

Integrity and transparency. What is now proved was once only imagined. Let there be work, bread, water and salt for all. Our true nationality is mankind. Countless are the world's wonders, but none more wonderful than man. The secret of joy in work is contained in one word: excellence. To know how to do something well is to enjoy it. When we see the land as a community to which we belong, we may begin to use it with love and respect. Trees are the extreme endeavour of the earth to speak to the sky. Life is a series of collisions with the future; it is not the sum of what we have been, but what we yearn to be.



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“Ten years ago, ST launched its environmental initiative and published its Decalogue: ten precise objectives that the company set itself with the aim of saving natural resources, reducing (recycling and reusing) waste, and achieving CO<sub>2</sub> neutrality, among others. Since then, awareness about sustainable development has been increasing considerably worldwide, extending the concept beyond the protection of natural resources to the impact of a corporation on all of its stakeholders.

This concept of responsibility to our partners has been embedded in our Shared Values since the company was created, and we have always claimed that there is no contradiction between the interests of shareholders and those of other stakeholders.

# “Integrity and transparency”

On the contrary, we believe that those corporations that give special care to their role as good citizens in the communities in which they operate and in society generally, not only fulfill their ethical obligation but also maximize the return to their shareholders.

This report illustrates our commitment to sustainable development, and our desire to constantly push the boundaries of our interpretation and practice of Corporate Social Responsibility. By publicizing both our major achievements and our areas for improvement, this report also illustrates two core values of the company: integrity and transparency to our partners.”

A handwritten signature in dark ink, appearing to read 'Pasquale Pistorio'. The signature is fluid and cursive, written in a professional style.

Pasquale Pistorio  
President & CEO STMicroelectronics



## Designing a sustainable future: The path ahead

ST is at a very interesting point in the evolution of its vision and strategy for sustainable development. Over the last ten years our stakeholders' focus has been mainly on our environmental impact. We are now faced with a fast pace of change in the external world, where expectations are growing with regard to social issues and ethical awareness and performance. As a company we have been aware of these challenges for many years. Our Shared Values, published in 1991, already included our objective to "contribute to the well-being of our people and of every community in which we operate, with particular emphasis on sustainable development".

Our vision is to achieve excellence in all aspects of corporate responsibility. We have done very well already in turning this vision into reality: over the years ST's commitment to the environment, as well as its spirit of responsibility to society, has earned the company considerable respect in the business world. However, the pace of change in the field of sustainable development leaves no time for complacency. We know we are facing a few challenges, which we view as opportunities to improve, the most important of which, in our opinion, being our ability to:

- **better understand the expectations of our stakeholders:** Attention to stakeholder needs forms part of our Total Quality Management culture, but it requires a new focus, more effective implementation, and probably innovative forms of engagement.
- **integrate social issues and initiatives into a robust framework:** we have a long tradition of focusing on the well-being and development of our employees, but we are still improving our approach by driving the processes that are in place effectively. As part of this process, we are working to strengthen our health & safety culture and harmonize our initiatives with local communities. We will continue to place special emphasis on the overall quality of working conditions within the company and on the systems and processes for monitoring, evaluating and constantly improving the quality of life at work.
- **enhance our supply chain management:** we need to review our relationship with our suppliers and focus on achieving more integrated partnerships with them in order to tackle sustainable development issues more effectively.

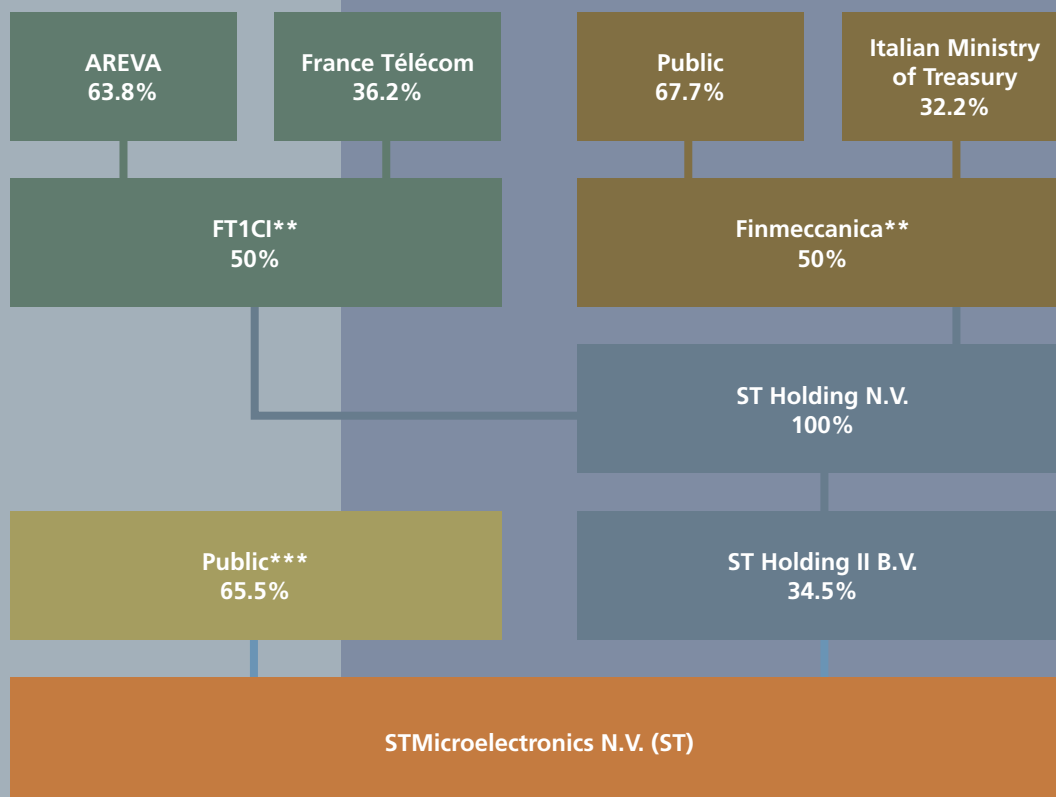
As we follow this path to excellence in corporate social responsibility we are consciously drawing on the cultural richness of our company, which brings together people who have very diverse cultural and historical backgrounds. This approach reflects the spirit with which ST was founded: to tap the genius of each of the cultures of the countries in which we are present in such a way that we can work together, with a shared 'heart and mind', towards a common goal.

## STMicroelectronics: A Profile of the Company

STMicroelectronics is a global, independent semiconductor company that designs, develops, manufactures and markets a broad range of semiconductor integrated circuits (ICs) and discrete devices. Our products are used in a wide variety of electronic applications, including telecommunications, computer systems, automotive products as well as industrial automation and smart card applications.

Registered in the Netherlands, ST is quoted on the New York Stock Exchange (as STM), on the Paris Euronext exchange, and on Milan's Borsa Italiana. The company now has close to 900 million outstanding shares, approximately 65% of which are publicly traded on the various stock exchanges. The balance of the shares is held by STMicroelectronics Holding II BV, a company whose shares are owned (50% each) by Finmeccanica (Italy) and by a French consortium including Areva and France Telecom.

