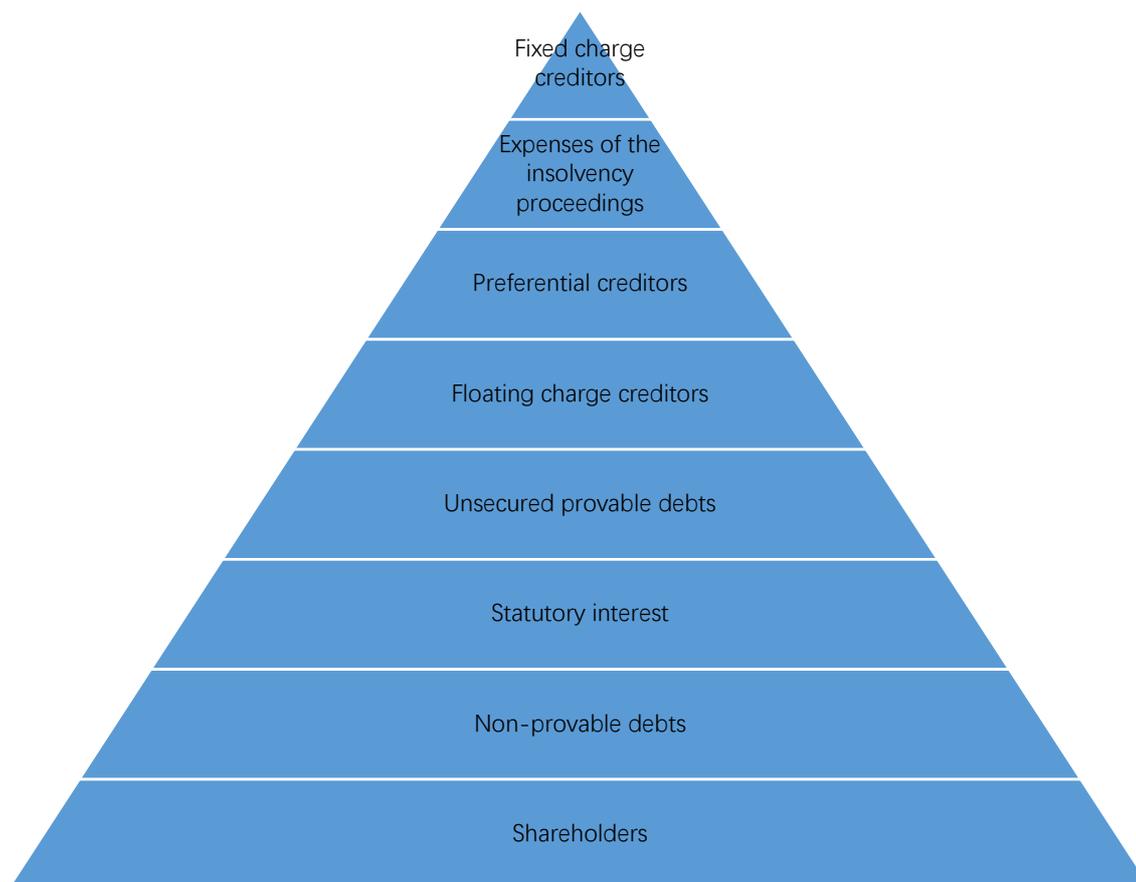
⁴⁵ A Keay and P Walton (n 5) 505.

⁴⁶ Insolvency Act 1986 s107.

⁴⁷ Ibid.

⁴⁸ Ibid s176AZA (3)(b).

⁴⁹ Insolvency Rules 2016 regulation 115 regulation 176ZA and Insolvency Act 1986 s175.



*Table I – the order of the distribution phase of the liquidation

If the liquidator still has enough funds to distribute to other creditors after liquidation expenses, preferential debts would be paid at this stage. A key consideration of preferential debts is the interests of employees; for example, contributions made to an occupational pensions scheme and the employees' wages.⁵⁰ Moreover, HM Revenue & Customs (HMRC) returned preferential creditor status after April 2020.⁵¹

The claims of a floating charge holder are then paid off after those of the preferential creditors. A floating charge is a security interest over a fund of changing assets of a company, such as stock.⁵² If there is a default in payment,

⁵⁰ Insolvency Act 1986 s175(1)-(2).

⁵¹ The Insolvency Act 1986 (HMRC Debts: Priority on Insolvency) Regulations 2020 s2.

⁵² Insolvency Act 1986 s251.

the floating charge will change into a fixed charge over the specific assets which fall into that class of assets on the date of default. This changing process from floating charge to fixed charge is referred to as crystallising.⁵³ If a floating charge had not crystallised before the date of liquidation, it will crystallise on that date.⁵⁴ The floating charge holder could initiate a sale of the assets falling under the floating charge, but the condition is that only once the preferential creditors and the cost of the liquidation have been paid, as well as a prescribed amount retained for distribution to any unsecured creditors.⁵⁵ It no doubt increases the risk that floating charger holders cannot not receive enough money that is owed by the insolvent company.⁵⁶ In cases such as that of *Permacell Finesse Ltd*, the insolvency assets were unable to repay the claims of the floating charge holder.⁵⁷ After that unsecured creditors, deferred debts and shareholders are the last order part of distribution.⁵⁸

The interests of fixed charge holders are safer in winding up compared with other creditors.⁵⁹ A fixed charge will be attached to an identifiable asset upon creation, such as land, property, machinery, copyright, trademark etc.⁶⁰ The fixed charge is applied to protect the repayment of the company debt, because a company cannot sell the asset that has been being secured without the lender's permission. Thus, when a company goes into liquidation, the fixed charge holder manages to sell the asset in order to recover their money. However, it is worth nothing that if the value is more than the outstanding debt

⁵³ V Finch and D Milman (n 2) 311.

⁵⁴ Ibid.

⁵⁵ The prescribed part is calculated as follows: 50% of the first £10,000 of the company's net property, plus 20% of the balance up to a maximum of £600,000. If the value of the net property of the company is less than £10,000 the liquidator is not obliged to retain a prescribed part for the benefit of the unsecured creditors.

⁵⁶ A Keay and P Walton (n 5) 513.

⁵⁷ *Re Permacell Finesse Ltd* [2007] EWHC 3233 (Ch).

⁵⁸ Ibid.

⁵⁹ V Finch and D Milman (n 2) 539.

⁶⁰ Ibid.

owed, the excess part must be paid to the liquidation and then distributed by the liquidator to other creditors.⁶¹ If the value is less than the outstanding debt owed to them, the less part they can secure as an ordinary unsecured creditor for unpaid balance of the debt in winding up.⁶²

4.2.3 Insolvency Act in England and Scotland⁶³

Insolvency Act 1986 is the current general guidance of insolvency cases in the United Kingdom, most provisions apply to all jurisdictions in the UK.⁶⁴ However, for historical reasons and out of legal habits, there are some differences between insolvency cases in England and those in Scotland.

Firstly, there is no official receiver in Scotland, which means that there is no 'liquidator of last resort'.⁶⁵ The court will appoint a nominated IP in Scotland to act as the interim liquidator.⁶⁶ The result is that there is no need to pay a rate of realisation to an official receiver. The IP in Scotland will play the same role as the official receiver in dealing with insolvency cases.⁶⁷ For example, the IP chairs the creditors' meeting in order to appoint a liquidator in Scotland,⁶⁸ whereas the official receiver plays this role in England and Wales.

Secondly, there is not a Receiver of Law of Property Act (LPA) in Scotland,⁶⁹ the only way of receivership in Scotland is Administrative Receivership which is

⁶¹ Constance E. Bagley and Craig E. Dauchy, *The Entrepreneur's Guide to Business Law* (Cengage Learning 2011) 446.

⁶² Ibid.

⁶³ Almost identical insolvency laws in England and Wales.

⁶⁴ Donna Mckenzie Skene, 'How insolvency works in Scotland' (2003)11 *Juta's Business Law* 104.

⁶⁵ Louise Laing and Iain Penman, 'Scottish insolvency vs England and Wales-What you need to know' (*The Gazette*, 17 December 2019) <<https://www.thegazette.co.uk/insolvency/content/172>> accessed 5 May 2020.

⁶⁶ Insolvency Act 1986 s138.

⁶⁷ D M Skene (n 64) 104.

⁶⁸ The Insolvency (Scotland) (Receivership and Winding Up) Rules 2018 regulations 3.3, 4.12,5.25.

⁶⁹ Law of Property 1925 s3.1.

regulated in Chapter 2 of Part 3 of Insolvency Act 1986. LPA is use for protecting secured creditors.⁷⁰ If a company goes into the process of LPA Receivership, the officer will control the assets from the directors according to the appointment. Under the Insolvency Law they are entitled to take the necessary action to recover the amounts owed to the secured creditor.⁷¹ However, there is nothing to distinguish between mortgages and charges in Scotland, which means that LPA does not work in the jurisdiction of Scotland.

Thirdly, there is no statutory power to disclaim onerous property or contract in Scottish insolvency laws, whereas section 178 and 179 of the Insolvency Act 1986 enables liquidators to legally disclaim onerous property or contract in England and Wales. The IPs in Scotland can cause the insolvent company to reject its contractual obligations.⁷² However, a liquidator in Scotland has no power to divest the company of a real right in land by unilateral disclaimer.

4.3 Environmental Liability in the Insolvency Procedures

4.3.1 The Type of Environmental Liability in the UK

As a developed and industrialised country, the business behaviour of potential polluters is affected by many environmental laws and regulations in the United Kingdom. These include the EU Environmental Liability Directive (ELD), EU Waste Framework Directive (WFD), Environmental Protection Act 1990, Environmental Permitting Act, and others.⁷³

The first of these, ELD comes from the European Union, and has subsequently

⁷⁰ Akintola Kayide and David, Milman, 'The rise, fall and potential for a rebirth of receivership in UK corporate Law' (2019)8 Journal of Corporate Law Studies 12.

⁷¹ Insolvency Act 1986 s40.

⁷² *Clark & Whitehouse (Joint Administrators of Rangers Football Club Plc), Re Directions* [2012] ScotCS CSOH_55.

⁷³ Combining the pollution prevention and control 2007, Water Management Act 2010, Prevention of Oil Pollution Act 1971.

been implemented within the different jurisdictions of the UK.⁷⁴ The purpose of this Directive is to establish a framework for environmental liability based on the polluter pays principle to prevent and remedy environmental damage.⁷⁵ ELD only applies in cases of significant environmental damage.⁷⁶ ELD aims to ensure that financial consequences of certain types of damage caused to the environment will be borne by the economic operator who caused such damage.⁷⁷ As far as the financial liability of the operator under the ELD is concerned, it provides a framework based on the polluter pays principle, which can be described as a form of environmental liability.⁷⁸ ELD has been implemented in different jurisdictions in the UK. In terms of nomenclature, England⁷⁹ and Wales⁸⁰ have adopted as environmental damage regulations, while Scotland⁸¹ and Northern Ireland⁸² have adopted the expression of environmental liability regulations. However, these regulations are all based around prevention and remediation. These regulations are only applicable in cases where there is a greater impact of environmental damage, or the inaction of polluters leads to serious damage caused by continued polluting of the environment. In other cases, other environmental rules will be applied to deal with environmental damage cases, such as contaminated land regime, Water

⁷⁴ Environmental Damage (Prevention and Remediation) (England) Regulations 2009, Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009, and Environmental Liability (Scotland) Regulations 2009.

⁷⁵ Environmental Liability Directive 2004/35/EC Article 1.

⁷⁶ Ibid Article 2 (a) (b) (c).

⁷⁷ Ibid Article 14.

⁷⁸ Ibid.

⁷⁹ Environmental Damage (Prevention and Remediation) Regulations 2009 SI2009/153.

⁸⁰ Environmental Damage (Prevention and Remediation Regulations) (Wales) Regulations 2009, SI 2009/995.

⁸¹ Environmental Liability (Scotland) Regulations 2009, SSI 2009/266.

⁸² Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009, SI 2009/252.

Resources Act etc.⁸³

The second of these regulations is the Waste Regulations 2011⁸⁴ which derives from the EU Waste Framework Directive, and aims to minimise the use of resources, as well as encourage the practical use of waste.⁸⁵ It requires that companies engaged in the collection and transportation of waste must ensure that if waste is prevented, recycled or disposed⁸⁶ when engaging in waste collection and transportation, companies should be aware of the general environmental protection principles of prevention and sustainability, overall environmental, human health, economic and social impacts.⁸⁷ If the regulator finds that the companies concerned are not fulfilling their obligations, it has the power to issue a restoration notice to the polluter.⁸⁸ Polluters can face criminal offence and penalties if they fail to comply with their liabilities from a restoration, stop notice or a compliance notice.⁸⁹

The third of these, the Contaminated Land Regime, has been regulated by the Environmental Protection Act 1990 Part 2A. This is also a part of the implementation of WFD in the UK. This regulation provides a means of dealing with unacceptable risks posed by land contamination to human health and the environment, which further provides a legal basis for regulators to enforce the law. According to these regulations, it is the duty of the right person to repair

⁸³ Environmental Protection Act 1990 Part 2A provides more details about contaminated land. More details have defined in Water Resources Act 1991.

⁸⁴ The Waste (England and Wales) Regulations 2011 and The Waste (Scotland) Regulation 2011.

⁸⁵ Waste Framework Directive 2008/98/EC Article 2(1), (2) or (3).

⁸⁶ The Waste (England and Wales) Regulations 2011 regulation 12-15.

⁸⁷ Ibid.

⁸⁸ The Waste (England and Wales) Regulations 2011 regulation 40. The restoration notice means that a notice requiring a person to take specified steps within a specified period to secure that the position is, so far as possible, restored to what it would have been if a contravention had not occurred.

⁸⁹ The Waste (England and Wales) Regulations 2011 regulation 42.

the land contaminated by their actions.⁹⁰

On top of these regulations, operators in the UK also have environmental remediation obligations in relation to the closure of sites such as landfills; for example, the operator must meet criteria to close the landfill and move it to aftercare. This aftercare must meet relevant standards, such as those pertaining to ecological restoration.⁹¹ In order to ensure that the operator has enough fund to cover the costs of aftercare, all landfill operators need to prepare sufficient financial assurance to cover the future environmental cost before obtaining a license. The standard for financial assurance is that the costing of landfill sites ought to be based on 60 years' aftercare for non-hazardous and hazardous landfills and 3 years for inert landfills.⁹²

Lastly, some other types of environmental liability are also considered with respect to UK environmental legislation, such as oil spill and nuclear liabilities. Under the relevant regulations, polluters are required to take responsibility for their pollution and be held accountable for any necessary clean-up.

For example, the Petroleum Act 1998 established a licensing system, which requires licensees to secure sufficient funds to cover liability for any damage

⁹⁰ Environmental Protection Act 1990 Part 2A s78F.

'(Class A) persons who caused or knowingly permitted the land to become or remain contaminated or, if they cannot be found,

(Class B) persons who are the current owners or occupiers of the contaminated land.'

⁹¹ Waste Framework Directive, regulation 15 Waste Management Licensing Regulations 1994 Article 13.

⁹² Environment Agency, 'Calculate your financial provision' (GOV.UK 30 January 2020)

<<https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision>> accessed 13 July 2022

It is worth to mention the difference between the three different landfills. Non-hazardous waste are industrial wastes that cannot go into a waterway or waste containers. The main difference between hazardous and non-hazardous waste is that the latter is considered to be low-risk/non-dangerous. Inert waste landfill is a disposal facility that accepts only waste that does not cause environmental problem in terms of leachate. Such as cure asphalt, rock, leaves.

caused by oil pollution.⁹³

For nuclear environmental liability, the Environment Agency has to ensure that nuclear companies and the sites they operate meet high standards of environmental protection at all stages, such as design, construction, operation and decommissioning. Operators of nuclear facilities must also obtain a licence from the respective regulator and fulfil their environmental obligations, such as those relating to the operation, decommissioning and clean-up of nuclear sites.⁹⁴ Decommissioning is carried out by Sites Licence Companies (SLCs) working for The Nuclear Decommissioning Authority (NDA).⁹⁵ The current decommissioning cost of nuclear power station in the UK is around £23.5 billion.⁹⁶ Around two thirds of the cost is paid by the government, with the remainder being covered by income generated from the NDA's commercial activities.⁹⁷ Therefore, in cases whereby those responsible for pollution cannot pay the costs necessary for the environmental liability of nuclear sites, the British government takes on the liability of decommissioning nuclear facilities.⁹⁸

On the basis of relevant legalisations, environmental liability may be classified into two distinct categories.⁹⁹ The first of these is known and foreseen

⁹³ The Petroleum Act 1998 s4.

⁹⁴ Nuclear Installations Regulations 1971 regulation 3, The Environmental Permitting (England and Wales) Regulation 2016 Schedule 23.

⁹⁵ Nuclear Decommissioning Authority, 'Guidance: the NDA operating model, roles of site licence company' (GOV.UK, 11 May 2013) <<https://www.gov.uk/government/publications/guidance-the-nda-operating-model-roles-of-site-licence-company>> accessed 19 May 2022.

⁹⁶ Sandra Laville, 'UK nuclear power stations' decommissioning cost soars to £23.5 bn' (The Guardian, 20 May 2022) <<https://www.theguardian.com/environment/2022/may/20/uk-nuclear-power-stations-decommissioning-cost>> accessed 22 May 2022.

⁹⁷ Nuclear Decommissioning Authority, 'Nuclear provision: the cost of cleaning up Britain's historic nuclear sites' (GOV.UK 4 July 2019) <<https://www.gov.uk/government/publications/nuclear-provision-explaining-the-cost-of-cleaning-up-britains-nuclear-legacy/nuclear-provision-explaining-the-cost-of-cleaning-up-britains-nuclear-legacy>> accessed 22 May 2022.

⁹⁸ Ibid.

⁹⁹ European Commission, *Environmental Liability* (White Paper, COM 66, 2000) 13.

environmental liabilities. Examples of these include the decommissioning liability of nuclear sites, operators needing to restore and reclaim sites following mine closure, operators responsible for the remediation of landfills, as well as liability relating to pollution produced in normal industrial operation, such as air and water pollution which also requires extensive clean-up. This may also concern one-off incidents, such as oil spills or an explosion at a storage facility. Once such incidents occur, operators need to bear the environmental liabilities if they are found to be at fault.

No matter the nature of the environmental liability, the cost of such liability is, in most cases, huge. For example, the total cost of decommissioning the UK's existing offshore oil and gas production, transportation and processing infrastructure is estimated at £51 billion.¹⁰⁰ Meanwhile, the cost of landfill reclamation and remediation is also very high, with the cost of Walleys Quarry landfill alone estimated around £525,000 to £1 million.¹⁰¹ This raises an issue as to how, upon a polluter entering insolvency proceedings, insolvency law responds to environmental liabilities in the UK given the excessive cost of repair.

4.3.2 Environmental Liability in the UK's Insolvency Law

As noted above, environmental liability was not mentioned in the Insolvency Act 1986 or Insolvency Rules. Thus, if IP were to distribute insolvent estates, environmental liabilities would be classified, in principle, as ordinary debts. However, provisions in the Insolvency Act 1986, environmental laws, or case law, mean the position of the environmental regulator could be changed. This

¹⁰⁰ Stuart Stone, 'Marine simulation tech: cutting the £51 billion cost of decommissioning North Sea oil and gas' (Utility Week Innovate Network, 19 November 2021) <<https://utilityweek.co.uk/marine-simulation-tech-cutting-the-51-billion-cost-of-decommissioning-north-sea-oil-and-gas/>> accessed 19 May 2022.

¹⁰¹ Gareth Simkins, 'Walleys Quarry Landfill declared a statutory nuisance' (ENDS Report, 22 July 2021) <<https://www.endsreport.com/article/1722894/walleys-quarry-landfill-declared-statutory-nuisance>> accessed 10 May 2022.

part will analyse three different situations in insolvency proceedings. In these situations, environmental liability can be classified at different levels, which are bottom level, middle level and upper level.

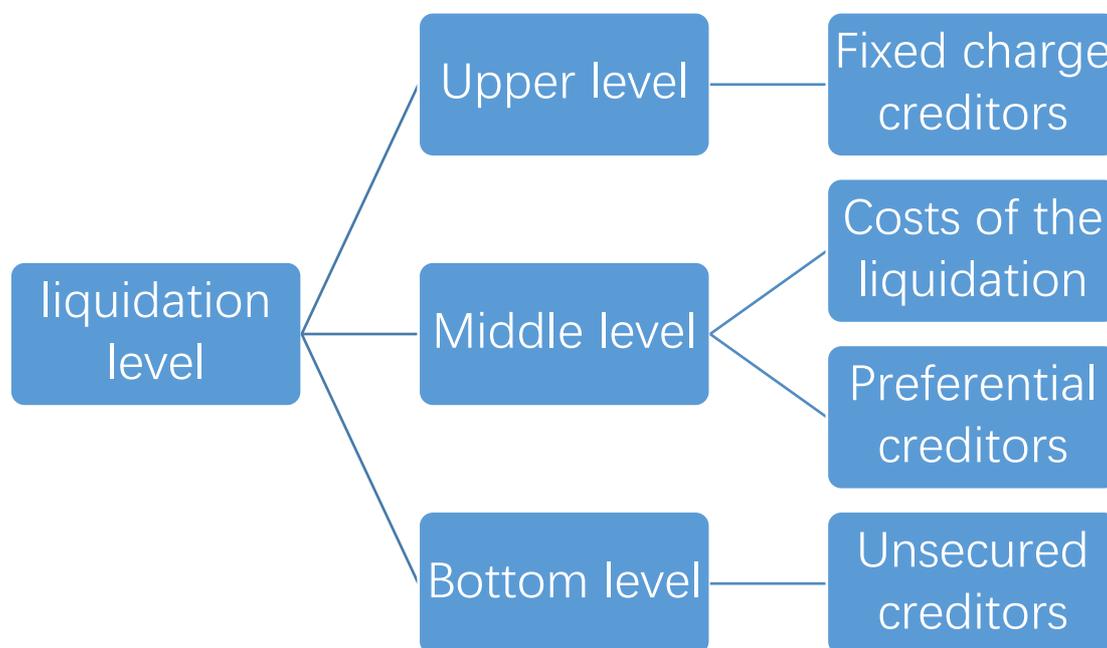


Table II - the order of distribution from bottom to upper in insolvency cases

At the bottom level, regulators may find it difficult to recover the cost of cleaning or remediation as environmental claims may be disclaimed in insolvency proceedings. For example, under section 178 of Insolvency Act 1986, environmental liabilities may be disclaimed by the liquidator resulting in the regulator being unable to recover costs, which will be analysed further in the next section. Moreover, the liquidator may even legally avoid environmental liabilities in insolvency resulting in environmental costs being transferred to society. The middle level means that environmental liability is given priority in the order of distribution in insolvency proceedings. If the insolvency polluter has a sufficient insolvency estate, the regulator can recover all environmental costs. Similarly, if the insolvent polluter does not have sufficient assets to cover all priority claims, the regulator may only be able to recover a portion of the environmental costs. The upper level is where the regulator could legally charge

land or property of polluters for environmental liabilities. If a pre-existing charge holder has charged land or property before, the regulator has the power to replace the previous holder.

4.3.3 Bottom level: S178 and S239 in Insolvency Act 1986

In England and Wales, the Insolvency Act 1986 gives a liquidator the right to disclaim the onerous property of an insolvent operator based on Section 178 of the Insolvency Act 1986. This means that an insolvent operator can successfully terminate its right and obligation in respect of the onerous property.¹⁰² Based on Section 178 of the Insolvency Act 1986, the onerous property can be explained as any unprofitable contract and any other property which is unsaleable or not readily saleable or is such that it may give rise to a liability to pay money or perform any other onerous act.¹⁰³ Some land and licence may have been contaminated in the course of operation, and the contaminated land that needs to be cleaned up meets the conditions of an onerous property, such as in the case of *Re Celtic Extraction Ltd*, *Re Bluestone*.¹⁰⁴ There are sites other than closed mines, quarries and landfills that may require remediation, as operators agree to perform restoration obligations after any operation when applying for a license. If so, the risk of these lands or license being abandoned as onerous property is greatly increased.

The *Re Celtic Extraction Ltd* is the first case in England to have disclaimed the license as an onerous property successfully. In this case, the Court of Appeal ruled that the waste management licence was onerous property within the meaning of the Insolvency Act of 1986, so the liquidator could disclaim the

¹⁰² Colin Mackie and Valerie Fogleman, 'Self-insuring environmental liabilities: a residual risk-bearer's perspective' (2016)16 *Journal of Corporate Law Studies* 309.

¹⁰³ Insolvency Act 1986 s178(3).

¹⁰⁴ C Mackie and V Fogleman (n 102) 309.

licence as "onerous property".¹⁰⁵ Celtic Extraction held a waste management license issued under the Environmental Protection Act of 1990. Because of financial problems, it was compulsory liquidation, and the official receiver acted as liquidator in the compulsory winding up. The controversial point of the case was whether the licence can be defined as property and disclaimed. The liquidator believed that the company had no assets to enable the continued fulfilment of the terms of the licence, while the Environmental Agency requires remedial measures to be taken at two sites under the terms of the waste management permit.¹⁰⁶

In this case, in the view of the regulator, the polluter could not disclaim licence according to the polluter pays principle¹⁰⁷ and Environmental Protection Act 1990.¹⁰⁸ However, in the view of the judge, there were no more details about the polluter pays principle in the Waste Framework Directive and Environmental Protection Act 1990 Part 2A, and there was no mention of any information about insolvent polluters.¹⁰⁹ Thus, in this case, the judge only needed to address two major questions: 1) whether the licence meets the scope of property provided for in section 436 Insolvency Act 1986 and 2) whether the licence can be disclaimed under Section 178.¹¹⁰

To answer the first question first. With the development of the cases and provisions of the insolvency law, the term property has been expanded.¹¹¹ However, in the view of the judge, the licence can still be identified as property

¹⁰⁵ *Re Celtic Extraction* [2001] Ch. 475.

¹⁰⁶ *Ibid.*

¹⁰⁷ Environmental liability Directive regulated the polluter pays principle, which has been implemented in the UK with the Part 2A and waste regulation.

¹⁰⁸ Environmental Protection Part 2A s35(11).

¹⁰⁹ *Re Celtic Extraction* [2001] Ch. 475.

¹¹⁰ *Ibid.*

¹¹¹ *Heath v Tang* [1993] 1 WLR 1421.

as defined in the insolvency law.¹¹² Firstly, there must be a legal framework that gives a right to those who meet certain conditions.¹¹³ Furthermore, the licence will have value.¹¹⁴ The very substantial fee received by the agency in the licence application, which proves the significant value of the waste licence to the owner or occupier of the land concerned. Therefore, the licence can be identified as property in Section 436 of the Insolvency Act 1986.

Now back to the second question, whether the licence can be disclaimed under section 178 of the Insolvency Act 1986. It's the Court of Appeal decision and Morritt LJ's judgement that is being contrasted with Neuberger J's in *Re Mineral Resources*. Morritt LJ supported the view of the official receiver that adopted the narrower interpretation of Section 35(11) Environmental Protection Act 1990.¹¹⁵ The conflict between S35(11) Environmental Protection Act 1990 and S178 Insolvency Act 1986 are not mutually inconsistent and irreconcilable:

*In my view the former can and should be limited to termination by act of parties and not by external statutory force. In that event it is not necessary to consider the judge's reasons for concluding that the consequence of the irreconcilability is to limit the application of section 178 of the Insolvency Act 1986 rather than that of section 35(11) of the Environmental Protection Act 1990.*¹¹⁶

Further, The Court of Appeal stated that if this case followed the decision in *Re Mineral Resources Limited, Environment Agency v. Stout*, it would mean that the cost of compliance would take precedence over provable obligations and that the company's assets would have to be set aside to cover future

¹¹² *Re Celtic Extraction* [2001] Ch. 475.

¹¹³ *Ibid.*

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

¹¹⁶ *Ibid.*

compliance costs rather than being distributed equally among creditors, which was not a reasonable or ideal situation.

However, the comment of the judge on the polluter pays principle in the *Re Celtic Extraction* case is negative.¹¹⁷ Because the Celtic Extraction left open the question whether the Environment Agency could claim as an unsecured creditor. Some scholars even commented that it is a violation of the polluter pays principle.¹¹⁸ The reason is that the aim of the polluter pays principle is to reduce the environmental liabilities transferred to wider society and realise the internalisation of environmental costs.¹¹⁹

However, in one of the views of the Court of Appeal, the disclaimer of a waste management license is unlikely to constitute an unlawful act, just as the license is terminated on the dissolution of the company or the death of the individual holder, so the licence can be disclaimed.¹²⁰ The decision of this case is like opening Pandora's Box, and other companies have also used this method to escape environmental liabilities, such as Bluestone Chemicals Limited.¹²¹

If the polluter disclaims the licence, it means it will be difficult for regulators to recoup the clean-up cost.¹²² Firstly, regulators need to prove the cost of repair, then regulators can claim charges in liquidation as legitimate ordinary unsecured creditors. But this means that all the risks will be transferred to society. Because in the order of distribution in liquidation, regulators have a

¹¹⁷ Blanca, Mamutse, 'Environmental liabilities in insolvency – an area ripe for reform?' (2016)8 International Journal of Law in the Build Environment 263.

¹¹⁸ Blanca Mamutse and Valerie Fogleman, 'Environmental claims and insolvent companies: the contrasting approaches of the United Kingdom and the United States' (2013)2 British Journal of American Legal Studies 609.

¹¹⁹ C Mackie and V Fogleman (n 102) 310.

¹²⁰ Ibid

¹²¹ *Re Official Receiver (as Liquidator of Celtic Extraction Ltd and Bluestone Chemicals Ltd) v Environment Agency; Bluestone Chemicals Ltd v Environment Agency* [2001] Ch. 475; [2000] 2 W.L.R. 991 [1999] B.P.I.R.986, CA.

¹²² C Mackie and V Fogleman (n 102) 311.

chance to be repaid only after the completion of all priority debts, such as floating charges, insolvency expense, employee interests, etc.¹²³ When many unsecured creditors divide the remaining insolvency property equally, regulators are likely to recover only a fraction of the cost.¹²⁴ This is because, in most insolvency cases, given that the value of assets available for distribution is often very low, the returns paid to unsecured creditors in the liquidation process are very low, and even the amount of some distributable property is zero.¹²⁵ In this way, the disclaimer may prevent regulators from recovering the costs of repairs or clean-up so that all costs will be transferred to externalisation, that is, borne by society.

4.3.4 Middle Level: Environmental Liability as Priority in Insolvency Expenses

Recently, Scottish case law indicated that environmental liabilities in liquidation were attributed to bankruptcy expenses, in the case of *Doonin Plant [2018]*. Doonin Plant operated waste management operations at a number of sites before it was liquidated in January 2015.¹²⁶ The Scottish Environmental Protection Agency (SEPA) claimed that from 2010 until the date of liquidation, the company stored waste at one of its sites without a licence.¹²⁷ The company received two notices from SEPA under the Environmental Protection Act 1990,¹²⁸ one in 2012 and the other in 2015, for this issue, requiring the company

¹²³ unsecured creditors, interests of shareholders

¹²⁴ C Mackie and V Fogleman, (n 102) 311.

¹²⁵ Sarah Paterson and Thomas Vickers, 'Common issues in corporate recovery and insolvency in England and Wales' (Slaughter and May, July 2011) <<https://www.slaughterandmay.com/services/practices/restructuring-and-insolvency/>> accessed 10 May 2020.

¹²⁶ Simon Tilling, 'Who is protected on insolvency: environment or the creditors' (Burgess Salmon, 13 November 2018) <<https://www.burgess-salmon.com/news-and-insight/legal-updates/who-is-protected-on-insolvency-the-environment-or-the-creditors/>> accessed 15 May 2020.

¹²⁷ Ibid

¹²⁸ Environmental Protection Act 1990 s59(1).

to remove the waste from the site. The company did not do so. This happened prior to the liquidation.¹²⁹

The liquidator appointed by the company estimated the cost of removing the waste between £2.3 million and £3.7 million. However, the company only had £635,000 in funds, so it was clear that the liquidator could not fully comply with the notice issued by SEPA.

As a result, the liquidator submitted a note to the Court of Session in 2018 asking how the court should deal with the obligations under the notice issued by SEPA.

In court, the two sides had been arguing over several issues, such as whether the liquidator needed to complete the remedial works.¹³⁰ In this case, the conflict point was how should legal environmental liabilities be classified in the statutory insolvency system, and would this conflict with the remuneration of the insolvency practitioner? Lord Doherty gave a series of analyses and answers as described below.

Firstly, the Environmental Protection Act of 1990 is the basis of Lord Doherty's detailed analysis. His view was that the 1990 Environmental Protection Act should be and was considered together with the basic Waste Framework Directive and polluter pays principle, the cost of complying with remedial measures should be divided into liquidation costs.¹³¹ Because the judge found that the legislature reasonably intended that the cost of complying with a Section 59(1) notice would be a liquidation cost, even though Section 59 itself is silent on the issue. If this were not the case, insolvent polluters would often avoid paying for the damage they have caused to the environment.¹³² In

¹²⁹ S Tilling (n 126).

¹³⁰ *Doonin Plant* [2018] CSOH 89.

¹³¹ *Ibid.*

¹³² *Ibid.*

reaching this conclusion, the judge followed Lord Neuberger's analysis of management costs in *Re Nortel GmbH* [2014] AC 209 (*Technical 507*) at paragraph 111.¹³³ Applying that analysis, the key question here is whether the nature of the duty imposed by the Section 59(1) notice is such that the legislature must reasonably intend that the liquidator's expenditure on complying with the Section 59 notice should be a liquidation expense.¹³⁴ Lord Doherty declined the view expressed in para 39 of *Re Celtic Extraction Ltd (in liquidation)* [2001] Ch 475 as 'unpersuasive'.¹³⁵

Secondly, counsel for the liquidator argued that the judgment would have a bad effect, that is, under certain circumstances, insolvency practitioners would not be appointed as liquidators. The reason is that the case of environmental liability will affect the remuneration of the liquidator, so the impact of insolvency is huge. In response to this issue, Lord Doherty clearly disagreed with such an argument. His view was:

*in my view there is no real risk that the court would refuse to order that a Liquidator's remuneration be paid in priority to section 59(1) expenditure if that is necessary to ensure that a Liquidator would be remunerated.*¹³⁶

In negotiating contracts, the Liquidator may be expected to safeguard his own legitimate interests as well as those of the company. Therefore, decisions as to the ways in which limited available resources ought to be used may be

¹³³ *Ibid.*

¹³⁴ *Ibid.*

¹³⁵ this approach would in effect lead to unsecured creditors of an insolvent polluting company paying for the company's environmental obligations. Where an insolvent company has assets, these are the company's assets and can fall to be used to pay liquidation expenses. Therefore, if meeting s59(1) environmental obligations is a liquidation expense, then the company's assets are to be used for that purpose because under the statutory liquidation regime, the expense has priority over creditors' unsecured claims.

¹³⁶ *Doonin Plant* [2018] CSOH 89.

expected to be taken following consultation with SEPA. An order has been made under section 156 directing that the remuneration and expenses of the liquidator shall take precedence over other expenses of the winding up.¹³⁷

The decision in this case is significant in Scottish law.¹³⁸ This is because this case is the first time where it was confirmed that environmental liabilities could be classed as bankruptcy expenses in Scottish case law. Some scholars disagreed with the decision to break with the *Pari Passu* principle, as it would damage the interests of unsecured creditors.¹³⁹ However, more scholars held a positive opinion about the decision.¹⁴⁰ It is undeniable that this case is a milestone in the liquidation of environmental liabilities. The case is likely to change the previous vulnerable position of environmental liability in liquidation in Scottish law.¹⁴¹ This case improves the position of environmental liabilities in liquidation in the jurisdiction of Scotland.¹⁴² It means that if the assets of an insolvent company are sufficient to cover bankruptcy expenses, regulators can ensure cost recovery of environmental liabilities. It is also protecting the polluter pays principle. The status of environmental liabilities in liquidation in the

¹³⁷ Ibid.

¹³⁸ Blanca Manutse, 'Lessons from Scotland: Environmental regulators' claim as contingent debts or liquidation expenses in insolvency proceedings (and the future toppling of a Celtic giant?)' (2020)33 *Insolvency Intelligence* 45.

¹³⁹ B.David Naidu, Dawn Monsen Lamparello and Emily S. Tabak 'Key environmental liability considerations in bankruptcy actions' (New Jersey Lawyer, October 2016) <<http://www.klgates.com/files/Publication/7d53a5d1-c4fe-459e-ae93-1751c67b33d4/Presentation/PublicationAttachment/d1cd9e12-982d-4273-802b-22fd7fec902e/Naidu.Lamparello.Tabak.pdf>> accessed 20 May 2020.

¹⁴⁰ Eric Baijal, 'Polluters must pay' (Scottish Legal News, 12 December 2018) <<https://www.scottishlegal.com/article/eric-baijal-polluters-must-pays>> accessed 15 May 2020; S Tilling (n 126).

¹⁴¹ Casey Watters, 'Empowering states to set the priority of environmental claims in bankruptcy' (2015)31 57; Tuula Linna, 'The environmental liabilities of a bankruptcy estate' (2017) 26 *International Insolvency Review* 212.

¹⁴² Ainslie Benzie 'Scottish Court gives clean-up costs priority over creditor repayment' (Pinsent Masons, 14 Jan 2019) <<https://www.pinsentmasons.com/out-law/legal-updates/scottish-court-gives-clean-up-costs-priority-over-creditor-repayment>> accessed 15 May 2020.

jurisdiction of Scotland is in a priority position, which effectively protects the interests of public health.

4.3.5 Upper level: charge land for environmental Liability

The upper level means that regulators could charge land for environmental liabilities according to laws that have been implemented. For example, in jurisdictions of England and Wales, some environmental laws give regulators a special right to take a charge (i.e. security) of the property of polluters. In other words, regulators can set a fixed charge on the polluter's property, even if it already has pre-existing charge holders, such as banks or other creditors, in which instance, environmental liability can be given the highest priority. For example, the Environmental Protection Act 1990, S78P grants the power to a regulator to take a charge over premises which consist of or include contaminated land.¹⁴³ Other regulations such as environmental damage (prevention and remediation) (Wales) regulation (2009),¹⁴⁴ and Environmental Damage (Prevention and Remediation) (England) Regulations 2009,¹⁴⁵ also include that regulators can charge on property of operators for their environmental liabilities. The purpose of these treaties is to ensure that the regulator is able to recover and secure the costs of remediation.

