



2010

The Federation of Finnish Technology Industries

Environmental Principles

Technology
Industries

Foreword

The Federation of Finnish Technology Industries aims to strengthen the competitiveness of technology companies by increasing their environmental know-how. These environmental principles highlight the environmental focus areas of the technology industry and specify its common operating principles.

The Federation of Finnish Technology Industries published its first environmental principles 'Ympäristövastuu osana teknologiateollisuuden kestävää liiketoimintaa' (Environmental responsibility as part of sustainable business practices in the technology industry) in 2004. As a result of climate change, environmental problems and greater environmental awareness, environmental issues play an increasingly important role in society. This change has a direct or indirect impact on all enterprises. It is important to take environmental issues into account in all operations.

The new environmental principles encourage technology companies to act as forerunners in the development of environmentally sound technologies. The Finnish technology industry has an impact on global eco-efficiency by manufacturing advanced products and services and developing innovative technologies for tackling environmental problems. Environmental know-how plays a key role in boosting the competitiveness of the industry.

We need shared principles that direct these operations in order to secure the preconditions for future operations. The environmental principles of the Federation of Finnish Technology Industries specify the areas in which technology enterprises have the greatest potential to improve their environmental competitiveness while ensuring their future operating preconditions. Furthermore, the principles introduce environmental topics to the conversation underway with various sectors and other interest groups, such as legislators.

The Federation of Finnish Technology Industries

The main Finnish technology industries are the electronics and electrotechnical industry, mechanical engineering, the metals industry and information technology. The technology sector is responsible for 75 % of all commercial research and development investments and 60 % of Finland's total exports, with over 70 % of net sales generated in the global markets. The Federation of Finnish Technology Industries has more than 1,400 member companies, covering almost 90 % of the entire Finnish technology industry.

Introduction

Industry's operating environment is changing significantly due to the challenges posed by global environmental problems and climate change. Industry is facing extensive demands that will determine what kinds of products and services can be produced in the future. As a result, the significance of monitoring and anticipating changes in the operating environment is being given further emphasis. The technology industry must identify products and services with a future market. Environmental know-how is essential, and environmental solutions are the business operations of the future.

The Finnish industry has been investing for decades in reducing the environmental impacts of products and operations. In the consideration of environmental issues, the focus has shifted from own operations to the entire supply chain. In the future, the technology industry's greatest potential lies in the reduction of environmental impacts throughout the value chain.

However, this point of departure is good for technology industry companies. Finnish technology companies have excellent expertise in the development of environmental solutions and energy technologies. Products, systems and services in the technology industry have an impact on the functioning and well-being of the whole of society. They can be used to significantly reduce environmental impacts not only in our own industry, but also in other sectors. This will grant us continued access in the future to the delivery of products, systems and services to the market.

The technology industry now has a unique opportunity. Future competitive advantage is based on the ability to utilise the solutions of the technology industry in an environmentally sound way. In this, key factors include the speed of reacting to new challenges, open innovation activities, and seamless co-operation crossing traditional boundaries between various sections of the value chain.



PHOTO: KUUSAKOSKI



Our technological development is based on life cycle thinking

In the operating environment of the future, the life cycle of products and their overall impact during their life cycle will be emphasised over the environmental impacts of operations.

A holistic approach is necessary, for example, in order to reduce greenhouse gas emissions in an optimal way throughout the product life cycle.

In the technology industry, the starting point for the development of products, systems and services lies in identifying their impacts during their life cycle. Solution development is based on an understanding of overall impacts. When technology is developed on the basis of life cycle thinking, we must focus on the stages of the life cycle that are essential in terms of the whole, and on the minimisation of their harmful environmental impacts. This approach will bring the most effective solutions, from the viewpoint of both the environment and business operations, to the fore.

Life cycle thinking provides opportunities to communicate with customers, consumers, suppliers, authori-

ties and other key stakeholders about the environmental impacts of various stages in the value chain. Customers and consumers are interested in the environmental impacts of end products throughout the product life cycle.

With respect to suppliers and the entire supply chain, life cycle assessment directs material choices, the use of natural resources, and the environmental impacts of the manufacture of raw materials. The focus of regulation is shifting from the environmental impacts of operations and products to reducing impacts throughout the life cycle. In addition, increasingly effective consideration of the interests of various sectors is also needed to optimize the total regulative impact, and to prevent the regulation of one activity from causing an increase in environmental impacts in another sector.



Our operations are guided by energy saving and energy efficiency

Our key development areas are energy saving and the improvement of energy efficiency. They play a large, over 50-per-cent role, in the reduction of emissions.

In most cases, energy-saving measures are productive, even over a short repayment period. Energy efficiency also brings cost savings and reduces greenhouse gas emissions.