### Shareholding structure\*

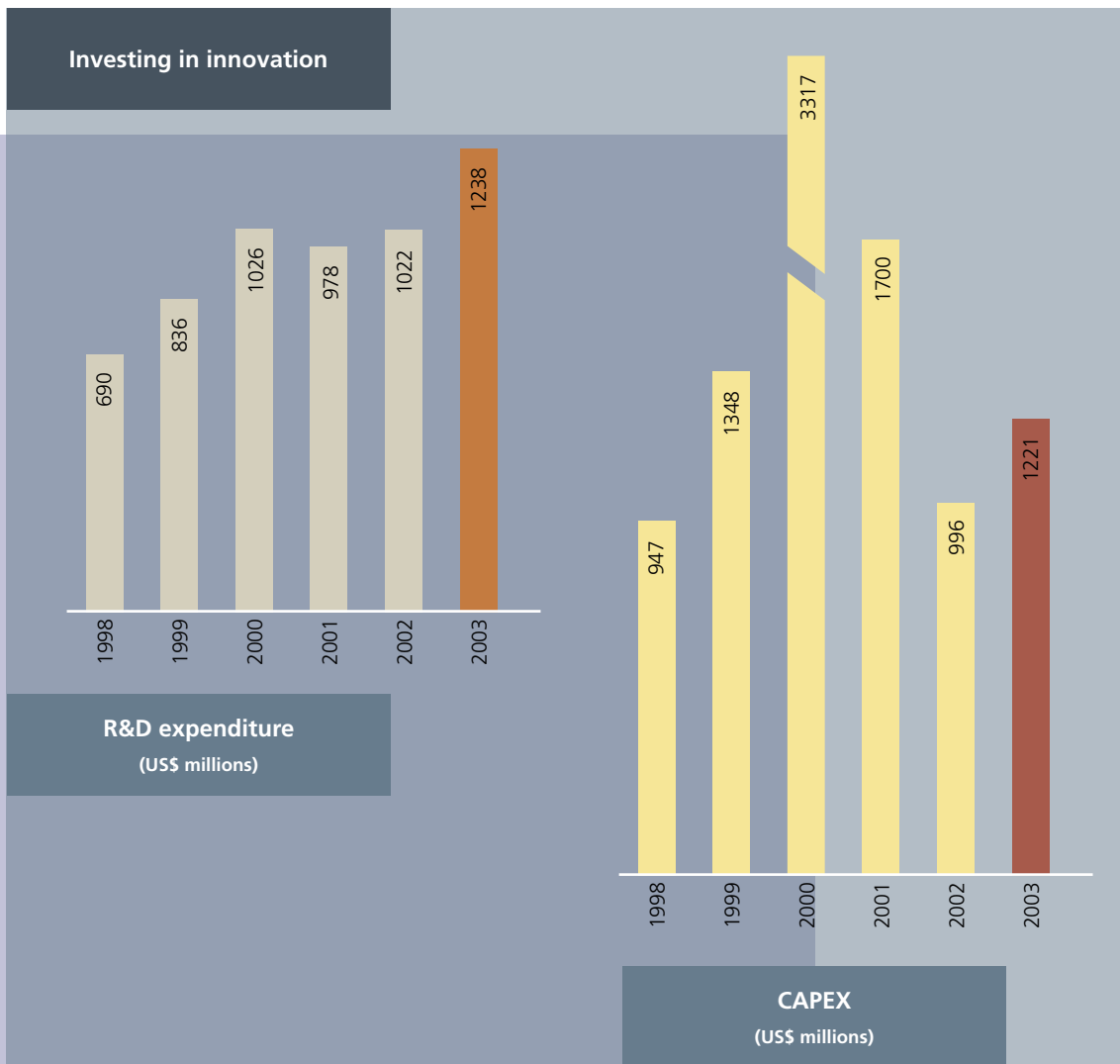


\* As of 31st December 2003

\*\* FT1CI and Finmeccanica currently share 50/50 voting rights in ST Holding N.V.

\*\*\* New York Stock Exchange, Euronext, Paris and Borsa Italiana, Milano





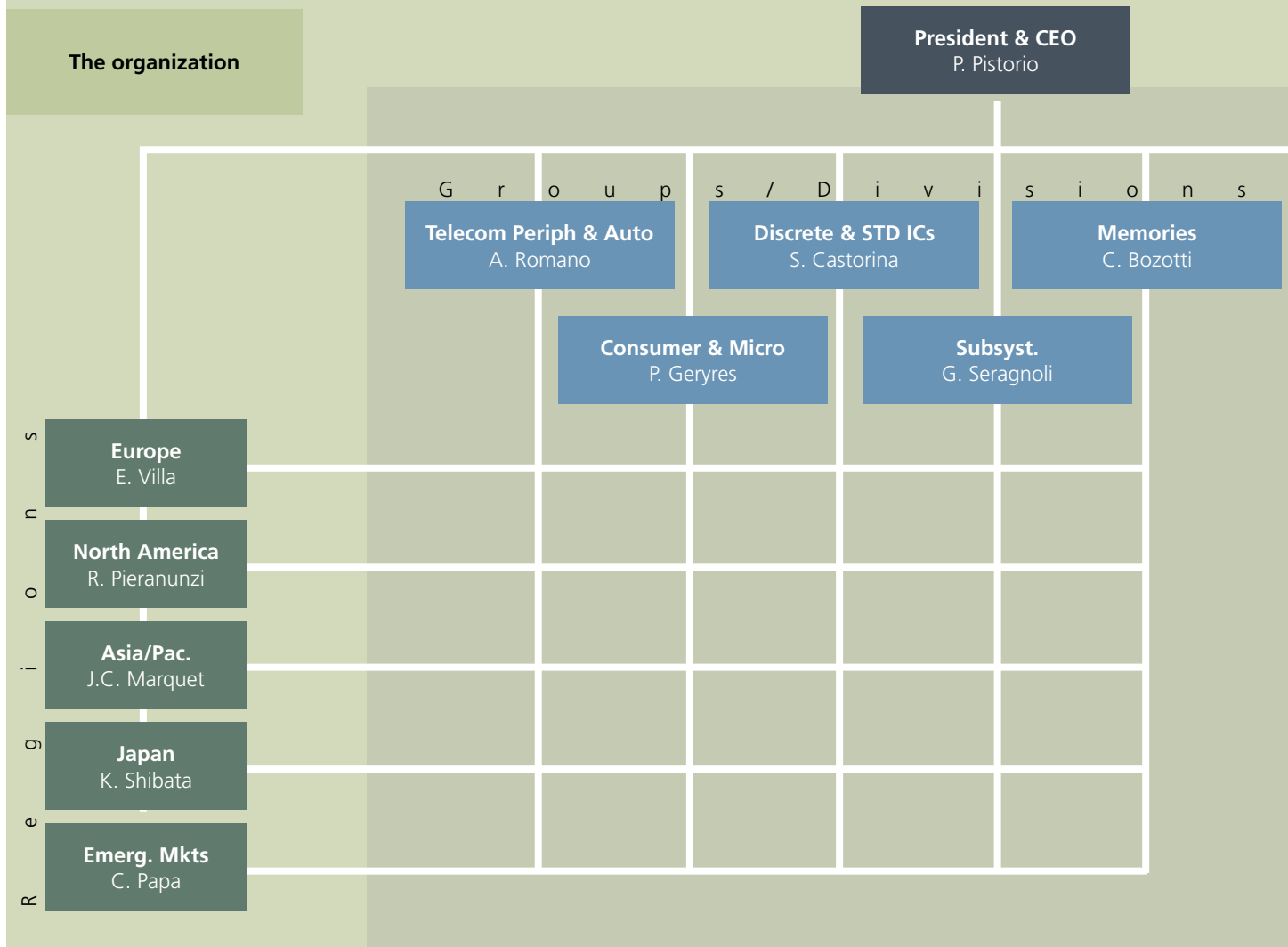
### Key figures

ST is one of the world's largest semiconductor companies. In 2003, the company's revenues were US\$7.2 billion: 44% in Asia Pacific, 28% in Europe, 14% in North America, 5% in Japan, and 9% in Emerging Markets (Eastern Europe, India, Africa, South America and the Middle East). If we look at our customers' region of origin, the split is significantly different: 45% for Europe-based customers, 29% for North America, 16% for Asia Pacific, 6% for Japan and 4% for Emerging Markets.

ST's net earnings in 2003 were US\$253 million. At the end of the year, total assets were US\$13,477 million (\$12,004 million in 2002), equity was US\$8,100 million (\$6,994 million in 2002), and total cash and equivalent securities were US\$2,998 million (\$2,564 million in 2002). Total debt in 2003 was US\$3,095 million (\$2,962 million in 2002).

In 2003 R&D expenditures were US\$1,238 million (from \$1,022 million in 2002), and capital expenditures were US\$1,221 million (from \$996 million in 2002).