However, a key contentious point about the above provision is that the property of the operator charged by the regulator can replace the pre-existing charge holder. Mackie argues that debts owed to society should take precedence over debts owed to corporate creditors.¹⁴⁶ This view arises from economic equity theory, i.e., to avoid some countries using public funds to

¹⁴³ Environmental Protection Act 1990 Part 2A ss78P(3)(a)(i) and (4)(b).

¹⁴⁴ Environmental Damage (Prevention and Remediation) Regulations 2009 SI 2009/153 reg 27(1).

¹⁴⁵ Environmental Damage (Prevention and Remediation) (Wales) Regulation 2009 SI 2009/995 reg27(1).

¹⁴⁶ Colin Mackie and Malcolm M Combe, 'Charges on lands for environmental liabilities: a matter of 'priority' for Scotland' (2019)31 Journal of Environmental Law 87.

subsidise their own pollution control. It is also consistent with the wider policy driving the polluter pays principle.¹⁴⁷ However, there has been criticism as to whether this view could be considered unfair or unjust in relation to the legal rights of the pre-existing charge holder.¹⁴⁸ According to Insolvency Law 1986, the interests of fixed charge holders in liquidation are absolutely safe if the value of the asset is sufficient to cover the debt.¹⁴⁹ If a regulator should replace the pre-existing charge holder, that would break the order of distribution as set out in the Insolvency Act 1986.

Although the legislation does not state the regulator has priority about charging on property, the case law indicates that the charge taken by the regulator would have priority over the pre-existing charge of a lender.¹⁵⁰ In the case of *Corporation of Birmingham v Baker*, the judge was clearly in favour of a regulator that focused on public interests, the reason is explained as follows;

*The works were done for the benefit of the property, fitting the property for building, and the like, and therefore it is not at all unreasonable or surprising to find it declared in an Act of Parliament in default of other remedies, that the property which is improved, and which has had the benefit, must bear the onus.*¹⁵¹

Furthermore, in the case of *Westminster City Council v. Haymarket Publishing Ltd*, this case confirmed that regulators can charge on the property of operators and replace the pre-existing charge holders.¹⁵²

¹⁴⁷ Ibid 101.

¹⁴⁸ Ibid 105.

¹⁴⁹ Chrispas Nyonbi, 'The floating charge: A history of unfairness' (SSRN 11 November 2011) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1965960> accessed 15 May 2020.

¹⁵⁰ C Mackie and V Fogleman (n 102) 315.

¹⁵¹ *Birmingham Corp v Baker* [1881]Ch.D 782.

¹⁵² *Westminster city council v Haymarket publishing Ltd* [1928]2 KB 681.

Therefore, through the method of analogy, it can be inferred that the position of the judge in hearing such cases is inclined to public interest.¹⁵³ It means that the regulator is likely to replace the pre-fixed charge holder when they charge on land for environmental liabilities. If regulators can successfully charge land and the value is enough to pay for environmental liabilities, then regulators are undoubtedly the safest in the process of winding up. The issue of implementation actually can be resolved relatively easily by legislators and drafters.¹⁵⁴

4.4 Case study

There are three typical cases that will be analysed in this part, which involve different types of environmental liability in the UK, including steel, coal and chemical. The first one is British Steel, which is the case went into insolvency, and a new buyer decided to takeover British Steel recently.¹⁵⁵ The second one is Scottish Coal, this case happened in the Scottish court. The IP in this case wanted to disclaim the license of Scottish Coal in the liquidation. The last case is Buncefield case, this case involved some different companies, and one of them seems went into voluntary liquidation in order to escape the environmental liability

4.4.1 British Steel

British Steel Ltd (British Steel) used to be one of the most renowned steel companies among those in the European market,¹⁵⁶ known for producing long

¹⁵³ C Mackie and V Fogleman (n 102) 317.

¹⁵⁴ C Mackie and M Combe (n 146) 108.

¹⁵⁵ Nails Pratley, 'A buyer for British Steel is welcome but what's Jingye's strategy?' (The Guardian, 11 November 2019) <<https://www.theguardian.com/business/nils-pratley-on-finance/2019/nov/11/a-buyer-for-british-steel-is-welcome-but-whats-jingyes-strategy>> accessed 2 June 2020.

¹⁵⁶ British Steel, 'Where we've come from' (British Steel) <<https://britishsteel.co.uk/who-we-are/where-weve-come-from/>> accessed 2 June 2020.

steel products.¹⁵⁷ It was founded after Greybull Capital acquired the long steel business of Tata Steel.¹⁵⁸

British Steel began to turn a profit a year after it was acquired. However, the positive financial climate did not last long, and British Steel soon found itself in the midst of a financial crisis two years later. While British Steel was in a state of insolvency for some time, the problems that British Steel faced have since been exposed in recent years. For example, the number of people employed by British Steel in 2019 was 31,900; equivalent to just 10% of the 323,000-strong workforce in 1971, according to the firm's employment data.¹⁵⁹

The impact of the closure of Redcar Steelworks in 2015 on British Steel is even more difficult to estimate. British Steel shrunk as a result of the closure of Redcar Steelworks, with only two blast furnace mills and four electric arc furnaces left in operation. The two blast furnace mills use raw materials to produce steel, while the four electric arc furnaces use recycled steel to make their products.¹⁶⁰ Indeed, the ability to manufacture steel is rated as an important component of the defence capabilities of developed countries, as well as it having an important role in strategically important industries such as transportation, oil and gas.¹⁶¹ British Steel is extremely significant for the UK, as it is the country's sole producer of rail, as well as other construction products.¹⁶² If the UK were to lose British Steel, this would mean relying heavily

¹⁵⁷ Ibid.

¹⁵⁸ Ibid.

¹⁵⁹ Jasper Jolly, 'British Steel to be sold to Chinese firm in deal that could save 4,000 jobs' (The Guardian, 11 November 2019) <<https://www.theguardian.com/business/2019/nov/11/british-steel-rescue-deal-jingye-scunthorpe-jobs>> accessed 15 June 2020.

¹⁶⁰ Rob Davies, 'What went wrong at British Steel?' (The Guardian, 22 May 2019) <<https://www.theguardian.com/business/2019/may/22/what-went-wrong-at-british-steel>> accessed 15 May 2020.

¹⁶¹ Ocheri Cyril and others, 'The steel industry: a stimulus to national development' (2017)06 Journal of Power Metallurgy and Mining 2.

¹⁶² R Davies (n 160).

on imported steel for construction and infrastructure projects.¹⁶³

British Steel at its current size cannot compete with China or India in the world steel market. Although British Steel had tried to seek government assistance, the bailout was refused.

This was because the government had previously paid £120 million to British Steel in order to help it pay an EU bill regarding carbon emissions.¹⁶⁴ Moreover, British Steel had requested the government to provide £30 million of the loan on non-commercial terms, which would have been illegal under EU national aid rules¹⁶⁵. Consequently, on 22nd May 2019, British Steel entered insolvency proceedings and the official receiver took over the company. Meanwhile, accounting firm, EY played the important role of 'special manager' and tried to find a new buyer for British Steel.

Attempts were made to find new buyers for British Steel, with Creybull and Oyak lined up to buy the firm until negotiations failed, owing to several issues. In the end, China Jingye Group agreed to pay £50 million to acquire British Steel; pledging an addition £1.2 billion in post-acquisition investment, and in doing so, saving 4,000 jobs.¹⁶⁶

According to a recent statement by an Executive from Jingye Group and Union Officials of British Steel, a primary agreement has been reached, which concerns the basis of a new employment contract, as well as other aspects relating to the company's turnaround plan.¹⁶⁷ However, the issue of environmental liability has yet to be mentioned in the liquidation details

¹⁶³ Ibid.

¹⁶⁴ Jasper Jolly and Julia Kollwe, 'British Steel on verge of collapse as government talks stall' (21 May 2019) <<https://www.theguardian.com/business/2019/may/21/british-steel-administration-jobs-government-loan>> accessed 15 June 2020.

¹⁶⁵ R Davies (n 160).

¹⁶⁶ Ibid.

¹⁶⁷ J Jolly and J Kollwe (n 164).

disclosed by the government, or the agreement information disclosed by British Steel. Several scholars are concerned that the potential environmental issues associated with British Steel cannot be adequately protected during either the current phase of compulsory liquidation or upon the firm being successfully taken over by Jingye.¹⁶⁸

First and foremost, British Steel had established a large expanse of steelworks plant in Middlesbrough, forming a near-continuous line from Middlesbrough in North Yorkshire, England, to the town of Redcar, along the south bank of the River Tees. The area once had 91 blast furnaces within a 10-mile radius.¹⁶⁹ According to a report issued by Middlesbrough Council, the sites of British Steel in Middlesbrough have been contaminated with heavy metals.¹⁷⁰ Officials have announced 1077 potentially contaminated site areas in Middlesbrough at present, in need of environmental clean-up, the exact expanse of land contaminated as a result of British Steel's industrial activity is not yet clear.¹⁷¹ Therefore, regulators are currently unable to recover the potential, future remediation cost from British Steel. Such environmental liability is likely to be of very high cost to those liable to pay for the required clean-up of affected areas.¹⁷²

Secondly, a large proportion of the fines received by British steel companies are due to the pollution they have produced, with all such fines attributed to the need to control the emission of pollutants, for example, reductions in carbon

¹⁶⁸ Andrew Keay and Peter Walton, 'British Steel – Is it a wind up?' (2019)12 Corporate Rescue and Insolvency 126.

¹⁶⁹ British Steel 'Our location' (British Steel) <<https://britishsteel.co.uk/get-in-touch/our-locations/>> accessed 15 June 2020; BBC News 'Workers return as steelworks furnace is relit' (BBC, 15 April 2012) <<https://www.bbc.co.uk/news/av/business-17718399>> accessed 15 June 2020.

¹⁷⁰ Middlesbrough Council 'Middlesbrough's contaminated land strategy' (July 2017) 40.

¹⁷¹ Ibid 65.

¹⁷² A Keay, and P Walton (n 168) 126.

production.¹⁷³ The government even provided £100 million to British Steel in order to pay its EU carbon bill.¹⁷⁴ However, according to the news disclosed by official sources, this £100 million is not free supporting; it is defined as a loan-type repayment, which is used for paying the EU carbon emission fines.¹⁷⁵ It means that British Steel has a debt of £100 million, which, upon the government taking on the role of creditor to British Steel; could result in requests for monetary repayment to be made.

Nevertheless, there is no sign indicating that British Steel would be able to repay the £100 million debt; in addition to the costs associated with liquidation or takeover by Jingye. Up to now, the British government has shown no readiness to recover these 'debts' from British Steel. Even if the acquisition is successful, the government may not request the £100 million owed by British Steel, due to the importance of steel production for the country's national defence capabilities.¹⁷⁶ Similarly, British Steel is the UK's sole railway manufacturer; providing building materials to many of the country's vital infrastructure projects.¹⁷⁷ At present, the rate of imported steel in the UK has risen to 42%. If British Steel became insolvent, the proportion of steel imported from outside the UK would inevitably rise sharply.¹⁷⁸ As such, the environmental liability of £100 million owed by the British Steel is not reflected in insolvency proceedings.

Thirdly, when the steelworks in Corby developed on a large scale, British Steel became its first and only owner. However, against the backdrop of the depression of the steel industry in the 1970s, British Steel closed its steelworks

¹⁷³ R Davies (n 160).

¹⁷⁴ Ibid.

¹⁷⁵ Ibid.

¹⁷⁶ O Cyril and others (n 161) 2.

¹⁷⁷ R Davies (n 160).

¹⁷⁸ Chris Rhodes, 'UK Steel industry: Statistics and Policy' (2 January 2018) House of Commons Briefing Paper.

there; leaving behind serious land pollution owing to excessive industrial activity.

In the famous case, *Corby Group Litigation v. Corby Borough Council*,¹⁷⁹ it became relevant that the pollution in Corby was caused by British Steel; as it had been claimed that this pollution had caused a number of local children to develop disabilities. Judges and plaintiff lawyers later ruled that such cases were due to negligence on the part of the Corby Borough Council.¹⁸⁰

Later, the Corby Council restored the 270ha of land contaminated by British Steel, at a cost of more than £35 million in public funds; 90% of which was provided in the form of a Derelict Land Grant from the Department of the Environment. The rest of the funding came from EU regional development funding.¹⁸¹ However, at no stage was British Steel asked to front the cost of such cleaning and remediation work; instead, the firm was able to openly and legally escape the costs relating to the remediation of land contaminated as a result of their prolonged industrial activity.

In Scunthorpe, decommissioned underground iron mines have caused environmental problems, such as serious subsidence in some areas, resulting in a delayed collapse. At the end of the 20th century, some of the surface iron quarries were restored with funds donated by companies and governments, while some quarries were used as landfills.¹⁸² However, the operator, British Steel did not pay any money for this remediation work.

In 2020, the sale of British Steel to the Jingye Group was completed.¹⁸³ The

¹⁷⁹ *Corby Group Litigation v. Corby Borough Council* [2009] EWHC 1994 (TCC).

¹⁸⁰ *Ibid.*

¹⁸¹ Stephen Sykes, 'The Corby case overspill' (ERIC, 1969) <<http://www.eric-group.co.uk/environmental-regulation/contaminated-land/the-corby-case-overspill>> accessed 18 June 2020.

¹⁸² J Jolly and J Kollwe (n 164).

¹⁸³ Department for Business, Energy & Industrial Strategy and The Rt Hon Alok Sharma MP, 'British Steel sale to Jingye Group completes' (GOV.UK, 9 March 2020)

deal was a success on the face of it, with various sectors in the UK praising the deal. Former Prime Minister Boris Johnson said ‘Jingye’s pledge to invest £1.2 billion into the business is a welcome boost that will not just secure thousands of jobs, but ensure British Steel continues to prosper’.¹⁸⁴ Former Business Secretary, Alok Sharma also commented ‘it marks the start of a new era for those regions (British Steel sites)’¹⁸⁵

However, the environmental liabilities of British Steel were not explicitly referred to, with both the press and government remaining silent on such issues. It is still unclear whether Jingye will assume the environmental bills and liabilities of British Steel, but based on that which has been disclosed by the government so far, it is feared that such environmental costs will ultimately be transferred to wider society.

4.4.2 Scottish Coal Co Ltd

Scottish Coal, a renowned coal producer, was not only the largest coal producer in Scotland, but also the second largest coal producer in the UK.¹⁸⁶ Scottish coal had an open-air interest in the coalfields of Scotland, which produces around 4 million tons of coal a year across Scotland.¹⁸⁷ However, Scottish Coal has encountered operational difficulties as a result of falling coal prices and rising operational costs.¹⁸⁸ According to a statement by KPMG, Scottish Coal did not meet the conditions required to allow it to continue to operate, and so Scottish

<<https://www.gov.uk/government/news/british-steel-sale-to-jingye-group-completes>> accessed 10 September 2022.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid.

¹⁸⁶ Scottish Coal Company Ltd, ‘History’ (Scottish Coal) <[http:// www.scottishcoal.co.uk](http://www.scottishcoal.co.uk)> accessed 18 June 2020.

¹⁸⁷ Ibid.

¹⁸⁸ Erika Askeland, ‘Last Scottish-owned coal mining company folds’ (The Scotsman, 20 April 2013) <<https://www.scotsman.com/news/last-scottish-owned-coal-mining-company-folds-1578655>> accessed 18 June 2020.

Coal was likely to go into liquidation.¹⁸⁹

Scottish Coal used to operate several open-cast mines. These sites were located in East Ayrshire, South Lanarkshire and Fife.¹⁹⁰ It is shown in ordinary scientific research that open-cast mining causes serious environmental impacts, such as changes to the geological, hydrological and geotechnical conditions of the impacted areas.¹⁹¹ It affects existing ecosystems and landscapes.¹⁹² Additionally, dust and noise not only affect the atmosphere and soil of the developed area, but also that of the surrounding inhabited areas and their populations.¹⁹³ As well as these environmental impacts, two sites of Scottish Coal are at heightened risk of erosion and flooding, or growing risk of incident.¹⁹⁴

According to environmental legislation, Scottish Coal have to remediate the affected sites post-mining.¹⁹⁵ Unfortunately, remediation of these sites had not taken place when Scottish Coal were placed into liquidation.

When the Scottish coal mines were ordered to be closed by the court and the petitioner was appointed joint liquidator, several plots belonging to Scottish Coal remained unsold. Relevant agencies estimated that the cost of complying with environmental regulations at these sites in future would be £478,000 per month; a cost bound to impact the assets of Scottish Coal.¹⁹⁶ In order to protect

¹⁸⁹ KPMG Notice (23 May 2014).

¹⁹⁰ Sunday Herald, 'Exposed: the worsening crisis at Scotland's opencast coal mines (Rob Edwards, 12 July 2014) <<https://www.robedwards.com/2014/07/exposed-the-worsening-crisis-at-scotlands-opencast-coal-mines.html>> accessed 18 June 2020.

¹⁹¹ Deniz Mamurekli, 'Environmental impacts of coal mining and coal utilization in the UK' (2010)15 *Acta Montanistica Slovaca* 134.

¹⁹² *Ibid.*

¹⁹³ *Ibid.*

¹⁹⁴ S Herald (n 190).

¹⁹⁵ *Ibid.*

¹⁹⁶ Malcolm M Combe and Malcolm I Rudd, 'Abandonment of land and the Scottish Coal Case: was it unprecedented' (2018)22 *Analysis* 303.

unsecured creditors and holders of floating charges, the joint liquidator sought to relinquish the land and instructions from the court. The view of the joint liquidator is that, if environmental obligations are fulfilled, the expenditure of the environmental obligation will account for almost all of the insolvency assets of Scottish Coal.¹⁹⁷ If such liabilities are fulfilled, it means that environmental responsibility is a formal priority, which undermines the statutory priority.¹⁹⁸ The joint liquidator made a series of requests to the court, including whether they could give up the land grant and statutory license, in other words, whether they could give up the obligation of land clean-up.¹⁹⁹

In the first instance, Lord Hodge confirmed the matter that heritable property owned by the company and forming part of the assets of the liquidation, and the licences attached to that property, were able to be abandoned.²⁰⁰ This means that the same practical result is achieved in Scotland as in England, where the liquidator has a clear statutory power to "disclaim" onerous property.

However, the decision of the ordinary judge was overturned on appeal, the Court of Appeal has ruled that there was no right to abandon the contaminated land in Scottish law, and the company was obliged to continue to maintain the sites under a licence granted by Scottish environmental regulation.²⁰¹ The Court of Appeal considered the circumstances in which ownership of the legal right to heritable property could be terminated under Scots law and concluded that the liquidator in Scotland had no power to disclaim statutory licences.²⁰²

The court has ruled that there was no right to abandon the contaminated land

¹⁹⁷ Ibid.

¹⁹⁸ *The Scottish Environment Protection Agency and Others v The Joint Liquidators of the Scottish Coal Company Ltd* [2013] CSIH 108; *Joint Liquidators of the Scottish Coal Co Ltd, Noters* [2013] CSOH 124

¹⁹⁹ Ibid.

²⁰⁰ *Joint Liquidators of the Scottish Coal Co Ltd, Noters* [2013] CSOH.

²⁰¹ *The Scottish Environment Protection Agency and Others v The Joint Liquidators of the Scottish Coal Company Ltd* [2013] CSIH 108.

²⁰² Ibid.

in Scottish law, and the company was obliged to continue to maintain the sites under a licence granted by Scottish environmental regulation.²⁰³ However, Scottish Coal does not appear to be paying its environmental liabilities.

In 2013, when Scottish Coal commenced liquidation, viable mines that were immediately transferable were sold to Hargreaves Service Plc (HSP), while mines that were not immediately transferable and were in question were allocated to Scottish Coal's subsidiaries, whose stakes were subsequently transferred to HSP.²⁰⁴ In this case, the liquidator 'legally' abandoned a large amount of contaminated land.²⁰⁵ This is despite comments that the deals as a whole were broadly beneficial, with a large number of jobs retained and the number of properties requiring abandonment minimised.²⁰⁶ However, Scottish Coal, as the polluter, has not paid for the remediation of its pollution. There is a case to prove this point.

The Dunstonhill opencast mine, one of Scottish Coal's sites, has made the 200-acre site particularly dangerous as the quarry void was filled water; posing a significant hazard to both the local environment and neighbouring community²⁰⁷. Dunstonhill has now been completely restored.

In 2015, East Ayrshire Council contracted Hargreaves Surface Mining Ltd to carry out remedial works, with East Ayrshire Council and the Scottish Mines

²⁰³ *The Scottish Environment Protection Agency and Others v The Joint Liquidators of the Scottish Coal Company Ltd* [2013] CSIH 108.

²⁰⁴ Acquisition of Assets from Aardvark (TMC) Ltd (16 May 2013) and Acquisition of Assets from The Scottish Coal Company Ltd (5 July 2013) <<http://www.hsgplc.co.uk/investors/regulatory-news.aspx>> accessed 10 July 2020; B Mamutse (n 117) 247.

²⁰⁵ Ibid.

²⁰⁶ B Mamutse (n 117) 247.

²⁰⁷ East Ayrshire Council 'Dunstonhill landscape is revitalised as works conclude on site' official East Ayrshire Council (East Ayrshire Council, 17 May 2018) <<https://www.east-ayrshire.gov.uk/news/article/dunstonhill-landscape-is-revitalised-as-works-conclude-on-site>> accessed 17 June 2020.

Restoration Trust (SMRT) working together to deliver the project.²⁰⁸ At the time of liquidation, ownership of the land owned by Scottish Coal was transferred to SMRT's subsidiary, Mines Restoration Limited.²⁰⁹ The cost of restoring Dunstonhill is currently unknown, but it appears that the source of funding for the restoration can be traced back to press reports, which state that East Ayrshire had received grants totalling in excess of £6 million to restore the opencast mines.²¹⁰ After the council paid millions of pounds in taxpayers' notes, the Scottish government provided millions of pounds more to cover the cost of the environmental restoration.²¹¹ When Scottish Coal was liquidated, it was predicted that Scottish Coal's environmental bill would exceed £73 million.²¹²

Indeed, the case of Scottish Coal is ironic. The liquidator 'legally' escaped environmental liabilities after the court ruled that the Scottish Coal could not abandon the land on which it was environmentally liable. In the cases where remediation was completed, the vast majority of the funding came from grants and taxpayers, and the real polluter did not pay for the cost of restoration.

4.4.3 Buncefield Fire

In December 2005, the Buncefield fuel depot fire was the largest peacetime blaze in the UK. The starting point was at an oil storage facility at the Hertfordshire Oil Storage Terminal, which is located near the M1 motorway, Hemel Hempstead, in Hertfordshire, England. The fire caused serious losses,

²⁰⁸ Ibid.

²⁰⁹ Ibid.

²¹⁰ Reevel Alderson '£6m boost to restore East Ayrshire's coalfield communities' (BBC, 31 March 2020) <www.bbc.co.uk/uk-scotland-52104126> accessed 17 June 2020.

²¹¹ Kevin Dyson, 'Abandoned opencast mine restoration 'completed' as East Ayrshire Council have to stump up £3 million for work' (Daily Record, 10 January 2022) <<http://www.dailyrecord.co.uk/ayrshire/abandoned-opencast-mine-restoration-completed-25904195>> accessed 17 June 2020.

²¹² BBC News, 'Liquidators escape £73 million clean-up bill for Scottish Coal' (BBC, 17 July 2013) <www.bbc.co.uk/uk-scotland-23348222> accessed 17 June 2020.

from damage to the economy to the health of nearby residents, among a series of other problems. Firstly, while the blaze was ongoing, more than two thousand local people had to look for a new place to live because a number of houses were destroyed by the fire.²¹³ In considering the potential damage to children's health caused by smoke from the fire, several local schools had to be closed temporarily.²¹⁴ Secondly, as the fire broke out on the M1 motorway, this resulted in the temporary closure of the country's most important traffic artery and other nearby roads.²¹⁵ Moreover, the oil storage also provided fuel to Heathrow Airport, meaning that as a result of the explosion and highway closures, a shortage of aircraft fuel ensued at Heathrow Airport for a prolonged duration of time.²¹⁶ A number of offices and other buildings were destroyed by the fire, which meant that these companies had to suspend business while such buildings were being repaired or reconstructed.²¹⁷ Lastly, the fire caused serious pollution of local groundwater, thus allowing chemicals that had been banned by the British government to be detected in the water supply, which could have led to serious health problems for local residents.²¹⁸

After this fire, five different companies, Total UK Ltd, British Pipeline Agency Ltd, Hertfordshire Oil Storage Ltd, TAV Engineering Ltd and Motherwell Control System had to pay more than £780 million fines and compensation in two major types of legal action, including both civil and criminal liability.²¹⁹ Firstly, we shall

²¹³ Jan Colley, 'Total liable for Buncefield fire' (Independent, 20 March 2009)

<<https://www.independent.co.uk/news/uk/home-news/total-liable-for-buncefield-fire-court-rules-1650007.html>> accessed 20 June 2020.

²¹⁴ BBC, 'Oil blaze schools reopen' (BBC News, 14 December 2005)

<<http://news.bbc.co.uk/1/hi/education/4525818.stm>> accessed 20 June 2020.

²¹⁵ Anthony Matthews, 'Timeline of Buncefield oil depot explosion in Hertfordshire' (Watford Observer, 11 December 2021) <<https://www.watfordobserver.co.uk/news/19776584.timeline-buncefield-oil-depot-explosion-hertfordshire/>> accessed 15 December 2021.

²¹⁶ Ibid.

²¹⁷ J Colley (n 213).

²¹⁸ Ibid.

²¹⁹ Ibid.

examine the consequences of civil liability.

Residents, enterprises, and insurance companies have filed a total of 2700 claims against the companies involved. During the court hearing, Total UK Ltd and Hertfordshire Oil Storage Ltd negligence was found to be the cause of the fire but refused to admit civil and criminal liability for the accident. In the view of Total UK Ltd, negligence is a difficult factor to define. However, in the High Court ruling, the judge said that the damage caused by the explosion at the Hertfordshire oil depot was due to Total's irresponsible behaviour and inadequate risk assessment.²²⁰ The ruling cost more than £750 million.²²¹

Secondly, we must examine the role of criminal liability in this case. The criminal case involved in this accident was initiated by the Health and Safety Executive and the Environment Agency under the Health and Safety Act and the Water Resources Act. In the corporate criminal trial, it was found that the problem with Hertfordshire Oil Storage Ltd was their failure to prevent major accidents and limit the impact of said accidents.²²² British Pipeline Agency Ltd pleaded guilty to the crime of environmental damage that was accused of not taking the necessary measures to prevent a major accident according to the Control of Major Accidents and Hazards Regulations. Total UK Ltd pleaded guilty to three charges, including two charges under the Health and Safety Act and a charge about water pollution under the Water Resources Act. Motherwell Control Systems and TAV Engineering were convicted of violating health and safety regulations. Therefore, in the decision of the court, Total UK was fined £3.6 million and a further £2.6 million of the cost, a total £5.8 million. Hertfordshire Oil Storage Limited was fined £1.45 million and plus £1 million, total of £2.45 million. The British Pipeline Agency Ltd was fined £300,000, plus a further

²²⁰ *Colour Quest Ltd v Total Downstream UK Plc* [2009] EWHC 540.

²²¹ Hemming Information Services 'total alone must pay for the damage' (4, 2009) *Industrial Fire Journal*.

²²² *Ibid.*

£480,000, all in all a total of £780,000. Motherwell Control Systems and TAV Engineering were both fined £1,000 each.²²³

However, there is a very strange phenomenon in the judgement of criminal liability. Motherwell Control System might have escaped more than £300,000 in environmental liabilities regarding the Buncefield fire. In the trial, Motherwell Control System was fined £1,000. However, in fact, the responsibility of Motherwell Control Systems in the fire might amount to more than £1,000 of damages. According to the report, 'Buncefield: why did it happen', which was published by the group Control of Major Accident Hazards (COMAH), the root cause of the accident came from the failures of both the high-level switch (HLS) and automatic tank gauging system (ATG), and that Motherwell Control Systems is responsible for their installation and daily maintenance.²²⁴ The job of Motherwell Control System is very important, according to the 2004 audit report, the Motherwell Control System needs to have the ability to perform this function, and its capacity requirements should be linked to the level of contract risk.²²⁵ In the low-risk part, terminal staff should be trained to be competent, while high-risk contracts may require the hiring of professionals.²²⁶ This means that the ability and training of Motherwell employees to use critical equipment should be evaluated, but it is clear that the company does not seem to have any training required for employees or hiring senior professionals. Therefore, Motherwell needs to take more responsibility in the event of such fire accidents. If Motherwell can fulfil the contract seriously and give training to its employees, the fire could have been avoided at a much lower risk, because the employees would have received relevant training and be competently familiar with the risks of the equipment and operation of said

²²³ Ibid.

²²⁴ COMAH (Control of Major Accident Hazards) *Buncefield: Why did it happen?* (HSE, Environmental Agency, and SEPA, 11 December 2005) 15.

²²⁵ Ibid 17.

²²⁶ Ibid 17.

equipment.

Another question posed throughout the investigation is why Motherwell initiated voluntary liquidation. Generally speaking, the reasons for a company initiating insolvency is that it meets balance sheet tests and cash flow tests.²²⁷ According to the disclosed documents, the voluntary liquidation of Motherwell was not for financial issues but seems to be a plot by senior executives of Motherwell to escape responsibility after the Buncefield fire.²²⁸ For example, most of Motherwell's business was transferred to a new company established after the fire, and the rest of the business was transferred to independent company Motherwell Tank Gauging.²²⁹ Strangely, however, the two companies use the same office number, and in addition, they have reached a new agreement with Motherwell, which accepts the business of Motherwell but does not include any responsibility for the Buncefield fire.²³⁰ Furthermore, the insurance of Motherwell was withdrawn, which meant that Motherwell could not bear any liability in case of fire and could only go into insolvency liquidation.²³¹ The evidence presented seems to suggest that senior executives have used voluntary liquidation to successfully escape their environmental liabilities. In the view of the judge, if Motherwell still exists, it will be liable to pay a further £300,000,²³² but it is insolvent and so there is no meaning in imposing a fine, because it does not have the ability to be fined.

In 2013, the remediation work of the Buncefield was completed, though there

²²⁷ A Keay and P Walton (n 5) 173.

²²⁸ Penman and Sommerlad, 'Buncefield firm Motherwell Control Systems escape £300k penalty' (Mirror, 29 July 2010) <<https://www.mirror.co.uk/opinion/money-opinion/p-s-investigates/buncefield-firm-motherwell-control-systems->> accessed 20 June 2020.

²²⁹ firstly, from LinkedIn, the profile of Philip Green and Peter Hamil shows the relationship between Motherwell with new company, Storage Tank Solutions. In addition, see note 202.

²³⁰ Ibid.

²³¹ Ibid.

²³² Ibid.

is no exact figure as to how much such remediation cost.²³³ However, it is certain that the fund paid by the companies was not nearly enough to cover the actual remediation costs, meaning that any remaining environmental costs will have been covered by public funds.²³⁴

4.4.4 Some Reflections on Case Study

The case study section of this chapter describes how British law treats environmental liability in insolvency proceedings and considers some core findings.

First, public funds are used for payment in respect of the environmental costs of insolvent polluters perhaps to some extent as in China. The case study shows that some, or even all, of the environmental costs of polluters are transferred to society. Although the UK environmental law and insolvency law provide more detailed provisions compared to China, public funds still pay the environmental costs of insolvent polluters. such as the Corby site of British Steel, incurring £100 million EU carbon emission fines of British Steel,²³⁵ Dunstonhill site of Scottish Coal,²³⁶ and Buncefield.²³⁷ All of the environmental costs of these sites were paid for by public funds, and the polluters did not assume their own environmental liabilities. Similarly, in some cases, polluters in England and Wales have been allowed to disclaim contaminated sites as onerous property,²³⁸ in which case the environmental costs can only be borne by public funds. Fortunately, Chinese EBL does not have a similar provision,

²³³ IEMA 'Buncefield remediation completed' (IEMA, 13 May 2013)

<<https://www.iema.net/articles/buncefield-remediation-completed>> accessed 10 September 2022

²³⁴ Fin Europe 'Buncefield multi-agency recovery plan' (GOV.UK January 2006) 30

<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/78981/buncefield-recovery-plan.pdf> accessed 10 September 2022.

²³⁵ J Jolly and J Kollwe (n 164).

²³⁶ K Dyson (n 211).

²³⁷ F Europe (n 234).

²³⁸ Insolvency Act 1986 s178.

which means that Chinese polluters cannot legally abandon their environmental liabilities. Meanwhile, Scots law has attempted to classify environmental liability as bankruptcy expense in Doonin case, whereas there is no similar provision or judgement in China. Therefore, this is a lesson that Chinese law should learn from Scotland.

Second, some environmental costs are unpaid in insolvency cases. In some cases, insolvent polluters have not completed their environmental clean-up or remediation obligations, and regulators have not prevented, cleaned-up, or remediated these sites, thus perpetuating the contamination of these sites in an unmanaged state. One typical example is British Steel, where some British Steel sites have not been cleaned up or remediated.²³⁹ Meanwhile, numerous contaminated sites in the UK awaiting remediation were disclosed in case study 1.²⁴⁰ The UK therefore faces the same problems as China, i.e. these unmanaged contaminated sites are potentially a threat to the ecology and human health as the pollution is long-term and can spread to the surrounding area.

Third, false insolvency to escape environmental liability. In the UK, some companies have resorted to an insolvency regime to avoid taking on their own environmental liabilities, such as the Motherwell company. In case study 3, there was sufficient evidence that Motherwell had deliberately completed winding up so that it would only have to pay £1000 for the damage caused by the Buncefield fire.²⁴¹ However, the executives of Motherwell had already completed the transfer of Motherwell's assets and set up a new company, avoiding the payment of a large amount of environmental compensation. In this respect, the UK faces the same challenges as China, where companies may

²³⁹ S Sykes (n 181).

²⁴⁰ *Re Celtic Extraction* [2001] Ch. 475.

²⁴¹ Hemming Information Services (n 221).

use the insolvency regime to escape their environmental obligations. However, the one difference with China is that UK insolvency law provides a legal means of escaping environmental liability. This inference is supported by reference to the most famous case in England, *Re Celtic Extraction Ltd.* Some academics have commented that the UK insolvency regime provides a shelter for polluters.²⁴²

Overall, although the UK is a developed and industrial country, the polluter pays principle in the UK still faces a significant challenge in respect of Insolvency proceedings. Moreover, the challenges that China faces in internalising environmental costs in insolvency proceedings are reflected in the UK.

4.5 Conclusion

In considering the aforementioned reviews and analyses, different situations have been used to demonstrate how insolvency law in the UK treats environmental liability.

Environmental liability is not mentioned in the order of distribution of insolvency estates in Insolvency Act 1986 and Insolvency Rules. In principle, environmental liability could be classified as the right of ordinary unsecured creditors. However, under the UK law, environmental liability could be faced with different results in the course of insolvency proceedings. Firstly, in section 178 Insolvency Act 1986 which applies in England and Wales, IPs can disclaim contaminated land or licence as onerous property in order to escape environmental liabilities. In these sorts of cases, public funds have to assume the environmental costs of insolvent polluters. Furthermore, in Scottish jurisprudential practice, environmental liability has been listed as a considered bankruptcy expense in the Doonin case. Lastly, under regulations in Environmental Protection Act and Waste Management Regulations, case law

²⁴² B Mamutse (n 117) 252.

provides that a regulator could legally charge land for environmental liability.

The case studies presented in this chapter show that various environmental liabilities were not found in liquidation. It means that potential pollution issues are likely to be repaired or remediated by society. Moreover, some polluters may use voluntary liquidation to evade environmental liability, such as in the case study of Buncefield Fire.

Lastly, because of the subtle differences in the laws of England and Scotland, their respective insolvency laws also treat environmental liabilities differently. Scotland has passed case laws to raise environmental liability to the middle level as 'bankruptcy expenses' in insolvency cases. England and Wales addressed environmental liabilities by charging land through statutory law to environmental regulators. However, the Insolvency Act in England and Wales provides more measures for insolvency polluters to evade environmental liabilities in liquidation. Thus, in the UK, insolvency laws have been created with stricter standards of environmental liability in Scotland. The next chapter will examine how US law will deal with environmental liabilities in bankruptcy proceedings.

Chapter 5

Environmental Liability of Insolvent Polluters in the United States

5.1 Introduction

This chapter will answer the fourth research question. This chapter will analyse how the Bankruptcy Code treats environmental liability in the United States.

This chapter consists of four parts. The first part will review the Bankruptcy Code in order to explain how bankruptcy law works in the U.S. The second part will discuss the environmental legal framework in the United States, where environmental liability is regulated within the existing legal framework. The third part will analyse how bankruptcy law treats environmental liabilities in bankruptcy proceedings. Three case studies will be used to analyse the current situation of environmental liabilities in insolvency cases in the U.S. The conclusion will form the last part of this chapter.

5.2 Review the Bankruptcy Code

The current bankruptcy law in the U.S. is Bankruptcy Code 1978,¹ which established as the basic bankruptcy framework in the US. State legislation is also a part of the U.S. bankruptcy legal system, but the principle of supremacy of federal law excludes the power of state legislatures to enact bankruptcy laws.² Thus, the Bankruptcy Code makes it clear when to apply the provisions of state law.³

¹ The Bankruptcy Code is the informal name for the body of federal bankruptcy law, which embodied in Title 11 of the United States Code (11 U.S.C. §§ 101 to 1532).

² The United States Constitution empowers Congress to 'establish ... uniform Laws on the subject of Bankruptcies throughout the United States.' U.S. Const. art. I, § 8, cl.

³ 11 U.S. Code § 522 and 544.

In the U.S., the trustee plays an important role in bankruptcy cases.⁴ They are responsible for dealing with all relevant affairs in bankruptcy cases. There are two different types of trustees under bankruptcy rules in the U.S; the U.S. trustee and the bankruptcy trustee.⁵

They have different responsibilities for handling bankruptcy cases. The major responsibility of the U.S. trustee is monitoring bankruptcy cases, which is to ensure that the debtor complies with insolvency law and properly deals with fraud and other criminal cases.⁶ By comparison, the duty of the bankruptcy trustee is broad but deals specifically with bankruptcy affairs, such as reviewing the debtor's bankruptcy petition for accuracy, evaluating property exemptions, and collecting financial documents.⁷

In summary, the task of the bankruptcy trustee is to complete the daily work required to facilitate the adoption of the debtor's bankruptcy application⁸. Furthermore, the bankruptcy trustee is responsible for the distribution of a debtor's assets, and chapter-specific responsibilities.⁹ Therefore, a trustee role cannot be ignored in bankruptcy cases in the U.S.

