# What If Polluters Cannot Pay?

## *The Swedish Mining Bankruptcies – Problems and Proposals*

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### 1. Introduction

Over the last two decades, Sweden has suffered from a number of large mining businesses going bankrupt. An example is the Blaiken mine, where Scanmining, in 2000, got a permit to mine zinc, lead, and gold. Six years later, the mining started. The company was declared bankrupt after just sixteen months. Lappland Goldminers bought the mine but did not even manage to begin mining before it was declared bankrupt. The companies have left behind large open pits and thousands of tonnes of mine waste with no plan to deal with it. Instead, water has continued to flow through the mine area, leaking high levels of zinc into a nearby lake – causing severe environmental damage. The Blaiken mine is, unfortunately, not a one-of-a-kind case. According to the Swedish Environmental Protection Agency, as many as 324 contaminated mining sites in Sweden are classified as "very high or high risk" to human health and the environment.[1]

There is an extensive set of regulations on mining, both on the EU and national level. Operators of mines shall take measures necessary to prevent environmental damage. If damage nevertheless occurs, operators are obliged to remedy it according to the Swedish Environmental Act,[2] which, in part, is an implementation of the Environmental Liability Directive.[3] The directive and the European Union's environmental policy are based on the principle that the polluter should pay.[4] However, in the vast majority of cases, such as Blaiken, there is no money left in the businesses to mitigate environmental harm and remedy environmental damage. The polluter cannot pay, which short-circuits the environmental liability system. You could say that the environment has gone bankrupt.

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1 See SOU [Swedish Government Official Reports] 2018:59 pp. 85–89; Naturvårdsverket och Sveriges geologiska undersöknings skrivelse (2017a), Förslag till strategi för hantering av gruvavfall, NV-03195-16, SGU-311-888/2016, p. 44 and pp. 84–85; "Här är gruvorna som förorenar Sverige", DN.se 2022-06-12 (last accessed 15 June 2024).

2 See Chapter 2 § 8 and Chapter 10 Environmental Act (in Swe: miljöbalk (1998:808)).

3 Full title: 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.

4 See Art. 191 Treaty on the Functioning of the European Union.

This article aims to explore and propose solutions that ensure that the polluter can pay, even if it goes bankrupt. We will use the Swedish mining industry and its regulation, which is mainly based on EU law, as a case study. We will start by providing an environmental background to identify typical environmental actions that require funding to prevent environmental hazards and to remediate the environment in case a mining company goes bankrupt. In this section, we will also delve into the polluter pays principle to explore how the polluter can, in principle, pay, even if it goes bankrupt. Then, we will explore solutions, focusing on priority, insurance, and security. While doing that, we will dip into Norwegian, Canadian, and American regulations as well as recommendations from the World Bank and Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Developments (IGF).[5]

## 2. Environmental Background

### *2.1 Introductory Remarks*

In Sweden, three parallel environmental liability regimes are in place to ensure that polluted sites are remedied. First and foremost, an operator of a mine must have a permit to start mining. The mining permit sets out how the mine should be operated to avoid and mitigate environmental damage and how the mining site should be remedied when it closes. Second, there is the liability mentioned above for environmental damages. Third, there are rules on environmentally hazardous activities that apply to, inter alia, storing extractive waste. We will explore the second and third liability regimes further in the section on priority. This section will focus on the permits, particularly how they are a tool for regulating how water and extractive waste should be managed. It will illustrate what kind of funding needs to be in place if a mining company goes bankrupt. This is deemed as a sufficient background to discuss solutions.

### *2.2 Permit, Water, and Extractive Waste*

Let us start with water. It is fundamental to mining in several ways, but the use of water creates significant environmental hazards. Water must be pumped out of open pits and shafts to carry out the mining operations. Water is also used in the enrichment process, which pollutes it. Afterwards, the water is purified in sedimentation ponds. However, there is a risk that these ponds will be flooded, especially at high water flows, which

5 IGF is an intergovernmental organisation that brings together over 75 countries and its goal, among other things, is to promote a sustainable mining industry.