See [www.st.com/company/annualreports](http://www.st.com/company/annualreports)

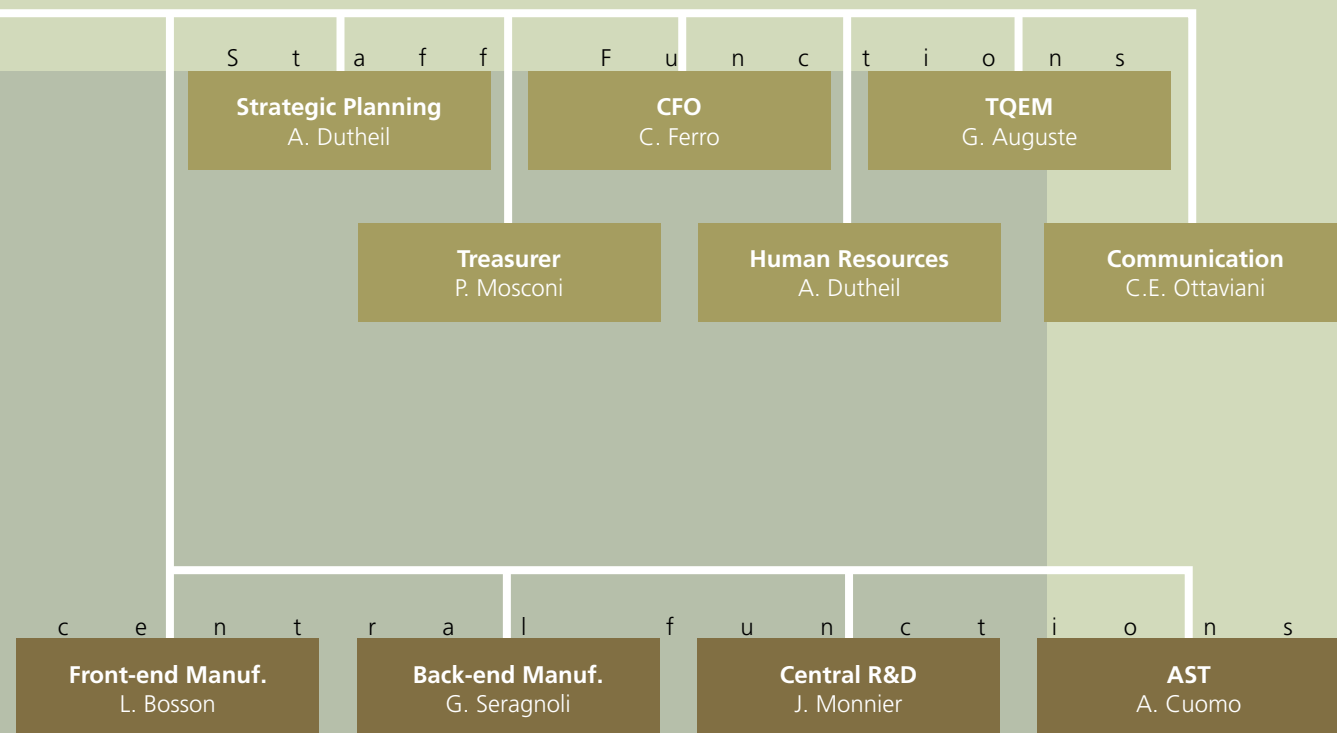


### The organization

ST is a classic 'matrix' organization, supported by staff and central functions. The rows of the matrix represent the geographical regions that are responsible for our revenues and margins. These sales and marketing areas also include design centers, which are present in the respective regions in order to better serve their customers. The columns of the matrix represent the product groups which, through their divisions, are responsible for designing and developing new products to serve our customers and to create new markets. They hold full responsibility for the profitability of each product family, and are therefore accountable for the overall financial performance of the company.

The company's corporate headquarters, as well as the headquarters for Europe and for Emerging Markets, are in Geneva. The company's US headquarters are in Carrollton (Dallas, Texas); those for Asia/Pacific are in Singapore; and Japanese operations are based in Tokyo. The company's operations include 18 manufacturing sites, 16 advanced R&D centers, 39 design and application centers, and 88 direct sales offices in 31 countries.

We place strong emphasis on decentralizing decision-making to division, marketing and manufacturing units so that decisions can be made faster and more effectively. This increases the responsibility and, consequently, the accountability, of both units and individuals.



The company is therefore composed of many virtual micro-corporations, which are integrated into the macro-corporation both through formal levels of accountability and through a company culture that creates a broader, more informal sense of responsibility.

The company currently employs over 45,000 people, split by region as follows:

#### ST Total Headcount Growth

	2002	2003
<b>Europe</b>	<b>23,200</b>	<b>24,159</b>
France	9,616	9,909
Italy	9,992	10,379
Malta	2,311	2,281
<b>Africa</b>	<b>4,877</b>	<b>4,751</b>
Morocco	4,845	4,571
<b>Americas</b>	<b>3,183</b>	<b>2,985</b>
USA	3,154	2,947
<b>Asia</b>	<b>11,881</b>	<b>13,759</b>
Singapore	4,859	5,616
Malaysia	3,992	4,045
China	1,663	2,369
India	974	1,364
	<b>43,141</b>	<b>45,654</b>

## Manufacturing sites

ST's manufacturing sites are divided into two main categories: Front End and Back End. The Front End sites produce silicon 'wafers' – thin slices of silicon ranging from 5 to 12 inches in diameter (the wider the diameter, the more advanced the technology required to produce it) – through a series of complex industrial processes that enable the silicon to transmit electronic signals. Back End sites assemble and package the individual silicon 'die' or squares by cutting them from the wafers and sealing them with wired connections into the 'package' or box that connects the chip to the electronic device it has been made for.

ST has 10 Front End and 8 Back End sites:

### Front End

Agrate, Italy  
Ang Mo Kio, Singapore  
Carrollton, Texas USA  
Castelletto, Italy  
Catania, Italy  
Crolles, France  
Phoenix, Arizona USA  
Rennes, France (undergoing closure)  
Rousset, France  
Tours, France

### Back End

Ain Sebâa, Morocco  
Bouskoura, Morocco  
Bouskoura 2000, Morocco  
Kirkop, Malta  
Muar, Malaysia  
Shenzhen, China  
Toa Payoh, Singapore  
Tuas, Singapore

## Significant events in 2003

In 2003 ST had the honor of welcoming President Jacques Chirac to open our new site in Crolles, France, where together with Motorola and Philips we have created one of the most advanced R&D centres in the world. We also developed strategic agreements, not only with our customers, which is our tradition, but also with some of our competitors: with TSMC in Crolles, with Texas Instruments to develop common chipsets in the mobile telecommunications area, and with Hynix to develop NAND flash memories.

During 2003, ST completed some significant acquisitions: Proton World International (leading smart card software company established in Belgium); Tioga Technologies (based in Israel) to strengthen our position in the area of digital subscriber line technology; Incard (based in Italy) to increase our ability to offer solutions in the smart card area; Synad Technologies (a wireless-LAN chip developer based in the UK).

In 2003 we announced our intention to reconsider and optimize our 6-inch manufacturing facilities worldwide (see 'Closure of our manufacturing site at Rennes' in the section 'Our People' for details).

## Additional information about

### STMicroelectronics

According to the most recent data from independent sources, ST is the world's leading supplier of analog Integrated Circuits (ICs), MPEG-2 decoder ICs, and ASICs/ASSPs overall. In the memory market, ST is ranked fourth in NOR Flash ICs. In application segments, ST is number one for ICs in set-top boxes; number two in smart cards, in hard disk drives, and on xDSL chips; and number three in wireless semiconductors and automotive.

The company currently offers over 3,000 main types of products to more than 1,500 customers, including Alcatel, Bosch, DaimlerChrysler, Ford, Hewlett-Packard, IBM, Motorola, Nokia, Nortel Networks, Philips, Seagate Technology, Siemens, Sony, Thomson and Western Digital. Nearly 70% of our revenues derive from differentiated products, a combination of dedicated, semi-tailored, programmable products designed to suit a specific customer or a specific application. These products have a high 'system' content and reflect the emphasis we put on 'System-on-Chip' technology, which responds to the fast-growing market for 'convergence' products.

## Our Shared Values

We strongly believe that any organization needs four key elements to be successful:

1. a mission describing the purpose of the company
2. key objectives clearly indicating where the company is going
3. a strategy for how to reach objectives
4. guiding principles setting out clear rules of the game

One of the reasons why the sense of responsibility to society is 'part of the DNA' of the company is that ST has defined and communicated these four key elements from the beginning. The objectives and principles presented below are the strong foundations on which we have built our Total Quality Management approach, which guides us in our business and social activity.

**Our Mission** is to offer strategic independence to our partners worldwide, as a profitable and viable broad range semiconductor supplier.

This mission is to be seen in the context of the unique and vital nature of the semiconductor industry. All recent and future advances in commerce, industry, science, medicine and entertainment depend on semiconductor microelectronic circuits and components.

**Our Objectives** cover the triple bottom line:

- *Growth*: we will grow faster than our competitors, with a target of 5% market share.
- *Financial*: we will generate shareholder value and return on equity better than the average of the Top Ten semiconductor suppliers.
- *Social*: we will contribute to the well-being of our people and of every community in which we operate, with a particular emphasis on environmental care and social responsibility.