5.2.1 Key Provisions in Bankruptcy Framework

The purpose of the bankruptcy code is to ensure that the trustee reasonably allocates the bankrupt asset pool to creditors and seeks to increase the value

⁴ Chapter 11 of the Bankruptcy Code has a debtor in possession norm.

⁵ 28 U.S.C. § 586 and 11 U.S.C. § 101, et seq. 11 U.S.C. §§701-704., 11 U.S.C. §1104. 28 U.S.C. §1930(a)(6).

⁶ 28 U.S.C. § 586 and 11 U.S.C. § 101. The US Trustee office can also act as a bankruptcy trustee in a particular case under 28 U.S.C. § 586 and 11 U.S.C. § 101, et seq, but the role normally performed by somebody from the private sector. See the website of The US Department of Justice <<http://www.justice.gov/ust>> accessed 11 September 2022.

⁷ Federal Rules of Bankruptcy Procedure 1007(b).

⁸11 U.S. Code § 704 Duties of trustee.

⁹ Ibid.

of the asset pool as much as possible.¹⁰ Additionally, the bankruptcy code provides the debtor with a second chance, through means such as liquidation. In cases where the company is still valuable, the bankruptcy code provides rescue mechanisms, such as reorganisation. In most bankruptcy cases, the fact that the assets of the debtor are not sufficient to repay all the creditors often adds to the creditors' panic.¹¹ Most creditors worry that their claims will not be paid, and therefore creditors are eager to collect any available assets. The result is that creditors only choose assets that can be acquired quickly, without considering how to maximise the total value. This kind of behaviour between creditors will only damage the collective interests.

According to the theory of bankruptcy law, legal bankruptcy protections should provide a certain order to protect the best interests of creditors and give debtors a chance to start anew.¹² Therefore, there are a few provisions in U.S. bankruptcy law that can balance the conflict between creditors and debtors.¹³

One of the first examples is the rule against fraudulent transfers. It means that the debtor is prohibited from completing the payment before bankruptcy for the purpose of transferring the property. Usually, debtors transfer property to their relatives to accumulate funds for themselves to start anew, or to repay the bank loan in advance as to maintain their financial credit, so that they can obtain a loan again in the future. Some scholars believe that such business tactics will increase unfairness among the group of creditors.¹⁴ Therefore, restrictions against fraudulent transfers are very important in bankruptcy cases.

¹⁰ Anthony J. Casey, 'Chapter 11's renegotiation framework and the purpose of corporate bankruptcy' (2020)120, *Columbia Law Review* 1721.

¹¹ *Ibid* 1722.

¹² *Ibid*.

¹³ Stanley D. Longhofer and Stephen R. Peters, 'Protection for whom creditor conflict and bankruptcy' (2004)6 *American Law and Economic Review* 262.

¹⁴ Joshua Macey and Jackson Salovaara, 'Bankruptcy as bailout: Coal company insolvency and the erosion of federal law' (2019)71 *Stanford Law Review* 904.

Furthermore, in the view of Joshua Macey and Jackson Salovaara, if debtors repay certain creditors before they enter bankruptcy proceedings, it can aggravate the conflicts between creditors.¹⁵ If creditors worry that the debtor will repay other creditors first, they may panic and ask debtors with financial difficulties to repay post-haste. This is likely to lead to forced liquidation of companies that would not have gone bankrupt. If such a situation were to happen, it would be a lose-lose scenario for all parties involved. In this situation, creditors cannot be treated fairly in the process of liquidation, whereas valuable companies with financial difficulties will go directly into liquidation and withdraw from the market completely. Therefore, the automatic stay is a necessary provision in the bankruptcy cases.

Automatic stay acts as an injunction to stop all actions of creditors when the company has filed a bankruptcy petition.¹⁶ The stay prevents the creditor from recovering the debt, seizing the debtor's assets, or otherwise controlling the property.¹⁷ The purpose of the automatic stay is not only to provide relief to troubled debtors, but also to prevent creditors from scrambling to collect assets, thereby undermining the value of the company.¹⁸ Therefore, in reorganisation cases, automatic stay gives debtors the necessary respite to focus on reorganisation rather than selling property to repay debts.¹⁹

Furthermore, creditors are an important party in bankruptcy cases. The Bankruptcy Code enables the creditors' meeting to help creditors understand the bankruptcy proceedings and allow creditors to raise questions about the debtor's financial situation.²⁰ The purpose of the creditors' meeting is to review

¹⁵ Ibid 905.

¹⁶ 11 U.S.C. § 326 (a).

¹⁷ Ibid 362(a)(2)-(6).

¹⁸ J Macey and J Salovaara (n 14) 906.

¹⁹ James C. Brand, 'Bankruptcy, Contempt, and the Durability of environmental obligations' (2011)24 Tulane Environmental Law Journal 227.

²⁰ 11 U.S. Code § 341.

the debtor's financial situation and to confirm the facts stated by the debtor in the bankruptcy petition.²¹ Particularly in the case of reorganisation proceedings, creditors have a certain right to raise questions and concerns, as the reorganisation plan is approved by a creditors' meeting. However, the ability to exercise their rights is based on two conditions.

Firstly, creditors and debtors should be classified according to certain standards, such as seniority and nature of claims.²² Parties in each category will vote on any proposed reorganisation plan.²³ In addition, the acceptance of any reorganisation plan must be approved by each class of creditors who own two-thirds of the value of the debt in that category, and that category of creditors also constitute the majority of individual creditors in said category.²⁴ However, in some cases, if the court considers the plan of reorganisation to be fair and equitable, it will ignore the objections of the creditors and approve the debtor's plan of reorganisation; this is referred to as a Cream-Down provision in Chapter 11 of the US code.²⁵

Secondly, a significant provision cannot be ignored in bankruptcy cases. The Bankruptcy Code allows the debtor to convert a case under chapter 7 into a case under chapter 11, as long as the debtor is eligible to become a debtor under chapter 11. However, a key condition is that the debtor had not converted cases from chapter 11 to chapter 7 previously.²⁶ The purpose of such a provision in the Bankruptcy code is to give complete relief to the debtor, so as to prevent valuable companies from being liquidated.²⁷

²¹ Ibid.

²² 11 U.S.C. § 507.

²³ 11 U.S.C. § 1126.

²⁴ 11 U.S.C. § 1126(c).

²⁵ 11 U.S. Code § 1129(b).

²⁶ 11 U.S.C. § 706(a).

²⁷ J Macey and J Salovaara (n 14) 910.

5.2.2 Reviewing Chapter 7 and 11 in Bankruptcy Proceedings

Chapter 7 of Bankruptcy Code (chapter 7) is the liquidation procedure in which the trustee plays a core role.²⁸ The purpose of chapter 7 is to ensure the most efficient, rapid and maximum liquidation of the debtor's assets and to allocate them to creditors and equity holders.²⁹ The liquidation procedure is administered by the chapter 7 trustee, who is elected by the US trustee or by certain creditors.³⁰ The trustee shall be responsible for realising all the bankruptcy assets and coordinating the distribution of the assets or the proceeds from the sale of the property.³¹

Chapter 11 of Bankruptcy Code (chapter 11) is a rescue procedure that is provided by the US Bankruptcy Code. Under chapter 11, the directors and management of the debtor company remain in control, providing there is no trustee appointed in the case.³² The chapter 11 procedure allows the debtor's business and capital structure to be restructured in the hope that the insolvent company will stand out in the bankruptcy process and become a healthier, restructured company.³³ Chapter 11 allows the debtor to submit exclusive right to a reorganisation plan within the first 120 days of the commencement of the bankruptcy proceedings.³⁴ This date can be extended to 18 months after the relief order if the debtor makes significant progress on the reorganisation plan and there is sufficient justification.³⁵ The reorganisation plan specifies how the debtor's assets will be distributed among different categories of creditors and

²⁸ Richard L Epling, 'Proposal for equality of treatment for claims in chapter 7 and claims in liquidating chapter 11 cases' (1989)4 Bankruptcy Development Journal 401.

²⁹ Ibid 402.

³⁰ 11 U.S.C. § 702(d).

³¹ 11 U.S.C. § 726.

³² 11 U.S.C. § 1107(a).

³³ Weisenberg, Brent, 'Expediting chapter 11 liquidating debtor's distribution to creditors' (2012)31 American Bankruptcy Institute Journal 106.

³⁴ 11 U.S. Code § 1121.

³⁵ Ibid.

equity holders.³⁶ Debtors can also liquidate their assets through chapter 11 of the bankruptcy code, which is usually more organised than liquidation as presented under chapter 7.³⁷

The critical moment for chapter 11 procedures is the submission of the reorganisation, as this specifies how the creditors' claim will be treated. In accordance with the provisions of chapter 11, creditors and shareholders are divided into categories of holders who are deemed to be making similar claims or that have similar interests.³⁸ The reorganisation plan must meet certain criteria before it can be confirmed.³⁹ At the same time, the plan must be confirmed by both creditors and the court before it can be passed.⁴⁰ In general, if the plan is fair and equitable and does not discriminate against creditors in similar circumstances, then it has a good chance of being adopted.⁴¹

5.2.3 The Order of Distribution

The order of distribution is an important process in bankruptcy cases with regards to how the assets of debtors should be distributed. According to traditional theory, the trustee should abide by the principle of equality when they are dealing with assets of debtors.⁴² What the legislator imagines is that the assets of the insolvent debtor will be handed over to the trustee when the debtor enters or is close to bankruptcy, then the trustee will sell assets and distribute the proceeds to the debtor's creditors.⁴³ The rule of equality of creditors has

³⁶ 11 U.S. Code § 1125.

³⁷ W, Brent, (n 33) 106.

³⁸ 11 U.S. Code § 1123.

³⁹ 11 U.S. Code § 1125.

⁴⁰ 11 U.S. Code § 1128.

⁴¹ W, Brent, (n 33) 106.

⁴² J Brand, (n 19) 228.

⁴³ Daniel S. Shamah, 'Bankruptcy Court Authorizes Sale of Power Plant Without Environmental Cap-and-Trade Obligations' (LEXOLOGY, 6 December 2017), <<https://perma.cc/9DQQ-JS95>> accessed 8 October 2020.

gradually became a core element of the bankruptcy story.⁴⁴ The modern American bankruptcy law can be traced to English bankruptcy laws enacted in 1543 and 1571, as well as the 1704 law which first give debtors the right to a permanent discharge of their debts.⁴⁵ There are occasional hints of the principle of equality of creditors in the debate on bankruptcy and in the case law interpreting the early statutes.⁴⁶ For example, in the 1758 case of *Worsley v. DeMattos*, Lord Mansfield said:

*the policy of the bankruptcy law introduced by... is to level all creditors, who have not actually recovered satisfaction, or got hold of a Pledge which the bankrupt could not defeat.*⁴⁷

The principle of equality as a basic principle in the bankruptcy processes is also regulated in the US Bankruptcy Code.⁴⁸

However, in the Bankruptcy Code, the equality principle only applies to unsecured creditors, as secured debts are paid from the security. Some preference creditors, whom have been defined in the Bankruptcy Code, may include those that oversee the status of administrative expenses,⁴⁹ as well as employees' interests.⁵⁰ The trustee will confirm the attributes and proportions of each creditor according to the materials submitted by said creditors.⁵¹ The

⁴⁴ J Macey and J Salovaara (n 14) 911.

⁴⁵ David A. Skeel Jr, 'The empty idea of 'Equality of creditors' (2018)166 University of Pennsylvania Review 704.

⁴⁶ Ibid.

⁴⁷ Robert Raymond and Baron Raymond, 'Reports of cases argued and adjudged in the Courts of King's Bench and Common Pleas in the reigns of the late King William, Queen Anne, King George the First, and His Present Majesty' (London, 1743) 483.

⁴⁸ 11 U.S. Code § 501.

⁴⁹ Expenses associated with the administration of an insolvency case, including post-petition trade debt and professional fees. U.S. Code § 507 (a)(1).

⁵⁰ Wages earned during the 180 days prior to the bankruptcy petition up to \$13,650 11 U.S. Code § 507 (a)(4); unsecured claims for contributions to employee benefits plans arising from services rendered during the 180 days prior to the bankruptcy filing 11 U.S. Code § 501 (a)(5).

⁵¹ Ibid.

trustee will then distribute the assets of the debtor to each creditor. The result of the distribution of all kind of creditor's claims depend on the attributes obtained before the bankruptcy distribution.⁵² It is unreasonable to simply think that there will be sufficient property in chapter 7 cases, and that all kinds of priority claims and ordinary unsecured claims can be paid off in turn; this is likely to only happen in very special circumstances.⁵³ Since the bankruptcy estate will be distributed to priority claims, just a few ordinary unsecured creditors could be paid off in most chapter 7 cases.⁵⁴ Generally, the proportion and criteria of various claims in liquidation procedures is very important. It is the basis for the settlement of creditor's claims in the chapter 11 of reorganisation cases.⁵⁵ In addition, the voting right of creditors determined by the distribution criteria will directly affect the voting results of the reorganisation plan.⁵⁶

In the liquidation, secured claims are different than other types of claims. Secured claims are exclusive, i.e., it refers to a statement to collect a secured debt, so insolvency does not have any substantial impact on secured claims as the secured property is excluded from the bankruptcy estate.⁵⁷

The bankruptcy expense is the first claim that must be paid off in the bankruptcy estate.⁵⁸ The definition of bankruptcy expense has been set out in section 503 of the Bankruptcy Code, which are the necessary costs and expenses of preserving the estate. This includes wages, salaries, and commissions for serving provided by trustee after the commencement of the case. In a chapter

⁵² David G. Epstein, Steve H. Nickles, and James J. White, *Bankruptcy Hornbook* (West Group, 1993) 465.

⁵³ *Ibid* 467.

⁵⁴ *Ibid* 467.

⁵⁵ *Ibid* 480.

⁵⁶ J Macey and J Salovaara (n 14) 903.

⁵⁷ *Ibid* 904.

⁵⁸ 11 U.S.C. § 507.

11 case, the cost of maintaining the operation of a bankrupt company, its legal fees, accountants' fees, and the like, are classified as bankruptcy expenses, thus making bankruptcy expenses high.⁵⁹ Nevertheless, in most cases whereby chapter 7 procedures are used, there are no enterprises that need to be operated; and in cases where it may be necessary, such operation is only required for a short period of time.⁶⁰ So, the bankruptcy expenses in chapter 7 cases are less than those of chapter 11 cases.⁶¹ However, even in chapter 7 cases, these costs may account for a significant proportion of the distributable property.⁶² In the view of some courts, bankruptcy expenses are a priority in the order of distribution is of great significance. In *Trustees of Amalgamated Insurance Fund v. McFarlin's*,⁶³ the crux of the judgment is that the legislation gives priority to bankruptcy expenses in order to promote the efforts of the trustee to revive the enterprise, thus benefiting all creditors of the bankruptcy estate.⁶⁴

Other major priority claims include gap claims,⁶⁵ wage claims, grain farmer and fisherman claims, tax claims, and claims for capital requirements due to a federal depository institution.⁶⁶ Among them, wage claims are related to the employees' wages, and welfare; and are given limited priority to the employees of the debtor. These rights are limited to the priority of wages up to \$2000, and unpaid wages must occur within 90 days of the bankruptcy filing, whereas the claim of the employee welfare payment plan must be due to the services

⁵⁹ D Epstein, S Nickles, and J White (n 52) 467.

⁶⁰ Ibid 468.

⁶¹ Stephen Lubben, *American Business Bankruptcy* (Edward Elgar Publishing 2019) 47.

⁶² Ibid 49.

⁶³ *Trustees of Amalgamated Ins. Fund v. McFarlin's*, 789 F.2d 98 (2nd Cir.1986).

⁶⁴ Ibid.

⁶⁵ These are debts incurred between the time an involuntary bankruptcy is filed and the date the court approves the bankruptcy filing.

⁶⁶ 11 U.S.C. § 507 (a).

provided within 180 days prior to the bankruptcy filing.⁶⁷ In fact, these are of little benefit to employees as each payment is up to \$2000.⁶⁸

Tax is also an important part of priority under section 507 of Bankruptcy Code, as it involves various tax revenue. To put it simply, section 507(a) has involved most types of tax, all of them were given priority in the distribution of bankruptcy estate.

According to Bankruptcy Code, creditors are divided by classes, and each class is paid in full before the next class is paid. It means that unsecured creditors are paid off after secured creditors and priority creditors have been paid off. In most cases, it is very difficult for ordinary unsecured creditors to be fully paid off in the liquidation process. The important reason is that if the bankruptcy estate appears smaller than debts that insolvent companies owe, it will certainly result in some ordinary unsecured creditors not being able to get full settlement. Some big US companies are often restructured in Chapter 11 or their assets are sold.⁶⁹ The result is that those ordinary unsecured creditors will not get a single dollar in return.⁷⁰

5.3 The Environmental Liability in the United States

In the US, environmental liabilities can arise from an array of processes and operations. For example, operators who may cause pollution must pay attention to their cleaning obligations, for instance, reducing air pollution to a specified value.⁷¹ This could also include meeting wastewater discharge standards.⁷²

⁶⁷ 11 U.S.C. § 507 (a) (3)(4).

⁶⁸ S Lubben (n 61) 47.

⁶⁹ Joel R. Spivack, 'Examining Donald Trump's Chapter 11 Bankruptcies' (Law Office of Joel.R.Spivack 15 May 2015) <<https://www.spivacklaw.com/blog/examining-donald-trumps-chapter-11-bankruptcies/>> accessed 8 October 2020.

⁷⁰ S Lubben (n 61) 48.

⁷¹ 42 U.S.C. §7401 et seq. (1970).

⁷² 33 U.S.C. §1251 et seq. (1972).

These must all meet the requirements established by environmental legislation.⁷³ Furthermore, polluters should complete their cleaning or remediation liabilities post-operation or in the event of any accidents, including the likes of any contaminated sites, mines, or oil spills.⁷⁴ Whereas the environmental liabilities of insolvent polluters are the most common occurrence in the post-operation or accidents,⁷⁵ they are ultimately regulated by national and state-level environmental legislations.

5.3.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The CERCLA was enacted by Congress on December 11, 1980. The original purpose of CERCLA was to enable the federal government to quickly clean up abandoned and uncontrolled hazardous waste sites to reduce environmental damage.⁷⁶ This is one legal framework that seeks to attribute liability for environmental harm to an array of involved parties. As a result, the Superfund was established, funded by taxes and government support.⁷⁷ The majority of tax revenue comes from the petrochemical industry, especially those services relating to chemicals which would need to be cleaned up under Superfund.⁷⁸ Additionally, since the tax applies to all companies that produce the same petrochemical products, they can internalise their costs.⁷⁹ It ensures that

⁷³ Such as other environmental legislations in the U.S. including toxic substances control act.

⁷⁴ Pollution Prevention Act 1990 § 13105 § 13106.

⁷⁵ Lawrence V. Gelber, Stephanie Kim, and Schulte Roth & Zabel, 'The Intersection of Environmental and Bankruptcy laws' in Lawrence Schnape (edt) *Environmental Issues in Business Transactions* (American Bar Association 2014) 341.

⁷⁶ Blanca Mamutse and Valerie Fogleman, 'Environmental claims and insolvent companies: the contrasting approaches of the United Kingdom and the United States' (2013)2 *British Journal of American Legal Studies* 587

⁷⁷ USA EPA 'Superfund transforming communities' (2018) Accomplishments Report FY 2018 6. The government support means Technical Assistance Grant Programme.

⁷⁸ 42 U.S. Code § 9606.

⁷⁹ B Mamutse and V Fogleman (n 76) 587.

contaminated sites that pose the greatest risk to human health and the environment are remedied first.⁸⁰ It covers the clean-up cost for uncontrolled or abandoned hazardous waste sites and emergency discharge of accidents, spills and other pollutants, as well as the release of pollutants into the environment.⁸¹

CERCLA aims to make polluters responsible for their clean-up costs. In order to ensure that the expenses can be recovered from responsible parties, CERCLA has a certain retroactive effect.⁸² The first task of CERCLA work is to identify the potential responsible parties (PRPs), which may include potential producers, owners, transporters, storage, and almost all the links that may cause pollution in business.⁸³ EPA will search for evidence to determine liabilities by matching potential parties with waste found at the site. EPA will use a variety of ways to do this research, such as reviewing documents, site investigations, interviews and others.⁸⁴ The aim of this process is that PRP can perform the clean up before having to use any of the Superfund money.⁸⁵ In fact, PRPs are liable for a wide variety of costs, for example, all costs of removal or remedial action incurred by the United States, or the fees that relate to the damage of natural resources, and some other necessary costs.⁸⁶ In other words, if there is facility of the site release or potentially release dangerous substances into the environment, the PRPs are the object of CERCLA

⁸⁰ Ibid 588.

⁸¹ US EPA, 'Summary of the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)' 42 U.S.C. §9601 et seq. (1980) (EPA 28 September 2021) <<https://www.epa.gov/laws-regulations/summary-comprehensive-environmental-response-compensation-and-liability-act>> accessed 12 September 2022.

⁸² *United States v. Ne. Pharm. & Chem. Co.*, 810 F.2d 726, 732-33 (8th Cir. 1986).

⁸³ 42 U.S.C. § 9607(a) (2012).

⁸⁴ EPA 'Finding potential responsible party' (EPA) <<https://www.epa.gov/enforcement/finding-potentially-responsible-parties-prp>> accessed 9 October 2020.

⁸⁵ Ibid.

⁸⁶ Lloyd A, Gelwan, 'PRP access to superfund sites: A primer' (1990)10 Virginia Environmental Law Journal 78.

supervision and should be held responsible.⁸⁷

Although CERCLA provides for strict liability, as well as joint and several liabilities, it is one environmental protection system that may be impacted by bankruptcy law. For example, in the case, *United States v. Bestfoods*, one of the most vital disputes was that concerning whether or not the parent company, that exercises control over the subsidiary's business, should be held responsible post-bankruptcy for the subsidiary.⁸⁸ After the bankruptcy of the company, the question of who bears responsibility for any remedial cleaning under CERCLA is a major problem, which impacts on CERCLA as a whole.

5.3.2 Other Key Environmental Legislation

In addition to CERCLA, the US congress has also formulated a series of important laws to regulate the environmental responsibilities of polluters, including the Clean Air Act (CAA), Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA), among others. They established a comprehensive environmental legal framework together with CERCLA in the US. Different environmental liabilities were identified under these laws.

The first of these, the Clean Air Act (CAA), was issued in 1963, which was designed to control air pollution at a federal level. Under this law, various issues are specified, such as air quality and emission standards and ozone protection, to name a few. It is necessary for industrial facilities to implement a Leak Detection and Repair (LDAR) in accordance with relevant regulations under the CAA.⁸⁹ The purpose of implementing LDAR is to identify and repair facility components such as valves and pumps.⁹⁰ If operators violate the CAA, for

⁸⁷ 42 U.S.C. §9601 (2012).

⁸⁸ Thomas H. Jackson, 'Bankruptcy, Non-Bankruptcy Entitlements, and the Creditors' Bargain', (1991)5 The Yale Law Journal 860.

⁸⁹ 42 U.S. Code § 7671g.

⁹⁰ EPA, *Leak Detection and Repair – A Best Practices Guide* (EPA Guide, October 2007) 1.

example, by exceeding the standard limit of emissions produced, the EPA has the right to undertake litigation or other necessary means of action against the offending party.⁹¹

The second of these acts, the Clean Water Act (CWA), was enacted in 1972. Prior to this, the Federal Water Pollution Control Act had been in place since 1948. The CWA aims to prevent, reduce and remediate water pollution.⁹² The EPA has the responsibility of making sure all operators comply with the regulations of CWA.⁹³ There are requirements under the CWA which are often violated by industrial operators, for example, in relation to oil spills and the discharge of hazardous substances into bodies of water. The CWA imposes liability on those who discharge oil and other potentially dangerous substances into or on the surface of navigable waters of the United States.⁹⁴ The 1977 amendment provides for specific criminalisation of discarding oil and hazardous substances into navigable waters and authorises the US government to require polluters to pay any related clean-up cost to the government. The catastrophic oil spill in Exxon Valdez prompted the promulgation of the Oil Pollution Act, and further increased penalties and other such consequences for the emission of pollutants or discharge of oil into the water.⁹⁵

A further act, the Surface Mining Control and Reclamation Act (SMCRA), was a major federal law enacted in the US in 1977, to regulate the environmental effect of coal mining. For example, SMCRA requires coal companies to

⁹¹ Clean Air Act § 304.

⁹² Clean Water Act § 502(7).

⁹³ meeting applicable water quality standards, developing risk management plans, and maintaining records.

⁹⁴ Clean Water Act s1321.

⁹⁵ For example, Civil judicial penalties of up to \$25,000 per day of violation or \$1,000 per barrel or unit discharged, or in the event of gross negligence or wilfulness, \$3,000 per barrel or unit. With inflation adjustments, the current amounts are \$32,500 per day, or \$1,100 per barrel or unit; \$4,300 per barrel in the event of gross negligence or wilfulness.

remediate land affected by open cast mining, which may involve the replacement of topsoil and disposal of mine waste, among other such remediation work as required.⁹⁶ Coal mine operators must obtain a permit and post a bond in accordance with the SMCRA before starting any mining activity.⁹⁷ The bonds are used to cover the cost of post-operational environmental liabilities, such as remediation or cleaning up work. Regulators can inspect mines at any time, and if mining operators are deemed to be in violation of the SMCRA, regulators can impose penalties, fines or even confiscate bonds.⁹⁸ SMCRA's blueprint is based on bond requirements, to ensure that once mining is completed, the operators will be able to restore the site to its original state.⁹⁹ Finally, to achieve the goal of internalisation of environmental cost.¹⁰⁰

Another act, the Resource Conservation and Recovery Act (RCRA) was passed in 1976, and focuses on preventing the release of hazardous waste into the environment. This legislation affected an array of industries, from mining and milling to smelting solid waste. The RCRA provides extremely broad and stringent enforcement provisions. In most cases, the company may assume liabilities for cleaning up in accordance with the RCRA. However, in cases whereby a company fails to undertake that which it is liable, the EPA will immediately file a lawsuit in accordance with the relevant provisions of the RCRA.¹⁰¹ In other words, the RCRA makes it so polluters are required to remediate sites, such as expanses of land or bodies of water, which have been contaminated as a result of their operations.¹⁰²

⁹⁶ 30 U.S.C. § 1265(b).

⁹⁷ Ibid § 1256(a), 1259(a).

⁹⁸ Ibid § 1259, 1267-1268.

⁹⁹ Ibid § 1259(a); 30 C.F.R. §§ 800.11, .14 (2018).

¹⁰⁰ J Macey and J Salovaara (n 14) 895.

¹⁰¹ Resource Conservation and Recovery Act §7003.

¹⁰² Joseph F.C. Dimento and Ava Badiie, 'Historical pollution and criminal liability in the United States' in: Centonze F., Manacorda S.(eds) *Historical pollution* (Springer 2017) 203.

Nevertheless, there are some loopholes in the US environmental legal framework, which emerge in cases which come into conflict with bankruptcy law. Typically, cases will lead to litigation. For example, in the case of *U.S. v. Apex Oil*, the Seventh Circuit ordered the company to clean up toxic chemicals discharged from a previous bankruptcy. In fact, this decision runs counter to the precedent of the Sixth Circuit.

In the case of *United States v. Whizco, Inc.*, the Sixth Circuit held that the federal government could not force the former operator of the strip mine to cover the cost of restoring the mine site, as the state had already determined its remedy.¹⁰³ The policy decision is the responsibility of Congress, which is able to easily amend the Bankruptcy Code so that the debtor will not be discharged from its environmental restoration obligations.¹⁰⁴ It was also a claim discharged in the bankruptcy case of the mine operator.¹⁰⁵ Moreover, some scholars have expressed strong concerns with regards to the coal mining industry, even if the purpose of SMCRA is to internalise the environmental cost of polluters. In the view of Macey and Salovaara, since self-bonds do not have any asset guarantees, they can hardly guarantee that coal companies will recover degraded land after insolvency, thus making it difficult for the government to recover its full value after insolvency.¹⁰⁶ Therefore, although there is a systemic framework of environmental legislation in the United States, most environmental law at present could be affected or overturned if conflicting with corresponding bankruptcy legislation.

5.4 How Does Bankruptcy Law Treat Environmental Liabilities

There is a long historical record, in the United States, about the conflict between

¹⁰³ *U.S. v. Whizco, Inc.*, 841 F.2d 147, 151 n.5 (6th Cir. 1988).

¹⁰⁴ *Ibid.*

¹⁰⁵ *Ibid.*

¹⁰⁶ J Macey and J Salovaara (n 14) 897.

environmental law and bankruptcy law.¹⁰⁷ This section will analyse how bankruptcy treats environmental liabilities in insolvency proceedings, which includes three key questions. The first one is how reorganisation cases treat clean-up liabilities under discharging provision, when they are discharged. The second question is disclaiming property as burdensome property in a bankruptcy estate, and the last question is whether environmental liabilities may become a priority in bankruptcy cases.

5.4.1 Discharging Provision with Environmental Liability

In US bankruptcy law, there is provision for a discharging right in bankruptcy cases, which could occur in chapter 7 or chapter 11. But for a company, bankruptcy law only allows a bankruptcy discharge to occur in chapter 11, i.e. in reorganisation cases.¹⁰⁸ The reason for this is that in chapter 7 the legal existence of a company is brought to an end, whereas in chapter 11 the company is allowed to continue to exist and is therefore given a second chance. The discharging right means that debtor is released from personal liabilities for certain specified types of debts.¹⁰⁹ In other words, debts are defined as liability on a claim in the Bankruptcy Code. This way the claim is able to be released as payment by the debtors, therefore, the debtor is no longer legally required to pay any debts that are discharged.¹¹⁰ The environmental liability, especially the clean-up cost, is extremely vulnerable to discharge attacks in reorganisation cases.¹¹¹

There are various cases in the United States which have proved the above conclusion. One of the most famous cases is *Ohio v. Kovacs*, which is a

¹⁰⁷ B Mamutse and V Fogleman (n 76) 600.

¹⁰⁸ Because company are banned discharging property in chapter 7.

¹⁰⁹ 11 U.S.C. § 101(5) (2012).

¹¹⁰ Ibid.

¹¹¹ B Mamutse and V Fogleman (n 76) 603.

landmark case about environmental claims under the Bankruptcy Code.¹¹² In this case, the point of contention was the cost of clean-up for contaminated land and whether it could be discharged. When the Kovacs failed to remove the waste on the land, the State of Ohio lower court appointed a receiver to manage the clean-up of contaminated landfills. The State was trying to force the former operator of Kovacs' landfills to fund the clean-up of the receiver. However, the Supreme Court considered that the State's request was a requirement in the chapter 7 case of Kovacs and was prohibited as a result of its discharge. Furthermore, another case also has proved that environmental liabilities for clean-up costs could be discharged in chapter 7 cases, which is *United States v. Whizco, Inc.* In this case, the judge reaffirmed the decision in the Kovacs case,

*The Court stressed that what the petitioner wanted from the respondent after bankruptcy was the money to defray clean-up costs." Since the clean-up order had been converted into an obligation to pay money, it gave rise to a "right to payment" and thus was a debt dischargeable under the Bankruptcy Code.*¹¹³

The decision taken by the court was made in accordance with the Bankruptcy Code, that is, the defendant could discharge their environmental liability for clean-up costs.¹¹⁴ The view of the judge was that the State had clearly taken into account the conflict between environmental law and bankruptcy law, and had devised remedies, thus there was no need to undermine the existing bankruptcy law.¹¹⁵

However, there is a recent case which challenged the decision by Kovacs,

¹¹² 469 U.S. 274 (1985).

¹¹³ *United States v. Whizco, Inc.*, 841 F.2d 147, 148 (6th Cir. 1988).

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

which is *United States v. Apex Oil Co.* In this case, the court cited RCRA 7003(a) instead of CERCLA in the trial. The reason given by the judge is that the right to an RCRA injunction was not a right to a fair remedy, and a violation of that right gave rise to a right to payment.¹¹⁶ Whereas RCRA did not provide for the recovery of money, thus it was not a 'claim' under section 101(5) of Bankruptcy Code.¹¹⁷ All in all, in the view of the Seventh Circuit, this made a sufficient distinction between RCRA obligations and more traditional types of debts and monetary obligations that fall within the scope of 'claim' that can be waived under the US Bankruptcy Code.¹¹⁸ The result was that Apex could not discharge its environmental liability.

An interesting question in this case is why RCRA was chosen over CERCLA. Generally, EPA prefers to bring cases under CERCLA rather than section 7003(a) RCRA, as CERCLA is not only required as an injunctive relief, but also regulates the recovery of clean-up costs spent by the government. The only, singular, reason that could explain why EPA had sued under RCRA is that it was to increase the rate of success.¹¹⁹ If EPA had sued under CERCLA, Apex could have argued that clean-up costs can be classified as monetary, which could be discharged in the same way as was done by Kovacs.¹²⁰

It is not clear whether the latest case will have a significant impact on environmental liability in chapter 7 cases. Some scholars thought the Apex case would likely affect the choice of bankruptcy venue.¹²¹ Under US bankruptcy law, companies have the right to choose where to file for bankruptcy. The seat of

¹¹⁶ *United States v. Apex Oil Co.*, No. 05-CV-242-DRH, 2008 WL 2945402, at *79 (S.D. Ill. July 28, 2008).

¹¹⁷ *Ibid.*

¹¹⁸ *Ibid.*

¹¹⁹ Michael Ohlrogge, 'Bankruptcy claim dischargeability and public externalities: evidence from a natural experiment' (Ph.D Thesis, Stanford University February 2020) i.

¹²⁰ *Ibid* 29.

¹²¹ *Ibid* 30.

the Third Circuit, Delaware had the strongest non-discharge ability precedent prior to the Apex ruling.¹²² Thus, some companies may file for bankruptcy in Delaware.¹²³

Actually, there were also rulings considering that the company is unable to discharge its environmental liabilities. For instance, in *Re Chateaugay Corp.* the Second Circuit ruled that the presence of harmful substances in the soil and groundwater, under the debtor's property, represented persistent pollution.¹²⁴ So, the debtor might be forced to spend money to clean up the property, the environmental liability that was not discharged in the debtor's bankruptcy case.¹²⁵ Furthermore, in *AM International, Inc. v. Datacard Corp.*, AM International sold a contaminated property to another entity, and then filed for bankruptcy. Datacard bought the contaminated property from another entity.¹²⁶ Datacard sued AM International under RCRA, one provision of RCRA allows the public to seek an injunction requiring responsible parties to remedy environmental pollution that poses an imminent and significant danger.¹²⁷

Overall, the Apex case is a new landmark in US case law.¹²⁸ The decision of the Supreme Court to reject the defendant's application for transfer in the *United States v. Apex Oil* is evidence of this milestone. The decision is of great significance for corporate debtors in chapter 7 cases, as it means that the discharge of the debtor is unlikely to protect it from future bans on the implementation of environmental clean-up.¹²⁹

¹²² Ibid 30.

¹²³ Ibid 31.

¹²⁴ *Re Chateaugay Corp.*, 53 F.3d 478.

¹²⁵ *Re Chateaugay Corp.*, 944 F.2d 997 (2nd Cir. 1991).

¹²⁶ *AM International, Inc. v. Datacard Corp.*, 146 B.R. 391.

¹²⁷ Ibid.

¹²⁸ B Mamutse and V Fogleman (n 76) 604.

¹²⁹ Ibid 607.

5.4.2 Abandonment Power with Environmental Liability

In the US Bankruptcy code, there is a similar provision to the UK Insolvency Act about disclaiming onerous property. This is the ability to permit a bankruptcy trustee to abandon any property of the estate that is burdensome to the estate or that is of inconsequential value and benefit to the estate.¹³⁰ But the description of abandonment power is rather brief in the Bankruptcy Code. The result is that there are arguments concerning abandonment power on environmental liability, such as *Midlantic National Bank v. New Jersey Department of Environmental protection*, and *Re Smith-Douglas* etc.

The case of *Midlantic* is another milestone in the United States, as this confirmed that contaminated land cannot be abandoned in liquidation.¹³¹ In *Midlantic*, the debtor, Quanta, was a waste oil processor which operated facilities in New Jersey. Quanta polluted the local sites, which was discovered by the New Jersey Department of Environmental Protection. Quanta filed for bankruptcy during discussions concerning the remedy obligations with the Department of Environmental Protection. The trustee attempted to give up the two properties as inconsequential value property under section 554 of the Bankruptcy Code and argued that compliance with State liquidation requirements would deplete the assets of the properties.¹³² In the judgement of bankruptcy, the court authorised the abandonment of both properties. The Supreme Court then overturned the decision of the bankruptcy court and prohibited abandonment.¹³³

The view of the Supreme Court is that the abandonment of the land aggravates the existing danger. The Bankruptcy Court should not have authorised the

¹³⁰ 11 U.S.C. § 554 (a), After notice and a hearing, the trustee may abandon any property of the estate that is burdensome to the estate or that is of inconsequential value and benefit to the estate.

¹³¹ *B Mamutse and V Fogleman* (n 76) 607.

¹³² *Midlantic National Bank v. New Jersey Dep't of Env'tl. Prot.*, 474 U.S. 494, 509 (1986) at 494.

¹³³ *Ibid* 502.

abandonment of such land in the absence of conditions for the adequate protection of public health and safety. Therefore, the Supreme Court rejected the request of the company to abandon the contaminated land.

The important factor affecting the judge's judgement is the bankruptcy property. These assets may be quite limited so that they will not be able to pay for decontamination even if the bankruptcy trustee abandons the site.¹³⁴ Therefore, the condition of prohibiting abandonment could be narrowly understood as a requirement to cause imminent and identifiable damage to human health.¹³⁵

In fact, another case seems to support this decision as well, which is *Re Smith-Douglas*.¹³⁶ The Fourth Circuit supported the trustee to abandon the fertilizer plant. One of the important reasons was that there was no imminent damage or danger within the fertilizer plant.¹³⁷ Furthermore, the estate lacked unencumbered assets that could be used to finance the clean-up. Therefore, the Fourth Circuit had to permit the trustee to abandon the fertilizer plant.¹³⁸ Even if there is a strong conflict with environmental law, it was still permitted to be abandoned. The judge explained the conflict as thus;

Cleaning up environmental violations is properly considered an administrative expense within the meaning of 11 U.S.C. § 507(a)(1). While such expense would be subordinate to secured claims, it would have priority over unsecured claims. Accordingly, where the estate has unencumbered assets, the bankruptcy court should require stricter compliance with state environmental law before abandonment is

¹³⁴ B Mamutse and V Fogleman (n 76) 609.