Major reductions in greenhouse gas emissions, required in the mitigation of climate change, will revolutionise the current energy production system and energy use throughout the world. According to the international consensus, the medium global temperature must not be allowed to increase by more than two degrees Celsius. This requires an 80 per cent reduction in greenhouse gas emissions based on the 1990 level. The EU target is to reduce greenhouse gas emissions by at least 20 per cent by 2020 and by 80–90 per cent by 2050.

Energy is either directly or indirectly related to all operations of an enterprise, from raw materials to end pro-

ducts. Energy saving and energy efficiency are the key factors in both operations and products. This means a reduction in specific energy consumption, as well as the monitoring of energy efficiency and adopting the development of energy issues as part of a company's everyday operations.

In practice, energy efficiency signifies small, continuous improvements on the one hand, and revolutionary, technological innovations on the other. The national Finnish energy efficiency agreement offers enterprises a systematic way of improving their energy efficiency.

The technology industry plays a key role in providing solutions for the improvement of energy efficiency in other sectors and the whole of society. It is important to utilise these opportunities by developing new solutions in an innovative manner.



Low emissions is our basic requirement

On a global scale, climate change mitigation will increase demand for technological solutions that reduce emissions.

In addition to the mitigation of climate change, low-emission technologies aim to minimise emissions into the atmosphere, waterways and soil, and to reduce waste. Emissions reduction is fastest when measures are directed at operations that have the most emissions and which consume the most energy.

Low emissions technology is a basic requirement in solutions by Finnish technology industries. This requires

investment in the development of effective and low-emission products, systems and services and their successful introduction and entry to the market.

The change throughout the world towards lower-emission technologies is creating major opportunities for the export of new and effective technologies. Strong growth in the market can be exploited by investing in the development and introduction of technologies in Finland.



Material efficiency and sustainable use of natural resources reinforce our position as a forerunner

Material efficiency aims at competitive products and services, whose attractiveness and usability will not diminish even when material use and emissions are reduced.

Material-efficient operations save natural resources, the environment and money, and help to mitigate climate change. Costs are saved when more valuable products are manufactured from the same amount of materials. In practice, material efficiency is, therefore, part of ecological and economic efficiency.

The growth of developing economies is increasing the demand for natural resources. For this reason, material efficiency and the sustainable use of natural resources are an increasingly essential part of global environmental efficiency. With demand raising raw material prices, the sufficiency of natural resources may become as important as climate change. In many countries, water will become a critical factor in the future, as a result of diminishing supplies of clean water and the related shortages.

Efficient use of materials will not be restricted to the improvement of production methods in use, but indirect solutions, such as logistics, will also have impacts on efficiency. The design of appliances will be directed by material efficiency targets. Products will be increasingly smaller, lighter and more durable. The objective will be to optimise the use of materials throughout the product life cycle. Solutions in the recycling of materials and new material choices may achieve considerable improvements in material efficiency and the sustainable use of natural resources. Another objective is to ensure maximum efficiency in the reuse of materials already in use.



We comply with legislation and anticipate future regulations through active interaction

Our 'rules of the road' are defined by legislation and regulations. The market needs functioning regulations. Knowledge of and compliance with such regulations creates the scope for sustainable operations.

Legislation is important for enterprises because it directs social development. It can impose new requirements on business activities, and enterprises are active in forecasting such requirements.

Companies in the technology industry comply with legislation and prepare themselves for legislative amendments by anticipating new requirements. They are aware of the environmental impacts and risks posed by their operations, and of their opportunities for reducing harmful impacts.

Companies can gain competitive advantages by anticipating legislative requirements. It is particularly important to identify the boundary conditions, as well as the related opportunities, set by legislation. Networking and co-operation with various players in the promotion of key targets for the sector play a key role. Active interaction will improve the chances of legislative development focusing on issues essential to companies in the technology industry, while supporting overall positive change.



We promote environmental know-how in the value chain

In the future, requirements related to the management of environmental issues will apply to the entire value chain. This applies to both legal obligations and customers' needs.

It is important for companies to be clear about how products and services are produced and what kinds of materials have been used in them. With respect to environmental know-how, the significance of the management of the entire product life cycle, and thus of the supply chain, receives further emphasis. Responsible business operations need the support of the entire value chain in order to be successful.

In long value chains, each company is responsible for its own operations and interfaces. Producing a sufficient amount of information in the value chain for customers, suppliers and subcontractors is important in the utilisati-

on of environmental know-how. In the future, combining information on the entire value chain will be as important as being able to assess the environmental impacts of products, systems and services as a whole.

Environmental know-how is promoted as co-operation between parties to the value chain and it is every player's duty to contribute to the improvement of the value chain's eco-efficiency. Practical tools in the promotion of environmental know-how in the value chain include the harmonisation of supplier requirements and fostering good practices among players in the sector.



