

Introduction

*Jan-Dirk Seiler-Hausmann, Christa Liedtke
and Ernst Ulrich von Weizsäcker*

Sustainable enterprises are companies that manufacture products and provide services according to certain economic, environmental and social standards. So far, no definition has been set up to measure sustainable performance in companies, and in fact sustainable companies are constantly seeking to improve their performance. This book aims to clarify what sustainable companies are. Our choice of title, *Eco-efficiency and Beyond*, shows that, while the concept of eco-efficiency is a starting point that some companies may not yet have reached, others are already taking their initiatives much further.

As early as 1997, the Düsseldorf Trade Fair decided to incorporate eco-efficiency into the programme of the trade fair, making a term not often heard at that time in Germany the topic of in-depth debate at one of the biggest environmental technology fairs. Reading the signs of the time, the Düsseldorf Fair asked the Wuppertal Institute to organise the First International Eco-Efficiency Conference in 1998, and again in 1999, when the Wuppertal Institute joined forces with the World Business Council for Sustainable Development (WBCSD) to organise a second eco-efficiency conference held in 2001 and called 'From Eco-Efficiency to Overall Sustainability in Enterprises'. Only three years after the first conference, the idea of eco-efficiency was established well enough to be considered a starting point for further progress, toward that new, much-touted and often only vaguely defined goal of sustainability. This is where Greenleaf Publishing stepped in and asked the Wuppertal Institute to document developments in the book you are now holding in your hands.

Eco-efficiency as a way to reach sustainable development was brought forward no less than ten years ago by the Business Council for Sustainable Development (BCSD)—now WBCSD. During preparations for the Second United Nations Conference on Environment and Development in 1992 and the book *Changing Course* (Schmidheiny 1992), the WBCSD helped to focus attention on the concept of eco-

efficiency. However, despite these positive beginnings, there has been little significant growth in public or political awareness of the concept outside interested groups of environmentalists, economists and business people. More than 150 leading multinational enterprises have joined the WBCSD in order to implement sustainable development by means of the eco-efficiency approach. But for the vast majority the concept is unknown.

So, what is eco-efficiency? Eco-efficiency is achieved when goods and services satisfy human needs, increase the quality of life at competitive prices and when environmental impacts and resource intensity are decreased to a degree that keeps them within the limits of Earth's expected carrying capacity.

Eco-efficiency is a management approach that allows enterprises to carry out environmental protection measures from a market-oriented point of view. Eco-efficiency shows that ecology and economy do not need to be a contradiction. On the contrary, when they are working together they present a gain for enterprises. The motto is to produce more with less. This is not sustainable development *in toto*, which goes further in that it also includes social considerations. The concept of 'corporate social responsibility' (CSR) integrates this aspect.

Eco-efficiency is being applied as a yardstick by financial institutions on the stock market. The Dow Jones Sustainability Index, which aims to list the most sustainable enterprises for stakeholders, includes companies, such as Badische Anilin- & Soda-Fabrik AG (BASF), Climatex, Henkel and Matsushita/Panasonic, that are implementing eco-efficiency measures. A number of business and political initiatives have also been formed. In December 2001, the German government suggested a national sustainability strategy to measure Germany's sustainable development. While this is not yet an accepted political target or even law, it shows that politics is moving toward the kind of binding aim for increasing efficiency as proposed by von Weizsäcker *et al.* (1997). Indicators and well-defined goals help to explain what sustainable development means; the ideas floated in the political sphere are about to be carried into the field of business, where abstract goals turn into solid facts.

Eco-Efficiency and Beyond approaches its subject from five different directions. If only two of the five continents are represented, however, that is because the book took shape in the context of German-Japanese research co-operation. The insights gained from juxtaposing German and Japanese approaches in the light of the standpoints concentrated in international organisations make us hope that this book will be only one of many to bring widely different cultures together. For, notwithstanding all the clichés about the loss of cultural diversity, different people still do have very different backgrounds, and it often takes a change of scene or the presence of a stranger to make us aware of what we take for granted, and of the deeper structures underlying surface similarity. Communication is the answer, and we are deeply grateful to our research partners at home and abroad for putting and pondering hundreds of questions.