¹³⁵ Ronald Mann, 'Balancing bankruptcy and environmental law: Midlantic National bank v. New Jersey Department of Environmental Protection' (2017)42 Journal of Supreme Court history 104.

¹³⁶ *Re Smith - Douglas, Inc.*, 856 F.2d 12, 17 (4th Cir . 1988).

¹³⁷ Ibid.

¹³⁸ Ibid.

*permitted. Smith-Douglass, however, had no unencumbered assets.*¹³⁹

Overall, in the United States, the main factor in determining that the trustee can abandon the property is that the abandoned contaminated property will cause imminent danger and damage to public health. Just like in the view of the court, the trustee shall not give up property in violation of state regulations or regulations reasonably designed to protect public health or safety from identified hazards.¹⁴⁰ The trustee should bear the environmental liability. The court also made some limits on the abandonment by trustee,

*It does not encompass a speculative or indeterminate future violation of such laws that may stem from abandonment. The abandonment power is not to be fettered by laws or regulations not reasonably calculated to protect the public health or safety from imminent and identifiable harm.*¹⁴¹

However, this standard is vague. The relevant laws in the United States do not have a clear definition of what kind of standard is imminent damage and danger. The result is that all imminent damage or danger has to be defined by the judge, as this is a standard which is difficult to unify.¹⁴² Thus, if the abandoned property is not defined as imminent damage or danger, then the clean-up funds need to be borne by public funds.

5.4.3 Clean-Up Cost as Administrative Expense?

There is a special provision in the U.S. Bankruptcy Code which is 503(b)(1)(A) and 507(a)(2). Both regulated that the status of administrative expenses may

¹³⁹ *Re Smith-Douglass, Inc.* 856 F.2d 12 (4th Cir. 1988) at 17

¹⁴⁰ *Midlantic National Bank v. New Jersey Dep't of Env'tl. Prot.*, 474 U.S. 494, 509 (1986) at 507.

¹⁴¹ *Ibid.*

¹⁴² Lawrence V. Gelber and others, 'the intersection of Environmental and Bankruptcy Laws' in Lawrence Peter Schnapf (edt), *Environmental Issues in Business Transactions* (ABA book Publishing 2011) 353.

confer on 'the actual and necessary costs and expenses of preserving the estate', taking precedence over other unsecured claims.¹⁴³ It means environmental claims in some conditions might be defined as one cost in administrative expenses, then receive priority in liquidation.¹⁴⁴

In fact, in *Midlantic National Bank v. New Jersey Department of Environmental Protection*, the Supreme Court had confirmed the environmental clean-up claims were entitled to administrative expenses priority.¹⁴⁵ Normally, in environmental clean-up cases, if environmental clean-up cost is defined as administrative expenses, certain conditions must be met, such as for public health and safety.¹⁴⁶ The court will identify that the environmental liability for clean-up cost can be recognised as an administrative expense.¹⁴⁷ For example, in re Wall Tube, the Court of Appeal reviewed the issue of whether 28 U.S.C. § 959(b)¹⁴⁸ applied to a chapter 7 trustee, and required the trustee to comply with the Tennessee Hazardous Waste Code. The judge stated,

We believe that whether a trustee is liquidating, managing or reorganizing the debtor's estate, his efforts under the Code remain the

¹⁴³ 11 U.S.C. §§ 507, 726.

¹⁴⁴ L Gelber and others (n 142) 359.

¹⁴⁵ *Midlantic National Bank v. New Jersey Dept. of Environmental Protection* - 474 U.S. 494, 106 S. Ct. 755 (1986) ct. at 762, 88 L.Ed.2d.

¹⁴⁶ Marvin Isgur, David Curry and Lindsey Johnson, 'Revisiting treatment of P&A obligations in Oil and Gas Bankruptcies' (13th Anniversary Bankruptcy Bench Bar Conference 2019, Austin, 17 April 2019) 7 <<https://statebaroftexasbankruptcy.com/resources/Documents/2019%20Conf.%20Presentations/PA%20Obligations%20Panel%20Materials.pdf> > accessed 15 October 2020.

Stephen B. Kong, 'A chapter 7 trustee's abandonment of environmentally-impaired property: Midlantic, post- Midlantic interpretation and the Plague of results-oriented legal analysis' (2011)5 *Fordham Environmental Law Review* 224.

¹⁴⁷ L Gelber and others (n 142) 361.

¹⁴⁸ 28 U.S.C § 959 (b) Except as provided in section 1166 of title 11, a trustee, receiver or manager appointed in any cause pending in any court of the United States, including a debtor in possession, shall manage and operate the property in his possession as such trustee, receiver or manager according to the requirements of the valid laws of the State in which such property is situated, in the same manner that the owner or possessor thereof would be bound to do if in possession thereof.

*same.*¹⁴⁹

Furthermore, in determining whether the response costs taken by the state government are the actual and necessary costs for the preservation of the estate, the Court of Appeal cited the category of administrative expenses previously expanded by the Supreme Court to include damage caused by negligence after the petition.¹⁵⁰ The Court of Appeal found support from a decision by the Northern District of Ohio, which decided that the response of government to the environmental harm caused by the debtor is administrative expense.¹⁵¹ The Court of Appeal argued that since federal environmental law did not allow the debtor to evade liability for violations, the cost was a necessary maintenance of the debtor's estate (contaminated land) and could bring benefits to the estate (restoration of environment).¹⁵²

Post *Midlantic* case, there is a trend in the United States that environmental claims are classified as administrative expenses in most cases.¹⁵³ However, there are still some cases challenging the decision of *Midlantic*. For example, in some decisions, some courts continue to hold that environmental claims should be defined as general unsecured claims and should not be priority in bankruptcy cases. One renowned case is *Re Mahoney- Troast Construction Co.*, it was the opinion of the bankruptcy court that the environmental hazards of the site did not pose an imminent damage to public health.¹⁵⁴ Thus, the claim filed by the former lessor against the debtor for clean-up costs, related to the hazard, is not entitled to administrative priority.¹⁵⁵

¹⁴⁹ *Re Wall Tube*, 831 F.2d at 122.

¹⁵⁰ *Ibid* 123.

¹⁵¹ *Ibid* 124.

¹⁵² *Ibid*.

¹⁵³ M Isgur, D Curry and L Johnson (n 146).

¹⁵⁴ *Re Mahoney-Troast Construction Co.*, 189 B.R. 57, 62.

¹⁵⁵ *Ibid*.

As to whether environmental claims have the right to become priority administrative expenses, previous cases gave different answers. However, it seems that some rules could be found, after careful analysis. Firstly, Courts tend to support priority administrative expenses for environmental damage that poses an imminent and significant danger.¹⁵⁶ For instance, Midlantic case and Wall Tube case. Furthermore, courts also upheld claims for environmental clean-up costs filed by regulators. It means that courts are reluctant to list the environmental claims of private parties as priority administrative expenses.¹⁵⁷ The typical case is Mahoney -Troast case. The reason for the court's refusal was that since the leased property was not owned by the debtor, the clean-up cost was not a necessary expense for preserving the debtor's property.¹⁵⁸

5.5 Case study

The United States is one of the most developed countries in the world; and heavy industries were historically crucial to American development. However, in recent years, heavy industrial enterprises have gradually gone bankrupt, such as Patriot Coal, Alpha Natural Resources, Peabody Energy, among others.¹⁵⁹ Against the backdrop of the COVID-19 pandemic, it has been particularly difficult for these enterprises to survive the financial hardship that has befallen them.¹⁶⁰ Moreover, coal was once the main source of fuel for US electricity, providing about half of utility-scale electricity generation in decades. In recent years, the proportion of coal as the source of utility electricity had

¹⁵⁶ L Gelber and others (n 142) 362.

¹⁵⁷ Ibid.

¹⁵⁸ *Re Synfax Mfg., Inc.*, 126 B.R. 30, 34 (Bankr. D. N.J. 1990).

¹⁵⁹ U.S. ENERGY INFO. ADMIN, 'Generation by Energy Source: Total (All Sectors), 2007-2017', (US Energy Infor, 3 March 2019) <<https://perma.cc/QP4Q-F95V>> accessed 15 October 2020.

¹⁶⁰ PWC United States, 'COVID-19: What it means for industrial manufacturing' (PWC) <<https://www.pwc.com/us/en/library/covid-19/coronavirus-impacts-industrial-manufacturing.html>> accessed 15 October 2020.

fallen to just 21.8% as of February 2022.¹⁶¹

Many coal companies, including Alpha Natural Resource and Peabody Energy, underwent bankruptcy proceedings. In this section, three case studies will be analysed for their relevance to the context of industrial bankruptcy, including coal and oil companies, which focus on how courts treat them in practice.

5.5.1 Chesapeake Energy Corporation

Chesapeake Energy Company (Chesapeake) is a natural gas, oil exploration, and production company engaged in the exploration, development and acquisition of assets that produce oil, natural gas, and natural gas liquids from underground reservoirs. As a mature company, Chesapeake was known as the pioneer of shale gas drilling and played a key role in helping the United States to become a global energy power.¹⁶² The media described Chesapeake as the company that led the shale revolution and ushered in an era of energy independence in the United States.¹⁶³ Thus, it can be seen that the status of Chesapeake in the United States is highly renowned. In the business history of Chesapeake, despite being ranked 309th in a ranking of the top 500 companies in the world, it was also recognised as the 90th most polluting company in the world.¹⁶⁴ The majority of this pollution was produced from Chesapeake's operations, and comprised of air pollution, water pollution, and the creation of

¹⁶¹ U.S Energy Information Administration 'What is U.S. electricity generation by energy source?' (EIA, April 2021) <<https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>> accessed 12 September 2022.

¹⁶² Chesapeake Energy, 'History' (Chesapeake Energy) <<https://www.companieshistory.com/chesapeake-energy/>> accessed 15 October 2020.

¹⁶³ Derek Brower, 'Chesapeake Energy, rise and fall of a US shale star' (Financial Times, 4 June 2020) <<https://www.ft.com/content/bf230420-a570-4fcb-a2cf-3c38b5429b6f>> accessed 15 October 2020.

¹⁶⁴ Fortune, 'Fortune 500 Chesapeake Energy', (Fortune) <<https://fortune.com/fortune500/2019/chesapeake-energy/>> accessed 15 October 2020.

Tess Riley, 'Just 100 companies responsible for 71% of global emissions, study says' (the Guardian, 10 July 2017) <<https://www.theguardian.com/sustainable-business/2017/jul/10/100-fossil-fuel-companies-investors-responsible-71-global-emissions-cdp-study-climate-change>> accessed 15 October 2020.

contaminated sites.

On June 28th, 2020, the Chesapeake Energy Company filed for chapter 11 bankruptcy. Their official reason for bankruptcy is due to the heavy debt burden caused by the COVID-19 pandemic, as well as a sharp drop in oil and gas demand and price per barrel in the global market, which had stagnated.¹⁶⁵ In fact, the company faced worse issues with respect to the stock market, whereby in early 2020, the price of Chesapeake's stock had dropped below \$0.20 per share; thus making bankruptcy near-inevitable.¹⁶⁶

According to the statement that was disclosed by Chesapeake, the debts of Chesapeake Energy are, in total, in excess of \$7 billion.¹⁶⁷ Furthermore, it is estimated that 6,800 wells are in need of remediation by Chesapeake; while the company currently has only \$41 million worth of bonds to cover an environmental clean-up cost in excess of \$1.6 billion.¹⁶⁸

At present, Chesapeake has filed for bankruptcy protection. However, a strange phenomenon occurred a few weeks before Chesapeake filed for bankruptcy protection; that being the company's decision to pay a bonus of \$25 million to a group of company executives. In response to why it paid executives \$25 million instead of debtors, the Chesapeake company explained:

The board and compensation committee, with the advice of their independent compensation consultant and legal advisors, determined

¹⁶⁵ Sakshi Garg and Dinesh Bacham, 'Oil & gas sector in danger: COVID-19 pushed Chesapeake Energy into bankruptcy' (Moody's Analytics, August 2020) <<https://www.moodyanalytics.com/articles/2020/oil-and-gas-sector-in-danger>> accessed 15 October 2020.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

¹⁶⁸ Hiroko Tabuchi, 'Fracking firms fail, rewarding executives and raising climate fear' (The New York Times, 12 July 2020) <<https://www.nytimes.com/2020/07/12/climate/oil-fracking-bankruptcy-methane-executive-pay.html>> accessed 15 October 2020.

*that the historic compensation structure and performance metrics would not be effective in motivating and incentivising the company's workforce.*¹⁶⁹

In other words, Chesapeake believed that by paying executives during this difficult time, it would ensure that they have the incentive to resolve its almost \$9 billion debt.¹⁷⁰ Ironically, this decision was agreed by the bankruptcy judge.¹⁷¹

This decision has been discussed by many scholars. For instance, Kathy Hipple, an analyst at the Institute for Energy Economic and Financial Analysis, commented that the aim of these executives might have been to bankrupt these companies, and it is therefore intolerable for them to pay themselves before filing for bankruptcy.¹⁷² Energy analysts predict that Chesapeake, as a pioneer in energy industry, may abandon wells and let taxpayers take responsibility for cleaning up and remediation.¹⁷³

According to regulations in the U.S.A, potential polluters shall set aside funds or bonds in advance for clean-up or closure responsibilities.¹⁷⁴ This is a Superfund requirement and Chesapeake as PRP should meet its

¹⁶⁹ David French, 'Debt-stricken Chesapeake Energy to advance incentive executive pay' (Reuters, 11 May 2020) <<https://uk.reuters.com/article/us-chesapeake-erngy-compensation/debt-stricken-chesapeake-energy-to-advance-incentive-executive-pay-idUKKBN22N011>> accessed 15 October 2020.

¹⁷⁰ Ibid.

¹⁷¹ Ibid.

¹⁷² Kathy Hipple, Clark Williams-Derry and Tom Sanzillo, 'Mounting negative cash flows highlight struggles of appalachian fracked gas producers' *Institute for Energy Economics and Financial Analysis* (November 2019) 3. H Tabuchi (n 168).

¹⁷³ Scott Tong, 'Chesapeake Energy bankruptcy raises new questions about oil and gas failures, abandoned wells' (Marketplace, 30 June 2020) <<https://www.marketplace.org/2020/06/30/chesapeake-energy-bankruptcy-raises-questions-about-oil-gas-failures-abandoned-wells/>> accessed 15 October 2020.

¹⁷⁴ Office of Site Remediation Enforcement, Office of Enforcement and Compliance Assurance, US Environmental Protection Agency, *Guidance on Financial Assurance in Superfund Settlement Agreements and Unilateral Administrative Orders* (6 April 2015).

environmental financial assurance obligations.¹⁷⁵ In fact, federal and state regulators have been unable to require companies to fully fund expected clean-up responsibilities, helping to mask the true costs of oil and gas production.¹⁷⁶ This could explain why Chesapeake only prepared \$41 million bonds to cover the potential \$1.6 billion of environmental clean-up costs. This can be seen as the equivalent of passing on environmental clean-up costs to taxpayers as a backdoor subsidy to the oil and gas industry.¹⁷⁷

Chesapeake's filings show that the company has a preliminary estimate of 6800 oil wells that need to be decommissioned.¹⁷⁸ The total cost of cleaning up is more than \$1.6 billion.¹⁷⁹ If these wells are not cleaned, it will cause further damage to the environment and would incur further liability costs as a result. Firstly, some companies often overlook the maintenance of oil wells, and block them in order to save money, causing tons of super endothermic methane to continue to pour into the atmosphere.¹⁸⁰ Methane is one of the official causes of the greenhouse effect, which further degrades the environment, and does so in a rapid manner. Furthermore, oil wells that are not decommissioned and maintained will affect the health of the surrounding residents. Some studies have shown that there is a link between living near oil and gas wells and health symptoms; while the well can also lead to contamination of surrounding

¹⁷⁵ 42 U.S.C. § 9607(a) (2012).

¹⁷⁶ Justin Mikulka 'As fracking companies face bankruptcy, US regulators enable firms to duck cleanup costs' (Desmog, 20 December 2019) <<https://www.desmogblog.com/2019/12/20/fracking-oil-gas-bankruptcies-cleanup-costs-regulators>> accessed 15 October 2020.

¹⁷⁷ Ibid.

¹⁷⁸ Eoin Higgins, 'Privatize the profit, Socialize the mess: Abandoned fracking wells left spewing climate-killing methane nationwide' (CommonDream, 13 July 2020) <<https://www.commondreams.org/news/2020/07/13/privatize-profit-socialize-mess-abandoned-fracking-wells-left-spewing-climate>> accessed 15 October 2020.

¹⁷⁹ H Tabuchi (n 168).

¹⁸⁰ Elise G. Elliot, Xiaomei Ma and Brian P. Leaderer, 'A community-based evaluation of proximity to unconventional oil and gas wells, drinking water contaminants, and health symptoms in Ohio' (2018)167 Environmental Research 556.

groundwater.¹⁸¹ This could potentially lead to negligence claims from residents if it became public knowledge that the insolvent company had not properly remediated their property; in this case, their oil wells.

Furthermore, over the past few years, Chesapeake have been fined repeatedly for their environmental pollution, some of which have created fines for maximum records. For example, in 2012, federal regulators punished Chesapeake by issuing them \$3.2 million in civil fines, which was required for fronting the cost of cleaning the water in West Virginia.¹⁸² In 2011, Pennsylvania regulators imposed record fines against Chesapeake. Fines are due to heavy pollution from natural gas drilling, which then leaks into local water sources.¹⁸³ As an American listed company which continues to profit from past operations, Chesapeake is clearly able to demonstrate that there is capacity and ability to control and reduce pollution in their operations, and remediate post-operation. It is obvious that Chesapeake did not think about investing a proportion of its money on its environmental protections. It is speculated that the company might not have thought about assuming its environmental liability as a first priority. This seems to validate certain scholarly opinions that the company aims to pay money to its executives and then apply for bankruptcy.¹⁸⁴

Presently, the Chesapeake Energy Company has already entered the reorganisation stage. A bankruptcy court has approved its \$925 million DIP (Debtor-in-possession) which is funding provided to businesses that have filed

¹⁸¹ Ibid 557.

¹⁸² Steve Sisney, 'Chesapeake fined \$3.2 million for West Virginia water violations' (Reuters, 19 December 2013) <<https://www.reuters.com/article/us-chesapeake-penalty/chesapeake-fined-3-2-million-for-west-virginia-water-violations-idUSBRE9BI19Z20131219>> accessed 15 October 2020.

¹⁸³ Edward McAllister, 'Chesapeake handed record fine for Pennsylvania gas drilling' (Reuters, 17 May 2011) <<https://www.reuters.com/article/us-chesapeake-dep/chesapeake-handed-record-fine-for-pennsylvania-gas-drilling-idUSTRE74G61M20110517>> accessed 15 October 2020.

¹⁸⁴ Clifford Krauss, 'Chesapeake Energy, a shale pioneer, files for bankruptcy protection' (The New York Times, 28 June 2020) <<https://www.nytimes.com/2020/06/28/business/economy/chesapeake-energy-bankruptcy.html>> accessed 15 October 2020.

for chapter 11.¹⁸⁵ However, the court only approved some limited relief, such as allowing the payment of employee wages and benefits, and to pay certain vendors and suppliers until now.¹⁸⁶ These relief measures exclude environmental relief. The court has not mentioned any measures in relation to the cleaning up of the wells yet. Some scholars also have a negative attitude towards the huge clean-up cost; with Mary Kang, abandoned well expert of civil engineering at McGill University commenting: 'I have definitely seen hydrocarbons coming out, from bobbing to films of oil'.¹⁸⁷

This case is currently still ongoing, if the court finally allows Chesapeake to abandon 6,800 wells, it may cause a chain reaction in the future and a precedent to be established. It would like cause more and more fracking companies to file under chapter 11, so as to abandon their oil and gas wells and achieve the purpose of escaping environmental liability. This is definitely not groundless. Analysts and sections of the media have predicted that with the malaise of the international market and the COVID-19 pandemic, more companies will likely go bankrupt in the not-so-distant future.¹⁸⁸

Furthermore, the bankruptcy of Chesapeake also exposes the issue of corporate governance. Weak corporate governance systems led to the bankruptcy of Chesapeake Energy, allowing for a 'fat cat' culture where

¹⁸⁵ Ciara Linnane, 'Chesapeake Energy gets bankruptcy court approval for \$925 million DIP loan' (MarketWatch, 30 January 2020) <<https://www.marketwatch.com/story/chesapeake-energy-gets-bankruptcy-court-approval-for-925-million-dip-loan-2020-06-30>> accessed 15 October 2020.

DIP: Debtor-in-possession (DIP) financing is a special kind of financing meant for companies that are in bankruptcy. DIP financing is used to facilitate the reorganization of a debtor-in-possession (the status of a company that has filed for bankruptcy) by allowing it to raise capital to fund its operations as its bankruptcy case runs its course.

¹⁸⁶ C Linnane (n 185).

¹⁸⁷ Scott Tong, 'Chesapeake Energy bankruptcy raises new questions about oil and gas failures, abandoned wells' (Marketplace, 30 January 2020) <<https://www.marketplace.org/2020/06/30/chesapeake-energy-bankruptcy-raises-questions-about-oil-gas-failures-abandoned-wells/>> accessed 12 September 2022

¹⁸⁸ C Linnane (n 185).

executives' remuneration took preference over the company's responsibilities to its stakeholders. The excessive remuneration did not resolve Chesapeake's insolvency crisis, on the contrary, it furthered Chesapeake's insolvency plan, in other words, the announcement of its insolvency weeks after the payment of high bonuses to executives.¹⁸⁹ Nevertheless, there are few restrictions on the remuneration of executives or directors under US law,¹⁹⁰ which could easily lead to the failure of these existing regulatory provisions for listed companies. In such cases, poor corporate governance will drive insolvency, and environmental costs cannot be internalised.

Lastly, the Russian invasion of Ukraine in 2022 led to a huge increase in international energy prices for a short time, with the price of coal in the international market also rising for a short period after the invasion.¹⁹¹ As coal prices increase, it may save some US coal companies to a certain extent. Nevertheless, in accordance with sustainable development objectives, coal prices may fall further as and when conflict draws to a close,¹⁹² leading to eventual bankruptcy for these coal companies. This assumption can be confirmed by the fact that the proportion of coal in utility power has been decreasing year on year.¹⁹³ If all of them abandon cleaning and maintenance

¹⁸⁹ Nicole Layton and Ginger Sprong, 'Cut and run: bonding, bankruptcies, and the Orphaned-oil-well crisis' (2022) 1 *LSU Journal of Energy Law and Resources* 6.

¹⁹⁰ Peter King and others, 'Disclosure of executive remuneration in the UK: recent development and US comparison' (WestLaw 1 February 2013) <[https://content.next.westlaw.com/practical-law/document/I8417b23f1cb111e38578f7ccc38dcbce/Disclosure-of-executive-remuneration-in-the-UK-recent-developments-and-US-comparison?viewType=FullText&transitionType=Default&contextData=\(sc.Default\)&firstPage=true#co_anchor_a869959](https://content.next.westlaw.com/practical-law/document/I8417b23f1cb111e38578f7ccc38dcbce/Disclosure-of-executive-remuneration-in-the-UK-recent-developments-and-US-comparison?viewType=FullText&transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a869959)> accessed 9 January 2023.

¹⁹¹ Sudarshan Varadhan, 'Global coal prices surge as Ukraine tensions worsen supply woes' (Reuters, 28 January 2022) <<https://www.reuters.com/business/energy/global-coal-prices-surge-ukraine-tensions-worsen-supply-woes-2022-01-28/>> accessed 12 September 2022.

¹⁹² Peter Nagle and Kal Trina Temaj, 'Energy market developments: coal and natural gas prices reach record highs' (World Bank Blog, 19 July 2022) <<https://blogs.worldbank.org/opendata/energy-market-developments-coal-and-natural-gas-prices-reach-record-highs>> accessed 12 September 2022.

¹⁹³ US Energy Information Administration (n 161).

of their wells, then all cleaning pressure and financial cost will be transferred to public funds. In fact, according to EPA estimates, more than 2 million wells have been abandoned in the United States so far, and the cost is conservatively estimated to be as high as \$435 billion – if all cleaning and sealing work is completed.¹⁹⁴

5.5.2 KMCO (Chemical Plant) LLC

KMCO LLC, located in Crosby, Texas, is a chemical manufacturing company that provides toll processing services to some of the world's largest chemical companies. The production capabilities of KMCO equates to over 900 million pounds of toll manufacturing products per year.¹⁹⁵ KMCO manufactures glycol products, such as antifreeze products, brake fluid products, oilfield products and cement grinding products.¹⁹⁶

As a chemical plant, a number of incidents have occurred at KMCO during its operation. An explosion was recorded on December 24, 2010, in which three workers were injured.¹⁹⁷ In 2016, KMCO was fined for generating air pollutants in its chemical processes.¹⁹⁸ Most recently, another fatal explosion occurred in April 2019 at the KMCO Crosby plant. This explosion killed one KMCO worker and severely injured two others.¹⁹⁹ All in all, the incident injured more than 30 people, including seven KMCO employees and 23 contract workers.²⁰⁰

According to the current investigation by the U.S. Chemical Safety and Hazard

¹⁹⁴ D French (n 169).

¹⁹⁵ KMCO, 'About us' (KMCO) <www.kmcolc.com/about-us> accessed 19 June 2022.

¹⁹⁶ CSB, 'Custom chemical processing and specialty chemical manufacturing' (CSB 17 September 2019) <<https://www.csb.gov/kmco-llc-fatal-fire-and-explosion-/>> accessed 19 June 2022.

¹⁹⁷ Brian Beckcom, 'Chemical Plant Fires Sites ITC and KMCO Both Have a History of Violations' (VB Attorneys, 04 February 2019) <<https://www.vbattorneys.com/blog/houston-area-chemical-plant-fires-have-numerous-environmental-and-safety-violations-in-common>> accessed 19 June 2022.

¹⁹⁸ Ibid.

¹⁹⁹ CSB 'Explosion and fire at KMCO Chemical Facility (Factual Update)' CSB (September 17, 2019) 5.

²⁰⁰ Ibid 5.

Investigation Board (CSB), the explosion may have occurred because a vapour was triggered, causing it to ignite and explode.²⁰¹ However, investigators are yet to clarify how and why the vapour cloud in question was triggered, meaning that the exact cause of the incident has yet to be formally disclosed by the CSB's final report.²⁰²

KMCO filed for Chapter 7 bankruptcy in May 2020, which could have resulted in the liquidation of a company's assets.²⁰³ A month after KMCO filed for bankruptcy, a company called ALTIVIA acquired KMCO and received court approval to do so.²⁰⁴ Normally, a bankrupt company would file for chapter 11 reorganisation and then look for a buyer to acquire it. However, KMCO opted for chapter 7, which bypassed the usual lengthy process of negotiating with creditors. Miriam Goott, an attorney who represented KMCO in the bankruptcy process, said:

*If there is a pre- bankruptcy deal in place to sell a business, then a Chapter 7 process potentially saves the estate millions in attorney's fees and increases the likelihood of a distribution to creditors.*²⁰⁵

In fact, after the explosion, many lawsuits were filed against KMCO by people, such as Harris County, the US Fire Pump Company and some of KMCO's own workers.²⁰⁶ These lawsuits ranged from personal injury claims to those alleging

²⁰¹ Ibid 10.

²⁰² Ibid 11.

²⁰³ B Beckcom (n 197).

²⁰⁴ ALTIVIA 'ALTIVIA Acquires KMCO Crosby, Texas Facility' (ALTIVIA, 1 June 2020) <<https://www.altivia.com/pressroom/altivia-acquires-kmco-crosby-texas-facility-1>> accessed 19 June 2022.

²⁰⁵ Erin Douglas, 'Bankrupt KMCO bought by Houston chemical company ALTIVIA' (HOUSTON CHRONICLE, 2 June 2020) <<https://www.houstonchronicle.com/business/energy/article/Bankrupt-KMCO-bought-by-Houston-chemical-company-15309618.php>> accessed 19 June 2022.

²⁰⁶ Houston Public Media, 'Harris County sues KMCO over fire at Crosby Facility' (Houston Public Media, 09 April 2019) <<https://www.houstonpublicmedia.org/articles/news/2019/04/09/328525/harris->

violations against environmental regulations.²⁰⁷ Despite this, ALTIVIA made it clear that it was not liable for lawsuits against KMCO relating to injuries caused by the explosion or any alleged environmental violation.²⁰⁸ This raises two further questions. The first of these concerns the likely cost of the alleged environmental violations given this particular set of circumstances; while the second raises the issue of who, of those involved, is most likely to be held liable for the environmental liabilities relating to the claims made.

With regards to the costs involved, the explosion investigated by the CSB is still being processed, though litigation information disclosed has provided the details necessary to roughly calculate KMCO's environmental liability.

Firstly, it appears that, with respect to the April 2019 explosion and fire at KMCO Crosby plant, that KMCO is currently stands in violation of Clean Water Act and Clean Air Act, as well as a hazardous wastes statute, and as a result Harris County has sued KMCO in local court.²⁰⁹ During the duration of the case, investigator found evidence of KMCO's past pollution practices in 2016, which subsequently contaminated the air and local water supplies. Investigator found multiple leaks at KMCO's Crosby facility, where light black light water was found to have flowed into creek near the flare, resulting in 36-inch outfalls. The outfall was understood to be connected to the movement of water downstream.²¹⁰ The

county-sues-kmco-over-fire-at-crosby-facility-argues-violations-of-state-and-county-laws/> accessed 19 June 2022.

²⁰⁷ Aurelio Campos and John C. Foley, 'Workers, Harris County take legal action over Crosby co. chemical fire' (Houston Business Journal, 9 April 2019) <<https://www.bizjournals.com/houston/news/2019/04/08/workers-harris-county-sue-crosby-co-over-chemical.html>> accessed 10 November 2021.

²⁰⁸ Ibid.

²⁰⁹ Perla Trevizo, Houston Chronicle, 'Lawsuits: KMCO official aware of valve leak before chemical plant explosion' (Chron, 8 April 2019) <<https://www.chron.com/news/houston-texas/article/Lawsuit-KMCO-officials-aware-of-valve-leak-13750546.php>> accessed 10 November 2021.

²¹⁰ *Harris County v. KMCO HARRIS COUNTY'S* Original Petition and Application for Temporary and Permanent Injunction 2017-56541 7.24. 25.

stream was filled with black water with a moderately strong odour and brown residue was found floating on the surface of the water.²¹¹ Under the Clean Water Act, Clean Air Act, and the Texas Administrative Code, KMCO was required to stop the effluent discharge and immediately repair its facilities, as well as accept responsibility for remediating the contaminated land and water.²¹² According to news reports, KMCO have been required to pay nearly \$3.3 million in fines for its environmental violations, though KMCO has yet to pay.²¹³

Moreover, this explosion would have caused further significant air and land contamination. In *Re Harris County v. KMCO*, documents filed in court by Harris County show that visibility conditions at the site were near-opaque due to the extremely high density of smoke, which persisted for over an hour.²¹⁴ To extinguish the fire, large volumes of foam were required, while at least two days' worth of 'facility-industrial wastewater' was discharged into the water.²¹⁵ In fact, the explosion and the fire caused by the blast was estimated to have released over 2,000 pounds of dangerous chemicals into the air, which would subsequently fallen into the surrounding river, and seriously endanger the health of nearby residents.²¹⁶ If such accounts are sufficiently substantiated,

²¹¹ Ibid 7.26.

²¹² § 101.4, § 116.115(b)(c) of Title 30 of the Texas Administrative Code, and Permit, Texas Water Code § 26.121(a). Texas Health & Safety Code § 382.085(b) by causing the emission of air contaminants in violation of TCEQ rules on at least 22 February 2013.

²¹³ Perla Trevizo, 'KMCO fined for pattern of environmental violations at Crosby plant' (Houston Chronicle, 28 June 2019) <<https://www.houstonchronicle.com/news/houston-texas/houston/article/KMCO-fined-for-alleged-pattern-of-environmental-14060062.php>> accessed 20 November 2021.

²¹⁴ Olivia Pulsinelli, 'Workers, Harris County take legal action over Crosby co. chemical fire' (Houston Business Journal, 9 April 2019) <<https://www.bizjournals.com/houston/news/2019/04/08/workers-harris-county-sue-crosby-co-over-chemical.html>> accessed 20 November 2021.

²¹⁵ Ibid.

²¹⁶ A Campos and J Foley (n 207).

KMCO will face higher fines and further claims in the ensuing lawsuits.²¹⁷

The second question raised relates to who is responsible for the payment of KMCO's environmental liabilities. In its acquisition plan, ALTIVIA has made it clear that it will not assume any environmental liability from the aforementioned explosion and will only assume part of KMCO's debts. This means that only KMCO can assume environmental liabilities post-acquisition; yet this is impossible. Moreover, KMCO has also stated that it is not responsible for any historical violations or incidents, as it states that:

*KMCO, LLC acquired the Crosby facility in 2012. Therefore, KMCO, LLC did not own or operate the Crosby facility and is not responsible for any historic incidents or violations that occurred prior to 2012.*²¹⁸

In addition, KMCO claimed that a new operator and management teams (acquired in 2012) were investing tens of millions of dollars in new capital with the intention to protect employees and the neighbouring community. However, after 2012, KMCO allegedly violated environmental regulations repeatedly and in doing so, caused a large number of accidents to occur. Therefore, consideration must also be given as to whether KMCO should assume responsibility for environmental liabilities that occurred after 2012.²¹⁹

Unfortunately, based on KMCO's current financial situation, it is difficult to assume all environmental liabilities. Moreover, as a limited liability company, the members of KMCO themselves have limited liability, while LLC members do not have any personal financial liability in relation to the LLC.²²⁰ As this is

²¹⁷ Ibid.

²¹⁸ Joel Eisenbaum, 'KMCO: Company is not responsible for any historic incidents or violations' (Huston, 3 April 2019) < <https://www.click2houston.com/news/2019/04/03/kmco-company-is-not-responsible-for-any-historic-incidents-or-violations/>> accessed 20 November 2021.

²¹⁹ Ibid.

²²⁰ Ibid.

the case, it is difficult to pierce the corporate veil, notably one of the most important characterises of LLC.²²¹

In the years to come, there will inevitably be a long and bitter process of litigating the hitherto discussed environmental claims that exist between the regulators, KMCO and ALTIVIA. At present, neither KMCO nor ALTIVIA can afford to cover the cost of these environmental claims, and, if the outcome of future litigation differs from the amount speculated by regulators, then public funds will come into play in order to sufficiently cover the cost of KMCO's environmental liabilities in their entirety.

5.5.3 Blackjewel Coal Company

As one of the behemoths of the coal industry in the United States, although Blackjewel LLC (Blackjewel) is not as famous as Alpha Natural Resources, Peabody Energy or Arch Coal, it has recently become one of the largest coal companies in the United States by sales.²²² Blackjewel is a leading producer of over 40 million tons of thermal and metallurgical coal per annum.²²³ The coal operations of Blackjewel are located in a number of states across the US, including Wyoming, Kentucky, Virginia and West Virginia.²²⁴

Blackjewel has recently filed for bankruptcy, and closed its two large-scale operations in the Powder River Basin in Wyoming, which resulted in hundreds of workers losing their job. According to information disclosed by the media and officials, the reason for bankruptcy could be summarised as follows.²²⁵

²²¹ Ibid.

²²² Clark Williams Derry, 'Seven Bombshells in the Blackjewel bankruptcy' (Sightline Institute, 9 July 2019) <<https://www.sightline.org/2019/07/09/blackjewel-bankruptcy-seven-bombshells/>> accessed 10 December 2021.

²²³ Ibid.

²²⁴ Ibid

²²⁵ Greg Johnson, 'Blackjewel closes two mines, nearly 600 out of work' (Powell Tribune, 5 July 2019)

Firstly, Blackjewel have been short of cash flow since 2013. Although Blackjewel is one of the largest coal companies in the United States by sales, in reality, Blackjewel have been living hand-to-mouth for many years. This conclusion can be proved in the discussion in the court that Blackjewel's CEO Jeff Hoops stated;

*Since 2013, Revelation Energy and then since 2017 when Blackjewel was formed, no question cash flow has been very tight. We reviewed that every other Friday with your client providing detailed cash flow statements. So yes, that should not be a surprise to you or him.*²²⁶

Secondly, the financial performance of Blackjewel is in turmoil. There is a huge leak in their financial system. The new financial system makes it almost impossible for executives to track the financial performance of individual mines.²²⁷ This means that management has no feasible way to figure out which businesses are losing money, or how much money they have lost. As a result, all decisions can only be made on the intuition of management.

Thirdly, the cold winter of the coal industry has resulted in many coal companies filing for bankruptcy across the United States, including some big industrial players, such as Patriot Coal and Peabody Energy. From the data released by the U.S. Energy Information Administration, the number of decommissioned coal units in the years 2015 to 2019 was 49.²²⁸ The executives did nothing leading up to filing for bankruptcy, despite acknowledging the firm's tight cash flow and growing debts.²²⁹ The company's CEO, Jeff Hoops, had every

<<https://www.powelltribune.com/stories/blackjewel-closes-two-mines-nearly-600-out-of-work,19762>> accessed 10 December 2021. Blackjewel, L.L.C. Case No. 19-30289.

²²⁶ C W Derry (n 222).

²²⁷ Ibid.

²²⁸ U.S. Energy Information Administration 'Annual Electric Generator Report' *U.S. Energy Information Administration* (2019) 3.

²²⁹ Matt Hepler, 'Delays, pollution and financial hurdles plague Blackjewel mines' (Appalachian Voices,

confidence that his bankrupt coal operator would rebound,²³⁰ and in hoping for the best, but failed to prepare for the worst.²³¹

On July 27 2020, a federal judge extended the bankruptcy case of Blackjewel to the end of that year.²³² The court considered many factors before making this decision; an important factor influencing this decision being the environmental violations committed by Blackjewel.²³³ When Blackjewel first filed for bankruptcy, it violated land, water and safety requirements many times on a number of its more than 20 facilities.²³⁴ Regulators alleged in court documents that Blackjewel continued to fail to comply with the Surface Mining Control and Reclamation Act or the Clean Water Act.²³⁵ Furthermore, Blackjewel had closed 32 coal mines in Wyoming, Virginia and Kentucky after failing to obtain enough temporary funds to keep coal facilities running during bankruptcy proceedings.²³⁶ Although Blackjewel has auctioned several coal mines, hundreds of mining permits remain in the hands of the insolvent company – Blackjewel.²³⁷ These neglected permits spread across multiple states and bore heavy environmental liabilities.²³⁸ The cost of cleaning up these wells is inevitably high. The report of U.S. Government Accountability Office noted that

18 May 2019) <<https://appvoices.org/2020/05/18/delays-pollution-finances-blackjewel-mines/>> accessed 10 December 2021.

²³⁰ John Raby and Mead Gruver, 'Blackjewel CEO confident bankrupt coal operator will rebound' (Courthouse News, 3 July 2019) <<https://www.courthousenews.com/blackjewel-ceo-confident-bankrupt-coal-operator-will-rebound/>> accessed 10 December 2021.