**Our Strategies** balance technical characteristics with human ones and include a strong focus on value-creating relationships with our stakeholders:

- *Manufacturing*: Be recognized as a world-class manufacturer in the three major parameters of our activity: Quality, Service and Cost.
- *Globalization*: To have an integrated presence (Development, Manufacturing and Marketing) in each of the world's major macro-economic systems.

- *Innovation*: Sustain a high rate of innovation in products, processes and manufacturing capabilities, as the main fuel for our growth, supported by R&D expenditures. Our innovation process will be driven by the market, through our strategic alliances with key partners. We will encourage innovation in all ways, including management methods, and we will welcome new and challenging ideas.
- *Strategic alliances*: Form relationships with key world customers, assuring them strategic access to our technology as well as to our manufacturing capabilities and assuring us vital access to their market and system know-how. Legally share resources and know-how with suppliers, other semiconductor manufacturers, universities and technical institutions when there is a mutual advantage to do so.
- *Product portfolio*: We aim to be a broad range supplier, but with different product goals:
  - a. World leadership:**
    - System-on-chip
    - Non-volatile memories
    - Power discretes and ICs
  - b. Among the Top Five:**
    - Microcontrollers
    - Standard linear ICs
  - c. Profitable participation:**
    - All other products providing they generate a positive cash flow.
- *Application Focus*: We aim to serve all application segments, with particular emphasis on:
  - Automotive
  - Computer peripherals
  - Digital consumer
  - Smart cards
  - Wireless communications and networking

**Our Guiding Principles** set the tone for the way in which we will act in pursuing our mission and objectives. They represent the basic values underlying our business intentions:

- *Customer satisfaction*: the key to competitive success is Total Customer Satisfaction. We will listen to the voice of our customers and strive to anticipate and fulfil their needs and expectations. Our future relies on strong partnerships, which we can ensure if each one of us does his/her best to provide world-class Quality, Service, Time-to-Market and Value.
- *Business integrity*: we will conduct our business with the highest ethical standards in dealing with each of our stakeholders' communities. We will dedicate ourselves to honouring our commitments, delivering on our promises, being loyal and fair, and standing up for what is right.
- *People*: we will behave with openness, trust, simplicity and humility. We will be ready to share what we know, encourage everyone's contribution and recognize achievements. We will emphasize job enrichment and personal realization through empowerment, teamwork and training. Each one of us will be loyal, hardworking, committed and personally involved in the continuous improvement and learning process.
- *Excellence*: the only 'status-quo' we will accept is one of permanent change and continuous challenge, always for the better. In all aspects of our activities we will strive for excellence, quality, competency and efficiency. We will be flexible and nimble, and we will encourage innovation and creativity in every aspect of our activities.
- *Profitability*: the profit we generate from our activities is the main source of the funds we need to prosper and grow. Profit is necessary to provide security and future opportunities for each of us, and to allow the company to meet its other social and business responsibilities.

# Total Quality Management

An integrated approach to sustainable business

## An overview of TQM at ST

Total Quality Management (TQM) is one of the characterizing features of our company identity and a key element of our success in creating social and economic value. TQM provides both a framework of objectives and strategies that guide and influence the interactions of the company with the outside world and a channel through which ST people can develop themselves and their abilities and work together to create powerful internal synergies. TQM has a very strong ethical basis and provides ways of translating this ethical dimension of the company into action. We believe that our employees are the actors of our performance, taking responsibility for and ownership of their activities.

<sup>1</sup> STMicroelectronics, TQM Guide for employees.

One way of considering TQM is as “the management of the total organization to achieve excellence”.<sup>1</sup> As ST’s Guide to TQM for employees explains, “everyone in the organization is involved in the final product or service to the customer; each of our work processes and activities contributes to the success of the whole. In a broader sense, ‘Total’ also includes the organization’s responsibility to the community at large”. Working together to create a form of value that transcends the sole interests of the individual is itself a source of satisfaction and motivation. It also makes for more efficient and productive activity, which results in economic benefits.

“ The fact is that in big organizations, you might easily lose sight of the guiding principles and strategies that will lead you from where you are to where you want to be in the future. You can still work alright, with your intelligence, but you are missing deeper involvement, based on emotional intelligence, because you will not have values to share with your colleagues. People don’t come to work with their hands and minds only; they come with their heart and their emotions. You cannot expect to release the potential of employees unless they share the values of the organization. TQM is the recognition of this simple fact. It is deeply embedded in the reality of business life. It is the framework that brings consistency between our values and our practices. It is a powerful blend of philosophy and tools to achieve Excellence.”

ST’s Guide to TQM for Employees

The form of TQM that we have developed over the years provides specific guidance on how to manage interactions with one’s colleagues and how to practice an ‘enlightened’ form of leadership that brings out the best in people through cooperation and the creation of trust. This ethical form of behaviour is based on our TQM ‘Five Principles’:

- **Management commitment:** our managers should lead cultural change and create the environment for TQM to develop.



- **Continuous improvement:** we should never rest on past successes but always work to better our best.
- **Management by facts:** only by gathering and analyzing factual data can we be sure of our conclusions.
- **Employee empowerment:** everyone without exception has a contribution to make according to his or her skills and creativity.
- **Customer focus:** everyone is someone's customer; the customer is the starting point for our strategies and actions, and the vital measurement of our success.

These TQM principles are practical guidelines to help each employee decide what is the best way to behave or act in his or her daily business life. They provide the link between ST's Guiding Principles (see previous section) and the reality of everyday work. Our TQM culture has been deployed in the company since the late 80's, and we are constantly striving to make it an integral part of our company identity and actions. One of the key concepts at the heart of TQM is responsibility: giving responsibility (empowerment), accepting responsibility (ownership and accountability), and understanding that the company is responsible to all of its partners and to society as a whole. This is the starting point of any strategy for sustainable development.

### The EFQM Business Excellence model

At ST we have adopted the EFQM Excellence model as the framework for our strategies and actions. The model identifies five enablers: leadership, policies & strategies, people management, resources & partnerships, and processes; and four results: those relating to customers, to people, to society, and business results. The model is fully consistent with the objectives of sustainable development and the means for achieving them, which take into account the expectations of all stakeholder groups and the company's responsibility towards them as part of its overall business excellence model.



In January each year, ST's top management defines the key objectives of the year, called Corporate Annual Targets. These targets are tailored to the Business Excellence model, which means that we have specific, measurable targets for each of the five 'enablers', and each of the four 'results'. The Corporate Annual Targets are then used by all of ST's organizations as the basis for their own targets. This process of cascading the top level targets down to the department level of the company is called 'Policy Deployment'. Performance against these targets is followed on a quarterly basis at all management levels, and at Top Management level during the quarterly review of the Executive Total Quality Council (ETQC). This process has been in place for many years, and we are convinced that it is a reliable way of embedding our sustainable development strategy in our management practices.

The aim to ensure consistency between our values on the one hand and our objectives, strategies, actions and behaviour on the other is a key aspect of our interpretation of sustainable development and reflects the importance that we attach to fulfilling our responsibilities to society.

The management structure that enables us to ensure responsibility and accountability is presented in the section on Corporate Governance. Some of the tools we use to implement our TQM culture of employee empowerment and knowledge sharing are presented in the section 'Our People'.

## Corporate Governance and CSR

Since its formation in 1987, ST has demonstrated a consistent commitment to the principles of good corporate governance. Examples of this commitment include:

- ST's corporate organization, which, in accordance with the laws of the Netherlands (where the company is registered), entrusts the management of the company to a Managing Board acting under the supervision and control of an independent Supervisory Board.
- Early adoption of policies on important corporate governance issues such as business ethics and conflict of interests, and, since the first public listing of ST shares in 1994, strict reporting policies covering disclosure practices and controls, and insider trading.
- Wide-ranging activities in the field of corporate social responsibility, encompassing environmental care, health & safety, training and other social activities.

The following documents illustrating our practices in the field of corporate governance are available on our corporate website:

- Corporate Governance Charter
- Business Ethics and Conflict of Interests Policy
- Supervisory Board Charter

[www.st.com/company/governance](http://www.st.com/company/governance)

ST complies with all applicable laws in the jurisdictions in which it operates, as well as with international norms, conventions and principles. In particular, companies forming the ST Group comply with international norms and conventions regarding the respect and promotion of human rights, such as the Universal Declaration of Human Rights, the United Nations Norms for Transnational Businesses, the conventions of the International Labour Organization and the Global Compact Principles.

