Foreword

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The aluminum industry is relatively young, but from its inception in the second half of the nineteenth century its vision has been one of long-term sustainability. Its products are costly and resource intensive to produce but have the potential to be employed in valuable, durable, energy-saving applications and to be recycled at the end of life, making the material an almost infinite resource. Its production facilities are capital intensive and are constructed to be in operation for periods measured in decades (and in the case of some, over a century). It has built and sustained communities where it operates and where its products are used and recycled. Thus, it is critical for workers' (and consumers') health and safety to form an integrated part of the aluminum business.

Healthy, safe, productive workers and communities make good business sense for an industry that has the potential to employ generations of families and whose products are increasingly demanded by society. Work-related injuries and illnesses are preventable, and the ultimate goal to eliminate accidents with lost-time injuries is an aspiration that forms the core of the aluminum industry's sustainability strategy.

The industry, from bauxite mining to recycling, through product fabrication and use, has greatly evolved from its early days, when society hailed aluminum as the "magic metal." Along with changing societal norms, concerted efforts to understand how the extraction and refining of bauxite affect the environment and communities around facilities have led to more sustainable mining and processing, including benchmark land rehabilitation practices.

Similarly, in the process of smelting our metal, we had to identify the possible effects on workers presented by a range of technologies. Dealing with the evident but preventable safety hazards that can result in burns and musculoskeletal injuries was only one component. The loss of a life and livelihoods among our workers motivated all to put in place standards and procedures aimed at eliminating accidents. Great strides were made and the industry shared and continues to share its best practices and learnings

both within the sector and with other manufacturing and industrial sectors.

The more difficult and more insidious health hazards called for research and the efforts of health professionals from both within and external to the industry's major companies. You can see in this publication that the efforts continue to be driven by the very human desire to benefit from these activities that produce a metal critical to an improving quality of life. On more than one occasion in my own career, I witnessed aluminum company CEOs place the emphasis on not just their employees' safety but on doing all that could be done to answer the questions around emissions and health impacts for all workers in self-evident hazardous environments: settings where chemical processes, liquid metal, gaseous and particulate emissions, machines galore and heavy ingots, rolls of metal, truck, and vehicular traffic all interacted with men and women going about their work.

Although these elements were intrinsic to the various perimeter systems, there raged another debate outside plant gates and in the community at large. This related to the sustainability of our industry in a world increasingly sensitive to issues such as land degradation, effluent pollution, greenhouse gas emissions, and social impacts. The industry and its national and international associations did not remain static. Instead, CEOs were strategic in responding to these concerns, drawing on rich lessons from past practices through which companies had successfully dealt with issues in earlier times.

The world of the early 1900s to even the mid twentieth century was a very different place from today. We tend to forget the issues of the day centered on creation of large industrial projects with supporting infrastructure. These were often in remote or nonindustrial settings. The investments that ensued created employment, towns in some cases, and facilities to feed the burgeoning uses of aluminum in aerospace, automotive, and construction applications, and in the food, beverage, and pharmaceuticals sectors among many. As the industry evolved, concerns about health and environmental impacts came to the fore just as technology and new standards on health and safety added to the issues facing investors, managers, employees, contractors, suppliers, customers, and communities.

This is our history. The present state of play on health issues, and also, to some extent, safety and environmental issues, is what this publication is all about. I recommend it to those who have an interest in assessing the state of research and current knowledge. Ours is a history of continual improvement on health and related issues; of ongoing effort to reach that state of consistency in the application of standards that ensures that every employee in the industry can earn and contribute while expecting to return home to their family and loved ones in good health.

There is little doubt, looking at the statistics, that over years of dedicated hard work by employees and managers we have improved in reducing accidents and illness and mitigating or eliminating environmental impacts. It is thanks to the continued efforts of many that we will one day not only meet the aspiration to eliminate workplace illness and injury, but also improve the wellness of our employees, our workers, their families, and communities.

Mr Dan Gagnier is currently Chairman of the International Institute for Sustainable Development (IISD) and was formerly Chair of the International Organization for Standardization's technical committee on Environmental Management (ISO/TC 207).

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He was instrumental in the creation and development of the International Aluminium Institute's Aluminium for Future Generations sustainability initiative that comprises voluntary, quantified EHS improvement objectives and annual, data-based measurement and reporting of the sector's performance against them.

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