occur during snowmelt in spring and when autumn rain falls. When flooding occurs, water must be released into adjacent streams, rivers, and lakes. To mitigate the risks of polluted water being released into nearby water courses, the mining company needs to control the water levels in ponds, open pits, and shafts, which is done, for example, by pumping. Furthermore, the water quality needs to be tested continuously to ensure that the water released from the ponds is up to environmental standards.[6]

The permit regulates the maximum levels of, for example, sulphate that the released water can contain, under the forms of flooding that can occur (or rather what measures must be taken to avoid flooding) and how continuous dam safety work must be maintained. The requirements follow from the Environmental Act and suppliant ordinances,[7] which, in part, are an implementation of the EU Water Framework Directive,[8] and the Directive Setting Environmental Quality Standards in the Field of Water Policy.[9] Operating these systems is vital to avoid environmental damage but also expensive. In the *Blaiken* case, the costs exceeded €100,000 per month.[10]

Let us move on to extractive waste. In 2020 alone, the Swedish mining industry generated nearly 120 million tonnes of extractive waste, which was over 75% of the total waste produced in Sweden that year.[11] The extractive waste mainly consists of blasted grey rock, and the environmental hazards of the waste depend on the type of ore being mined. Sulphide ores, from which gold, silver, copper, lead, and zinc can be extracted, can cause severe environmental damage. In these cases, the remediation aims to avoid oxidation and weathering, which occurs if the ore comes into contact with water and oxygen.[12]

Post-processing of mining waste can be done in different ways. The Geological Survey of Sweden[13] recommends covering the extractive waste with a two-meter layer of

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6 See for example "Varför vi pumpar ut vatten", kaunisiron.se (last accessed 15 June 2024); "Med vatten och dammar i fokus", lkab.com (last accessed 15 June 2024); Swemin (2021), Gruvbranschens riktlinjer för dammsäkerhet, GruvRIDAS.

7 See, for example, Chapter 2, Chapter 5, Chapter 11 §§ 24–26, Chapter 22 § 25, and Chapter 26 §§ 19–19a of the Environmental Act; Ordinance on Dam Safety (in Swe: förordning (2014:214) om dammsäkerhet); Ordinance on Extractive Waste (in Swe: förordning (2013:319) om utvinningsavfall); Ordinance on Operators' Self-Checks (in Swe: Förordning (1998:901) om verksamhetsutövares egenkontroll).

8 Full title: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

9 Full title: Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy.

10 See SOU 2018:59 p. 87.

11 See "Uppkommet avfall", scb.se (last accessed 15 June 2024).

12 See SOU 2018:59 pp. 45–53; Naturvårdsverket och Sveriges geologiska undersöknings skrivelse (2017b), Kartläggning av kostnader för hantering av gruvavfall och för efterbehandling av gruvverksamhet, NV-03195-16, SGU-311-888/2016, pp. 10–13 and pp. 14–18; Naturvårdsverket och Sveriges geologiska undersöknings skrivelse (2017a), supra note 1, pp. 90–101 and pp. 102–112.

13 The Geological Survey of Sweden (in Swe: Sveriges geologiska undersökning) is the government authority responsible for issues relating to bedrock, soil, and groundwater in Sweden.

moraine. The cost has varied greatly, depending on whether the correct type of moraine was available nearby, ranging from €2,50 per square meter to €25. €2,50 may seem low, but the post-processing costs exceeded €2 million in that case.[14]

Every operator needs a waste management plan to obtain a permit. The plan must state how the extraction waste will be handled and how the rehabilitation will take place. It must also contain a plan for closure, including rehabilitation, after-closure procedures, and monitoring, as prescribed in Chapter 22, § 1 of the Environmental Act and the Ordinance on Extractive Waste. These, in turn, are an implementation of the Extractive Waste Directive.

The environmental hazards associated with water use and the management of extractive waste highlight the need for both short-term and long-term measures to prevent environmental hazards and remediate the environment. The holder of the permit is responsible for taking these actions. If these actions are not carried out, the supervisory authority can issue injunctions and necessary prohibitions to ensure compliance with the permit, as stipulated in Chapter 26 § 9 of the Environmental Act. The authority can also execute a decision at the permit holder's expense, according to Chapter 26 § 17 of the same act. This transposes the actions into monetary claims. But what if the permit holder goes bankrupt? Who should pay, then? Let us delve into the polluter pays principle to answer that question and to further explore the normative basis of environmental claims.