### **Business ethics**

We respect good business conduct and ethical principles in all of our marketplace relationships. We greatly value our customers and strive to satisfy them in terms of quality, cycle time, respect for the environment and international labour standards. As we develop our products, we always keep in mind their future impact on our customers and other stakeholders. We encourage our suppliers to be socially responsible and sustainable

development parameters are included in their periodic rating that will in turn determine the evolution of their business with ST.

Our guiding principles provide the foundations on which our commitment to the highest standards of business integrity is based. As a minimum, all of our employees are expected to comply with the highest standards of business ethics in their work and in their interactions with customers, suppliers and government officials. This is defined by our Business Ethics policy, which is supplemented by local policies and procedures. All ST sites and subsidiary companies have adopted ethical standards consistent with the Company policy. New employees are informed of these standards and agree to comply with our policies when they sign their employment contract. We inform all our suppliers about our ethical standards and expect them to conform to our requirements.

### **Human Rights**

As a signatory to the UN's Global Compact, we are committed to uphold fundamental principles on human rights, labour and the environment. Our published Business Conduct and Ethics policy and our internal Social policy include specific references to our respect for human rights and the avoidance of child labour.

### **Privacy**

ST respects the privacy and integrity of its stakeholders and endeavours to adhere to strict standards when processing personal data. Personal information is collected by lawful and fair means. The company does not sell, rent or lease personal stakeholder or employee information. ST is committed to protecting personal information against unauthorized use or disclosure. Individuals are provided with reasonable access to their personal information, and the ability to review and correct it. ST also complies with relevant privacy and data protection laws in the locations in which it operates.

### **Bribery & corruption**

The use of bribes and illicit payments is prohibited. ST does not provide financial support to political parties or other political groups.

### **Financial reporting procedures**

#### **and internal controls**

ST is committed to (i) provide true, complete, accurate and timely financial information, and understandable disclosures that ST periodically files in public communications and reports, (ii) to refrain from directly or indirectly taking any action to fraudulently influence, coerce, manipulate, or mislead investors, creditors or persons that make decisions and take actions based upon ST's financial statements or public disclosures and (iii) to ensure that such statements and disclosures are not materially incorrect or misleading.

ST's practice is to file full quarterly financial statements, complete with Management's Operating and Financial Review and Prospects on form 6-K with the SEC. Audited annual financial statements, complete with Management's Operating and Financial Review and Prospects, are filed with the SEC on form 20-F. All filings are made with the certification contemplated by 302 and 906 of the Sarbanes-Oxley Act. ST also makes filings with the French AMF (Autorité des Marchés Financiers) and the Italian CONSOB (Commissione Nazionale per le Società e la Borsa).

ST seeks to ensure reliable internal controls, and will (i) periodically assess the quality of internal controls, including internal controls over financial reporting, (ii) implement, as and when necessary, control improvements, and (iii) take immediate action to resolve any control weakness that could materially affect the reliability of financial reporting and disclosures.

### **Monitoring Corporate Social**

#### **Responsibility**

Non-financial aspects of our corporate responsibility are also monitored on a quarterly basis, through dedicated steering committees focusing on Quality, Environment, and Health & Safety. These steering committees check the results of the past quarter, identify risks, and propose improvement programs. They are chaired by the Corporate Vice President in charge of Total Quality Environmental Management (TQEM), who reports the situation to Top Management during the quarterly ETQC (Executive Total Quality Council), where proposals and risks are analyzed and top-level decisions are taken.

We also carry out periodic reviews for each ST organization or site, based on the Business Excellence model developed by the EFQM (European Foundation for Quality Management), of which we are a member. These reviews encompass all the key aspects of an organization's performance, with a clear focus on our key stakeholders: customers & suppliers, employees, society and shareholders & the financial community. These reviews are organized by the Corporate Vice President in charge of TQEM, based on each organization's self-assessment, and the results are reported to the CEO.

In addition to these steering committees and reviews, and as a complement to the internal audits done by each organization or site at periodic intervals, we have a rigorous system of external assurance carried out by independent auditors for all aspects relating to environment, quality and health & safety. All 18 of our manufacturing sites are certified ISO14001 (Environment), OHSAS 18001 (Health & Safety), and ISO9000 (Quality).

### CSR Steering Committee

In 2003 we realized that, although we already had most of the elements of a strategy for Corporate Social Responsibility, we were still lacking a dedicated organizational framework to oversee the implementation of CSR initiatives throughout the company. The mounting pressure of stakeholders, in particular rating agencies and customers, led us to feel that it was necessary to give more internal visibility to strategic programs for CSR.

In October 2003, as a response to these developments, we set up a corporate CSR Steering Committee covering the key functions involved in issues relating to corporate responsibility:

- the Environmental Director
- the Corporate Legal Affairs Director
- the Internal Communications Director
- the Corporate Vice President for Communication (and President of the ST Foundation)
- the Corporate HR Development Director
- the Corporate Investor Relations Director
- the Chief Financial Officer, ST United States
- the Health & Safety Director
- the Corporate Purchasing Director
- the Corporate Vice President for Total Quality and Environment (and Chairman of the CSR steering committee).
- a full time CSR Manager joined the team in March 2004 and acts as the primary coordinator for all CSR-related issues in the company, reporting to the chairman of the CSR steering committee.

This steering committee also meets on a quarterly basis. Its mission is to analyze the inputs and requests from stakeholders, evaluate the risks the company faces, and propose strategies and programs for the effective management of CSR. The chairman of the CSR Steering Committee reports the activities and findings of the committee to the Executive Total Quality Council, chaired and driven by the CEO, on a quarterly basis.

We view our commitment to CSR as the illustration of our TQM culture, which includes our responsibility to our stakeholders as well as the need for continuous improvement.

## Report Profile

The changes we have made to this year's report reflect our desire to respond more effectively to the expectations of the sustainable business community and to reflect more deeply on what we expect of ourselves as a socially responsible company. They are designed to bring us closer to the GRI Guidelines that we have committed to follow and to develop a more comprehensive framework for illustrating how we implement the principles of the Global Compact, of which we are a signatory.

### **GRI Guidelines**

We have added a new Economic section to the Social and Environment sections of previous years' reports to complete the triple bottom line. We have also included an index to facilitate the comparison of our indicators and performance with the GRI Guidelines. We will work towards maintaining and increasing comparability, both of the company's own performance from one year to the next and with the performance of the wider reporting community.

### **Transparency and materiality**

We have made an effort both to disclose more information about our activities and to be as objective as we can in our reporting. When selecting what we feel are the most meaningful and relevant issues to cover, we have tried to illustrate both the areas in which we are strong and those in which we need to make improvement. We are working internally and with stakeholders to define the criteria that we will use in the future to determine the materiality of non-financial (social and environmental) risk. In the meantime, we have based our choice of significant issues on our existing knowledge of areas of interest to the financial community (e.g. key environmental risks, restructuring, health & safety). We have also tried to identify those issues that we feel create value for key groups of internal and external stakeholders (e.g. engagement with the local community, knowledge sharing etc.).


### Stakeholder perspectives

We have included extracts of research and interviews focusing on the views of our stakeholders regarding the unfolding future of sustainable development and their expectations of our company in this context. These interactions with stakeholders form part of our current (2004) and planned future approach, but do not represent the activities carried out in 2003. We have established the following list of stakeholder groups as a framework for exploring the value created through our interactions with stakeholders:

- Shareholders & the financial community
- Employees & their representatives
- The supply chain: customers & suppliers
- Local community & society (including NGOs and the academic community)
- Government
- Peers, industry and competitors
- Media

This list is an expanded version of the stakeholder groups integrated into our Total Quality Management framework based on the EFQM Excellence model (page 15).

### Verification

The 2003 report has been verified by PricewaterhouseCoopers. This verification covers both reporting processes and data aggregation of selected environmental and social Key Performance Indicators, identified in this report by the symbol . Verification for the Social section represents a new addition to the report (2002 verification only applied to the environment).

### Report scope

This report presents the company's corporate performance in sustainable development in 2003, covering all of its organizations and manufacturing sites around the world. Data in the Social section covers all of ST's employees.

Each of ST's 18 manufacturing sites produces its own annual environmental report as part of the process to maintain its EMAS certification. These reports are published by the individual site in the local language and are available on request.

### Contact details and feedback

For any further information regarding this report or any of ST's activities relating to sustainable development and corporate social responsibility, please send an e-mail to [sd.report@st.com](mailto:sd.report@st.com). We welcome any comments, feedback and suggestions for improvement.