The first chapters of the present book examines the framework set by globalisation, underlining the emerging importance of civil-society initiatives to balance the power of state and economy identified by classical political science. Globalisation has increased not only global trade links but also the awareness of our globe as one single system where, in the words of Edward N. Lorenz, the flap of a butterfly's

wings in Brazil may set off a tornado in Texas. Sustainable development requires an economy adjusted to Earth's carrying capacity, with benefits for both present and future generations. Only intense innovation in technology, consumer behaviour, social relations and policy frameworks can make this undertaking successful.

How do individual nations shape the framework for sustainability? If innovation is to be steered toward sustainable development, policy-makers need to offer companies stable and beneficial frameworks for their planning decisions. The book then moves on to explore the political conditions for sustainability in Germany. Law-makers involved in shaping German sustainable policy discuss its development, and two business non-governmental organisations (NGOs) shed a light on the practical implications.

We then take the question of workability even farther, in presenting management tools that actually enable managers to measure development toward sustainable and therefore profitable business practices. Organisations such as the United Nations (UN), the Organisation for Economic Co-operation and Development (OECD) and the European Commission have introduced sustainability targets and indicators at the macro, that is, economic, level but concepts for practical implementation such as cleaner production, Factor 4/10, eco-efficiency, environmental and social accounting, corporate citizenship and corporate social responsibility have also been proposed. Chemical giant BASF here presents its sustainable decision-making tool, while Katsuhiko Kokubu and Michiyasu Nakajima discuss the various sustainable accounting initiatives emerging in Japan. Two consulting agencies describe why and how they seek to push their clients toward sustainability.

Some companies have already made significant progress. This book also presents companies on their way to sustainability—in industries ranging from upholstery fabrics to electronic appliances, adhesives, surface technologies and washing powders. While current practice predominantly focuses on short-term product cycles and high sales margins, short product cycles have proved to overtax management and product development, with profit margins getting smaller and clients becoming more and more dissatisfied. An individualisation of products or services—made-to-measure rather than mass-production—is a possible model for a future that uses human and natural resources more efficiently and orients the creation of wealth on human needs. The enterprises making themselves heard here gain their profits from intelligent, innovative services, from the use phase and reintegration, re-use, recycling, treatment and further use of resources or product parts.

Whatever form economic development takes, the financial services sector will be closely involved in the allocation of capital on the macro and micro levels. Decisions made at financial institutions have an enormous influence on individual entrepreneurs and their attitude toward the idea of sustainable development, so they are crucial in determining whether an economy will succeed in following a sustainable path. The final four chapters of the book discuss developments in the area of banks and insurance companies.

Only a few weeks before Greenleaf suggested the title *Eco-Efficiency and Beyond*, one of my colleagues at the Institute for Global Environmental Strategies (IGES) had lent me his video of *Toy Story* as a first step towards an initiation in Japanese

animated movies. Those of you who know the film will understand that my first association was the hero's battle cry, 'To infinity and beyond!' The toy spaceman finally comes to terms with the fact that he is a toy and cannot really fly, but he learns to use the resources he does have and to rely on his fellow creatures in saving their own little world. In a similar vein, just citing eco-efficiency and sustainability will not lend us wings. These concepts need to be filled with less abstract meaning before they can take off. We will have to examine what we have to work on, whom we need to convince and who is there to help us.

The aim of *Eco-Efficiency and Beyond* is to trace developments so far and outline the concept's potential for the future. The great challenge we face now is the step beyond the factory gates, from eco-efficient production to sustainable products and services. In the last century, companies made their production lines more and more efficient, so that, today, emissions are ceasing to be a problem linked exclusively to manufacturing locations. At the same time, the emissions produced during the lifetime of products and services are increasing rapidly in a negative 'rebound' effect that policies, companies and consumers will have to address.