²³¹ Ibid.

²³² Camille Erickson, 'Court Extends Blackjewel Bankruptcy Case Through End of Year' (Star Tribune, 3 August 2020) <https://trib.com/business/energy/court-extends-blackjewel-bankruptcy-case-through-end-of-year/article_567c4d0a-fb3a-5286-bccc-70b6242d87c8.html> accessed 10 December 2021.

²³³ Camille Erickson, 'Blackjewel Bankruptcy case far from over' (Star Tribune, 18 November 2019) <https://trib.com/business/energy/blackjewel-bankruptcy-case-far-from-over/article_dac82152-f6df-563f-a1b4-eadf3cc937af.html> accessed 10 December 2021.

²³⁴ C Erickson (n 232).

²³⁵ Blackjewel, LLC (19-30289) (Docket 1125).

²³⁶ C Erickson (n 232).

²³⁷ Ibid.

²³⁸ Ibid.

'low-cost wells typically cost about \$20,000 to reclaim, and high-cost wells typically cost about \$145,000 to reclaim.'²³⁹ It also verifies once again that the environmental liability of Blackjewel is unimaginably huge.

Recent activities in the court have saw some regulators filing documents to accuse Blackjewel of such environmental violations. For example, the environmental regulator of Kentucky argued that Blackjewel had hundreds of outstanding environmental and mining violations at several mines in the state.²⁴⁰ The Kentucky Federal Energy and Environment and Cabinet cited 13,125 violations of the Kentucky Pollutant Discharge Elimination System by Blackjewel.²⁴¹

Furthermore, some scholars and media are also worried about the environmental pollution caused by Blackjewel. At the hearing, Appalachian Citizens Law Centre attorney Mary Corner said,

*As these mine sites are sitting, their conditions are degrading, the failure to maintain them is ultimately increasing the cost of reclamation. And that increased cost of reclamation, for the mines that are going to be abandoned, is going to fall on the citizens that we represent.*²⁴²

In a recent report, Mark Olalde commented:

That worst-case scenario would push the coal industry into unprecedented territory and would leave hundreds of millions of dollars

²³⁹ U.S. Government Accountability Office 'Bureau of land management should address risk from insufficient bonds to reclaims wells' U.S. *Government Accountability Office* (September 2019) <<https://www.gao.gov/products/gao-19-615>> accessed 10 December 2021.

²⁴⁰ Blackjewel, LLC (19-30289) (Docket 2298).

²⁴¹ Ibid.

²⁴² Sydney Boles, 'Bankrupt Blackjewel coal still racking up environmental violations, official warn' (Resource, 22 January 2020) <<https://ohiovalleyresource.org/2020/01/22/bankrupt-blackjewel-coal-still-racking-up-environmental-violations-officials-warn/>> accessed 10 December 2021.

*in clean-up liability unprotected.*²⁴³

In fact, scholars and media alike worry that Blackjewel will evade their environmental liabilities, with the help of bankruptcy. This option is quite possible. Firstly, CEO Jeff Hoops has transferred corporate assets to his personal property over many years.²⁴⁴ Jeff Hoops claimed to have provided a private loan to Blackjewel but did not submit any evidence about the loan.²⁴⁵

Though he has repaid his own private loan, he is not actually the highest level debtor in the list of debtors. Jeff Hoops described the \$34 million he paid to himself as a normal business operation.²⁴⁶ However, recent analysis has pointed out that the \$34 million payment was received by Clearwater Investment Holding, LLC, an entity founded by Jeff Hoops, whose shareholders include his wife.²⁴⁷

In 2021, under a liquidation agreement reached in federal bankruptcy court in Charleston, West Virginia, Blackjewel can no longer clean up and reclaim the coal mines covered by more than 30 permits in Kentucky.²⁴⁸ Furthermore, about 170 other permits in Kentucky, Tennessee, Virginia, and West Virginia will be placed into a legal limbo, if these 170 permits cannot be transferred to others,

²⁴³ Mark Olade, 'Exposed: West Virginia and other states relying on 'house of cards' to pay for coal mine cleanup' (DESMOG, 25 June 2020) <<https://www.desmogblog.com/2020/06/25/coal-surety-bond-pools-liabilities-mine-cleanup>> accessed 10 December 2021.

²⁴⁴ Taylor Kuykendall, 'Bank says revelation defaulted after affiliate picked up major coal assets' (S&P Global Market Intelligence, 24 April 2018) <<https://www.spglobal.com/marketintelligence/en/news-insights/trending/BcRk57G5W6v2e0z5cbfuEQ2>> accessed 10 December 2021.

²⁴⁵ Cooper Mckim, 'A year later: the Blackjewel bankruptcy' (Wyoming Public Media, 1 July 2020) <<https://www.wyomingpublicmedia.org/post/year-later-blackjewel-bankruptcy#stream/0>> accessed 10 December 2021.

²⁴⁶ Ibid.

²⁴⁷ Ibid.

²⁴⁸ James Bruggers, 'A bankruptcy judge lets blackjewel shed coal mine responsibilities in a case with national implications' (Inside Climate News, 19 March 2021) <<https://insideclimatenews.org/news/19032021/a-bankruptcy-judge-lets-blackjewel-shed-coal-mine-responsibilities-in-a-case-with-national-implications/>> accessed 12 September 2022.

they will be abandoned as well.²⁴⁹

There has been no updated information on these permits as of yet. However, it is certain that all of these wells are currently unmanaged and are not currently being remediated by either Blackjewel or the government.

5.5.4 Some Reflections on Case Study

The case study section in this chapter describes how the US law treats environmental liability in bankruptcy proceedings. Some reflections deserve to be discussed here.

First, environmental costs cannot be internalised in insolvency proceedings. The US has the same problems as UK and China that regulators struggle to recover the full costs of environmental remediation and cleaning up, and public funds have had to cover environmental costs in some bankruptcy cases. For example, in the case study Chesapeake Energy, Chesapeake had set aside only \$41 million in bonds to cover \$1.6 billion in environmental clean-up costs, with the remaining environmental costs to be borne by taxpayers.²⁵⁰ Furthermore, the EPA website makes it clear that in some cases, 'bankruptcy estates may pay out less than full value on their environmental claims'.²⁵¹ Although the EPA indicates that post-bankruptcy companies retain environmental liability for the sites they own,²⁵² in practice, however, it is difficult for EPA to recover these environmental costs. A very typical example of this is the Superfund that was set up by Congress to deal with emergency and hazardous waste sites that require long-term clean-up.²⁵³ However, with

²⁴⁹ Ibid.

²⁵⁰ H Tabuchi (n 168).

²⁵¹ EPA, 'Recovering costs from parties in bankruptcy' (EPA, 25 October 2021)

<<https://www.epa.gov/enforcement/recovering-costs-parties-bankruptcy>> accessed 12 September 2022.

²⁵² Ibid.

²⁵³ Jodel A. Minta, 'EPA enforcement of CERCLA: Historical overview and recent trends' (2012)

Southwestern University Law Review 652.

Superfund receiving over \$1 billion a year in financial allocations from the federal government, it is clear that Superfund does not fully recover the environmental costs from polluters.²⁵⁴ This problem also seems to exist in China, where the Chinese government expects to recover environmental costs from polluters, but many contaminated sites rely on financial allocation for clean-up.

Second, there is the issue of bankruptcy fraud to avoid environmental claims in the US. As in China and the UK, the bankruptcy regime in the US has become a tool for some polluters to escape their environmental liability. There are usually two scenarios for this mode, one in which the company's assets are transferred and then deliberately filed for bankruptcy. For example, in Chesapeake Energy, the company filed for bankruptcy after paying huge wages to its executives.²⁵⁵ Another scenario is where a company seeks an acquisition opportunity, and the buyer does not assume the previous environmental responsibility. A typical case is KMCO Chemical, where the buyer explicitly refuses to assume KMCO's environmental liabilities.²⁵⁶ If Chinese courts have not heard cases of bankruptcy fraud, the US courts have heard many cases of bankruptcy fraud to escape environmental liabilities.²⁵⁷ Unfortunately, there are still companies in the US that have successfully used the bankruptcy system to escape their environmental liabilities, at least KMCO and Chesapeake Energy have proved this assertion.

Third, COVID-19 has increased the conflict between environmental law and

²⁵⁴ EPA, 'EPA announces plans to use first \$1 billion from Bipartisan Infrastructure Law Funds to clear out the Superfund Backlog' (EPA, 17 December 2021) <<https://www.epa.gov/newsreleases/epa-announces-plans-use-first-1b-bipartisan-infrastructure-law-funds-clear-out>> accessed 12 September 2022.

²⁵⁵ D French (n 169).

²⁵⁶ A Campos and J Foley (n 207).

²⁵⁷ For example *In re Exide Techs.*, 613 B.R. 79 (D. Del. 2020), *In re Peabody Energy Corp.*, No. 18-3242, 2020 WL 2176028 (8th Cir. May 6, 2020).

bankruptcy law. Since the advent of COVID-19, a number of polluting companies in the US have gone bankrupt, such as Chesapeake Energy and Blackjewel. The bankruptcy of these companies following the pandemic has certainly increased the chances of externalising environmental costs of bankrupt polluters. For example, both Chesapeake Energy and Blackjewel have environmental costs that are externalised to society.²⁵⁸ Meanwhile, the COVID-19 pandemic has exposed the lack of adequate contingency plans, even in developed countries, such as the US. For example, KMCO's environmental obligations factor in no means of being transferred to the buyer, while Blackjewel's permits are not transferable, meaning that the regulator has no forward-thinking plan to address any environmental liabilities that it may occur. These environmental costs are recoverable by the regulator if these companies are required to prepare effective financial assurance before they are allowed to operate. Effective environmental regulation is therefore an effective means of internalising environmental costs, especially in the context of the COVID-19 crisis. Although the case study section on China in Chapter 2 does not cover bankrupt enterprises during the pandemic, China is currently the only country that adheres to a 'zero case' policy.²⁵⁹ The negative impact of such a policy on the economy is significant.²⁶⁰ Furthermore, although the Chinese government does not disclose the number of bankrupt enterprises during the pandemic, the experience of the US suggests that there will be many high-risk enterprises that file bankrupt during a pandemic, and thus a significant externalisation of environmental liability to society is extremely possible.

Lastly, neither the regulator nor the polluter has cleaned up the contaminated sites. The US, the same as the UK and China, has a large number of

²⁵⁸ P Nagle and K Temaj (n 192); P Trevizo (n 213).

²⁵⁹ Jiming Chen and Yiqing Chen, 'China can prepare to end its zero-Covid policy' (2022)28 *Nature Medicine* 1104.

²⁶⁰ Ali Cheshmehzangi, Tong zou and Zhaohui Su, 'Commentary: China's Zero-COVID approach depends on Shanghai's outbreak control' (2022)10 *Front Public Health* 857003.

contaminated sites that are left uncleaned, whether by polluters or regulators. For example, Case Study 1, that of Chesapeake, found that over 2 million oil wells have been abandoned in the US, with a conservative estimate of \$435 billion in clean-up costs.²⁶¹

In the end, there is no guarantee that the regulator will be able to recover the full environmental costs from responsible parties, in which case these will be transferred to the taxpayer. Bankruptcy has become a tool for some polluters to successfully escape their environmental liabilities, even though many similar cases have been heard in US courts. COVID-19 increases the possibility of externalisation of environmental costs to some extent, and this is a challenge that China may encounter in the future.

5.6 Conclusion

This chapter reviewed the bankruptcy law and environmental law in the United States. The environmental law might be affected by bankruptcy law in several cases. The second part of this chapter considered the different ways in which bankruptcy law treats environmental liability of polluters. Environmental liability is always a difficult issue in the context of bankruptcy law and bankruptcy proceedings. This includes the discharge of liabilities through reorganisation and abandonment of contaminated property. The use of case studies has further examined how bankruptcy law treats environmental liability in practice.

Evaluation of this chapter shows that, although the United States has established the Superfund programme to remediate or clean-up the contaminated sites of polluters, it cannot guarantee the recovery of these funds from the polluters in question. There is no doubt that the original intention of the Superfund, established under the core environmental law CERCLA, is good.

²⁶¹ D French (n 169).

EPA has recovered many costs from polluters with the help of CERCLA, though in many cases, the cost recovery has become uncertain when the polluter files for bankruptcy. In such cases, Superfund has had to rely on public funds. When the conflict between environmental law and bankruptcy law occurs in practice, the court cannot promise that it will stand up for environmental law in every case. The key point that the court needs to determine is the nature and degree of environmental damage, among other factors which must be considered by the courts. In the court, there is no promise given with regards to environmental liabilities in bankruptcy cases.

Furthermore, polluters in some cases may be trying their best to evade environmental liabilities in bankruptcy proceedings, for example, by paying wages to executives as in the case of Blackjewel Coal. They deliberately create conflicts between environmental law and bankruptcy law in order to rid themselves of their environmental liabilities. In some cases, the court will uphold the bankruptcy law in these conflicts. Furthermore, when polluters go bankrupt, there is often a lack of assets to pay the cost of clean-up and remediation as is required. In this case, it falls on public funds to front the cost of such remediation. It means that environmental liabilities are externalised and transferred from polluters to taxpayers.

At present, the conflict between environmental law and bankruptcy law is likely to exist in the legal practice of the United States for some time to come. The next chapter will analyse how financial assurance realises the internalisation of environmental costs.

Chapter 6

Examination the Role of Financial Assurance in Internalisation of Environmental Costs

6.1 Introduction

This chapter will answer the fifth research question. The previous chapters examined how insolvency law treats environmental liability in different jurisdictions including China, the UK, and the US. It is difficult to internalise environmental costs in insolvency proceedings, as previous chapters have demonstrated. Regulators and legislators should focus on how to ensure that polluters have enough funds to pay their environmental liabilities if they go insolvent. At present, financial assurance as a legal tool, has been widely implemented by countries all over the world to reduce the externalisation of environmental liabilities.¹ However, the development of financial assurance in China has been very limited. The dilemmas of financial assurance in China and the problem of examining financial assurance itself are the main elements explored in this chapter, so as to be able to consider how such financial assurance mechanisms could be more effectively and appropriately implemented in the context of the Chinese legal framework in the next chapter.

The main body of this chapter consists of five parts. Firstly, this chapter will examine the function of financial assurance and how it can improve the internalisation of environmental costs. The second part of this chapter will present different financial assurance instruments; with the advantages and

¹ The financial assurance has been implemented by EU, UK, US, Canada, Australia and others. More details countries see European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), *Financial provision for environmental liabilities – practical guide* (Phase III 11 September 2017) 29.

disadvantages of each instrument analysed. The third section will analyse the practice of financial assurance in China. The fourth section will analyse the practice of financial assurance in the UK and US. The fifth and final section will examine the issues relating to financial assurance.

6.2 The Function of Financial Assurance

Financial assurance as an emerging tool is accepted in many countries around the world, in order to enable operators to cover any current and future environmental costs of their activities.² The concept of the need for financial assurance comes from examples that are often mentioned by environmental experts, such as a mine operator abandoning a site without adequately addressing the environmental issues from its operations.³ Some large, internationally renowned companies have the advantage of addressing these environmental issues, while some smaller companies do not have a good track record in this area.⁴ As a result, in countries with good regulatory systems, legislators place their hopes on financial assurance to ensure that environmental costs are recovered by the regulator.⁵ Similarly, financial assurance is considered to be a vital tool for addressing environmental issues in countries where the regulatory infrastructure is not yet in place.⁶ In terms of these assertions, while there is general agreement that financial assurance should be an important means of controlling the internalisation of environmental

² Zacbary C.M. Arnold, 'Preventing industrial disasters in a time of climate change: a call for financial assurance mandates' (2009)41 *Harvard Environmental Law Review* 262.

³ Philip Peck and Knud Sinding, 'Financial assurance and mine closure: Stakeholder expectations and effects on operating decisions' (2009)34 *Resources Policy* 229.

⁴ *Ibid.*

⁵ Philip Peck and Knud Sinding, 'Environmental and social disclosure and data richness in the mining industry' (2003)12 *Business Strategy and Environment* 138.

⁶ UNEP and others, *Mining for closure: policies and guidelines for sustainable mining practice and closure of mines* 2005.

costs, some criticism exists.

The original vision for financial assurance was to internalise the environmental costs, but Mackie and Besco noted that many frameworks of financial assurance are ineffective.⁷ For example, Macey and Salovaara identified some significant regulatory issues, particularly the law's self-binding ability, acceptability and the risks that came with it.⁸ Although they made an important suggestion that recovery and cost internalisation were two distinct purposes of financial assurance regulations, they did not elaborate on the relationship between them. Mackie and Besco commented 'while reclamation does lead inevitably to cost internalisation, cost internalisation does not lead inevitably to reclamation'.⁹ This means that the actual requirements of cost internalisation for operators are vague. In theory, operators can internalise their obligations in different ways, including self-bonding, depositing cash in an account or buying bonds from a third party.¹⁰ However, each of these measures is liable to fail completely, which means that the private funds needed to carry out the project may not be available when needed. It is unknown whether the operators' private expenses to fulfil their environmental obligations will be realised.¹¹

The same criticism was expressed to the regulator by Vivoda, Kemp and Oven, who argued that the right balance between 'enabling', and 'restrictive' regulations can be the basis for ensuring that mining companies operate in a way that meets their commercial interests, while also serving broader social

⁷ Colin Mackie and Laurel Besco, 'Rethinking the function of financial assurance for end-of-life obligations' (2020)50 *Environmental Law Reporter* 10588.

⁸ Joshua Macey and Jackson Salovaara, 'bankruptcy as Bailout' (2019)71 *Stanford Law Review* 894.

⁹ C Mackie and L Besco (n 7) 10589.

¹⁰ Colin Mackie and Valerie Fogleman, 'Self-insuring environmental liabilities: a residual risk-bearer's perspective' (2016)2 *Journal of Corporate Law Studies* 330.

¹¹ C Mackie and L Besco (n 7) 10589.

objectives.¹² The importance of establishing an effective regulatory framework can be seen from their perspective. Restrictive factors for mine operators can improve the internalisation of environmental costs. This restrictive factor should be risk-based and planned to provide assurance to stakeholders (such as society, residences, regulator) that the liability will not be externalised.¹³

Furthermore, the other argument is about 'internalisation' of environmental costs. The polluter pays principle should be the guiding principle for financial assurance, but this principle is not implemented in some countries.¹⁴ Some scholars have therefore raised criticisms against the internalisation of costs. Boyd and Ingberman recognised that internalising costs can be fostered by mandating the existence of capital dedicated to the satisfaction of debts, even after the dissolution of the company.¹⁵ Mackie and Besco explained this assertion, they argued, the purpose of building up a capital reserve is to ensure that the operator has the money to meet its liabilities.¹⁶ This will occur where the operator carries out works or where the regulator uses assurances to carry out works on behalf of the operator.¹⁷ Fulfilling the liability would then mean environmental remediation works. The indirect effect of this is that costs will be internalised by the operator.¹⁸

Peck and Sinding considered that this cost internalisation model raises capital

¹² Vlado Vivoda, Deanna Kemp and John Owen, 'Regulating the social aspects of mine closure in three Australian states' (2019)37 *Journal of Energy & Natural Resources Law* 422.

¹³ *Ibid.*

¹⁴ Jason Malone and Tim Winslow, 'Financial assurance: environmental protection as a cost of doing business' (2018)93 *North Dakota Law Review* 5.

¹⁵ James Boyd and Daniel Ingberman, 'The vertical extension of environmental liability through chains of ownership, contract and supply' in Anthony Heyes (ed), *The Law and Economics of The Environment* (Edward Elgar Publishing 2001) 44.

¹⁶ C Mackie and L Besco (n 7) 10577.

¹⁷ *Ibid* 10589.

¹⁸ *Ibid.*

and operating costs and leads to lower profits for operators.¹⁹ However, not all financial assurance measures require the establishment of capital reserves, for example, escrow accounts, trust funds and cash deposits in favour of the regulator are required to establish capital reserves.²⁰ Self-insurance and parent company guarantees do not mandate the establishment of capital reserves, but if the operator goes insolvent, their ability to meet their obligations is low. Measures such as guarantor bonds and bank guarantees present similar risks, as reserves are not applicable to these measures. These measures provided by third parties, such as banks and insurance companies, may fail to come up with the financial wherewithal as no company is immune to the risk of financial deterioration.²¹ In this case, the lack of capital reserves inhibits the measure's ability to meet the operators' liabilities and thus also it difficult to internalise environmental costs.

Therefore, capital reserves are necessary for the internalisation of environmental costs, but the assertion of Peck and Sinding cannot be ignored. Therefore, regulators and legislators should think carefully about this issue and should allow operators to take a variety of different financial assurance measures, but capital reserves should be a mandatory requirement.

6.3 The Instruments of Financial Assurance

Financial assurance mechanisms vary slightly from country to country, but at present the most commonly used ones include surety bonds, cash, letters of credit, bonds pools, insurance, trust funds, and self-insurance.²² However, not all of these forms of financial assurance are used in every industry, nor are they

¹⁹ P Peck and K Sinding (n 3) 230.

²⁰ C Mackie and L Besco (n 7) 10589.

²¹ Ibid.

²² J Malone and T Winslow (n 14) 11.

all created equally, as they are dependent on the type of environmental liability that needs to be covered, for example, insurance is often used for environmental incidents.²³

6.3.1 Surety Bonds

Surety bonds are a kind of financial guarantee mechanism, which involved three parties including the principal as the primary obligor (potential polluters), the surety of the secondary obligor (financial institutions), and the regulator as the obligator²⁴ Under this mechanism, if the principal is originally responsible to the agency and is unable to perform its obligations, the surety shall be responsible to the agency.²⁵ The surety, that is the issuer of the guarantee, has the right to seek recovery from the principal. For example, the surety is liable because of the default on the principal's debts.²⁶ In principle, although these financial institutions (sureties) can cooperate through and with insurance groups, a surety should not be confused with insurance companies. When an insurer agrees to assume liability under an insurance policy, the insurance relationship exists only between the principal and the insurer.²⁷ One difference from insurance needs to be noted, which is that the surety is subject to secondary liability when the principal defaults, and the insurer can recover from the principal any liability assumed by the surety.²⁸ As a result, most sureties or bonding companies will require the principal to sign such a compensation agreement and provide collateral, which will be released upon the successful

²³ Ibid.

²⁴ Lopes da Costa, José Carlos, 'Environmental financial assurance: current coverage, institutional challenges, and alternative financial guarantee agreements' (Ph.D Thesis, University of British Columbia, April 2020) 15.

²⁵ William Gorton, "Environmental/Reclamation Financial Assurances: Back to the Future," (2010)56 Rocky Mountain Mineral Law Institute 56.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

completion of the principal's obligations.²⁹

In theory, the guarantor basically undertakes to be responsible for the actions or omissions of the party seeking the guarantee. But in some cases, the validity of the surety bonds will be challenged, such as when the surety has a close relationship with the principal. However, corporate surety bonds are effective and easy for regulators to monitor because the responsibility for financial losses falls on the surety.³⁰ For the surety, it is necessary to consistently monitor the financial health of the client and bear the risk of the potential default of the insolvent client.³¹ This is undoubtedly challenging. Therefore, surety bonds may not be applicable to all clients, which mainly depends on the credibility of the principal and the risk threshold of the surety.³²

Furthermore, the insolvency issue of the surety is key to the effectiveness of financial assurance. When sureties or bonding companies fail, a particular and noteworthy issue is that their former customers must acquire assurance elsewhere in a relatively short period of time. This is usually not a problem for a financially healthy customer. However, when companies that need assurance experience their own financial difficulties, replacement may prove difficult. In some cases, new assurance may not be available. A problem with an American insurance company, Frontier Insurance Company, is the best case.³³ The US Treasury disqualified Frontier from issuing federal bonds in 2000 because of poor financial performance. Therefore, Frontier customers had to find a new provider to continue to meet their financial assurance requirements. Most were

²⁹ Ibid.

³⁰ W Gorton (n 25) 58.

³¹ Ibid.

³² Ibid.

³³ Frontier was a major supplier of environmental bonds. For example, of 198 solid waste landfills in Michigan in 2000 35 had closure bonds issued by Frontier, or 18 percent of the total.

able to do this, but for a long time, two big customers, landfill operator Safety-Kleen Corporation and mining operator AEI Industries, were unable to replace their environmental bonds.³⁴

When an assurance provider such as sureties or bonding companies, fails suddenly, and a polluter with assurance obligation is in financial distress, regulators are caught in a dilemma.³⁵ Regulators should issue an injunctive action such as facility closure in this time. However, if the regulator requires the closure of the facility, it will not produce real environmental benefits. On the contrary, a closure would leave the company short of cash flow, which can be used to finance debt, improve the company's ability to find alternative bonds and avoid insolvency. But if regulators do not close facilities or take corresponding measures, then the environmental liabilities left behind is another thorny issue if the polluter becomes insolvent.

In the light of the dilemma, EPA did not force the Safety-Kleen and AEI to replace their bonds. Safety-Kleen and EPA signed a consent agreement requiring periodic financial reports on the company's attempts to find alternative assurance and independent environmental audits of sites previously covered by Frontier Bond.³⁶ The agreement also set a series of deadlines for bond swaps. Unfortunately, these deadlines are not particularly credible. According to Safety-Kleen itself, 'there can be no assurance that the company will be able

³⁴ James Boyd, 'Financial responsibility for environmental obligations: are bonding and assurance rules fulfilling their promise?' (August 2001) Resources for the future working paper 20.

<<https://ssrn.com/abstract=286914>> accessed 10 November 2021.

³⁵ According to an EPA official, "requiring the company to close its treatment, storage, and other services was not in the best interest of the environment". Quoted in Pat Phibbs, Safety-Kleen, EPA Agree on Deadline for Obtaining Insurance for Facilities, Environment Reporter, October 20, 2000, 2200-1.

³⁶ *Re Safety-Kleen Corp., Bankr.* D. Del. No. 00-2303, October 17, 2000. Safety-Kleen and its subsidiaries operate approximately 30 percent of the waste management facilities in the U.S. Approximately 50 percent of its financial assurance was provided by Frontier.

to replace Frontier on a schedule acceptable to both EPA and the states.³⁷ Some scholars said that apart from shutting down the facility, there is no meaningful threat, and EPA's approach is poor.³⁸ However, another company, AEI, filed for insolvency in 2001.³⁹ The withdrawal of Frontier bonds led to a downgrade of the AEI debt rating to Caa2.⁴⁰ With such low-rated debt and a lack of collateral, it was hard for AEI to find replacement bonds. Safety-Kleen and AEI are both big companies. Even so, the insolvency of a single assessor posed a major obstacle to the compliance of the two companies and caused a serious financial crisis for AEI. Although assurance failure is still rare, Frontier's failure highlights the importance of regulatory oversight and screening and monitoring of the financial health of assurance providers.

6.3.2 Letter of Credit

The letter of credit was originally a common method of payment in international trade.⁴¹ In international trade, a buyer of a major purchase may require a letter of credit to guarantee that the seller will pay.⁴² By issuing a letter of credit to guarantee payment to the seller, the bank is essentially assuming the responsibility that the seller will be paid.⁴³ The buyer must prove to the bank that they have sufficient assets or a sufficient line of credit to pay before the

³⁷ 10-Q Report for Safety-Kleen Corporation, SEC file 1-08368, February 28, 2001, at 9-10. Safety-Kleen was in financial difficulty for a variety of reasons, most unrelated to the withdrawal of the Frontier bonds.

³⁸ J Boyd (n 34) 41.

³⁹ Ibid.

⁴⁰ Ibid. Caa2: Moody's long-term corporate debt ratings are rated within speculative grade. Debt rated Caa2 is judged to be in a poor position with a very high credit risk. A rating one notch higher is Caa1. A rating one notch lower is Caa3.

⁴¹ Brooke Wunnicke and Paul S. Turner, *Standby and Commercial Letters of Credit* (3rd edn, Wolters Kluwer Law and Business 2000) 2-2.

⁴² Ibid.

⁴³ Ibid.

bank will guarantee payment to the seller.⁴⁴ The letter of credit can now also be used as one of the operators of environmental financial assurance instruments.

If the provider of surety bonds is a financial institution or a parent company, then the provider of the letter of credit can only be a financial institution. The financial institution here is defined as an entity that holds the title of 'issuer' on behalf of a private company.⁴⁵ The letter of credit is extended to a third-party agency as a 'beneficiary', which may require payment in the form of 'draw' in accordance with the basic agreement between the applicant and the beneficiary.⁴⁶ As long as the letter of credit has not expired, the drawer must accept the beneficiary's request for withdrawal.⁴⁷ In addition, issuers are usually required to pay annual fees as well as compensation and security interest.⁴⁸ Furthermore, the letter of credit also avoids the risk of waiting for funds to accumulate as they are available on the date they are issued.⁴⁹ However, the bonds are also risky, and one important reason for this is that bonds usually must be renewed on a regular basis. If the financial situation of the operator deteriorates, it may not be possible to renew the contract.⁵⁰

6.3.3 Bonds Pool

There are many forms of bonds pool, also known as a mutual pool. These measures can be used as an alternative to individual financial assurance or as a general safe pool to pay for environmental liability cost for any member of this

⁴⁴ Ibid.

⁴⁵ J Malone and T Winslow (n 14) 14.

⁴⁶ Ibid.

⁴⁷ Ibid 15.

⁴⁸ Ibid.

⁴⁹ J Boyd (n 34) 42.

⁵⁰ IMPEL (n 1) 29.

bonds pool.⁵¹ Under this mechanism, the local government or the state can operate a bonds pool as an alternative to the traditional surety relationship.⁵² The participation of members of the bonds pool, that is these companies, may be voluntary, but the pool manager may approve only applicants who meet certain ongoing qualifications, or only those companies with certified records.⁵³ This pooling of resources is similar to the way City Councils raise funds in the UK.⁵⁴ But this mechanism is prone to problems, and there is a danger when a company's debt exceeds or requires too much of a bonds pool. The reason is that it prevents the ability of the bonds pool to cover any other debt of other participating companies.⁵⁵ The form of bonding is funded through fixed contributions of participating bond members whose rates are other lower than other traditional suretyship arrangements.⁵⁶

Furthermore, the bonds pool could be used as an ex post security fund to cover the cost of any outstanding remedial obligations.⁵⁷ In such cases, however, the bonds pool cannot be used as the main assurance, but as an additional source of funding when necessary.⁵⁸ In practice, if the manager of the pool is the state, the state usually funds the bonds pool by taxing the extracted materials, setting

⁵¹ Linlin Cheng and Jeffrey Skousen, 'Comparison of international mine reclamation bonding systems with recommendations for China' (2017)4 *International Journal of Coal Science & Technology* 72.

⁵² IMPEL (n 1) 29.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ IMPEL (n 1) 30.

⁵⁶ Ibid.

⁵⁷ Marianna Gorbatova and others, 'Retraining Professional Management Personnel at Coal Industry Enterprises: the Requirements of the Time' (IIIrd International Innovative Mining Symposium, Kemerovo, 2018) <<https://pdfs.semanticscholar.org/f828/76f952a7944b366612007646acb1bf375ea6.pdf>> accessed 10 September 2021.

⁵⁸ Gregory E Conrad, 'Mine Reclamation Bonding – from Dilemma to Crisis to Reinvention: What's a State Regulator to Do?' (Energy and Mineral Law Foundation Winter Workshop on Energy Law, Florida 11 February 2014) <<http://www.imcc.isa.us/EMLF%20Bonding%20Presentation%20Final.pdf>> accessed 10 September 2021.

fees or imposing fines on entities.⁵⁹ But it is worth noting that these bonds pools may be affected if participants file multiple claims in a short period of time during an industry-wide downturn. In this case, it is difficult for this mechanism to cover the full cost of environmental liability.⁶⁰

6.3.4 Insurance

As one of earliest financial assurance mechanisms, insurance has been adopted by most countries.⁶¹ Generally, insurance is used not only to cover claims for personal injury or property loss, but also for remediation of pollution accidents or other unforeseen environmental damages.⁶² In the view of some researchers, insurance can also be used to bear the risk if the cost exceeds the estimated cost of closure or reclamation.⁶³ However, insurance is not used to cover foreseeable costs, and the function of insurance only covers fortuities.⁶⁴

There are many types of insurance in the market, including optional insurance and mandatory insurance, but they are both unique to the use of the contractual relationship between the operator and the insurance company.⁶⁵

The benefits of environmental insurance are the transfer of liability for environmental costs to private entities, insurance companies, and the burden of monitoring operators' compliance.⁶⁶ Commercial insurers are the main

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Valeria Fogleman, 'Environmental liability insurance' in Lucas Bergkamp and others (eds), *Chemicals and the Law* (Edward Elgar, 2022) vol11.

⁶² Minge Negash and Tesfaye T. Lemma, 'Institutional pressures and the accounting and reporting environmental liabilities' (2020)29 *Business Strategy and the Environment* 1945. IMPEL (n 1) 15.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ James Boyd, 'Financial responsibility for environmental obligations: an analysis of environmental bonding and assurance rules' (2002)20 *Law and Economics of Environmental Policy* 197.

⁶⁶ David Dana and Hannah Wiseman, 'A market approach to regulating the energy revolution: assurance

providers of insurance for environmental liabilities, which are an independent third parties that provide premiums to enterprises that meet their underwriting standards. Therefore, commercial insurance companies have made business decisions in assessing risk losses and setting premiums, and the use of insurance is considered to be more of a 'market approach'.⁶⁷ However, the cost of obtaining insurance can be high, if not prohibitively high, in many cases.⁶⁸

6.3.5 Secured Funds

Secured funds can also be called a cash deposit, which can be used to provide a more flexible means of environmental recovery, such as trust funds and escrow accounts. Under this mechanism, a private company creates a trust fund as a 'settlor' and provides funds for the interests of the institution, which should be the only 'beneficiary'.⁶⁹ The third party, as the 'trustee', manages the trust subject according to the trust documents, which must meet the requirements of the beneficiary.⁷⁰ Meanwhile, there is the other financial instrument similar to secured funds, which is escrow.⁷¹ As for an escrow account, this is a separate account by a third party to hold cash on behalf of two or more contracting parties until the operator completes its environmental obligations and releases the funds from the account.⁷² The nature of an escrow and a trust fund are similar and therefore this section will only consider the

bonds, insurance, and the certain and uncertain risks of hydraulic fracturing' (2014)99 Iowa Law Review 1542-1543.

⁶⁷ Ibid 1547-1549.

⁶⁸ Ibid 1547.

⁶⁹ J Boyd (n 65) 199.

⁷⁰ Ibid 200.

⁷¹ Thomson Reuters, 'Escrow Account' (Thomson Reuters)

<[https://uk.practicallaw.thomsonreuters.com/0-107-](https://uk.practicallaw.thomsonreuters.com/0-107-6230?transitionType=Default&contextData=(sc.Default)&firstPage=true)

6230?transitionType=Default&contextData=(sc.Default)&firstPage=true> accessed 20 September 2022.

⁷² J Boyd (n 65) 199.

effectiveness of a trust fund as a financial assurance.

The benefits of trust funds are obvious. First, trusts can hold different property rights and interests, and operators can increase additional funds according to the expansion of operators' activities.⁷³ Second, trust funds also have the ability to generate interest or income from contributions, thus allowing the money to be used in various ways such as investments.⁷⁴ Third, the trust fund is terminated and its assets or subjects are returned to the enterprises (settlor) after satisfactory recovery or in accordance with the terms of the trust document itself.⁷⁵ It is even possible to gradually return funds over time, depending on the stage of the completed obligations.⁷⁶ The number and currency figures of contributions depend on the trust instrument itself, but should be monitored so that the accumulated funds are sufficient to cover existing environmental project costs and projected future costs.⁷⁷

The disadvantages of trust funds are also very apparent. For example, when a company fails to make a consistent contribution in accordance with the trust instrument, or the amount of contribution is not sufficient to cover potential long-term liabilities, the insolvency of a company may lead to irrecoverable property.⁷⁸ In addition, when a company itself acts as a trustee, the existing problems will be more obvious. In such cases, trust mechanisms may lack transparency, resulting in more opportunities for underfunded or poorly managed trusts, resulting in trust failure.⁷⁹ Additionally, investment is risky, the investment behaviour of the trustee may create a risk of reducing the amount

⁷³ J Malone and T Winslow (n 14) 16.

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ *Ibid.* 17.

⁷⁸ G Conrad (n 58).

⁷⁹ *Ibid.*

of deposit.⁸⁰ As long as the adverse environmental impact can be eliminated, the trust will maintain its validity and any value-added benefits through proper management will exist.

6.3.6 Self-Insurance and Parent Company Guarantee

Self-insurance enables operators to assure that they will rely on their own financial position to meet their future environmental liability.⁸¹ If an operator is unable to fulfil its environmental liability due to the loss of its financial value, the regulator has no recourse against the operator.⁸² This problem will be highlighted when the company files for insolvency.⁸³ Self-insurance requires the regulator not only to initially assess the financial integrity of the operator, but also to continuously monitor the financial situation of the entity until its environmental obligations are fully completed.⁸⁴

A parent company guarantee is a legally binding agreement entered into by the operator's parent company.⁸⁵ The agreement requires the operator's parent company to fulfil its environmental obligations if the operator fails to do so.⁸⁶ The purpose of a parent company guarantee is to avoid the transfer of environmental costs to society.⁸⁷ The acceptance of a parent company guarantee by the regulator is usually based on the same criteria as self-insurance and, generally evidence of a certain level of shareholding by the

⁸⁰ Ibid.

⁸¹ W Gorton (n 25).

⁸² Ibid.

⁸³ L Cheng and J Skousen (n 51) 72.

⁸⁴ Jeanna Heard, 'Bankruptcy's Role in the Growing Dilemma of Self-Bonding in the Coal Industry' (2017) 34 Emory Bankruptcy Development Journal 213.

⁸⁵ IMPEL (n 1) 32.

⁸⁶ Mahsa Hosseini Moghaddam and Ali Zare, 'Responsibilities of multinational corporations on environmental issues' (2017)10 Journal of Politics and Law 82.