“What is now proved

The Marriage of heaven and hell (Proverbs of hell)

was once only imagined.”

“What is

William Blake

now proved

painter and poet

was once

1757-1827, London, UK

only

imagined.”

## GRI Content Index

2003 is the first year for which we can provide comprehensive details of social data for GRI indicators.

Core and additional indicators, represented by ( ■ ), by category.

For any indicators not included in the report, the letters 'EX' are entered (+ explanation for the decision to exclude the indicator)

### Economic

Indicators	Measurement Unit	2001	2002	2003	Comments/Report Section	
EC1	Net sales	(M\$)	6304	6270	7234	Annual Report
	Total revenues		6357	6318	7238	
EC2	Geographic breakdown of markets					Company Profile
	Asia-Pacific	(%)	37	43	44	
	Americas	(%)	18	15	14	
	Europe	(%)	34	29	28	
	Japan	(%)	5	4	5	
	Emerging Markets	(%)	6	9	9	
EC3	Cost of sales	(M\$)	4047	4020	4672	Annual Report; The cost of sales presented here is not exactly the same as the 'cost of all goods, materials, and services purchased' (EC3). It is the closest internal indicator that we can report on.
EC4	Percentage of contracts paid in accordance with agreed terms	(%)	-	-	-	EX - Currently not monitored
EC5	Total payroll and benefits	(M\$)	1493	1593	1924	Economic Impact
EC6	Interest paid (on debt)	(M\$)	32	22	19	Annual Report
	Dividends paid		35	36	71	
EC7	Accumulated results	(M\$)	4199	4592	4774	Annual Report
EC8	Total sum of taxes	(M\$)	97	146	41	Economic Impact
EC9	Subsidies received by country		-	-	-	EX - Currently not monitored
EC10	Donations to Communities	(K\$)	-	203	402	Our Communities

## Social

Indicators	ST Response for 2003	Report section	
<b>LABOUR PRACTICES AND DECENT WORK</b>			
Employment and Decent Work			
LA1	<p>Breakdown of workforce, where possible, by region/country, status (employee/non-employee), employment type (full time/part time) and by employment contract (indefinite or permanent/fixed term or temporary).</p> <p>Also identify workforce retained in conjunction with other employers (temporary agency workers or workers in co-employment relationships), segmented by region/country.</p>	<p>At the end of December 2003, ST employed 45,654 people throughout the world: 24,159 in Europe (and 795 temporaries), 13,759 in Asia (and 237 temporaries), 4,751 in Africa (no temporaries) and 2,985 in Americas (and 14 temporaries). Of our total employees, ST had 17,001 engineers and managers, 18,571 operators and 10,082 others (administrative, technicians...).</p>	STMicroelectronics: A Profile of the Company - The Organization; Our People
LA2	<p>Net employment creation and average turnover segmented by region/country.</p>	<p>Despite the continuing difficulties in our sector, in 2003 ST hired a total of 6,044 people, of which 2,266 engineers and managers, 2,746 operators and 1,032 others (administrative, technicians). The overall ST voluntary turnover for 2003 is 5.04%.</p>	Our People - Recruitment
Industrial Relations			
LA3	<p>Percentage of employees represented by independent trade union organizations or other bona fide employee representatives broken down geographically OR percentage of employees covered by collective bargaining agreements broken down by region/country.</p>	<p>EX For confidentiality and legal reasons we do not monitor this information.</p>	
LA4	<p>Policy and procedures involving information, consultation, and negotiation with employees over changes in the reporting organizations operations (e.g.: restructuring).</p>	<p>ST has a European Works Council, a requirement under European Union law. The aim of the Council is to promote the participation of every worker in a social dialogue within the company. The Council has 21 representatives and meets annually.</p>	Our Workplace - Freedom of Association

Indicators	ST Response	Report section	
Health and Safety			
LA5	Practices on recording and notification of occupational accidents and diseases, and how they relate to the ILO Code of Practice on Recording and Notification of Occupational Accidents and Diseases.	All ST manufacturing sites are certified OHSAS 18001. At present we provide health & safety guidelines for our subcontractors, but they do not take part in our training programs. By 2005 we will be asking our suppliers and subcontractors to assure us that they have adequate health & safety management systems. We have also developed programs to fully assess Environmental Safety and Health (ESH) Chemical Risk and require all of our suppliers to comply with our list of banned substances and to produce a certificate to this effect. We refuse to work with any suppliers that do not comply. The chemical risk assessment program is an internal ST program which is being integrated into the OHSAS 18001 management system. OHSAS 18001 meets the requirements of the ILO.	Our Workplace - Health & Safety
LA6	Description of formal joint health and safety committees comprising management and worker representatives and proportion of workforce covered by any such committees.	Each manufacturing site has an Environmental and Health & Safety steering committee, where representatives of site top management, operational management, workers & their representatives and the local site doctor are permanent members. This committee is responsible for implementing the corporate health & safety policy. Each local EHS steering committee covers all ST employees in that manufacturing site.	Our Workplace - Health & Safety; Corporate Governance and CSR
LA7	Standard injury, lost day and absentee rates and number of work-related fatalities (including subcontracted workers).	2003: Recordable Injury/Illness case per 100 employees: 0.83. Days away from work due to injury/illness per 100 employees: 10.88. These figures cover all ST employees, not subcontractors.	Our Workplace - Health & Safety
LA8	Description of policies or programmes (for the workplace and beyond) on HIV/AIDS.	EX. ST does not have any formal policy that deals with HIV/AIDS	

Indicators		ST Response	Report section
Training and Education			
LA9	Average hours of training per year per employee by category of employee. e.g. senior management, middle management, professional, technical, administrative, production and maintenance).	Our internal standard is to provide 35 hours (minimum) of training to each employee annually. In 2003, the average number of training hours per employee was 46 (35 for engineers and managers, 62 for operators, and 35 for administrative/technicians...).	Our People - Training and Development
LA16	Description of programmes to support the continued employability of employees and to manage career endings	We have a formal policy to help our people develop their careers. Annual reviews highlight employees' strengths and weaknesses, provide a comparison of existing skills with those required, and a plan to train or recruit to fill any gaps. We also encourage mobility within and across different job functions. Our policy is to make all job vacancies available internally. The ST University helps us make ST a permanent learning organization.	Our People - Training and Development
LA17	Specific policies and programmes for skills management or for lifelong learning		
Diversity and Opportunity			
LA10	Description of equal opportunity policies or programmes, as well as monitoring systems to ensure compliance and results of monitoring.	We are committed to attract, develop and retain a diverse workforce, while providing equal opportunities for employees at all levels. This is reflected in the 81 nationalities represented in ST. Although our company's roots are French and Italian, 40% of our top managers are from other cultures. We recruit solely on ability and promote on merit. Discrimination against employees based on gender, race, disability, origin, religion, marital status, veteran status, age or sexual orientation is unacceptable.	Our People - Diversity
LA11	Composition of senior management and corporate governance bodies (including the board of directors), including female /male ratio and other indicators of diversity as culturally appropriate.	Women make up 40% of our workforce and of these 17% are engineers or managers. Our long-term goal is to have at all levels in ST a higher representation of women.	Our People - Diversity

Indicators	ST Response	Report section	
<b>HUMAN RIGHTS</b>			
Strategy and Management			
HR1	Description of policies, guidelines, corporate structure, and procedures to deal with all aspects of human rights relevant to operations, including monitoring mechanisms and results.	Corporate Governance and CSR; Our Workplace - Human Rights	
HR2	Evidence of consideration of human rights impacts as part of investment and procurement decisions, including selection of suppliers/contractors.		
HR3	Description of policies and procedures to evaluate and address human rights performance within the supply chain and contractors, including monitoring systems and results of monitoring.		
Non-discrimination			
HR4	Description of global policy and procedures/ programmes preventing all forms of discrimination in operations, including monitoring systems and results of monitoring.	Discrimination against employees based on gender, race, disability, origin, religion, marital status, veteran status, age or sexual orientation is unacceptable.	Our People - Diversity
Freedom of Association & Collective Bargaining			
HR5	Description of freedom of association policy and extent to which this policy is universally applied independent of local laws, as well as description of procedures/programmes to address this issue.	Employees are free to choose whether or not to lawfully organize and join associations, including trade unions. ST does not threaten, penalize, restrict or interfere with employees' lawful efforts to join an association of their choice.	Our Workplace - Freedom of Association