We ensure that the needs of customers and other stakeholders are recognised through open and active dialogue

Open and active interaction between key stakeholders is an important part of functioning in society.

Interaction helps to identify various viewpoints that must be taken into account by business operations. The views of stakeholders make environmental management issues tangible.

Technology industry companies participate in open dialogue with various stakeholders on national and international level. Continuous dialogue with stakeholders

helps a company identify the expectations of its stakeholders and enables it to use their expertise. Key stakeholders include customers, subcontractors and suppliers, public authorities, employees, owners, financing bodies, research institutes and educational establishments, clusters, and organisations.



Being an innovative, responsible forerunner ensures our operational preconditions

Environmental issues present a major challenge to the global economy. The Finnish technology industry has established itself in the development of solutions for the reduction of environmental impacts.

We have a good reputation in environmental and technology know-how. Finland has constantly been ranked one of the world's leading countries in environmental issues. Finland's functioning infrastructure and efficient operating methods also create the preconditions for operations with minimum environmental impacts.

As an innovative, responsible forerunner, we are strengthening the Finnish technology industry's brand

in the global market. This will boost the operating preconditions of enterprises while earning products, systems and services in the technology industry a place in solving environmental problems within the global economy. As a result of our environmental know-how, the Finnish technology industry can also be a success in the future.



The efficiency and low emissions of the Finnish technology industry are a global eco achievement

The Finnish technology industry has a significant impact on global eco-efficiency. It is a forerunner in low-emission technology.

Technologies and products developed in Finland help to reduce global emissions. Moreover, product manufacture in Finland is based on smaller energy investments and greenhouse gas emissions than in most of our competitive countries.

In particular, the emission efficiency of the energy- and material-intensive industry in Finland represents a global environmental achievement, which should be taken into account in the location of production. In addition to lower emissions, emission efficiency guarantees efficient operations and lower energy costs.



In conclusion

Global environmental problems and responding to them require substantial changes within all companies. Environmental know-how and technology will play a key role in conquering the environmental challenges of the future. In addition to energy and environmental technology, we will also still require an extensive array of environmentally sound products, systems and services in the electronics and electrotechnical industry, mechanical engineering, the metals industry and information technology. Common to all of these is the fact that future products and services are expected to be environmentally acceptable. Many traditional solutions can also be used as an 'environmental technology' when applied more extensively,

for example, by making processes in other sectors more effective. It is becoming increasingly clear that minimising the environmental impacts of all sectors is a basic precondition for sustainable operations.

Investment in the development of new environmental solutions has increased explosively. Although the basic setting in Finland is good, we will need a rapid change in the market, greater, more focused investments, as well as creativity in seeking new co-operation partners. Change in the market and operating methods will create new sectors and business models, while transferring investment between current and future sectors.

CONTRIBUTORS TO THE PRINCIPLES

The Working Group for Environmental Issues of the Federation of Finnish Technology Industries

Marko Vainikka, Wärtsilä Corporation, Chairman
Jorma Antson, Vaisala Group
Marko Hakovirta, Metso Corporation
Helena Kivi-Koskinen, Rautaruukki Corporation
Ilkka Kojo, Outotec Oy
Pekka Koski, Sandvik Mining and Construction Finland
Juha-Erkki Mäntyniemi, Nokia Siemens Networks
Jussi Oijala, KONE Corporation
Anu Rinkinen, GE Healthcare Finland Oy
Hannu Rintala, ABB Oy
Johan Sandell, SAS Institute Oy
Hemminki Sääksjärvi, Fujitsu Services Oy
Markus Terho, Nokia Corporation
Vesa Törölä, Boliden Harjavalta Oy
Antero Vattulainen, Kuusakoski Oy
Juha Ylimaunu, Outokumpu Oy
Pirjo Kaivos, Secretary, The Federation of Finnish Technology Industries

The Federation of Finnish Technology Industries

Mika Kapanen
Peter Malmström
Mika Nykänen
Sirpa Silander
Carina Wiik
Juha Ylä-Jääski

As invited expert

Mikael Niskala, Tofuture Oy

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We are forerunners in environmental issues

- Our technological development is based on life cycle thinking
- Our operations are guided by energy saving and energy efficiency
- Low emissions is our basic requirement
- Material efficiency and sustainable use of natural resources reinforce our position as a forerunner



Responsibility is the basis for our operations

- We comply with legislation and anticipate future regulations through active interaction
- We promote environmental know-how in the value chain
- We ensure that the needs of customers and other stakeholders are recognised through open and active dialogue



We have an impact on global eco-efficiency

- Being an innovative, responsible forerunner ensures our operational preconditions
- The efficiency and low emissions of the Finnish technology industry are a global eco achievement



The Federation of Finnish Technology Industries

Eteläranta 10, PO Box 10, 00131 Helsinki, Finland

Telephone +358 9 19 231, fax +358 9 624 462