⁸⁷ IMPEL (n 1) 32.

operator.⁸⁸ Furthermore, as with self-insurance, a parent company guarantee does not require the company to set aside funds. The parent company guarantee is therefore a high-risk financial assurance instrument, as is self-insurance.

For self-insurance and parent company guarantees, there are several things that should be considered. The first thing to be recognised is that self-insurance and parent company guarantees have many benefits for companies with good financial ability. Firstly, they require operators, and possibly their parent company, to demonstrate a certain degree of financial strength before and during activities that endanger the environment.⁸⁹ This kind of financial test can prevent nominally capitalized and financially unstable operators from entering the market.⁹⁰ Furthermore, self-insurance will not affect the company's cash flow, which will help the company to reduce costs and better develop the business.⁹¹

However, the remedial ability of self-insurance and parent company guarantee is quite risky. The effectiveness of self-insurance and parent company guarantee depends on financial testing, which enables operators to use a verified and verifiable capital base to repay their debts.⁹² This is in sharp contrast to measures such as trust funds, insurance or guaranteed bonds committed to environmental responsibilities.⁹³ These self-insurance assets are also likely to be considered part of the general assets of the operator so that their unsecured creditors can obtain them if the operator enters liquidation

⁸⁸ Ibid.

⁸⁹ C Mackie and V Fogleman (n 10) 250.

⁹⁰ Ibid 251.

⁹¹ Ibid.

⁹² J Boyd (n 65) 196.

⁹³ Ibid 197.

proceedings.⁹⁴ This situation can also occur with parent company guarantees. This means that environmental liabilities are externalised in this case. Furthermore, there are some problems with the financial tests that determine self-insurance. The tests required by self-insurance cannot foresee changes in the market, the insolvency of important customers, or the loss of key contracts. Once this happens. It is a major blow to the effectiveness of self-insurance and parent company guarantees. Finally, self-insurance and parent company guarantees are very demanding for regulators, who must audit the data at appropriate intervals to determine their accuracy and whether operators continue to meet the necessary financial tests. These requirements for the financial and material resources of regulators, as well as the professional capabilities of regulators, are very high. In the event of a regulatory error, self-insurance and parent company guarantees may be ineffective when necessary. One case in the US should be considered, which is that of Dow Corning. It took only one year for Dow Corning to go insolvent from its AA bond rating, due to breast implant litigation costs.⁹⁵ As a result, the company was no longer eligible to self-insure a hazardous waste disposal facility in Michigan. However, the company submitted a self-certificated claim based on suspicious accounting techniques and unaudited data which was ultimately inconsistent with the audited financial report.⁹⁶ In fact, this company claimed that its balance sheet

⁹⁴ Ibid.

⁹⁵ Cheryl Wade, 'Dow Corning's Anderson looking forward to bankruptcy end, retirement' (Midland Daily News, 22 May 2004) <<https://www.ourmidland.com/news/article/Dow-Corning-s-Anderson-looking-forward-to-7056261.php>> accessed 15 September 2021.

⁹⁶ Correspondence, Waste Management Division, Michigan Department of Environmental Quality, to the Dow Corning Corporation, October 19, 1995 ("In making the demonstration, the company relied upon the bankruptcy filing as a basis to exclude certain liabilities, receivables, and special charges for the breast implant litigation. The MDEQ cannot accept the bankruptcy filing as a basis to exclude the amounts attributed to the breast implant litigation.... The bankruptcy filing cannot be used as a basis to improve Dow Corning Corporation's ability to pass a financial test that it previously failed"). The data submitted to MDEQ was un-audited and in conflict with subsequent, audited data.

had improved as a result of the insolvency filing for the purpose of assurance.⁹⁷ In just one year, this company has gone from compliance to non-compliance as the finance of this company deteriorated quickly and unexpectedly. It is difficult for EPA to respond quickly in a short period. Under such circumstances, it will be extremely difficult for regulators to require polluters to find alternative financial provisions.⁹⁸ Therefore, self-insurance and parent company guarantees should be the weakest financial assurance instruments.

6.4 The Practice of Financial Assurance in China

The development of financial assurance in China is in its infancy. In contrast to countries with developed regulatory systems, currently, China only utilises mining deposit and environmental pollution insurance.⁹⁹ Although the role of financial assurance in relation to environmental liability has been discussed by scholars in China, most of these discussions have focused on environmental liability insurance and have not addressed other instruments of financial assurance. Feng, among other researchers, believes that environmental liability insurance in China should be supported by its government.¹⁰⁰

There is almost no domestic Chinese legislation relating to financial assurance. However, international conventions are a significant source of China's national environmental legislation.¹⁰¹ Financial assurance legislation in many countries

⁹⁷ J Boyd (n 65) 199.

⁹⁸ Ibid.

⁹⁹ Mining deposit is a former financial assurance in China, it has been instead to mining remediation fund, which will be introduced in this section. Environmental pollution insurance includes two different types, one is in several cities as a kind of trail environmental insurance, and the other one is mandatory insurance for oil pollution, which will be introduced in this section as well.

¹⁰⁰ Yan Feng and others, 'Environmental Pollution Liability Insurance in China: In Need of Strong Government Backing' (2014)45 *Ambio* 687.

¹⁰¹ Dupuy, Pierre-Marie and Viñuales, Jorge E. *International environmental law* (2nd edn, Cambridge University Press, 2018) 12.

is heavily influenced by international conventions. Major international conventions sometimes require mandatory financial assurances from member states, as is true of the 1992 Civil Liability Convention¹⁰² for marine oil spills; as well as the Paris Convention¹⁰³ and Vienna Conventions¹⁰⁴ for damage from nuclear installations. However, these conventions have not yet been ratified by all member states, and as such, they operate using a tiered system of financial assurance.¹⁰⁵

At present, China has only joined the 1992 Civil Liability Convention, of which it became a member in 1999. This convention requires ship-owners to maintain 'insurance or other financial assurance' sufficient to cover the maximum liability for a single oil spill.¹⁰⁶ Accordingly, China promulgated the measures for the Implementation of Civil Insurance for Vessel-included Oil Pollution Damage be issued to meet the requirement of 1992 Civil Liability Convention. The measures stipulate that the ship-owner should purchase civil liability insurance or obtain corresponding financial guarantee,¹⁰⁷ with the measures also outlining detailed provisions for civil liability insurance and the amount required to cover oil pollution damage by ships.¹⁰⁸

Furthermore, there is a supplementary convention to the 1992 Civil Liability Convention, that being the International Oil Pollution Compensation Fund 1992 (1992 Fund). The purpose of the 1992 Fund is to establish a compensation system for victims in the event that 1992 Civil Liability Convention is unable to

¹⁰² Convention on Civil Liability for Oil Pollution Damage 1992.

¹⁰³ Convention on Third Party Liability in the Field of Nuclear Energy 1960, as amended.

¹⁰⁴ Vienna Convention on Civil Liability for Nuclear Damage 1963, as amended.

¹⁰⁵ IMPEL, *Financial provision – protecting the environment and the public purse* (IMPEL 6 September 2016) 19.

¹⁰⁶ Liability and compensation for oil pollution damage 1992 Civil Liability Convention, Article V.

¹⁰⁷ Measures of the People's Republic of China for the Implementation of Civil Liability Insurance for Vessel-induced Oil Pollution Damage 2010, Article 2.

¹⁰⁸ *Ibid* Article 4-7.

provide compensation.¹⁰⁹ While China is a member of 1992 Civil Liability Convention, the 1992 Fund applies only to Hong Kong, not mainland China.¹¹⁰

As a result, China has only acceded to one international convention with mandatory financial assurance requirement, though this has driven the legislative process in China by forcing ship-owners to prepare financial assurance or insurance to cover losses or damage in the event of any potential oil spills.

The next section will analyse the practice of financial assurance in China. The lack of financial assurance cases in China makes it difficult to carry out case studies here. Therefore, this section will analyse the effectiveness of the existing financial assurance instruments in China in realising the polluter pays principle.

6.4.1 Practice in China: Deposit / Funds

In 2006, China required mine operators to pay deposits in the form of central department normative documentation so as to ensure environmental clean-up and ecological restoration following mining activity.¹¹¹ Provincial governments issued guidelines one after another to establish local mine deposit systems based on the central department documentation. Under the guidance of such

¹⁰⁹ IOPC Fund, 'The 1992 Fund Convention' <<https://iopcfunds.org/about-us/legal-framework/1992-fund-convention-supplementary-fund-protocol/>> accessed 21 February 2022.

¹¹⁰ Ministry of Transport of People's Republic of China, 'Notice of Entry into Force of the 2000 Amendment to the Protocol to the International Convention on Civil Liability for Oil Pollution Damage, 1992 and the 2000 Amendment to the Protocol to the International Convention on the Oil Pollution Compensation Fund, 1992' (GOV.CN, 11 November 2003) <https://www.mot.gov.cn/zhengcejiedu/chuanboyouwushmszrbxssbf/xiangguanzhengce/201510/t20151015_1904241.html> accessed 21 February 2022.

¹¹¹ Ministry of Finance, Ministry of Land and Resources and State Environmental Protection Administration 'Guiding Opinions on the Gradual Establishment of a Responsibility Mechanism for Mine Environmental Treatment and Ecological Restoration' (30 October 2009) s1.

normative documentation, mining enterprises are required to create a deposit account in banks designated by local finance departments, together with land and resource and environmental regulatory departments. They will monitor this deposit for future mine environmental clean-up and restoration.¹¹²

The mining deposit was replaced in 2017 by guidance issued by the central government on the establishment of a mine environmental management and restoration fund.¹¹³ The purpose of this guidance was to further realise the responsibility of mine operators with regards to mining environmental clean-up and restoration.¹¹⁴ Based on this guidance, each province has issued local guidance on the establishment and use of mine funds. For example, the guidance of Shanxi Province stipulates the methods, criteria, and scope of use for any funding. The guidance clearly states that the fund can only be used for restoration, clean-up and other related costs related to the mining environment.¹¹⁵

However, there are various problems with the fund in practice. Firstly, a large portion of the fund comes from government support.¹¹⁶ In this case, the portion of the fund paid by polluters does not fully cover their clean-up and remediation responsibilities. The original purpose of the fund, namely the ‘polluter pays’

¹¹² Ibid.

¹¹³ Ministry of Finance, Ministry of Land and Resources, Ministry of Environmental Protection, ‘Guidance on the Establishment of a Mine Geological Environment Treatment and Restoration Fund by Abolishing the Deposit for Mine Geological Environment Treatment and Restoration’ (1 November 2017).

¹¹⁴ Guidance on the Establishment of a Mine Geological Environment Treatment and Restoration Fund by Abolishing the Deposit for Mine Geological Environment Treatment and Restoration’ (2017.11.1) article 2.

¹¹⁵ Ibid article 12.

¹¹⁶ Ministry of Ecology and Environment [生态环境部], ‘Response to Recommendation No. 9003 of the Fifth Session of the Twelfth National People’s Congress’ [对十二届全国人大五次会议第 9003 号建议的答复] (Ministry of Ecology and Environment)

<https://www.mee.gov.cn/gkml/hbb/jytafw/201709/t20170927_422503.htm> accessed 15 March 2022.

principle, cannot therefore be fully realised.

Furthermore, the fund criteria are not uniformly set in each province.¹¹⁷ Shanxi province, the Inner Mongolia Autonomous region, Jiangxi province and Shaanxi province have formulated the fund allocation standard.¹¹⁸ Among them, the fund provision standard established by Shanxi, Shaanxi, and Jiangxi has set the fund allocation standard as being linked to sale revenue, while Inner Mongolia has set the fund allocation standard linked to the mining base. With regards to the means of fund calculation, Shanxi stipulates that the mine operator fund shall be calculated on a quarterly basis, while Shaanxi and Inner Mongolia outline that such calculations should be made on a monthly and annual basis respectively.¹¹⁹ In the event of certain scenarios, the fund may be difficult to recover; for example, when a mining licence is valid, but the mine operator has closed and intends to evade its environmental liabilities. In cases such as this, the main task of regulators is to discover and subsequently recover the fees.

Both Shanxi and Jiangsu have made provisions for mine operators refusing to perform mine ecological restoration or mining permit cancellation, as well as for cases of mine operators abandoning their environmental obligations; whereby the regulator will commission a third party to carry out environmental clean-up and restoration.¹²⁰ The relevant expenses shall be borne by the mine

¹¹⁷ There is the potential for distortions in trade, which is contrary to the original intent of the OECD when it introduced the polluter-pays principle in 1972. See chapter 6.2.

¹¹⁸ Xiangmin Liu and Zhenguo Yu [刘向敏, 余振国] 'Study on the system of mine geological environment treatment and restoration fund' [矿山地质环境治理恢复基金制度研究] (2022)1 *Nature Resource Economics of China* [中国国土资源经济] 38.

¹¹⁹ *Ibid* 39

¹²⁰ Based on guidance from the provinces and municipalities. For example, Chongqing mining geological environment management and restoration fund management measures, Guangdong Provincial

operator.¹²¹ However, the fund is used independently by the mine operator and can only be monitored by the regulator, so in the event that a mine operator ceases operations due to financial issues, such as excessive debt, there are no remaining funds in this restoration fund account.¹²² Despite the relevant judicial interpretation issued by the Supreme People's Court in 2015, the People's Court can directly sentence the defendant (i.e. polluter) to bear the cost of environmental restoration.¹²³ However, if the responsible person has insufficient or no funds at the time of judgement, then the court's decision has no practical significance.¹²⁴

Moreover, while the central government has issued a general scope of use for the fund, this varies from province to province. All provinces in China have introduced post-mining environmental clean-up and restoration funds, but with different names. (Table I)

Department of Natural Resources mining geological environment management and restoration fund management interim measures, Shanxi Province mining environment management and restoration fund management measures implementation views, Guizhou Province mining geological environment management and restoration fund management measures.

¹²¹ Ibid.

¹²² X Liu and Z Yu (n 118) 41.

¹²³ Supreme People's Court 'Interpretation of the Supreme People's Court on Several Issues concerning the Application of Law in the Conduct of Environmental Civil Public Interest Litigations' (2015).

¹²⁴ X Liu and Z Yu (n 118) 41.

Name of the Fund	Administrative Division
Mine Geological Environment Management and Restoration Fund	Hebei, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Anhui, Fujian, Shandong, Henan, Hunan, Guangdong, Guangxi, Chongqing, Guizhou, Yunnan, Tibet, Gansu, Qinghai, Ningxia
Mine Geological Environment Management and Restoration and Land Reclamation Fund	Zhejiang, Shaanxi
Mine Ecological Restoration Fund	Jiangxi
Mine Environment Management and Restoration Fund	Shanxi

Table I Names of Provincial Funds¹²⁵

The different names used for the fund itself reflects the difference in areas of environmental responsibility that are covered. Even among those regions adopting the same name for the fund, there are discrepancies in the environmental responsibility that fall under the defines of the fund criteria. For example, the scope of fund use in Inner Mongolia, Anhui and Tibet encompasses mine geological environment treatment, restoration and

¹²⁵ Guidance, (n 113) see footnote 120.

monitoring, as well as land reclamation and protection.¹²⁶ The scope of fund use in Liaoning covers soil and water pollution prevention and control, in addition to mine geological environment prevention and monitoring,¹²⁷ whereas in Jilin, Heilongjiang and Yunnan funds may be used for mine geological environment treatment, restoration and monitoring, excluding land reclamation.¹²⁸ Thus it can be seen that certain environmental liabilities, such as reclamation arising following the closure of mines, are not universally covered by funds across all regions. In fact, these responsibilities should be borne by the polluters under strict liability.¹²⁹

Lastly, public information is not transparent. As things stand now, only regulators responsible for spot checks occasionally monitor the use of funds.¹³⁰ However, public supervision, which is one of the important ways of protecting effectiveness of environmental funds, has not been taken seriously. The regulator does not disclose the details of the fund and cost recovery. As a result, in cases whereby mine operators have not yet applied for closure, but have effectively ceased operations, it is difficult to recover funds and thereby complete environment restoration of the mine.¹³¹ It is highly likely that this will have the same effect as the deposit system, whereby the cost of abandoning the fund is less than the cost of mine restoration.¹³²

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ If these responsibilities were not classified as strict liability, then they would be borne by society. But the fact is that these liabilities arise from the polluter's operating.

¹³⁰ X Liu and Z Yu (n 118) 41.

¹³¹ Ibid.

¹³² Ibid.

6.4.2 Practice in China: Environmental Liability Insurance

Environmental legislation in China has been fairly silent on the matter of compulsory environmental insurance, with the exception of marine oil pollution;¹³³ since ship-owners are required to take out civil liability insurance or obtain appropriate financial assurance to cover the event of any potential oil spill.¹³⁴ However, for other industries, only voluntary environmental insurance is available and accepted at present in China.

Environmental insurance is still a relatively immature produce in China. In 2007, The Ministry of Environmental Protection and the China Insurance Regulatory Commission (CIRC) issued the report 'Guidance on the Environmental Pollution Liability Insurance', requiring local governments to conduct pilot studies on the subject of environmental liability insurance.¹³⁵ Some local governments have since launched voluntary environment liability insurance programmes. For example, in 2008, Shenyang issued local regulations entitled 'Shenyang Regulations on the Prevention and Control of Pollution from Hazardous Wastes'; the first local regulation of its kind related specifically to environmental liability insurance in China. It stipulates that insurer are encouraged to establish products that cover environmental liability for hazardous wastes, and potential polluters are encouraged to seek such insurance.¹³⁶ By 2021, 21 provinces, including Guangdong, Hubei, Jiangsu, and Guizhou had issued relevant local guidelines to carry out the pilot

¹³³Jing Liu, 'Compensating Ecological Damage: Comparative and Economic Observation' (Ph.D Thesis, Maastricht University, 2013) 365.

¹³⁴ Measures for the Implementation of Civil Insurance for Vessel-included Oil Pollution Damage.

¹³⁵ Ministry of Environmental Protection and the China Insurance Regulatory Commission, 'Guidance on the work of Environmental pollution liability Insurance'.

¹³⁶ Shenyang Regulations on the Prevention and Control of Pollution from Hazardous Wastes, Article 8.

environmental liability insurance.¹³⁷ Among these local policies, the local government of Shandong has further proposed mandatory provisions. These mandatory provisions stipulate that if an enterprise should be insured, but is in fact not insured or has not renewed (its insurance policy), the environmental regulator shall notify the enterprise to insure or renew insurance within a limited time period, as well as to evaluate its environmental credit through the enterprise environmental credit evaluation system of Shandong Province.¹³⁸ However, with the exception of policy guidance and regulation, there is no specific legislation on environmental liability insurance in China, and it is this lack of specific legislation that poses difficulties for the implementation of environmental liability insurance.¹³⁹

In recent years, the number of enterprises insured for environmental liability insurance has continued to increase, but the number of enterprises insured for environmental liability insurance still accounts for a very low proportion of the total number of large and medium-sized¹⁴⁰ industrial enterprises in China; with the premium income also accounting for a small proportion of China's liability insurance premium income.¹⁴¹

According to available public data, the number of environmental insurance buyers in China is much lower than the global average.¹⁴² The global

¹³⁷ Weiyi Wang, Bingting Li and Botao Hao [王维逸, 李冰婷, 郝博韬], *Green Finance Series (IV) Making the most of green insurance's market-based risk management role* [绿色金融系列(四)充分发挥绿色保险的市场化风险管理作用] (Ping An Securities 1 May 2021) [平安证券 2021年5月1日] 16.

¹³⁸ Environmental credit evaluation methods for enterprises in Shandong Province Article 2.

¹³⁹ Hang Bao, Wenyu Dai and Wenjie Liu, [保航, 戴闻语, 刘文杰] *China Environmental Pollution Liability Insurance Issues and Analysis* [中国环境污染责任保险问题与分析] (Greenpeace [绿色和平] December 2020) 6

¹⁴⁰ Large and Middle size means industrial legal entity with annual main business income of 20 million yuan or more.

¹⁴¹ H Bao, W Dai, W Liu (n 139) 9.

¹⁴² Ibid.

environmental insurance market has an annual premium of over US \$2 billion, with an average of approximately 20% of insurance purchasers buying specialist environmental insurance.¹⁴³ Some reports have analysed the reason why more companies should, but are not buying environmental insurance, with a key reason being that companies in high risk industries such as mining, chemical manufacturing, oil and gas are experiencing a tightening of capacity, premium rates and shorter policy terms for environmental insurance.¹⁴⁴

However, in China, data on insurance premium income shows it to be less than even this global average. From 2015 to 2017, environmental liability insurance premium income increased, but it still accounted for less than 1% of the national liability insurance premium income.¹⁴⁵

Premium rates are an important measure of the performance-to-price ratio of insurance products.¹⁴⁶ The lower the premium rate of an insurance product, the higher the coverage amount that can be provided per unit of premium.¹⁴⁷ Although the coverage amount of environmental liability insurance has been increasing in recent years, compared with the average premium level of general liability insurance, it is still at a high level compared to the average premium level of general liability insurance; and as such, there is a need for further development.¹⁴⁸

Taking 2017 as an example, the coverage amount was 30.6 billion yuan, an increase of 16.03%.¹⁴⁹ The average premium rate in 2017 was 1.03%, while

¹⁴³ Aon, *Environmental Insurance Market Update* (Aon, 2019 Aon) 2.

¹⁴⁴ Ibid

¹⁴⁵ H Bao, W Dai, W Liu (n 139) 10.

¹⁴⁶ John Birds, *Bird's Modern Insurance Law* (8th edn, Thomson Reuters, 2019) 189.

¹⁴⁷ Ibid

¹⁴⁸ H Bao, W Dai, W Liu (n 139) 9.

¹⁴⁹ Ibid.

the average premium rate of general liability insurance in 2019 was only 0.05%.¹⁵⁰ Therefore, this data shows that the premium rate of environmental liability insurance is much higher than that of general liability insurance.

Furthermore, there are many problems with environmental liability insurance in practice. First, there are no mandatory legal requirements for environmental liability insurance in China. Only the Environmental Protection Law encourages enterprises to take out environmental liability insurance, but it is not a compulsory requirement.¹⁵¹ Similar situations exist in other jurisdictions, for example EU ELD also encourages companies to take out environmental insurance but, much like in China, it is not mandatory to do so.¹⁵² In practice, local governments can only issue guidelines, which lack a legal basis when issued in isolation.¹⁵³ These factors have resulted in a very small number of polluting enterprises taking out insurance.

Secondly, the premium rate and pay-out ratio of environmental pollution liability insurance are very low, resulting in a low willingness of enterprises to take out insurance. According to recent statistics, the premium rate in some provinces is less than 30%; to as low as just 8% in some provinces.¹⁵⁴ Meanwhile, according to the data of CIRC and related reports, the current compensation rate of environmental liability insurance is less than 10%.¹⁵⁵ In some provinces,

¹⁵⁰ Ibid.

¹⁵¹ Environmental Protection Law 2014 s152.

¹⁵² Environmental Liability Directive 2004/35/EC.

¹⁵³ H Bao, W Dai, W Liu (n 139) 10.

¹⁵⁴ People's Government Website: Yunnan Province urges enterprises to implement the main responsibility of environmental protection. (Province Gov, 13 January 2019)

<http://www.gov.cn/xinwen/2019-01/13/content_5357431.htm> accessed 15 September 2021.

¹⁵⁵ Xuan Li and others, 'Mandatory environmental liability insurance has provided over 160 billion yuan of risk protection for companies, why is the payout rate only 10%?' (Centre for Environmental and Economic Policy Research, Ministry of Ecology and Environment, 23 July 2019)

<http://www.prcee.org/zysd/zjsd/201907/t20190723_712117.html> accessed 15 September 2021.

the compensation rate of environmental liability insurance is less than 5%.¹⁵⁶ In a more extreme case, there was only one successful compensation case in Shenzhen from 2008 to 2015.¹⁵⁷

Thirdly, there is lack of uniform standards for environmental risk assessment and gaps in technology as well. At this stage, it is difficult to obtain sufficient data for risk assessment, so insurers do not have a strong willingness to underwrite in terms of their own risk management.¹⁵⁸ Likewise, for their own risk management, insurers will set too many restrictions and terms to reduce the types of liability they underwrite.¹⁵⁹ For example, the environmental liability insurance products of six large size insurers in China are selected here. (Table II) The comparison of the insurance liability terms provides further evidence that environmental liability insurance cannot cover all the environmental liability of polluters.

¹⁵⁶ Ibid.

¹⁵⁷ Ibid.

¹⁵⁸ H Bao, W Dai, W Liu (n 139) 13.

¹⁵⁹ Ibid.

Insurer	Personal and Property Damage of a Third Party	Ecological Environment Damage	Emergency Disposal and Decontamination Cost	Progressive Pollution
China Pacific Insurance Company	Y	N	Y	N
China Ping 'An Insurance Company	Y	N	Y	N
China Continent Insurance	Y	N	Y	N
People's Insurance Company of China	Y	N	Y	N
Cathay Insurance	Y	N/A	Y	Y
Eunda Eunda Insurance Holding	Y	N	Y	N

Table II The Insurance Liability Terms¹⁶⁰

6.5 The Practice of Financial Assurance in Other Jurisdictions

Financial assurance has been developed in some jurisdictions as a legal tool for achieving polluter pays principle, such as in the UK and US. Financial assurance has been enacted in these jurisdictions, for example in relation to waste management and oil spills. The importance of this section is therefore to examine, through case studies, whether financial assurance is effective in achieving the polluter pays principle.

6.5.1 Case in the UK: Waste Management (Foreseen Liability)

Environmental Permitting (England and Wales) (Amendment) Regulations 2015 is a watershed in the practice of the jurisdictions of England and Wales of financial assurance in environmental liabilities.¹⁶¹ This amendment gives the English Environment Agency more powers to eliminate or prevent the risk of serious pollution, or to remedy the impact of pollution caused by the operation of regulated facilities such as landfills. This will greatly increase the likelihood

¹⁶⁰ H Bao, W Dai, W Liu (n 139) 9.

¹⁶¹ J Malone and T Winslow (n 14) 7.

of the Environment Agency recovering costs from these operators.¹⁶² The operators have prepared the financial assurance under the law, and the Environment Agency may obtain the funds in accordance with the terms of the legal agreement, to recover the cost of the project.¹⁶³ However, prior to this amendment, such power applied only if the environmental permit waste management license was in force. There are some case studies to prove it.

A. Stage 1: Before 2015

Manywells landfill site, formerly an abandoned quarry, was approved for landfill planning in the early 1990s.¹⁶⁴ Over the next nine years or so, much of Bradford's household waste, including empty bleach bottles, batteries, used medicines, cosmetic containers, and unwanted food, were all dumped on the site.¹⁶⁵ A landfill is like an enormous plastic bag stuck in a hole in the ground. When things in this bag rot, it produces gases, such as methane, carbon dioxide, carbon monoxide and sulphur compounds in various mixtures, as well as leachate.¹⁶⁶ This is an environmentally unsustainable way to deal with waste, as it causes serious and extensive land pollution to the site in question. After the landfill was closed, the operator had the responsibility to remediate the site.¹⁶⁷

The waste management licence for Manywells landfill included financial

¹⁶² Ibid.

¹⁶³ Ibid 9.

¹⁶⁴ City of Bradford Metropolitan District Council 'Replacement unitary development' (Bradford Council, 13 October 2005) <[¹⁶⁵ Ibid.](https://www.bradford.gov.uk/planning-and-building-control/planning-policy/replacement-unitary-development-plan/#:~:text=The%20Council%20is%20currently%20preparing,Council%20on%2018%20July%202017.> accessed 16 September 2021.</p></div><div data-bbox=)

¹⁶⁶ IMPEL (n 105) 44.

¹⁶⁷ National Audit Office 'Environment Agency Protecting the Public from Waste' (16 December 2002) 44.

assurance for these restoration costs, which included £375,000 in an escrow account, and a similar sum in the form of a parent company guarantee.¹⁶⁸ In fact, the combination of the escrow fund and parent company guarantee is sufficient to cover the cleaning up cost post-closure. Unfortunately, the operator of Manywells landfill, Hillridge Ltd (Hillridge) went into liquidation along with its parent company, Wastepoint. However, none of the sites have been capped or restored. According to the relevant report, it is estimated that the cost of this work will exceed £500,000.¹⁶⁹

It means that Hillridge has lost the ability to pay the cost for the cleaning up and restoration of its landfill. Furthermore, the waste management licence and the escrow fund were disclaimed as onerous property by insolvency practitioners under section 178 of the Insolvency Act 1986; and thus they did not seek to recover the funds held in the escrow account. In this case, the judge ultimately supported the insolvency practitioner of Hillridge. In the view of the judge,

*...the financial provision established by the Trust Deed was an integral part of the terms upon which the waste management licence was held, the joint liquidators must be taken, in disclaiming Hillridge's interest in the waste management licence, to have disclaimed its interest in the Fund as well.*¹⁷⁰

Therefore, the court ruled that, due to the disclaimer, the trust fund was not reimbursed to Hillridge. On the contrary, the disclaimer effectively deprives Hillridge of any interest in the fund.¹⁷¹ The purpose of the fund held in the escrow has been changed, and in addition, any interest of Hillridge has been

¹⁶⁸ Ibid.

¹⁶⁹ Ibid.

¹⁷⁰ *Environment Agency v Hillridge Limited* [2004] Env LR 32 [2004] JPL 1258.

¹⁷¹ Ibid.

disclaimed and vested in the official property as unowned property.¹⁷² The reason is that the fund in the escrow no longer has an owner, and no one else can claim on it.¹⁷³ The fund was eventually handed over to the Crown Court.

Fortunately, the Crown Court passed these funds to the City of Bradford Metropolitan District Council. In addition, national grant funds were also provided to the Bradford MDC, which used these funds and internal resources to carry out extensive remedial work, and is now responsible for managing the site.¹⁷⁴ However, one thing is worth paying attention to, that being that the cost of this remedial work, amounting to more than £5,000,000, greatly exceeds the amount of financial assurance available.¹⁷⁵ The cost of assurance does not necessarily match the actual environmental liability. Taking Manywells as an example, the amount of assurance assessed by regulator was only £375,000, but the actual cost of environmental liability is more than £500,000. This means that the excess amount must be borne by public funds, not by the polluters themselves.

There is another non-landfill case, that of Premiere Environmental Ltd. The operator of a chemical treatment plant, Premiere Environmental Ltd, reached a financial assurance of £90,000 with the Environment Agency, which will be deposited in an escrow account.¹⁷⁶ When this company went into insolvency, it was found that the contaminated rainwater required the Agency to carry out emergency works. Landowners have also provided funding for the site's safety and the removal of large quantities of hazardous chemicals. The total cost is

¹⁷² Ibid.

¹⁷³ Ibid.

¹⁷⁴ National Audit Office 'Environment Agency Protecting the Public from Waste' (16 December 2002)

44.

¹⁷⁵ Ibid.

¹⁷⁶ Ibid.

estimated at £2,400,000.¹⁷⁷ At the time of insolvency, only £60,000 was deposited in that escrow account.¹⁷⁸ In the case of insolvency, financial assurance is very difficult to enforce. Between 1996 to 2002, financial assurance was used a total of 15 times.¹⁷⁹ In six of these cases, the assurance was insufficient to cover the actual costs involved in ensuring the security of the site. The total funding provided in these six cases was £120,000, but it is estimated that expenditure will exceed £2,700,000.¹⁸⁰ In most cases, the extra costs fall on landowners, but the Environment Agency is expected to provide a total of £121,000 for the project.¹⁸¹

This highlights a problem, as the issue concerning the gap between assurance and environmental liability is present in other cases, as well as the that of Manywells. In principle, financial assurance could be sufficient to cover the polluter's future environmental obligations. However, in practice, the estimate of decommissioning or site restoration cost is key as operators can run deficit if their level of financial assurance is not matched.¹⁸² Financial assurance mechanisms cannot cover all environmental liability, meaning that part of the environmental liability is externalised; resulting in public funds needing to front this cost, which would break with the purpose of the polluter pays principle.

B. Stage 2 After 2015

In 2015, the Environmental Permitting (England and Wales) Regulation 2010 was amended. The English Environment Agency was given more power to control the risk of pollution of operators. Where financial assurance is available,

¹⁷⁷ Ibid.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid 43.

¹⁸⁰ Ibid.

¹⁸¹ Ibid.

¹⁸² IMPEL (105) 42.

the Environment Agency can rely on the terms of a legal agreement to secure funding to recover the cost of the works.^{183 184} It means that regulators can review the financial ability of operators at any time, which could adjust financial assurance to ensure that there are sufficient funds to cover environmental costs.

However, judging from the above practical experience in England, insolvency is a great challenge to the performance of environmental liabilities of operators. In the case of insolvency, financial assurance may be inadequate or unenforceable. Although the latest amendment should help the insolvency situation in England and Wales, the precise wording of legal agreements and laws is likely to affect the availability of funds when needed.¹⁸⁵

Furthermore, some other factors will also affect the effectiveness of financial assurance for environmental liabilities. The first of these factors are renewal dates and the status of the company. Renewal dates and information on company status should be reviewed carefully. Any risk of insolvency or financial capacity could lead to the invalidation of bonds or funds.¹⁸⁶ In this case, funds or bonds will be unavailable. The second factor worth considering is how funds are to be raised. The cost of establishing and maintaining financial assurance is not a small amount, thus consideration needs to be given as to how to raise funds.¹⁸⁷ At present, a common practice is, for example, levying fees on permit application and holders.¹⁸⁸

¹⁸³ Ibid 43.

¹⁸⁴ Department for Environment food & Rural Affairs, 'Environmental Permitting Core Guidance: for the environmental permitting (England and Wales) Regulations 2016 (SI 2016 No1153)' 9.30. (GOV.UK, 7 March 2013) <https://www.gov.uk/government/publications/environmental-permitting-guidance-core-guidance--2> accessed 17 September 2021.

¹⁸⁵ IMPEL (n 105) 45.

¹⁸⁶ J Malone and T Winslow (n 14) 10.

¹⁸⁷ IMPEL (n 105) 45.

¹⁸⁸ Ibid.

The last of these factors consider is whether the members of regulators need to have a full range of expertise.¹⁸⁹ The cost of maintaining bonds or funds is complex and difficult, so there is a growing demand for novel and complex mechanisms. This means that members of regulators must have varied backgrounds in environmental science and finance alike.

6.5.2 Case in the UK: Oil Spill (Unforeseen Liability)

In the UK, financial assurance requirements also apply to offshore facilities for oil and gas exploration, as well as production and other offshore facilities. The UK Petroleum Act 1998 requires application for a license to explore and evaluate oil wells on the UK continental shelf to provide evidence that the plugging and abandonment of oil wells and the damage caused by pollution to third parties have been funded.¹⁹⁰ This type of financial assurance is available for offshore facilities; in the form of cash, irrevocable letters of credit, bonds, secure fund or a trust agreement.¹⁹¹ These financial provisions assets need to be specially supervised in order to be able to be used in the insolvency of operators.¹⁹²

The North Sea is shared by the UK, Norway, the Netherlands, Belgium, Denmark, France, and Germany. It also has 184 offshore oil rigs, making it one of the largest offshore drilling areas in the world.¹⁹³ Since the late 1960s, the

¹⁸⁹ Ibid.

¹⁹⁰ Department of Energy and Climate Change, 'Guidance Note to UK Offshore Oil and Gas Operators on the Demonstration of Financial Responsibility before Consent may be Granted for Exploration & Appraisal Wells on the UKCS'.

¹⁹¹ DECC, Decommissioning of offshore renewable energy installations under the Energy Act 2004; Guidance notes for industry (January 2011, revised), s8, 29-32 (Guidance notes).

¹⁹² IMPEL (105) 29.

¹⁹³ De Smedt Kristel and others, *Civil Liability and Financial Security for Offshore Oil and Gas Activities Final Report* (Maastricht European Institute for Transnational Legal Research Faculty of Law, Maastricht University, 2013) 50.

North Sea has witnessed an oil boom as the Netherlands, Norway and the UK discovered oil along their coastlines and at sea. The oil boom peaked in 1999, with as many as 2.9 million barrels a day sourced from the UK continental shelf.¹⁹⁴ Although these offshore rigs are more expensive to build and maintain than onshore drilling, they produce higher volumes of oil per day.¹⁹⁵

Nevertheless, these rigs also bear high environmental costs, in addition to the economic costs. For example, these offshore facilities not only pollute the oceans and damage marine ecosystems, but also release pollutants into the air, further exacerbating the impacts of climate change.¹⁹⁶ According to a survey conducted by the Guardian, 4123 different oil spills were recorded in the North Sea between 2000 to 2011, yet only seven oil companies were fined. The total fine amounted to £74,000, but sadly no individual company has paid more than £20,000. By 2014, more oil and gas spills had occurred, with 601 reported in the UK alone; marking an increase of 14.5% from 2013.¹⁹⁷ More surprisingly, offshore oil and gas spills in the North Sea have increased by almost 25% in 2019 alone.¹⁹⁸

The first case happened in 2011, about 216t of oil leaked from Shell's Gannett

¹⁹⁴ Department of Energy & Climate Change, 'Statement on oil leak from pipeline at the Gannet Alpha platform' (Gov.uk, 15 August 2011)

<http://www.decc.gov.uk/en/content/cms/news/statement_gfs/statement_gfs.aspx> accessed 15 September 2021.

¹⁹⁵ D Kristel and others (n 193) 50.

¹⁹⁶ There is a high risk of both accidental spills as well as the release of oil, chemicals and radioactive materials to the sea through the "routine operation of production platforms" according to the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).

¹⁹⁷ Adam Ma'anit, 'Oil spill exposes Shell's ticking timebomb' (the Guardian, 17 August 2011)

<<http://www.guardian.co.uk/commentisfree/2011/aug/17/oil-spill-shell-timebomb>> accessed 15 September 2021.

¹⁹⁸ Petro Online, 'Are North Sea oil spills becoming more common' (Petro Online, 22 November 2020)

<<https://www.petro-online.com/news/analytical-instrumentation/11/breaking-news/are-north-sea-oil-spills-becoming-more-common/53749>> accessed 18 September 2022.

Alpha platform to the North Sea; considered to be the largest oil discharge into British waters in the past decade. The Department of Energy and Climate Change claimed that considering the annual oil spill in the North Sea, this is a large-scale oil spill, but it is expected that the oil spill should dissipate naturally.¹⁹⁹ Strong winds and huge waves have greatly reduced the lustre of oil on the surface of the water. However, while the spill did not reach the damaging effects of the Deepwater horizon disaster, it remains significant, due to the fact that it took place under the much-vaunted regulatory regime emphasising strict environmental standards in the UK. Moreover, the company responsible for the incident has been proactive in building an image of corporate social responsibility, in order to better its own reputation.²⁰⁰ The total cost of the incident for Shell is estimated to be approximately £45 million, with a further cost of approximately £100 million required to replace the affected pipes.²⁰¹ Shell was also fined an additional £22,500 in this incident.²⁰² Large multinational companies like Shell are likely to have the funds to pay for such clean-up and remediation following an incident, in the event that a regulator requires them to pay the full cost. However, small and medium size companies are less likely to have the funds to cover this clean-up cost, meaning that public funds would be expected to cover this cost due to there being no alternative arrangement in place.