**Indicators****ST Response****Report section**

## Child Labour

HR6	Description of policy excluding child labour as defined by the ILO Convention 138 and extent to which this policy is visibly stated and applied, as well as description of procedures/ programmes to address this issue, including monitoring systems and results of monitoring.	We do not employ people under the age of 16 years, anywhere. We support the abolition of child labour and seek to promote the health, safety and education of children.	Our Workplace - Child Labour
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## Forced and Compulsory Labour

HR7	Description of policy to prevent forced and compulsory labour and extent to which this policy is visibly stated and applied as well as description of procedures/ programmes to address this issue, including monitoring systems and results of monitoring.	We do not use forced labour in any of our facilities. We condemn all forms of forced and compulsory labour.	Our Workplace - Forced Labour
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## Security Practices

HR11	Human rights training for security personnel.	We consider the overall security of our tangible and intangible assets from the perspective of all of our stakeholders. We do what is necessary, through the application of the best security practices in all of our sites, to protect our employees, contractors and property, without endangering local communities. We do what is necessary to protect our employees, contractors and property without endangering local communities.	Our Workplace - Security
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## Indigenous Rights

HR12	Description of policies, guidelines and procedures to address the needs of indigenous people	We respect the rights of indigenous and tribal people.	Our Workplace - Indigenous Rights
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Indicators		ST Response	Report section
<b>SOCIETY</b>			
Community			
SO1	Description of policies to manage impacts on communities in areas affected by activities, as well as description of procedures/ programmes to address this issue, including monitoring systems and results of monitoring.	We are committed to be good corporate citizens, contributing to the well-being of the communities in which we operate and to society in general. Besides our basic economic impact on communities and society, we contribute to them through donations of cash, products and a broad range of employee volunteering activities (with a special focus on the Digital Divide).	Our Communities
Bribery and Corruption			
SO2	Description of the policy, procedures/ management systems, and compliance mechanisms for organizations and employees addressing bribery and corruption.	We respect good business conduct and ethics in all of our marketplace relationships by not accepting or being involved in bribery and corruption, or making political donations. All our employees are expected to comply with the highest standards of business ethics in their work and in their interactions with customers, suppliers and government officials. This is defined by our Business Ethics policy, which is supplemented by local policies and procedures. All ST sites and subsidiary companies have adopted ethical standards consistent with the company policy. New employees are informed of these standards and agree to comply with our policies when they sign their employment contract. We inform all our suppliers about our ethical standards and expect them to conform to our requirements.	Company: Corporate Governance - Business Ethics
Political Contributions			
SO3	Description of policy, procedures/ management systems, and compliance mechanisms for managing political lobbying and contributions.		
<b>PRODUCT RESPONSIBILITY</b>			
Consumer Health and Safety			
PR1	Description of policy for preserving customer health and safety during use of products and services, and extent to which this policy is visibly stated and applied, as well as description of procedures/ programmes to address this issue, including monitoring systems and results of monitoring.	We currently provide life cycle assessment details to our customers on request. We are working towards creating a database containing a life cycle assessment of our products. We publish regularly updated information on the chemical content of our products on our website.	Environment - Sustainable Product Design and Development  <a href="http://www.st.com/stonline/company/environment">www.st.com/stonline/company/environment</a>
Products and Services			
PR2	Description of policy, procedures/ management systems, and compliance mechanisms related to product information and labeling.		
Respect for Privacy			
PR3	Description of policy, procedures/ management systems, and compliance mechanisms for consumer privacy.	ST has a Privacy Policy that was last updated on June 20th 2003. It does not request personal information from visitors prior to accessing any section of the Company's website. Identifying information (name, address, etc.) is required only when website visitors interact with ST or ask for a specific service or information.	<a href="http://www.st.com/stonline/legal/privacy">www.st.com/stonline/legal/privacy</a>



## Environmental

Indicators	Measurement Unit	2001	2002	2003	Comments	
EN1	Total materials use other than water				Reports in tons for main types of materials available starting 2004	
	Front-End	(kg/wafer)	-	-		1,31
	Back-End	(tonnes/M units)	-	-		1,18
EN2	Percentage of materials used that are wastes				Currently not monitored	
EN3	Direct Energy use				Environment: Measuring Our Performance - Key Inputs and Outputs	
	Electricity	(GWh)	1774	1860		1973
	Gas	(GWh)	277	270		260
EN4	Indirect energy use		-	-	-	EX - Not Applicable
EN5	Total water use	(x1000)m <sup>3</sup>	20330	19450	19850	Environment - Water
EN6	Location and size of land owned, leased or managed in biodiversity-rich habitats		-	-	-	EX - Not Applicable
EN7	Description of the major impacts on biodiversity		-	-	-	EX - Not Applicable
EN8	Greenhouse gas emissions				Environment: Measuring Our Performance - Key Inputs & Outputs 2003	
	from Energy	(kTonnes CO <sub>2</sub> )	929	940		971
	from PFCs	(kTonnes CO <sub>2</sub> )	532	601		677
EN9	Use and emissions of ozone-depleting substances	kg (CFC <sub>11</sub> equivalent)	591	565	158	Environment: Measuring our Performance - Environmental Burden Indicators
EN10	SO <sub>2</sub> and other significant air emissions type				Environment: Measuring our Performance - Environmental Burden Indicators	
	SO <sub>2</sub>	(tonnes)	25	36,3		49
	VOCs	(tonnes)	310	341		331

Indicators		Measurement Unit	2001	2002	2003	Comments
EN11	Total amount of waste by type and destination					Environment - Waste
	Total waste	(kTonnes)	31,1	31,1	33	
	Waste to landfill	(kTonnes)	6,5	4,6	1,9	
	Waste R+R	(kTonnes)	20,8	20,2	24	
EN12	Significant discharges to water by type					Environment: Measuring our Performance - Environmental Burden Indicators
	P+N	(tonnes)	346	282	253	
	Heavy Metals	(tonnes)	20	16	18,7	
EN13	Significant spills of chemicals, oil and fuels in terms of total number and total volume		-	-	-	No case
EN14	Significant environmental impacts of principal products and services		-	-	-	Major impact is a positive one: products and their applications have energy saving characteristics. Environment - Sustainable Product Design and Development
EN15	Percentage of the weight of products sold that is reclaimable at the end of the products' useful life and percentage that is actually reclaimed		-	-	-	EX - Currently not monitored
EN16	Incidents of and fines for non-compliance					No case

“Let there be work,

bread,

water

and salt for all.”

“Let there  
be work,  
bread,  
water  
and salt  
for all.”

Nelson Mandela

1993 Nobel laureate in peace

1918, Transkei, South Africa

## Economic impact

We report key economic and financial figures for 2003 in the Company Profile section. In keeping with our intention to progressively align with the GRI Guidelines, this section presents the economic performance indicators that we are able to provide for our activity in 2003.

### Job creation and payroll

The most direct economic impact of a multinational company is the creation of jobs in the countries in which it operates. Despite recently undergoing one of the periodic downturns characteristic of the semiconductor industry, ST has increased its workforce significantly in the last twelve months, as shown in the following table:

ST total  
headcount  
growth

	2002	2003
<b>Europe</b>	<b>23,200</b>	<b>24,159</b>
France	9,616	9,909
Italy	9,992	10,379
Malta	2,311	2,281
<b>Africa</b>	<b>4,877</b>	<b>4,751</b>
Morocco	4,845	4,571
<b>Americas</b>	<b>3,183</b>	<b>2,985</b>
USA	3,154	2,947
<b>Asia</b>	<b>11,881</b>	<b>13,759</b>
Singapore	4,859	5,616
Malaysia	3,992	4,045
China	1,663	2,369
India	974	1,364
	<b>43,141</b>	<b>45,654</b>

In several cases the company has created hundreds of highly skilled jobs in semiconductor design and application laboratories, which contribute to increasing the long term competitiveness of host countries. As a consequence the monetary flow (payroll including benefits) has also increased:

Total 2001	US\$1,493 million
Total 2002	US\$1,593 million
Total 2003	US\$1,925 million

Labour costs:  
total ST

#### Developing local suppliers

It is ST's strategy to develop the network of local suppliers in host countries as much as we can. This makes sense from a purely operational viewpoint (fast response times, easy communications, and quite often economic advantages). It also makes sense from a sustainable development viewpoint, because it increases local expertise and technical competitiveness. However, we are not yet in a position to publish reliable data on the amount of purchases in each country. We plan to monitor these indicators more closely in the future, in order to better evaluate the real economic impact on local communities (in some cases, local purchases might be just a local sales office acting for a foreign company, which does not create significant local added value).

