

Chile's environmental momentum: ISO 14001 and the large-scale mining industry – Case studies from the state and private sector

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Received 27 November 2003; received in revised form 26 May 2004; accepted 27 May 2004
Available online 26 April 2005

Abstract

Since Chile's return to democratic government in 1990, the environment has taken on a greater significance in policy making activities. This article examines the progress Chile has made in this area with particular reference to the large-scale mining sector and the overall environmental performance of its environmental management systems (EMSs). Many large-scale mines operating in Chile have already attained ISO 14001 certification, and those that have not, are either working towards this or have an alternative system in place. Evidence of improving environmental performance is presented, and many of the challenges which lie ahead for the country and its mining industry are highlighted.

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Keywords: ISO 14001; Chile; Mining; Environmental management systems (EMSs)

1. Introduction

The importance of mining in Chile cannot be overstated. During the last decade, the greatest contribution to export revenues was mining. In the period 1990–2002, Chile exported a total of US\$188.1 billion, of which, large-scale mines were responsible for 43%. In 2002, total exports from mining amounted to US\$7 billion, representing 39% of US\$18 billion generated from the entire country's exports [1]. In addition to exports, mining contributes to education and training, health, employment, and has been responsible for many infrastructure improvements.

The counter side to this is the sometimes unquantifiable environmental consequences of mining activities,

and the fact that the minerals extracted are non-renewable natural resources. Managing the balance between prudent use of natural resources and irresponsible exploitation is a challenging task for both governments and mining companies. The former have to weight the advantages that come with permitting large projects, including employment and revenue generation, against the realities of natural resource depletion and potential environmental damage. Companies must develop viable projects that produce a return for their shareholders, whilst demonstrating to all stakeholders their moral integrity. With the speed of present day communications, any mining disaster, inappropriate project or suggestion of exploitation of a minority group, will attract media attention. The three key areas of corporate environmental risk, legal, business and public must be appropriately addressed for all projects, no matter how remote, hostile or underdeveloped the location. Demonstrating a history of corporate environmental responsibility is an asset when soliciting

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approval for new ventures. Certification to an internationally accredited environmental management system is one way of demonstrating that a company takes its responsibilities seriously.

2. Environmental management systems and the mining industry

Environmental management systems (EMSs) are designed to help companies to manage their environmental responsibilities and liabilities. This is only possible with complete cooperation of the management and workforce, and for each person to accept and understand exactly what this means. Financial audits and management systems are now accepted as a regular part of business, and in the last decade, many companies began carrying out environmental audits and producing environmental reports. EMSs link these audits with other management processes, including the identification of areas that require further investigation, legal requirements, and the development of procedures and reporting processes such that environmental performance is improved overall.

In the early 1990s, the debate about EMSs was high on the agenda with the development of the British Standard BS7750, the European Management and Auditing Scheme (EMAS) and the subsequent development of the ISO 14000 standards. In this context, the chemical industry had already been through a major self-evaluation process and had made important changes. Historically, this sector had been viewed as one that suffered from safety, health and environmental concerns due to the nature of the materials manufactured, large-scale production, poor management, and installations situated near inhabited areas. Following a number of disasters, including Bhopal and Love Canal, it became clear that if this perception was not changed, regulations would be imposed over which the industry had no control. A group of industrial leaders therefore devised the 'Responsible Care' management system.

The key lesson to be learned from Responsible Care is that it convinced authorities that the industry could self-regulate: an industry with a pro-active, motivated management would perform without new regulations being imposed upon it. The onus of proof of a changing attitude would be on the industry, not the regulating body. This lesson has clear implications for the mining industry; increased voluntary efforts towards development of an industry EMS may well pay dividends in helping to shift the management pendulum from regulatory control to industry self-regulation.

In all parts of the world where mining has traditionally had major representation, it remains an industry of high significance upon which many sectors of the

national economy are dependent. Investment in mining projects will continue to support national development programmes with the generation of much-needed employment, income and access to foreign currency. In Stephen Foster's *Mining and Environmental Management* [2], the argument is put forward that environmental management in the industry should be developed with due regard to the significance of the sector in terms of the global economy. Issues relating to sustainability should be addressed with the full knowledge of the environmental and socioeconomic effects that could follow a decline in mining activity, which would inevitably result from the establishment of unrealistic or overambitious environmental legislation.

In 1993, Coopers and Lybrand conducted a survey of several major Canadian mining companies to examine the presence, completeness and effectiveness of an EMS. As many Canadian mining companies have an interest in Chile, their attitudes could have an important influence on the perception of the industry in that country. The results of the survey are as follows:

1. Most companies had developed an environmental policy and measured their environmental performance against this policy on a regular basis.
2. Communications were still not effective, especially in conveying information to stakeholders. Communication about environmental intent was generally much better with employees.
3. Environmental audits were conducted in most companies, either annually or bi-annually. It was also acknowledged that some of these audits were only reviews.
4. Many companies thought they had identified all key environmental risks faced by their business but many risks had been overlooked.
5. Many executive environmental positions had been created in these companies since 1986. It was accepted that these executives had strong technical skills but needed a greater awareness of management systems.
6. Many companies had focused on the development of codes of conduct, but these had not been applied in a consistent manner.

The lessons of other industries, and the willingness of the regulatory community to accept self-assessment, implied that an EMS could go a long way towards ensuring that the mining industry no longer mounts well-intentioned reactions to policy, but rather anticipates and pre-empts many issues before they become real adversaries [3].

One of the initial misconceptions about ISO 14001 was that improvement in environmental performance would be achieved through prescriptive measures (e.g. dictating exact levels of emissions or discharges to be

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