In theory, there is a need for regulators to constantly review the financial assurance of operators, as it would help to promote financial assurance as a

¹⁹⁹ Department of Energy & Climate Change (n 194).

²⁰⁰ Dickinson Press staff 'Shell's reputation hit by North Sea oil spill' (The Dickinson Press, 16 August 2011) <<https://www.thedickinsonpress.com/business/1808593-shells-reputation-hit-north-sea-oil-spill>> accessed 15 September 2021.

²⁰¹ BBC News, 'Shell fined £22,500 over Gannet Alpha oil leak' (BBC, 24 November 2015) <<https://www.bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-34909654>> accessed 15 September 2021.

²⁰² Ibid.

means of covering, and thus avoiding the externalisation of environmental liabilities.²⁰³ Furthermore, it would also encourage operators to enhance safety awareness and reduce the occurrence of accidents,²⁰⁴ such as that which occurred in the North Sea; the effects of which could have ultimately been reduced or avoided completely. The design life expectancy of these offshore facilities is usually 20 to 25 years. According to the Health and Safety Executive, most hydrocarbon leaks occur at 20-year-old facilities.²⁰⁵ In the case of Gannet Alpha, the facility was in its 20th year of operation when the oil spill occurred. The regulator has a responsibility to review and check the safety of these facilities at all time.²⁰⁶ Some media outlets expressed concern following the oil spill at the North Sea; yet the response of the government and regulators was to play down concerns about ageing infrastructure and exaggerate regulators' ability to respond to emergencies.²⁰⁷ This consequence of this could be an increased likelihood of further oil spills occurring in future, and a shift in responsibility for future cleaning and remediation work following incidents to public funds.²⁰⁸

In fact, such worries and suspicions are not groundless. In 2013, new guidelines covering the cost of the North Sea oil spill came into effect. However, it is only in accordance with such guidelines that companies must prove financial responsibility for drilling operations before obtaining a licence.²⁰⁹ The new guidelines are based on the 2010 oil spill. The reason for the change is that existing insurance is still widely applicable to many operators but requires

²⁰³ J Malone and T Winslow (n 14) 12.

²⁰⁴ Ibid.

²⁰⁵ D Kristel and others (n 193) 51.

²⁰⁶ Ibid.

²⁰⁷ BBC (n 201).

²⁰⁸ Ibid.

²⁰⁹ The Department of Energy and Climate Change Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013.

explorers in more difficult waters to increase the level of insurance where the cost of oil spill may be higher.²¹⁰ This means that the previous financial assurance standards are not sufficient to fully cover cleaning costs.

Furthermore, BP caused an oil spill as a 'process failure'. Following the incident, BP was fined £7,000 for failing to clean up the spilled oil. Regulators also did not advocate clean-up and asked BP to pay for it.²¹¹ BP's Speakman claimed that:

*It is considered that the most appropriate response remains to allow the oil to disperse naturally at sea, but contingencies for other action have been prepared and are available, if required.*²¹²

From cases, such as that which occurred in the North Sea, accidents are more difficult to be covered by financial assurance than predictable environmental liabilities such as decommissioning. The internalisation of environmental liability is a huge challenge in the event of an accident. The reason is that accidents are an unpredictable environmental liability, and so it is difficult for financial assurance to cover its eventuality. Even though insurance can provide full cover for this kind of accident, high-risk sectors are experiencing a contraction in capacity and a decrease in premium rates, which has also led to insurers refusing coverage.²¹³ In fact, this conjecture has been verified.

For the past 50 years, the United States has maintained a public fund to remediate oil spills related to offshore and land accidents which subsequently

²¹⁰ BBC News, 'New insurance rules for North Sea oil firms' (BBC, 1 January 2013) <<https://www.bbc.co.uk/news/uk-scotland-scotland-business-20877522>> accessed 15 September 2021.

²¹¹ Dan Zukowski, 'BP platform leaks oil into north sea with no plans to clean it up' (EcoWatch, 05 October 2016) <<https://www.ecowatch.com/bp-north-sea-oil-spill-2031305685.html>> accessed 15 September 2021.

²¹² Ibid.

²¹³ Aon (n 143) 2.

cause surface water pollution.²¹⁴ One of the objectives of the fund is to recover public expenditure in response to the oil spill from responsible parties.²¹⁵

However, statistics show that the current fund has recovered only 19% of the expenditure from the responsible parties.²¹⁶ This means that the remaining 81% of the money is paid for by public funds, which is the proportion of polluters externalised.²¹⁷ Therefore, in order to solve this issue, attention should be paid to and from both legislation and regulators. For example, legislators should provide for more details on financial assurance to deal with environmental accidents. Meanwhile, regulators should inspect and update operators' financial assurance more carefully. In this context, operators will pay more attention to production safety, with the hope of reducing the occurrence of accidents.²¹⁸ However, the reality is that in the event of an accident occurring, the effectiveness of the financial assurance mechanism will be greatly reduced. Public funds must bear the cost of the externalisation of polluters.

6.5.3 Case in the US: Mining Sites

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as the Superfund, manages the clean-up of hazardous waste sites. In order to ensure that potential responsible party (PRP) rather than public funding bear the financial burden of completing the clean-up

²¹⁴ Clean Water Act and Oil Pollution Act 1972.

²¹⁵ J Boyd (n 65) 199.

²¹⁶ The analysis was based on congressional documents and financial statements obtained from the Coast Guard under the Freedom of Information Act. See Brent Walth, 'Spill Laws Fail to Halt Seepage of Public Cash,' *The Oregonian*, February 27, 2000. Records show that the Oil Spill Liability Trust Fund has paid out \$262 million for oil spills since 1990 and has been reimbursed \$49 million, or about 19%. The Coast Guard claims a significantly higher recovery rate (60%) based on recoveries associated with closed cases.

²¹⁷ *Ibid.*

²¹⁸ *Ibid.*

of superfunds, financial assurance is the best measure. EPA sets out financial assurance requirements in its Superfund settlement and imposes financial requirements on PRPs through orders.²¹⁹ To a certain extent, the financial assurance ensures that the polluters bear the clean-up cost by themselves, reducing the pressure on public funds. There are many successful cases as shown on the official website of EPA. However, in some cases, financial assurance does not seem to be so effective.

The first case is the Summitville mine in Colorado. Galaxy Resources is the operator of the mine. It was licensed in 1984, but declared bankruptcy just eight years later.²²⁰ The company gave less than a week's notice when closing the mine, with the mine abandoned thereafter; leading to a suspension of environmental protection procedures.²²¹ A few months later, the winter came, with snowfall causing the heap leaching system to overflow; subsequently leading to the discharge of harmful substances into the local river.²²² In this case, the financial assurance of Galaxy is only \$4,500,000, but taxpayers have paid more than \$250,000,000 so far.²²³

The second case happened in Montana. Pegasus Gold and its subsidiary Zortman Mining had operated two gold mines since 1979.²²⁴ These mines used open-air cyanide heap leaching processes on a large scale, which seriously pollutes the land. The company closed some mines in 1997 due to market

²¹⁹ EPA, 'Financial Assurance in Superfund Settlements and Orders' (EPA)

<<https://www.epa.gov/enforcement/financial-assurance-superfund-settlements-and-orders>> accessed 15 September 2021.

²²⁰ Financial Responsibility Requirements under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 Fed. Reg. 3388, 3433–34 (11 January 2017).

²²¹ Ibid.

²²² Jared Diamond, *Collapse: How societies choose to fail or succeed* (Viking Press, 2005) 459.

²²³ Ibid.

²²⁴ Bureau Land Management and Montana Department Environmental Quality, 'Final supplemental environmental impact statement for reclamation of the zortman and landusky mines' (1 January 2001).

conditions, but the company finally declared bankruptcy in 1998, leaving about 85% of the land unrepaired.²²⁵ The financial assurance provided by the company falls far short of the necessary clean-up costs. The state government alone has allocated about \$32,000,000 for remediation, most of which has been used to establish a trust fund for ongoing water treatment, which is expected to cost between \$2,000,000 and \$2,500,000 a year.²²⁶ In addition, the Bureau of Land Management contributed more than \$17,000,000.²²⁷ Perhaps even more infuriating is that the board decided to transfer profitable assets to a new company before declaring bankruptcy.²²⁸

The last case to consider is that of the Dakota Mining Co., and its subsidiary Brohm Mining, which operates the Gilt Edge mine in South Dakota. The state had a reclamation bond of only \$6,000,000.²²⁹ The initial cost of remediation of the site was estimated to be between \$12,000,000 and \$15,000,000, but as with other sites, the actual clean-up cost far exceeded this estimate.²³⁰ When EPA included this site on the National Priorities List, it estimated the remediation would cost as much as \$50,300,000; not taking into account the cost of water collection and treatment to be dealt with under the additional remediation plan.²³¹ According to relevant reports, EPA has spent more than \$56,100,000

²²⁵ Jim Kuipers, *Putting a price on pollution: final assurance for mine reclamation and closure* (Mineral Policy Center, 2003) 14.

²²⁶ Karl Puckett, 'Fort Belknap Backs State in Bad Actor Case Over Zortman-Landsky Pollution' (Great Falls Tribune, 13 September 2018) <<https://www.greatfallstribune.com/story/news/2018/09/13/cleanup-costs-zortman-landsky-gold-mines-continue-mount-montana-bad-actor-superfund-acid/1292506002/>> accessed 15 September 2021.

²²⁷ *Ibid.*

²²⁸ Braden Murphy, 'Financial Assurance for Hard Rock Mining: EPA and CERCLA' (2019)4 *Notre Dame Law Review*, 1868.

²²⁹ *Ibid.*

²³⁰ *Ibid* 1869.

²³¹ Bob Mercer, 'Millions More to Be Spent Cleaning Up Gilt Edge Mine Near Lead', (Rapid City Journal 19 May 2017) <<https://rapidcityjournal.com/news/local/millions-more-to-be-spent-cleaning-up-gilt-edge->

on this site up until 2007; of which the cost of water treatment alone was estimated to be \$1,300,000 per year.²³² At present, the cost of cleaning up this site is estimated to be \$200,000,000, most of which will be funded by the Superfund. Although the settlement has reduced costs for taxpayers by about \$40,000,000, compared with the financial assurance provided by the company, the gap is too large.²³³

What these cases have in common is that insolvent polluters do not have enough financial assurance funds to pay for their environmental costs. The reason for this is the inability to match cost estimates to the level of financial assurance to be provided, which was also confirmed in the UK case study. Section 108 CERCLA can affect the financial assurance standards of RPRs. Section 108 CERCLA empowers EPA to require all types of facilities to establish and maintain proof of financial responsibility to cover the costs associated with the release of hazards from substances from their facilities.²³⁴ However, section 108 is now the focus of the law, as the U.S. Court of Appeals for the D.C. Circuit to consider the challenge to the EPA's regulatory decision under this section CERCLA. The reason is that the EPA did not set these requirements due to many daunting factors such as the complexity of the standards. When environmental groups tried to force the EPA to take action, the EPA agreed earlier in the D.C. Circuit Court to release a timetable for the industrial sector it

mtstandardmine/article_fd9041a9-0ee4-5f86-a2b8-079b3f581778.html.> accessed 15 September 2021.

²³² Ibid.

²³³ Environmental Protection Agency, 'EPA Recovers over \$10 Million for Past Costs at the Gilt Edge Mine Superfund Site in South Dakota' (EPA, 15 April 2016).

<[https://archive.epa.gov/epa/newsreleases/epa-recovers-over-10-million-past-costs-gilt-edge-mine-superfund-site-south-dakota.html#:~:text=Taxpayers%20bill%20reduced%20by%20%2440M&text=%E2%80%93%20April%2015%2C%202016\)%20The,payment%20of%20over%20%2410%20million.](https://archive.epa.gov/epa/newsreleases/epa-recovers-over-10-million-past-costs-gilt-edge-mine-superfund-site-south-dakota.html#:~:text=Taxpayers%20bill%20reduced%20by%20%2440M&text=%E2%80%93%20April%2015%2C%202016)%20The,payment%20of%20over%20%2410%20million.)> accessed 15 September 2021.

²³⁴ B Murphy (n 228) 1870.

would regulate, starting with hard-rock mining, which was scheduled to submit a proposal in December 2016.²³⁵ EPA acted pursuant to the consent order approved by the Court of Appeal.²³⁶ Furthermore, EPA's schedule if it would subsequently address the chemical, petroleum and electric power industries.

In 2016, the EPA proposed to implement details of financial assurance on hard rock mining, establishing financial assurance requirements with an estimated cost of between \$111,000,000 and \$171,000,000 per year.²³⁷ However, in a controversial decision made in December 2017, the EPA overturned its decision and declared that no rules were needed.²³⁸ The EPA noted that 'the mere presence of hazardous substances is not equivalent to risk.'²³⁹ Furthermore, the EPA firmly believes that the risk of storage or disposal of hazardous substances in the hard rock mining industry will not reach the level of risk of taxpayer-funded responses.²⁴⁰ Environmental groups subsequently filed a lawsuit, but unfortunately, the D.C. Circuit Court of Appeal upheld EPA in the final decision.

In the view of the judge noted that the decision by EPA was logical:

That the EPA might choose not to promulgate financial responsibility

²³⁵ EPA USA, 'EPA finds that financial risks from chemical manufacturing industry does not warrant additional federal requirements' (EPA, 10 Feb 2020) <<https://www.epa.gov/newsreleases/epa-finds-financial-risks-chemical-manufacturing-industry-does-not-warrant-additional>> accessed 15 September 2021.

²³⁶ *Re Idaho Conservation League*, 811 F.3d 502 (D.C. Cir. 2016).

²³⁷ CERCLA 108(b), Hard Rock Mining Financial Assurance Proposed Rule, 82 Federal Register 3388 (Jan. 11, 2017).

²³⁸ EPA's Financial Responsibility Requirements under CERCLA Section 108(b) For Classes of Facilities in the Hardrock Mining Industry, Env'tl. Prot. Agency, 83 Fed. Reg. 7556 (Feb. 21, 2018).

²³⁹ Financial Responsibility Requirements Under CERCLA Section 108(b) for Classes of Facilities in the Hardrock Mining Industry, 83 Fed. Reg. 7564.

²⁴⁰ EPA, 'Final Action: financial responsibility requirements under CERCLA section 108(b) for classes of facilities in the Hardrock Mining industry' (EPA) <<https://www.epa.gov/superfund/final-action-financial-responsibility-requirements-under-cercla-section-108b-classes>> accessed 15 September 2021.

*requirements for the hard-rock mining industry has always been a foreseeable possibility; our decision in the Environmental Groups' previous mandamus action expressly recognized that the EPA retains discretion to promulgate a rule or decline to do so.*²⁴¹

In fact, the decision by Judge in this case also analyse the section 108. Section 108(b) of CERCLA, which calls for the President to establish financial assurance requirements for classes of facilities “consistent with the degree and duration of risk associated with” hazardous substances at the facilities.²⁴² As a result, the attitude of each presidential administration towards certain industries during its term of office can also affect the details of financial provision. For example, President Reagan delegated these responsibilities to the EPA Administrator in 1987.

Furthermore, during the administration of G.W. Bush, the focus of CERCLA law enforcement gradually shifted. Despite occasional unsuccessful efforts by Congress to restore expired taxes as a source of Superfund, the Bush administration refused to support these efforts, but Superfund programmes remained underfunded in the 2000s.²⁴³ This situation has several consequences.²⁴⁴ Firstly, the EPA put more effort into the Superfund cost recovery cases against PRPs than ever before.²⁴⁵ Secondly, the EPA became quite reluctant to put new hazardous waste sites on the CERCLA national priorities list under pressure from some states environmental groups.²⁴⁶ Lastly,

²⁴¹ *Re Idaho Conservation League*, 811 F.3d 502 (DC Cir. 2016).

²⁴² Jodel A. Minta, ‘EPA enforcement of CERCLA: Historical overview and recent trends’ (2012) *Southwestern University Law Review* 653.

²⁴³ Joel A. Minta, “‘Treading Water’: A Preliminary Assessment of EPA Enforcement During the Bush II Administration’ (2004)34 *Environmental Law Reporter* 10922.

²⁴⁴ J Minta (n 242) 655.

²⁴⁵ J Minta (n 243) 10922.

²⁴⁶ *Ibid.*

the EPA paid more attention to short-term clearance operations at disposal sites rather than long-term remedial actions, which in some cases tended to be piecemeal hazardous waste site clean-up.²⁴⁷

In the last year of G.W. Bush's tenure, the number of PRPs bankruptcies increased sharply as the economy slumped.²⁴⁸ In response, the EPA began to place greater emphasis on the requirement for responsible parties in the CERCLA enforcement order to provide adequate financial assurance in the form of insurance, performance bonds and letters of credit.²⁴⁹ The Agency also made greater efforts to identify fraudulent modes of transport in which financially distressed companies tried to reduce their responsibility for hazardous waste through fraudulent means.²⁵⁰

After G.W. Bush, the administration of Barack Obama adhered to a strict financial assurance policy. Under the hard-rock mining financial assurance rules proposed by the administration of Barack Obama, mine operators would have had to obtained bonds or other financial instruments to address hazardous emissions and remediation.²⁵¹

However, after the administration of Donald John Trump took office, the politicians appointed by President Trump took positions on the EPA, and the

²⁴⁷ Ibid.

²⁴⁸ U.S. Government Accountability Office, GAO-09-656, Superfund Litigation has decreased and EPA needs better information on site clean-up and cost issues to estimate future program funding requirements 63 (2009) <<http://www.gao.gov/new.items/d09656.pdf>.> accessed 15 September 2021.

²⁴⁹ EPA, EPA 530-K-02-181, RCRA, SUPERFUND & EPCRA CALL CENTER TRAINING MODULE 5 (2001), <<http://www.epa.gov/wastes/inforesources/pubs/training/fina.pdf>.> accessed 15 September 2021.

²⁵⁰ EPA, EPA 540-R-01-007, COMPREHENSIVE FIVE-YEAR REVIEW GUIDANCE i, 1-1, 3-3, 4-3 to 4-10 (2001), <<http://www.epa.gov/superfund/accomp/5year/guidance.pdf>.> accessed 15 September 2021.

²⁵¹ Mathew Brown 'Trump reversal of mining pollution rule challenged in court' (AP News, 16 May 2018) <<https://apnews.com/article/9b8b33cd55c043149f7f37017047605a>> accessed 15 September 2021.

rules of the Obama administration were quickly overturned. Even though the mining industry was listed as a major source of toxic pollution in the US according to the EPA's list of toxic emissions, the Trump administration was actively working to reinterpret the law in order to cut the protection of human health and the environment; while requiring taxpayers to pay more for the actions of polluters. Unfortunately, the Court's decision cleared the way for further such efforts.²⁵²

At present, the ruling government in the US under administration of Joe Biden, has not yet established a clear attitude on the matter at present. It is undeniable that insolvency has always been a great challenge to the effectiveness of financial provision, while it is inevitable for changes in political direction to also affect the implementation of financial provisions in relation to environmental liabilities.

6.6 The Limitation of Financial Assurance

Financial assurance has been implemented in the UK and US, as well as other countries, as a legal tool for internalisation of environmental costs, however, it is still at a nascent stage of development in China. In this section, the limitation will revolve around two aspects. On the one hand, it will address the limitations of establishing financial assurance in China itself. On the other hand, the limitations will address the development of financial assurance itself; in other words, the common issues of financial assurance that have been encountered in other jurisdictions. These common issues are also challenges which China may face in future in establishing a mechanism of financial assurance.

²⁵² *Re Idaho Conservation League*, 811 F.3d 502 (D.C. Cir. 2016).

6.6.1 The Limitation of Financial Assurance in China

Firstly, only mandatory financial guarantee provisions are in place for maritime transport and mining. Regarding other aspects, China's environmental legislation currently only encourages polluters to take out environmental assurances, such as environmental liability insurance. At present, only Shenzhen has compulsory environmental liability insurance to cover high-risk enterprise in a total 34 provinces and 333 cities in China.²⁵³ Shenzhen is one of the pilot cities identified by the Ministry of Ecology and Environment for environmental pollution insurance, and the implementation of a mandatory environmental insurance system; which was also requested by Shenzhen as a pilot reform.²⁵⁴ The Chinese government hopes to gain experience from the 'Shenzhen Model' to determine whether mandatory environmental insurance should be extended to the whole country.²⁵⁵ However for the time being, insurers have no desire to develop environmental liability insurance products, and polluters believe that the cost of covering pollution will be less than the cost of buying insurance.²⁵⁶

Moreover, the lack of transparency of public information is also a major challenge in establishing a financial assurance system in China. For example, the use of the mine restoration fund has not been disclosed, while the US

²⁵³ Yanwen Dou [竇延文], 'Providing risk coverage of RMB 2.765 billion! Shenzhen mandatory liability insurance for environmental pollution achieves full coverage for environmental high risk enterprises' [提供风险保障 27.65 亿元! 深圳环境污染强制责任保险实现环境高风险企业全覆盖] (Shenzhen Special Zone Daily[深圳特区报] 24 Feb 2022) <<https://finance.sina.com.cn/jjxw/2022-02-24/doc-imcwipih5137021.shtml>> accessed 15 September 2021.

²⁵⁴ Ibid.

²⁵⁵ Ibid.

²⁵⁶ Shenzhen Gov, [深圳政府在线] 'Shenzhen environmental pollution compulsory liability insurance to achieve full coverage of environmental high-risk enterprises' [深圳环境污染强制责任保险实现环境高风险企业全覆盖] (Shenzhen Gov, 25 February 2022) 2022-02-25 <http://www.sz.gov.cn/cn/xxgk/zfxgj/zwdt/content/post_9589513.html> accessed 5 March 2022.

Superfund is able to check the use of remediation funds for each brownfield site.²⁵⁷ Regulatory transparency can increase the effectiveness of financial assurance by regularly reviewing them in order to ensure that the amount of financial assurance matches their environmental obligations.²⁵⁸

Lastly, there is only one single type of financial assurance instrument available to operators. Currently, only the mining and maritime industries in China have mandatory financial assurance provisions. With the exception of Shenzhen, only high-risk industries are encouraged to take out environmental liability insurance. However, in other countries, the legislation on financial assurance allows operators to freely choose the financial assurance model. For example, in the UK, England's legislation on waste disposal closure, restoration and aftercare allows operators to choose from a variety of financial assurance models, such as escrow account, deposit, parent company guarantee, bonds and local authority deed agreements.²⁵⁹

There is a lack of choice in China's financial assurance models. If legislation can provide a variety of assurance models for operators to freely choose from, operators could select a combination of assurance types according to their own unique circumstances. At the same time, the impact of financial assurance on cash flow can be effectively reduced and environmental liabilities are more likely to be fully protected.²⁶⁰

²⁵⁷ X Liu and Z Yu (n 118) 41.

²⁵⁸ James M. Otto 'Global Trends in Mine Reclamation and Closure Regulation' (2009) *International Mining and Oil and Gas Law, Development, and Investment* 257

²⁵⁹ Environment Agency, 'Calculate your financial provision' (GOV.UK, 30 January 2020) <<https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision>> accessed 7 September 2022.

²⁶⁰ Some financial assurance mechanisms, which do not affect the cash flow of the operator, such as parent company guarantee.

6.6.2 The Common Issue of Financial Assurance

Financial assurance is currently the most effective protection measure for reducing the externalisation of environmental liabilities.²⁶¹ However, financial assurance is by no means a panacea. The goal of financial assurance is to realise the polluter pays principle and realise the internalisation of environmental liability. Cost internalisation is an indirect goal of creating dedicated capital reserves, which will be created mainly to ensure that operators repay their debts.²⁶² However, in some cases, financial assurance is not so effective, such as in the case of unforeseen environmental liability, or that of the insolvency of operators where it necessary for assurance to be effective. Moreover, the effectiveness of financial assurance is affected by various, including legislation and regulatory review, among others. Therefore, this section will analyse some issues with financial provision, including ineffectiveness in some cases, weak financial assurance instruments, as well as conflict with both economic conditions and policy.

A. Estimation Issues in Financial Assurance

At the outset, operators are required to provide sufficient funds as a financial assurance to cover their potential environmental obligations. The estimates of environmental costs, such as decommissioning or site restoration are key, as they should be matched by the level of financial assurance.²⁶³ If it does not match, there will be a deficit.²⁶⁴ The deficit will have to be covered by public funds. For example, in the case of Manywells landfill, Summitville mine, Zortman Mining, and Brohm Mining, the actual environmental remediation costs

²⁶¹ Liz Williams Russell, 'Financial assurance mandates: a mechanism to prevent climate-induced industrial disasters' (2018)48 *Environmental Law Reporter* 48.

²⁶² C Mackie and L Besco (n 7) 10589.

²⁶³ J Boyd (n 65) 145.

²⁶⁴ *Ibid.*

are all greater than the amount of their financial assurance. As a result of the inability to match cost estimates to the level of financial assurance to be provided, the effectiveness of financial assurance is reduced; thereby making it difficult to internalise environmental costs.²⁶⁵ The mismatch between the estimated financial assurance and the actual environmental costs arises for several reasons.

Firstly, as case studies have demonstrated, insolvency is the biggest challenge to the internalisation of pollution costs. Once insolvent, environmental costs can only be partially recovered in many cases, even if they financial provisions have been prepared. In the meantime, there may be complications; for example, the company may deliberately increase the possibility of insolvency by divesting captive assets in order to externalise costs.²⁶⁶ In industries where debts costs are potentially high, a company's business organisation, capital investment and retention decisions may be affected by the desire to externalised liabilities; for example, choosing not to integrate vertically or horizontally, or opting to hide assets overseas.²⁶⁷

Secondly, the security of financial assurance instruments can also easily lead to a failure in the internalisation of environmental costs.²⁶⁸ Each financial assurance instrument is defective in its own distinct way, as has already been evaluated earlier in this chapter. For example, self-insurance requires the regulator to monitor the financial position of the company over a period of time. If the regulator is unable to monitor the operator and thereby require it to update the amount of its financial assurance, it could lead to a failure of the financial

²⁶⁵ Ibid 146.

²⁶⁶ J Malone and T Winslow (n 14) 32.

²⁶⁷ Ibid.

²⁶⁸ Ibid 33.

assurance.²⁶⁹

Lastly, in the case of illegal activities, the protection provided by financial assurance may be limited. Some illegal activities, such as the dumping of waste, takes place entirely outside the permissible and legal system for the establishment of financial provision. Illegal activities may also endanger the sufficiency and legal security of financial assurance even those that are in place.²⁷⁰ For example, if the amount of waste allowed under the licence is 1000 tons, but 1500 tons waste is actually released, 500 tons are thereby illegal. However, the financial assurance in place will only be enough to handle 1000 tons, so at this time, there is a partial funding gap. In this case, the effectiveness of financial assurance is limited.

B. The Conflict of Financial Assurance

From the above discussion and case studies, financial assurance appears likely to conflict with politics and the development of operators. Firstly, politics may influence the standards of financial provision, as confirmed by the second part of the case study.²⁷¹ This is based on a country's legislation and the direction of economic development. In the United States, for example, legislation provides the president with authority, but with the succession from one president to the next, different stances and requirements on issues such as financial assurance requirements for hard rock mining may be adopted. One obvious case is the change in standard under the Obama administration compared with that instructed under the Trump administration. Thus, politics may be considered an important factor in affecting financial assurance

²⁶⁹ W Gorton (n 25) 30.

²⁷⁰ IMPEL (n 1) 45.

²⁷¹ See the experience of the US 6.5.3.

standards.

Furthermore, most financial assurance mechanisms, such as insurance, bonds and guarantees, require potential polluters to prepare funds prior to commencing operations. This fund may increase at any time during the course of business. This will affect the company's cash flow and balance sheet to some extent, especially for smaller companies which may have weaker financial resources. If the standard of financial assurance is too low, the result will be that financial assurance is insufficient to cover the company's environmental liabilities. This argument is supported by the Manywells case study. In the case of the Manywells site, its financial assurance amounted to £375,000 by way of an escrow account, however, it was estimated that the cost of remediation following operation would exceed £500,000.²⁷² Furthermore, in the event of unforeseen incidents, such as oil spills, the financial assurance in place cannot possibly cover the cost of environmental liabilities in their entirety, such as in the cases of oil spills occurring in the North Sea.²⁷³ Thus, there is a need for regulators and legislators to think about how to set up a reasonable financial assurance system and standards which can not only ensure the coverage of environmental liabilities, but also limit the affect on the operating ability of the respective company in question.

6.7 Conclusion

Financial assurance mechanisms can, in principle, realise the polluter pays principle and ensure that companies can meet their future environmental restoration obligations. Financial assurance allocates the environmental costs to the potential polluter itself and gives the potential polluter an advance

²⁷² See case study 6.5.1

²⁷³ See case study 6.5.2

knowledge and understanding of future environmental obligations. The financial assurance market offers a wide range of financial instruments and while these each have their own distinct drawbacks, they can also be adapted to meet the needs and requirements of individual companies, facilities, and regulations.

Financial assurance is still in its infancy in terms of development within the Chinese market and in relation to other markets globally. There are currently only funds providing for mine restoration or environmental liability insurance for high-risk enterprises in China. The absence of mandatory financial assurance regulations, lack of public information transparency, and a single choice of financial instrument to apply are three major limitations that inhibit the development of financial assurance in China.

However, in more mature markets, such as that of the UK and US, other common issues concerning financial assurance mechanisms have also been exposed. For example, there are many cases whereby the estimate of financial assurance has not matched with the actual environmental cost, or where conflict has arisen between respective political, economic and financial assurance mechanisms. These issues are worthy of greater attention and consideration if a proposal for a financial assurance mechanism in China were to be put forward. The next chapter will provide some recommendations for law reform in China.

Chapter 7

Recommendations for Legal Reform in China

7.1 Introduction

This chapter will answer the last research question. This chapter will put forward some recommendations for China's legislation in accordance with all previous analysis. These recommendations consist of two parts, which are aimed at Enterprises Bankruptcy Law (EBL) reform and financial assurance legislation.

7.2 Recommendations for Enterprises Bankruptcy Law

Environmental liabilities include the costs of remediation/clean-up, site restoration, damage caused by the polluter's operations adjoining properties.¹ It could also encompass traditional damage, for example, personal injury or economic loss caused by the pollution incident. Chinese EBL typically treats such liability as unsecured, non-preferential claims, whereas from the case studies in the chapter 2, the environmental liabilities of the insolvent polluter are effectively transferred to the public, in turn violating the 'polluter pays' principle. Therefore, these recommendations will focus primarily on the following aspects; environmental priority, representative and notice provision, conflict with other laws, and the entity issue.

7.2.1 Environmental Priority in the EBL

The order of priority in winding up is already accounted for in EBL (table I). In EBL, after paying the costs of the liquidation and first paying the debts incurred for the common good of creditors, the insolvency estate will pay wages,

¹ Briana Diopenes, 'What are environmental liabilities and when you should consider them' (Integrate Sustainability, 28 May 2020) <<https://www.integratesustainability.com.au/2020/05/28/what-are-environmental-liabilities-and-when-you-should-consider-them/>> accessed 31 January 2022.

employees' pensions, then the social insurance and taxes, followed by unsecured, no-preferential creditors.² The primary importance of realising the polluter pays principle in insolvency cases is to establish the priority of environmental liabilities in the process of liquidation distribution. If the priority of environmental liability is feasible in winding up, the following issue deserve to be considered.

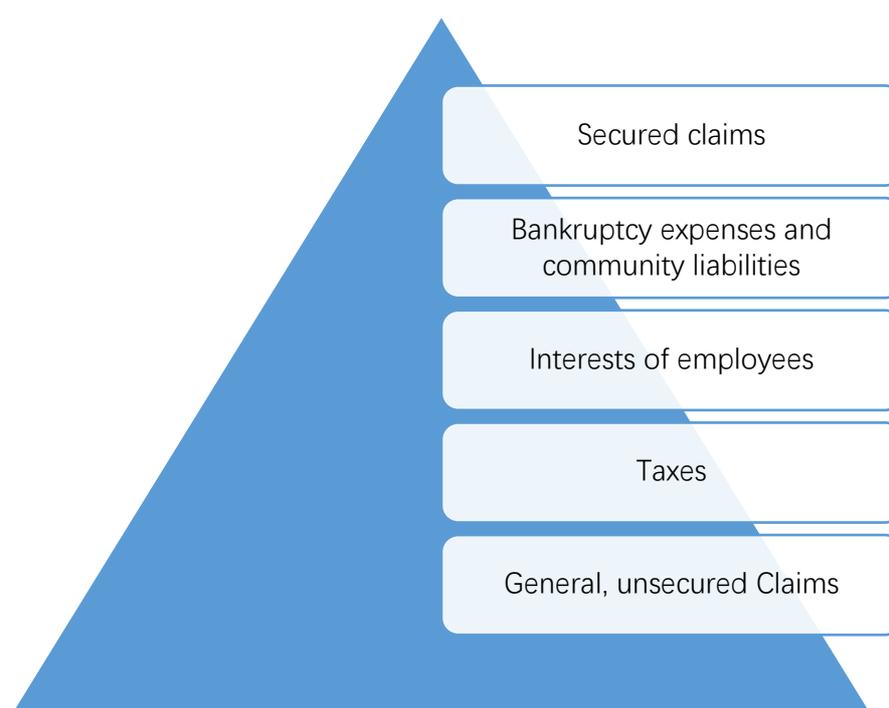


Table I: The existing the order of distribution in EBL

Firstly, the scope of environmental liability priority should be considered. The purpose of giving priority to environmental liability is to realise the internalisation of the environmental cost. The cost should include environmental fines, in addition to foreseen environmental liability and unforeseen environmental liability.³ Regarding the nature of environmental fines, there is an argument that these are merely administrative fines, rather than costs associated with actual

² Enterprises Bankruptcy Law (EBL) 2006 s113.

³ Foreseen liabilities: like the closure of a mine or landfill. Unforeseen liabilities: pollution incident.

environmental pollution.⁴ However, the fines also cover the cost of environmental investigations carried out by the regulator, meaning that if the costs are not recoverable then the funds available to the regulator will have decreased.⁵

Furthermore, if the distributable assets are not sufficient to cover the full environmental priority, the cost of environmental remediation should be paid in priority to environmental fines. The reason is that the implementation of administrative fines cannot change the pollution that the operator has caused; rather the administrative fine acts more like a warning notice issued by the regulator.⁶ Giving priority to administrative fines will only add additional revenue to the government, with the revenue from fines not guaranteed for use on matters relating to environmental governance.⁷ However, the nature of other environmental liabilities that come at some actual cost to environmental governance, such as clean-up costs, restoration, and environmental damage that the debtor's operations has caused to adjoining property, are indeed different than administrative fines. These environmental liabilities should be given priority in liquidation since they are more closely linked to the cause of the pollution itself.⁸

The order of priority given to environmental liability in winding up could indeed be informed by relevant cases in other jurisdictions, for example, both Scottish and US law have established, through case law, that environmental liability

⁴ Huaining Sun and Guanfeng Yang, 'Administrator's Perspective-- Research on Environmental creditor's Rights in Enterprise bankruptcy procedure' [管理人视角-企业破产程序中环境债权问题研究] (Zhonglun Law Firm, 2019) <<http://www.zhonglun.com/Content/2019/11-05/1626406424.html>> accessed 8 February 2022.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

⁸ This argument has been discussed in the chapter 2.

ought to be treated as though it were insolvency expenses.⁹ China can learn from the jurisprudence of other jurisdictions to achieve legal Sinification. From reading the existing EBL, the environmental liability can be recognised as a kind of community liability in China. The community liability has been interpreted as the liabilities arising from damage caused by a debtor's property.¹⁰ In practice, some public interests have been confirmed as community liability in Chinese bankruptcy cases. For example, demolition compensation and resettlement¹¹ was recognised as community liability in the insolvency of a real estate company.¹² The insolvent's polluting behaviour has the potential to cause extensive damage to the environment and poses a threat, directly or indirectly, to human health (public interest), as has been argued in previous chapters.¹³ Furthermore, if the polluter fails to meet its environmental obligations, it can be understood that the polluter saves itself the expenses of its environmental obligations, which can be recognised as ill-gotten gains.¹⁴ Environmental liability can therefore be recognised as community liabilities in a broader sense.

Lastly, the interests of employees have been a priority protection throughout the development of Chinese bankruptcy law, for example, both the EBL 1986 Trial and EBL 2006 placed specific emphasis on the interests of employees.¹⁵ If the cost of environmental clean-up is too large, all insolvency assets will be

⁹ *Joint liquidators of Doonin Plant Limited* [2018] CSOH 89. *Midlantic National Bank v. New Jersey Dept. of Environmental Protection* - 474 U.S. 494, 106 S. Ct. 755 (1986) ct. at 762, 88 L.Ed.2d.

¹⁰ Enterprise Bankruptcy Law 2006 s42.

¹¹ Demolition compensation and resettlement refer to the company that obtains the housing demolition and relocation permit to pay for the owner of the demolished house for the demolition compensation and resettlement.

¹² For example, in the insolvency case of Jiangsu Lianshui Xin Ding Real Estate Co., Ltd., the administrator identified the resettlement costs of the demolished households as a community debt.

Notice of recruitment of community debt lenders in insolvency cases issued on 19 January 2020

¹³ H Sun and G Yang (n 4).

¹⁴ *Ibid.*

¹⁵ Enterprise Bankruptcy Law Trial 1986 s37 and Enterprise Bankruptcy Law 2006 s113.

used to pay for the cost of environmental remediation; which in turn is likely to mean that the interests of employees cannot be protected. It is worth noting that China's EBL provides a remedy similar to that of the 'Prescribed Part' of the UK Insolvency Act 1986.¹⁶ Under Article 132 EBL, if assets are insufficient to pay employees in winding up, the realisation of the secured property can be paid to the employees in priority.¹⁷ Therefore, Chinese legislators should further improve on Article 132 in the subsequent amendments to EBL.

In summary, environmental liability cannot be classified as labour claims or taxes; instead, it can only be classified as common bankruptcy claims, or general and unsecured liability. Therefore, the order of environmental liability in the distribution should be raised (Table II) from the following aspects.