### *2.3 The Polluter Pays Principle*

The polluter pays principle can be traced back to the work of the English economist A. C. Pigou. Pigou was active in the early twentieth century when Britain had undergone unparalleled industrial growth over the previous sixty years, increasing the country's gross domestic product substantially. But industrialisation had also destroyed parts of the British idyll: industries and coal mines had marred deep valleys and high hills in shades of green. It was a theme that Pigou took up in his texts. He pointed out that the market did not consider these "disservices"[15] (later called externalities) in pricing. If, for example, manufacturer A were to sell an item produced in one of her factories to B, A did not have to take responsibility when someone other than A and B was affected by this transaction, such as a neighbour and his living environment. In this way, the prosperity of the individual industrial owner benefited at the expense of the neighbour's and, in the end, society's prosperity. Pigou found that the market had failed in that respect

14 See SOU 2018:59 pp. 45–53; Naturvårdsverket och Sveriges geologiska undersöknings skrivelse (2017b), supra note 12, pp. 45–63.

15 See Pigou, A. C. (1912), Wealth and Welfare, p. 158.

and that the government had to intervene. He argued that this problem could be solved through taxes. The externalities could be *internalised* in the business through taxes.[16]

Environmental lawyers later picked up the idea, and the polluter pays principle builds on the notion of internalisation. However, the primary vehicle for internalisation has not been taxes but environmental standards and liability regimes for environmental damages. For example, suppose a factory that produces goods discharges dirty water into a river. In that case, the cost of taking care of the externalities should, according to the principle, be internalised in the business. Otherwise, the product's price will not reflect the actual manufacturing cost, and the seller and buyer may prosper at the expense of the environment. The principle that the polluter should pay is thus a *cost allocation norm*, which has its basis in Pigou's thinking.[17]

Given this background, the question raised earlier – should the polluter pay even if it goes bankrupt – can be rephrased and specified as follows: should the internalisation of costs also occur in the event of the polluter's bankruptcy?

In contrast, society generally tolerates companies taking business risks that can lead to bankruptcy in the future; a credit provider, such as a bank, bases its business on managing and pricing such risks. The credit provider's business is based on assuming a specific proportion of the risk that the debtor's business will not develop as planned.

If we return to the *Blaiken* case, the bankruptcies were caused by overestimating profitability, underestimating environmental consequences, and problems with ore beneficiation.[18] These are standard business risks, and in a market economy, we tolerate that these risks, in part, are carried by, inter alia, a credit provider. In a sense, they are externalised to the credit provider. However, a claim to a credit provider is not fully comparable to an environmental claim. According to the polluter pays principle, the internalisation of environmental costs should be complete. Hence, it is unacceptable that some business risks are externalised, resulting in unfulfilled environmental claims.

There are risks involved in setting up a mining company. The mining sector suffers from volatile commodity prices. For example, during the last decade, the cost of zinc has varied between €1,400 and €4,000 per tonne,[19] which makes it hard to start and

16 See Pigou, A. C. (1912), supra note 15, pp. 7–8; Pigou, A. C. (1932), The Economics of Welfare, 4th ed., pp. 172–203. See also Kumekawa, I. (2017), The First Serious Optimist, A.C. Pigou and the Birth of Welfare Economics, pp. 74–78; Collard, D. (2011), Generations of Economists, pp. 20–21; Aslanbeigui, N. & Oakes, G. (2015), Arthur Cecil Pigou, pp. 70–72.

17 See for example De Sadeleer, N. (2020), Environmental Principles, From Political Slogans to Legal Rules, 2nd ed., pp. 31–33, pp. 42–46, and pp. 62–80; Bugge, H. C. (2009), The polluter pays principle: dilemmas of justice in national and international contexts, Ebbesson, J. & Okowa, P. (Eds.), Environmental law and justice in context, pp. 411–422; Beyerlin, U. & Marauhn, T. (2011), International Environmental Law, pp. 58–59.

18 See SOU 2018:59 pp. 86–87.

19 "Commodity Prices", indexmundi.com (last accessed 15 June 2024).