Table II: The proposed reform of the order of distribution in EBL

¹⁶ A 'Prescribed Part' is the part of the proceeds that must be set aside for the unsecured creditors out of the floating charge realisations.

¹⁷ Enterprise Bankruptcy Law 2006 s132.

7.2.2 Environmental Representative and Notice Provision

Environmental liability is not mentioned in EBL, thus, the liquidator cannot pay adequate attention to the environmental liability of the insolvent polluter as is needed. As such, EBL should establish a notice provision of environmental liability, as well as a system of environmental representatives. Environmental representatives should be civil servants in the local environmental protection authority of the People's Government.

Enterprises engaged in activities of high-risk or those likely to cause substantial environmental pollution shall, at the time of insolvency, give the environmental protection department notice or an assessment of their existing acts of environmental concern and a complete organisational framework report. The contents of the report should include the legal entity of the enterprises involved, the polluting behaviour, the fact, area, and extent of the pollution caused, as well as the cost of environmental clean-up and estimated cost of future remediation. This kind of notice provision is not a novel idea; with senators in the US attempting to put forward a similar proposal in 2006, which would have ensured that government agencies would not abandon environmental claims for simply failing to find them.¹⁸ Therefore, when the insolvent enterprise files for insolvency, there is an obligation for the insolvent enterprise to submit to the court an overview of its environmental pollution and a plan for the restoration of environmental issue in the future. After the insolvency filing is accepted by the court, the bankruptcy administrator shall be responsible for the specific implementation plan and timely report to the court and shall be subject to the supervision of the creditors' committee to ensure that environmental liability is

¹⁸ Maria Cantwell United States Senator for Washington, 'Cantwell Hails ASARCO Superfund Clean-up Deal, Continues Push to Hold Corporate Polluters Accountable: Senator's legislation would close existing loopholes, keep corporate polluters from skipping town and sticking taxpayers with clean-up costs' (Press Release, 31 Oct 2006) <<http://cantwell.senate.gov/news/record.cfm?id=265566>> accessed 8 February 2022.

internalised to the maximum extent.

Furthermore, EBL should confirm the identity of the environmental representative that will participate in future insolvency proceedings, such as the declaration of insolvency claims or meetings of creditors. The representative brings together the interests of contingent environmental creditors who declare and estimate their claims. The purpose is to ensure that future environmental creditors who are not involved in insolvency proceedings will also receive the same share of liquidation. Meanwhile, the position of environmental representatives shall be raised at the creditors committee. This provision should refer to the existing structure of the creditor committee whereby employee interest representatives have at least one seat on the creditor committee. Similarly, at least one person should be chosen to be an environmental representative if environmental liability is involved in the insolvency proceedings.

Lastly, the environmental representative should also be added to reorganisation proceedings. The reorganisation plan will comprise of a specific debt settlement plan and the debt voting group. The voting group should include an environmental liability group; in addition to a secured liability group; labour liability group; tax group and ordinary liabilities group. This means that the reorganisation plan must be approved by the environmental liability group, which would be conducive to ensuring that environmental clean-up costs are paid after reorganisation. Meanwhile, environmental liability should play a more dominant role in the restructuring process, as environmental representatives will now be members in the voting group.

7.2.3 The Entity of Insolvent Polluter Post-Liquidation

At present, EBL stipulates that the completion of liquidation signals the end of insolvency proceedings. The entity and shareholders of the company shall no

longer bear any responsibility to the company. However, environmental liability has particularity and continuity. A lot of environmental pollution will not be discovered until several years after proceedings have concluded, which could otherwise lead to those not responsible for the damage bearing such environmental obligations. Thus, there is a clear need to reform such legal provision needs.

The EBL should establish the reservation system of the liability entity. After the conclusion of the insolvency liquidation procedure of the enterprise in question, the qualification of the liability entity of the original insolvent enterprises should be retained for a period of time after. The company cannot carry out its regular business activity, however, it can still be used as an entity to solve any potential issues that may arise as a result of proceedings post-liquidation. This provision has been practiced in Delaware company law for many years.¹⁹ However, in applying this concept within the context of Chinese law, it may be worth reconsidering the length of time for which an entity is retained; with a period of three years perhaps more suitable. This is because if the entity is retained for too long, it runs the risk of undermining the original intention of EBL, that is, the debtor can be reborn.²⁰

¹⁹ U.S. Delaware General Corporation Law s278. All corporations, whether they expire by their own limitation or are otherwise dissolved, shall nevertheless be continued, for the term of 3 years from such expiration or dissolution or for such longer period as the Court of Chancery shall in its discretion direct, bodies corporate for the purpose of prosecuting and defending suits, whether civil, criminal or administrative, by or against them, and of enabling them gradually to settle and close their business, to dispose of and convey their property, to discharge their liabilities and to distribute to their stockholders any remaining assets, but not for the purpose of continuing the business for which the corporation was organized. With respect to any action, suit or proceeding begun by or against the corporation either prior to or within 3 years after the date of its expiration or dissolution, the action shall not abate by reason of the dissolution of the corporation; the corporation shall, solely for the purpose of such action, suit or proceeding, be continued as a body corporate beyond the 3-year period and until any judgments, orders or decrees therein shall be fully executed, without the necessity for any special direction to that effect by the Court of Chancery.

²⁰ H Sun and G Yang (n 4).

Furthermore, in some necessary cases, the scope of the entity of environmental liability needs to be expanded; for example, if the polluter deliberately files for insolvency in order to escape environmental liability, or if the pollution is caused by the polluter intentionally or negligently. In such instances, in accordance with the principle of joint and several liability, regulators could recover the environmental costs from the relevant corporate entity by way of individuals within the entity, such as executives and shareholders. At present, this view has been supported by some scholars, who have expressed that the veil of the corporation should be lifted in this kind of cases.²¹ That is to say that joint and several liability is borne by the responsible shareholders of the company, which is not only conducive to the settlement of environmental liability, but also plays a warning role for shareholders to participate in the company's environmental protection and reasonable management. However, it is worth nothing that the extent to which successor entities should bear continuing responsibility should be limited in order to promote the healthy development of the economy.

Some experts agreed with the proposal to lift the veil of the corporation in order to protect the interests of creditors. In the view of Judge Li and Judge Zhang, the insolvency termination company is cancelled, and its entity no longer exists. Meanwhile, the appropriate continuation of its entity will help to fulfil the liability arising from its polluting activity.²² The continuation of its entity can also ensure the realisation of the polluter pays principle and the internalisation of environmental liabilities.²³ Furthermore, the judges' view is that the will of the

²¹ Hui Huang, 'piercing the corporate veil in China: Where is it now and where is it heading?' (2012)3 the American Journal of Comparative Law 770.

²² Zhi Li and Ming Zhang, 'The Judicial approach to the realization of Environmental Tort creditor's Rights in bankruptcy procedure-- from the Perspective of interest Measurement' [破产程序中环境侵权债权实现之司法进路-以利益衡量为视角] (2019 Annual Conference of Chinese Society of Environmental and Resources Law [中国法学会环境资源法学研究会 2019 年年会], Haikou, 2019) <<http://61.181.120.82:8080/kcms/detail/detail.aspx?filename=FXHJ201910003012&dbcode=CPFD&dbn ame=CPFD2021>> accessed 8 February 2022.

²³ Ibid.

company is reflected by its executives, blindly emphasising the company, which may in turn encourage the ill-behaviour of executives, for example, earning income from operating environmental pollution risk business.²⁴ Therefore, they suggest that in this case, executives or shareholders should be forced to assume environmental liability.²⁵

The veil lifting in China was the first used as a statutory remedy in 2005, and was drafted into Chinese Company Law 2005. This legislation provides for the extension of the rights of creditors to pierce the corporate veil and to pursue all shareholders of a company, from single shareholder companies to listed firms.²⁶ For example, Article 20 established a wide range of rights for creditors to pursue the debts of companies with limited liability and joint stock companies, including shareholders of listed public companies:

*Where the shareholder of a company abuses the independent status of the company as a legal person or the limited liability of shareholders, evades debts and thus seriously damages the interests of the creditors of the company, he shall assume joint and several liability for the debts of the company.*²⁷

Furthermore, Article 64 also imposes requirements on companies with a single shareholder, it states,

Where the shareholder of a one-person company with limited liability cannot prove that the property of the company is independent of his own property, he shall assume the joint and several liability for the

²⁴ Ibid.

²⁵ Ibid.

²⁶ Kimberly Bin Yu and Richard Krever, 'The high frequency of piercing the corporate veil in China' (2015)23 Asia Pacific Law Review 65.

²⁷ Company Law 2005 s20.

*debts of the company.*²⁸

The veil piercing rule is strictly applied in the Company Law of other jurisdictions, though not very common. In contrast, Articles 23 and 64 of the Chinese Company Law results in the corporate veil being pierced far more frequently in China than in other jurisdictions.²⁹ Articles 20 and 64 also provide a means for achieving the internalisation of environmental liability in insolvency proceedings. In insolvency cases, where a company's shareholders have deliberately transferred property to escape environmental liability or where company accounts are mixed with private accounts, the corporate veil can be pierced, thus meaning that shareholders would be expected to cover the costs of the company's environmental liability.

7.2.4 Charging on Property for Environmental Liability

There are characteristics of continuity and concealment in environmental liability. In some cases, it may be difficult to calculate the amount of environmental liability in insolvency proceedings. Therefore, the law should give regulators more power, to allow them to impose a charge (effectively a security interest) on polluters' property for environmental liability. However, it should make some changes so as to fit the existing Chinese culture. The property that regulators charge for environmental liability includes movable property³⁰ and immovable property³¹.

Any change in priority for a particular group in insolvency would be at the expense of other creditors and would therefore likely result in those creditors

²⁸ Ibid s64

²⁹ B Yu and R, (n 26) 82.

³⁰ Movable property: Movable property is property that can be moved from one place to another, its also intangible property, such as intellectual property rights and financial collateral.

³¹ Immovable property: The concept of 'immovable property' includes the ground itself or something fixed to or in the ground that cannot be easily dismantled or easily moved, such as real estate.

being less inclined to extend credit to a company in difficulty; as has been demonstrated in the UK.³² However, in China, the situation could be different. Firstly, China's regulations regarding property provide the possibility for regulators to charge property for environmental liabilities. Article 243 of the Chapter of Property of the Civil Code stipulates:

*For the need of the public interest, the collectively-owned land and the houses and other immovable property of an organisation or individual may be expropriated within the scope of authority.*³³

The expropriated should be compensated for their losses and usually the government will pay for these costs.³⁴ These regulations provide the possibility for the regulator to charge for environmental liability. Obviously, it is in the public interest for the regulator to charge for environmental liability. If this regulation could be applied to environmental liability in insolvency, then environmental costs may be paid out of the portion of the secured property after it has been paid to the secured creditor.

The interests of other creditors on the secured or movable property should be compensated. However, with respect to the polluter pays principle, if the government pays for any amount of compensation, there will be no real internalisation of environmental costs. The establishment of a compensation fund is therefore the way forward, funded by potential polluters.

In addition, the interests of employees, such as pension benefits, do not conflict with the regulator and are already a priority in the order of distribution in liquidation. Even if the company's pension fund is in deficit; as the current

³² The Secretary of State for Business, Innovation & Skills and Command of Her Majesty, 'Government response to the joint House of Commons committees' report on the impact of the closure of City Link on employment (17 September 2015) 29.

³³ Civil Code s243.

³⁴ Ibid s245.

legislation already provides remedies.³⁵

Therefore, if Chinese law allows regulators charge property for environmental liabilities, the regulations should consider several issues. Firstly, regulators should be allowed to charge immovable property for environmental liability in some cases, such as cases whereby the polluting firm becomes insolvent or is deemed to be at risk of insolvency. The order of distribution should follow the existing provision under Civil Code, which is in the order of registration. It will affect the power of regulators if there is a conflict between the mortgage set by the regulator and the original mortgage.³⁶ However, at least, it provides a way to reduce the externalisation of environmental liability, and increases the possibility for regulators to recover clean-up costs.

Secondly, if the property is movable property, the situation becomes more complex. If the movable property has not been subject to the setting of a lien, the regulator should first set lien to ensure that the regulator comes first in the order of settlement. In the other case, if the property has been set a lien, the regulator should be given more power to ensure that it is at the forefront of mortgage priorities; for example, to improve the order of regulator's charge on the operator's property and be paid off after the lien. This provision depends on the order of registration, which means that regulator can take precedence over unregistered mortgages under this provision. There is a similar guarantee

³⁵ According to the circulars issued by the State in 1994 and 1997 on issues relating to the re-employment of employees of insolvent enterprises, the pensions and medical expenses of the retired employees of insolvent enterprises should be managed by the social pension and medical insurance institutions in the locality of the retired employees of the insolvent enterprises.

If the bankrupt enterprise participated in the social pension insurance and medical insurance scheme before the insolvency, the retired employees' pensions and medical expenses shall be paid from the local pension insurance fund pool and medical insurance fund pool. If the insolvent enterprise did not participate in social insurance, such as pension insurance, medical insurance and unemployment insurance, prior to the insolvency, these payments should be paid out of the land use rights grant of the insolvent enterprise.

³⁶ Civil Code 2020 s414.

regulation in China now.³⁷

In China, some scholars have put forward similar suggestions to EBL. These scholars proposed that in insolvency cases, the court should deposit a certain proportion of the bankruptcy property and retain it for a certain period to ensure that environmental liability determined in the future is paid. If the environmental liability has not been determined after the time limit has expired, the deposit shall be distributed again in accordance with the distribution order stipulated in the EBL.³⁸

7.3 Recommendations for Financial Assurance in China

The previous chapter has introduced the legislative situation of financial assurance in China, which, at present, is close to non-existent. The polluter pays principle has played an important role in developing the legislation of Chinese environmental law. Financial assurance is a significant measure in realising the internalisation of the environmental liability of insolvent polluters and ensuring that environmental obligations, such as remediation, are performed as intended by the regulator. As such, this section will look to provide some guidance as to how to establish a financial assurance system in China. This section comprises of five parts; the principle, scope, mechanisms, increase and the calculating amount of financial assurance, as well as the assessment process.

7.3.1 The Principle and Purpose

The polluter pays principle should be implemented in Chinese law in a direct way rather than implicitly. Financial assurance can be effective in reducing the

³⁷ Ibid s414, s786, Interpretation of the Supreme People's Court of the Application of the Relevant Guarantee System of the Civil Code of the People's Republic of China s59 s66.

³⁸ H Sun and G Yang (n 4).

externalisation of environmental costs.

In terms of international convention, the 1992 Civil Liability Convention for marine oil spills³⁹ is one of the key international conventions with mandatory financial assurance requirements. China ratified the 1992 Convention in 1999, and as such, the establishment of financial assurance measures is necessary in China.

Financial assurance must meet the responsibility of potential polluters, which means that the assurance has to be sufficient, secure, and available when required.⁴⁰ Furthermore, the assurance should be regarded as a means to meet all manner of a polluters' environmental responsibility, such as the cost of clean-up and environmental restoration. Therefore, legislation should consider the following aspects.

Firstly, financial assurance must be sufficient so as to allow operators to meet all of foreseen and unforeseen liabilities; such as closure, one-off incidents, and restoration.

Secondly, the funding that operators provide must be secure for the duration of operation, so as to make sure that funds are available to discharge the environmental liability of operators if necessary. As such, legislation should also consider how to prevent funds from being used for other purposes.

Lastly, operators should keep the funds available until their environmental obligation discharge, such as the time at which the operator has completed clean-up and restoration work after closure. These principles have been accepted in other jurisdictions, such as in the Guidance on Financial Provision

³⁹ European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) *Financial provision – protecting the environment and the public purse* (IMPEL 6 September 2016) 19.

⁴⁰ Irish Environmental Protection Agency, 'Guidance on financial provision for environmental liabilities 2015' 3.

for Landfill in England and Wales.⁴¹ Furthermore, the financial provision report issued by IMPEL also mentioned the importance of this principle in realising the polluter pays principle.⁴²

In the end, the regulator should consider applications to assess financial assurance for their future environmental liability on a case-by-case basis. Moreover, financial assurance should be reviewed year-on-year, which will be further introduced in the later part.

7.3.2 The Scope of Financial Assurance

The regulations governing financial assurance should suit all potential polluters, this means that all potential polluters need to prepare enough financial assurance for their potential environmental liability in the future. But some recommendations should be considered.

First is the requirement of financial assurance instruments. The function of financial assurance has been analysed in Chapter 6, which concludes that capital reserves is necessary to internalise environmental costs. Therefore, Chinese law should consider requiring operators to set up capital reserves for their environmental liabilities, whether foreseeable or unforeseeable. Furthermore, for foreseen liability, such as decommissioning, the environmental costs are not difficult to determine. However, for unforeseen liability, such as pollution incidents, the environmental costs cannot be easily determined. If damage is considered in a worst-case scenario, the financial burden on the operator is too harsh. Chinese legislators should therefore consider setting only an average value at which such operators are required to maintain their level of financial assurance. In this case, there may be a certain externalisation of

⁴¹ This guidance has been withdrawn on 30 January 2020. The new system has instead this guidance see Calculate your financial provision < <https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision>> accessed 8 February 2022.

⁴² IMPEL (n 39) 3.

environmental costs to society, and thus China should establish a fund similar to the Superfund in the US. The sources of the fund would be mainly taxes, fines from polluting enterprises, which would mitigate the externalisation of environmental costs to a certain extent.⁴³

Furthermore, who should prepare financial assurance before operation? On the hand, high-risk pollution industries will be required to use financial assurance. on the other hand, non-high-risk enterprises that might still be potential polluters, should be required to prepare financial assurance for their potential environmental obligations. The definition of high risk and potential pollution should be determined following the permit that they get from regulators. For example, mining operators need to apply for a license before operating, with the condition for obtaining that license being that the operator must provide financial assurance before the start of operation. This provision has been clearly defined in the financial assurance legislation of some countries, for example, in Finland, operators need to provide sufficient financial assurance when they wish to apply for a waste shipment permit.⁴⁴

Third, the scope of environmental liabilities covered by financial assurance. The basic purpose of financial assurance is that the polluter has the ability to respond to their environmental obligation to pay for their environmental liabilities, including closure, incidents, or restoration, as well as the interests of any residents or citizens which are damaged as a result.⁴⁵ Therefore, strict

⁴³ Xiaobo Zhao, *Developing an Appropriate Contaminated Land Regime in China, Lessons Learned from the US and UK*, (Springer, 2019) 276.

⁴⁴ Ministry of the Environment, Department of Natural Environment, Guide on a Financial Guarantee in Waste Management – Guidance for waste management operators on the required financial guarantee, August 2012 <<http://hdl.handle.net/10138/41529>> accessed 8 February 2022.

⁴⁵ U.S. Texas Commission on Environmental Quality, 'Purpose of Financial Assurance' <https://www.tceq.texas.gov/agency/financial/financial-assurance/purpose_of_financial_assurance.html> accessed 7 February 2022. Canada Energy Regulator 'Guidelines Respecting Financial Requirements' <[240](https://www.cer-rec.gc.ca/en/about/acts-</p></div><div data-bbox=)

liability should apply to environmental pollution cases. operators should be liable for environmental accidents, regardless of whether the polluter's detrimental actions are intentional or negligent. Their financial assurance should pay for this kind of environmental costs and compensations. On the one hand, this provision is in accordance with the polluter pays principle, while on the other, it draws lessons from the relevant legislation of other jurisdictions, such as Canada, which has implemented detailed legislation regarding absolute liability for financial requirements of the offshore industry.⁴⁶

7.3.3 Mechanisms to Make Financial Assurance

The mechanisms of financial assurance are varied, but not all of them are suitable for China. From the analysis of the previous chapter, the mechanisms of financial assurance in China should be regarded as either insurance, trust funds, deposits, parent company guarantees, letters of bank guarantee or self-insurance.

Operators shall freely choose the type of financial assurance and can use single mechanism or a combination mechanism (except self-insurance) to achieve the required amount of financial assurance. In other words, operators need to prove that their financial assurances are sufficient, secure, and available even if they using different types of financial assurance.

Generally, other jurisdictions have stipulated different financial assurance mechanisms for operators to choose freely. For example, in the UK, the Environment Agency will accept renewable bonds or cash deposit with the

regulations/other-acts/canada-oil-gas-operations-act/guidelines-respecting-financial-requirements/index.html#s1_2> accessed 7 February 2022.

⁴⁶ Canada Energy Regulator, 'Guidelines Respecting Financial Requirements' <https://www.cer-rec.gc.ca/en/about/acts-regulations/other-acts/canada-oil-gas-operations-act/guidelines-respecting-financial-requirements/index.html#s1_2> accessed 7 February 2022.

Environment Agency.⁴⁷ In the US, the types of financial assurance allowed to be used by those engaging in surface coal mining include cash, certificate of deposit, investment grade rated securities, irrevocable letter of credit, negotiable bonds, real property, self-insurance, state bond pool or a surety bond.⁴⁸ For hard rock mining, the financial assurance instruments accepted include cash, deposit, letter of credit, insurance, among others.⁴⁹

For some mechanisms of financial assurance, operators must provide documents to the regulator as proof of financial assurance, for example, a letter of credit or bank guarantee, proof of participation in a pool fund, proof of deposit, or agreement of parent company guarantee. In some cases, the operator must ensure that the proof of financial assurance is valid during the work or activity for which the regulator is issued. In cases such as damage caused by pollution, the effects from which may persist for a longer period of time, financial assurance should ensure long-term validity. This provision is similarly reflected in Canadian legislation.⁵⁰

Furthermore, operators are also required to provide proof that it has enough financial resources to pay for the environmental liability, for example, the audited financial statement and credit rating, the audited financial statement if the parent company guarantee is accepted, the agreement of deposit or guarantee, the insurance policy or certificate of insurance. This ensures that the operator's financial resources are sufficient, secure, and available. Similarly, this provision is already supported and implemented in other jurisdictions. For example, in Scotland, the regulator will carry out a credit reference check to

⁴⁷ UK Environment Agency, 'Landfill operators: environmental permits' (GOV.UK, 30 January 2020) <<https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision>> accessed 19 September 2022.

⁴⁸ US Government Accountability Office, 'Financial assurance for reclamation: Federal regulations and policies for selected mining and energy development activities' (16 December 2016) 5.

⁴⁹ Ibid.

⁵⁰ Canada Energy Regulator (n 46).

assess whether an applicant is of adequate financial standing.⁵¹ In the US, the first step in demonstrating financial assurance is preparing a written, sit-specific cost estimate. These financial assurances should meet the condition of a financial test.⁵²

The regulator needs to constantly monitor the level of financial assurance of the operator. These mechanisms include annual renewed insurance, parent company guarantees, and self-insurance. It is difficult to guarantee the long-term sufficiency and availability of these mechanisms; as is also reflected in Canadian legislation.⁵³

7.3.4 Calculating the Amount of Financial Assurance

The legislator needs to clear scope of environmental obligations, and provision in advance, which are the necessary conditions for calculating the amount of financial assurance.⁵⁴ The legislator needs to consider some important guidance on foreseen and unforeseen liability.

For foreseen liability, it is most important to determine whether the liability remains constant throughout the operation, as is true with waste treatment, or whether the liability will change throughout the operation.⁵⁵ In some foreseen liabilities, such as in the case of mines, the cost of closure, recovery and other costs will last for a prolonged period of time and will change over time. Therefore, it is particularly important to identify some key dates, such as initial

⁵¹ Scottish Environment Protection Agency, 'Financial Provision for Non-Landfill Waste Management Activities' 1. <<https://www.sepa.org.uk/media/219299/wst-g-031-financial-provision-for-non-landfill-waste-management.pdf>> accessed 7 February 2022.

⁵² US Environmental Protection Agency, 'Wastes – on-Hazardous waste- Municipal Solid Waste' <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/famsw.html#1>> accessed 7 February 2022.

⁵³ Canada Energy Regulator (n 46).

⁵⁴ IMPEL, *Financial Provision for Environmental Liabilities Practice Guide* (IMPEL Report, 12 November 2018) 18.

⁵⁵ *Ibid* 19.

liability, maximum liability, and final end date.

For unforeseen liability, legislation should make it clear whether compensatory remedies as well as major remedies are covered. If unforeseen liability results in lifelong injury, it should be given priority. Additionally, a risk assessment should be conducted to determine the maximum estimated liability.⁵⁶ At present, many jurisdictions, including Ireland,⁵⁷ and the UK,⁵⁸ already have some form of risk assessment template in place, which could be used as a reference for China to implement its own.

Lastly, regulators can decide whether to increase or decrease the amount of financial assurance for operators. Similarly, operators can also apply to increase or decrease their financial assurance, to be agreed upon by the regulator. This part is considered in the legislation in several jurisdictions as well, such as Canada.⁵⁹

A. Increasing Financial Assurance

The reason for requiring an increase in financial assurance may be that the operator is intending to expand its new business, which subsequently risks creating further pollution, or that the risk posed by existing production increases as a result of aging equipment or out-dated technology. In this case, regulators may require the operator to increase financial assurance, although regulators should assess each operator's criteria and needs on a case-by-case basis. The regulator should notify the operator as soon as possible if an increase in financial assurance is necessary. A similar provision to this has long been

⁵⁶ Ibid 21

⁵⁷ Irish Environmental Protection Agency, 'Guidance on assessing and costing environmental liabilities' <<https://www.epa.ie/publications/>> accessed 8 February 2022.

⁵⁸ UK Environment Agency, 'Calculate your financial provision' <<https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision>> accessed 8 February 2022.

⁵⁹ Canada Energy Regulator (n 46).

practised in the US.⁶⁰

B. Decreasing Financial Assurance

Where certain operation activities may pose significant less risk, the regulator would best advise operators to apply for a decrease of their financial assurance with conditions. When operators apply to decrease the amount or value of their financial assurance, the application must include the estimated total amount of environmental liability relating to the operations of the company; as well as an accident risk report, the means of financial assurance to be used and reasons why the applicant is proposing a decrease in their assurance amount. Meanwhile, the applicant shall give the regulator sufficient time to review the operators' application. In Canadian legislation, regulators should approve lower financial requirements for operators when the risk is reduced.⁶¹

7.3.5 The Assessment Process

Financial assurance requires that operators provide sufficient, secure and available funds for their future environmental liability. Therefore, operators should provide their financial assurance proposal before applying for a permit.

The assessment process should learn from that of the UK, with the ideal assessment process chart shown below (Table III). Operators must clarify their choice of financial assurance mechanism and provide complete and detailed payment and cost plans. Regulators will review the authenticity of financial assurances; for example, by way of a written confirmation with guarantors or banks. If the amount of financial assurance is insufficient or certain parts require correction, the regulator shall return it to the operator in a timely manner.

⁶⁰ United States Environmental Protection Agency, 'Financial Assurance Requirements for Hazardous Waste Treatment, Storage and Disposal Facilities' <<https://www.epa.gov/hwpermitting/financial-assurance-requirements-hazardous-waste-treatment-storage-and-disposal>> accessed 8 February 2022.

⁶¹ Canada Energy Regulator (n 46).

Regulators will work out the details of the formal financial assurance if the revised plan is sufficient, secure, and available.⁶²

Following this, regulators should issue a formal agreement on financial assurance for environmental liability of operators. The agreement can be used as evidence in the event of any future environmental lawsuits. Upon completion of the signing of the agreement, the regulator should ensure that all financial assurances are received within a limited period of time and proved to be valid.⁶³

Moreover, from the analysis of the previous chapters, in practice, the amount of financial assurance is less than the actual cost of pollution. Therefore, regulators will conduct periodic reviews under the agreement to ensure that the amount of financial assurance matches changes in inflation or risk.

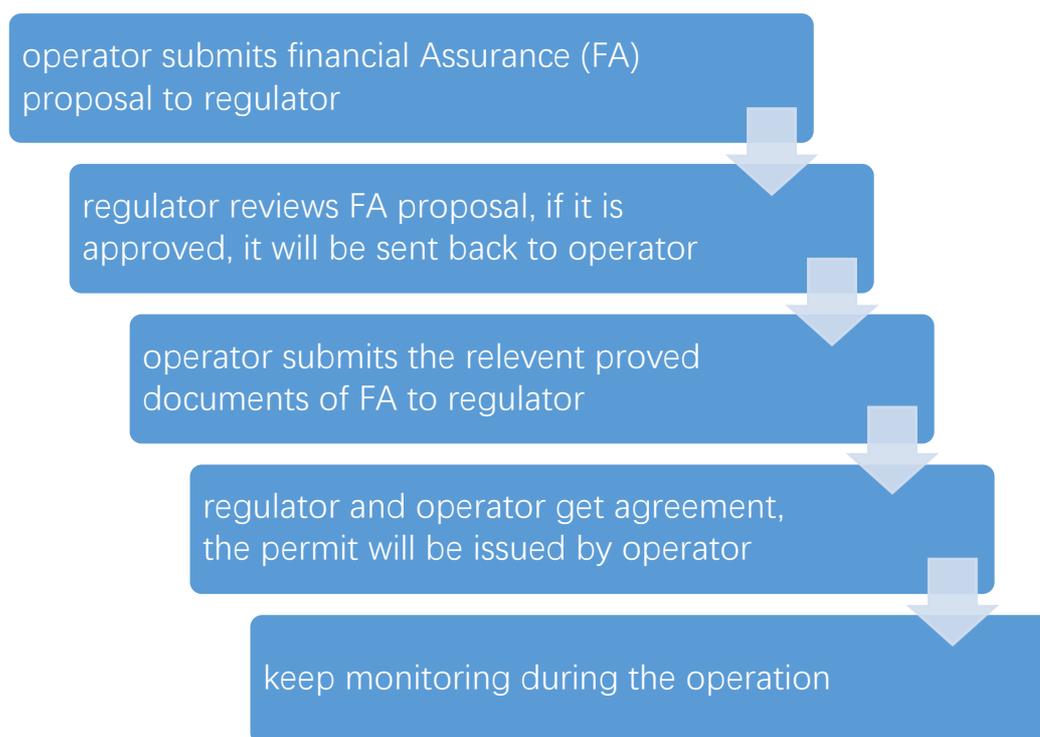


Table III: The process of assessment

⁶² UK Guidance and spreadsheets for determining the amount Guidance on financial provision <<https://www.gov.uk/government/publications/financial-provision-for-landfill>> accessed 8 February 2022.

⁶³ Ibid.

7.4 Conclusion

To achieve the polluter pays principle and thereby reduce the externalisation of environmental liability, it is essential to reform the EBL and introduce financial assurance in China.

The reform of the EBL should first give priority to certain environmental liabilities, such as environmental clean-up cost, which can change the order of environmental liability in the distribution of bankruptcy estate. Furthermore, environmental representatives should be added into the process of bankruptcy proceedings, so that the environmental liability can attract the attention of the bankruptcy judge and the bankruptcy administrator. Upon the completion of the winding up stage, which signals that the company has officially withdrawn from the market, the company in question cannot be held liable for any further liability. Therefore, in the reform of EBL, the life of the corporate entity should be appropriately extended to a set period of time, so as to allow sufficient time to pay potential, yet undiscovered environmental liabilities after insolvency is complete. Environmental crime should also be further cracked down on, and so it is advocated herein that if the company intentionally pollutes the environment, executives and relevant shareholders should be properly investigated for civil liability and criminal sanctions.

Financial assurance can be an effective mechanism to reduce the externalisation of environmental liabilities if it were to be applicable to future legislation. This chapter has provided some guidance to Chinese legislators with respect to the establishment of financial assurance, such as its principle, scope, mechanism and assessment; among other aspects. These suggestions can promote the legislation process of financial assurance legislation.

Regarding the future implementation of the legislative proposals on various measures of financial assurance, enterprises should in fact be allowed to freely

choose the combination of financial assurance, which would not only help to reduce the impact of financial assurance on corporate cash flow and business development but could also help to reduce the externalisation of environmental liability after insolvency.

Therefore, with respect to the realisation of the polluter pays principle, and the internalisation of environmental liability, China should look to adopt dual measures, for example, by way of a reform of EBL and the consolidation of financial assurance. The next chapter will provide a conclusion for this thesis.

Chapter 8

Conclusion

Within the context of China's Enterprises Bankruptcy Law (EBL), this thesis provides a robust solution to realise the internalisation of environmental liabilities in insolvency cases.

The analysis in this research begins with the conflict between Chinese environmental legislation and EBL. The polluter pays principle has been implemented in several pieces of Chinese environmental legislation, such as the Environmental Protection Law 2014, the Soil Pollution Prevention and Control Law 2018, and others. The purpose of the polluter pays principle is that those who produce pollution should bear the cost of their obligations in order to prevent damage to human health or the environment. However, the environmental liability is not mentioned in the EBL. The environmental liability has been treated as an unsecured non-preferential claim in insolvency cases, which leads to the externalisation of environmental liability, i.e. the public funds assume the environmental liability of the insolvent polluter.

The importance of the research conducted in this thesis is in two parts. Firstly, the environmental liability of insolvent polluters has been discussed by a small group of Chinese scholars, but their discussions have mostly focused on theoretical aspects and lacked analysis of relevant measures. Furthermore, financial assurance as a legal tool to address the externalisation of environmental costs has been widely practised around the world, but in China it is still in its infancy and there is a gap in the relevant legislation. This may be due to the fact that both bankruptcy law and environmental law have a relatively short history of development in China compared to many mature jurisdictions.

The central research question addressed in this thesis was - how should Chinese law mitigate the prospect of environmental liabilities being 'externalised' to society upon the insolvency of the polluter? This was supported by questions which were discussed in each of the chapters. These will be discussed before conclusions are drawn on the central research questions.

First, this thesis examined the polluter pays principle from an international perspective and the polluter pays principle aims to realise the internalisation of environmental costs. The thesis then examined how Chinese environmental legislation reflected the polluter pays principle and this was described in Chapter 2. In this chapter, it was found that the polluter pays principle is implicitly implemented in Chinese environmental legislation, which has led to a number of problems in Chinese environmental law. On the one hand, the courts play a decisive role in environmental cases. On the other hand, it is the negligence of the regulator that makes it difficult to recover environmental costs.

When environmental law meets bankruptcy law, there is a strong conflict. Over the past two decades, China's bankruptcy and environmental laws have both developed rapidly, in particular, bankruptcy law; China's first enterprises bankruptcy law (EBL) has been enacted and a modern insolvency framework has been established. However, environmental liability has been greatly challenged in EBL and the externalisation of environmental costs is very significant in insolvency proceedings. For example, public funds pay for the environmental liability of insolvent polluters. Some contaminated sites have been properly managed as a result of the insolvency of the polluter, and even companies have used the insolvency regime to transfer or legally waive their environmental liabilities.

Similar problems were found in some developed, industrialised countries, such as the UK and US. Insolvency and environmental regulatory regimes are better

developed in the UK and US than in China. The problems that China currently faces have been discussed by the courts in the UK and US for decades. In practice, on the one hand, both UK and US insolvency (bankruptcy) laws allow polluters to abandon their environmental liabilities in different ways, for example, the UK allows insolvency practitioners to disclaim environmental licences as onerous property. On the other hand, both the UK and US also have given priority to environmental liabilities in insolvency proceedings through case law. Therefore, environmental costs are dealt with in a different way in the UK and US insolvency regimes. In theory, environmental costs are recoverable by regulators in insolvency proceedings if they are given priority.

However, the case studies from Chapters 4 and 5 show that even in the UK and US, the environmental liabilities of insolvent polluters are externalised to society. Public funds are needed to pay the environmental costs of insolvent polluters, some contaminated sites are in an un-remediated state, and there is even bankruptcy fraud to escape environmental liability. It is worth noting that more companies may go insolvent as a result of the COVID-19 pandemic, which also means that the externalisation of environmental costs will be more serious in the existing legal framework.

Financial assurance as a legal tool, is widely used to internalise environmental costs in the UK and the US, as well as in many other countries. By analysing the function of financial assurance, financial assurance in the form of capital reserves is necessarily intended to internalise environmental costs. The forms of financial assurance instruments are also varied, including surety bonds, letters of credit, bonds pool, insurance, secured funds, and self-insurance and parent company guarantees. These financial assurance instruments also have different advantages and disadvantages, and in some cases they may be ineffective. Therefore, in order to ensure that financial assurance are effective, different types of financial assurances are applied for different types of environmental liabilities.

In China, the regulations on financial assurance are limited. Financial assurance only applies to mining and maritime transport, where the financial assurance is not effective in the case of mining. Furthermore, China has introduced environmental pollution insurance as a pilot in some cities. However, the development of environmental pollution insurance in China has been relatively slow, and there is a considerable gap in the environmental pollution insurance market between China and developed countries.

In the UK and US, financial assurance also does not fully internalise environmental costs. As can be seen from the case studies in Chapter 6, there are times when financial assurance cannot cover the full environmental costs, which results in environmental costs having to be covered by public funds. Moreover, in some environmental incidents, regulators have been unable to recover environmental costs due to inaccurate determinations of environmental costs resulting in ineffective financial assurance. Furthermore, in some cases, politics may influence the standard of financial assurance, and the UK and US may be affected more. Presidential governments in the US, and Cabinets in the UK, change as Presidents and Prime Ministers do. As such, in the US, the economic policies of each US President have influenced the changes observed in financial assurance standards, as has been demonstrated in the case study in Chapter 6.

Through all of the above analysis, this thesis has put forward recommendations for legal reform in China, presented here in Chapter 7. These recommendations are around two aspects, one is for Enterprises Bankruptcy Law (EBL), the other one is for establishment of financial assurance in China.

In bankruptcy law, the primary importance is to give priority to environmental liability in winding up. Environmental liability was considered to be recognised as an aspect of community liabilities. Whereas the interests of employees can be protected with Article 132 EBL. Furthermore, environmental representative

and notice provision should be considered for inclusion in a future amendment to the EBL. The lifetime of the insolvent polluter should be extended post liquidation. Lastly, Chapter 7 considered whether China should allow the regulator to impose a charge on immovable property for environmental liability.

For financial assurance, firstly, the polluter pays principle should be guidance for financial assurance in China, and the financial assurance should be sufficient, secure and available. Secondly, all potential polluters should be required to prepare financial assurance with a certain of capital reserves, and polluters should be required to assume strict liability for environmental incidents. Thirdly, the regulator should establish effective test conditions of financial assurance, maintain monitoring of the level of the operator's financial assurance, and ensure that its financial assurance is effective over time. Fourthly, during the assurance period, the regulator may increase or decrease its financial assurance depending on the operator's production technology and level of environmental pollution caused by its operation. Lastly, Chinese legislators and regulators should consider establishing an effective assessment system to determine if the operator provides sufficient, secured and available financial assurance for their future environmental obligations.

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