#### Taxes

Taxes are part of our economic contribution to society. ST pays taxes in all of the countries in which it operates (local income and others)

Income taxes + Other taxes	2001	2002	2003
	\$97m	\$146m	\$41m

### Capital expenditures

One of the best ways of demonstrating our commitment to the countries in which we operate is to develop the local infrastructure by investing in leading edge technology manufacturing fabs. In the past few years a significant part of our capital expenditure has been made in Europe (Crolles, Catania, Rousset), reflecting the fact that we are a European-based multinational company committed to the development of our European sites. In 2003 capital expenditure in Asia Pacific increased as a result of the development of our 8-inch (diameter silicon wafer) fab in Singapore.

5 years Capital Expenditure US\$ (Millions)	2001	2002	2003
<b>Total</b>	<b>8,348</b>	<b>8,317</b>	<b>8,591</b>
Asia Pacific	22%	22%	26%
Europe	62%	65%	58%
Others	2%	1%	6%
North America	14%	12%	10%

See 'Our Communities' in the Social section for details of our charitable contributions to local communities and for the wider social and economic impact of our R&D activities.



The scope of the data provided in this Social section covers 100% of ST employees in 2003 (excluding sub-contractors).

## Social

Here we outline our approach to managing our people, workplace and community involvement, showing our progress in 2003 and plans to improve.

### **The way we manage**

People are at the heart of the company and our most valuable resource. Our human capital is our main asset and competitive advantage. We apply the same discipline to managing people as we do in the rest of our business activities, using systems based on Total Quality Management (see page 14). Our organizational structure, processes and work culture are:

- Transparent, fair, guarantee equality and provide equal opportunities
- Respect the privacy, dignity and worth of individuals
- Encourage empowerment and personal initiative
- Create opportunities for advancement and growth, allowing employees to continuously improve their ability and extend their skills.

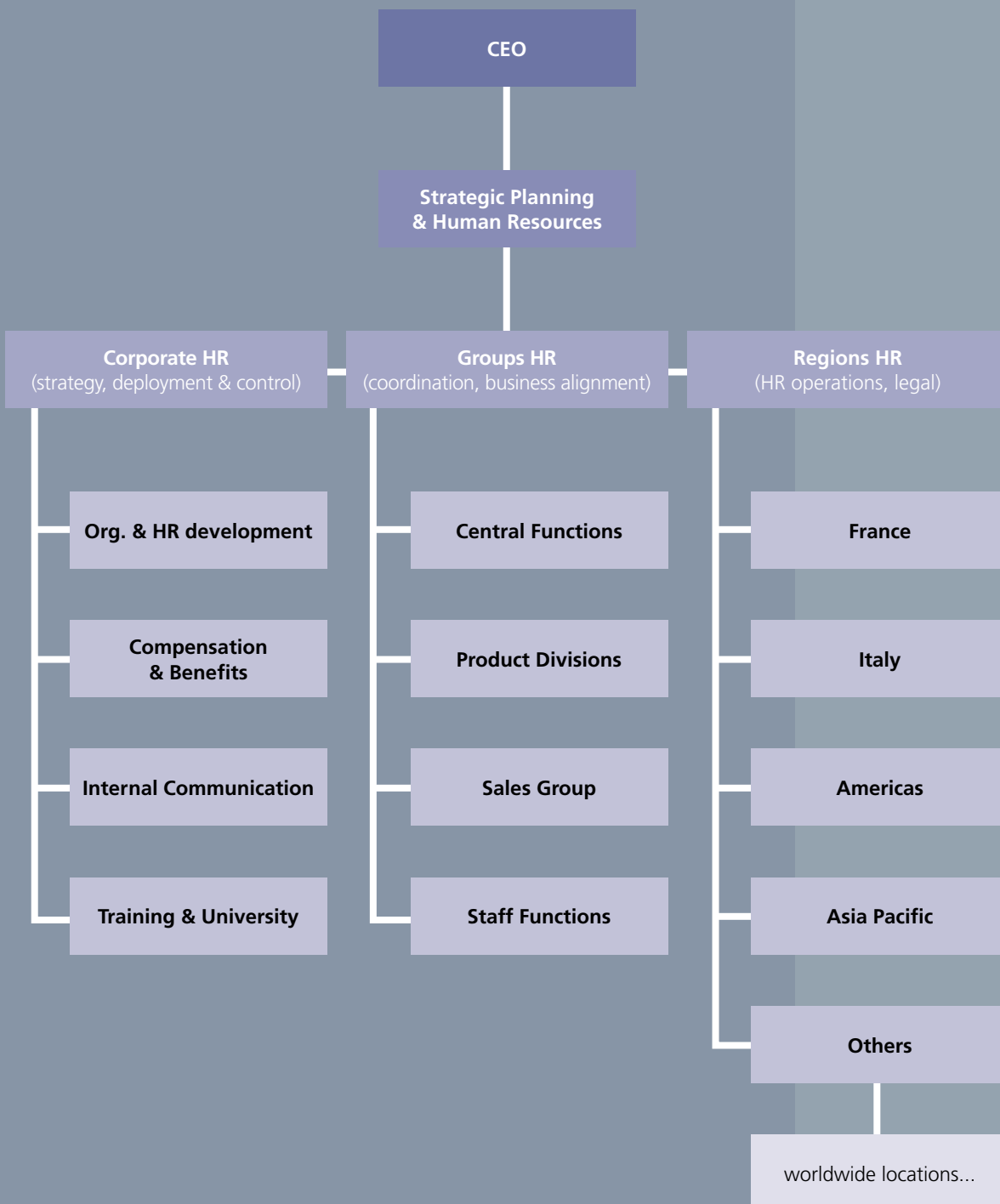
### **Organization and systems**

Our Human Resources function is focused on providing services where they are needed in the regions and countries in which ST operates in compliance with local regulations. This is reflected in the location of our 450 HR professionals, 90% of which are based locally. Corporate HR works closely with local management, supporting the development and deployment of systems, processes and career development programs. We use formalized HR management systems such as People Soft e-services and HR intranets. We have standard operating policies and procedures that guarantee an equitable level of services to all potential recruits. Local operating procedures apply to specific regions. We conduct extensive internal audits regularly to ensure that policies are respected.

### **Measuring and reporting**

Our Human Resources Measuring System (HRMS) has evolved from weekly workforce reporting and manual consolidation in 1987 to an automated social reporting system that collects information to match the requirements of the Global Reporting Initiative and ST's HR and social scorecard. The scope of the social indicators is continuously improved to meet stakeholder expectations.









## Our people



Since 1993 the number of people working for ST has risen by 130%. Despite the continuing difficulties in our sector, the number of employees rose by 2,513 in 2003, compared with 2002.

Year	Headcount
1993	19,905
1994	21,959
1995	25,468
1996	25,847
1997	28,741
1998	29,192
1999	34,487
2000	43,644
2001	40,228
2002	43,141
2003	45,654

2003	Hiring
Engineers & Managers	2,266
Technicians & Admin	1,032
Operators	2,746

Few industries compete so vigorously for talented people as ours. We believe that accomplished, talented people will be more attracted to a company where they are the centre of the enterprise and where ethical, social and environmental values are at the heart of the company. We seek to provide training, help employees develop their talents and careers and ensure that the quality of the workplace increases motivation.

### Diversity

Encouraging diversity is part of our corporate culture and strategy. We are global in outlook and know that our strength and competitiveness is built on respect for cultural differences. We are committed to attract, develop and retain a diverse workforce, while providing equal opportunities for employees at all levels. This is reflected in the 81 nationalities represented in ST. Although our company's roots are French and Italian, 40% of our top managers are from other cultures.

<b>Europe</b>	68
France	50
Italy	32
Other Europe	35
<b>Africa</b>	13
<b>Americas</b>	38
<b>Asia (inc JPN)</b>	33
<b>Total ST</b>	<b>81</b>

Number  
of nationalities  
end of 2003

We want our people to reflect the diversity of the societies in which they work, while offering them the broadest opportunities possible. This is why we recruit solely on ability and promote on merit. Discrimination against employees based on gender, race, disability, origin, religion, marital status, veteran status, age or sexual orientation is unacceptable.

Our sector attracts more male graduates than women. We recruit people who have technical qualifications, an area where historically, and particularly in Europe, there is a higher proportion of men. Women make up 40% of our workforce and of these 17% are engineers or managers. Our long-term goal is to have at all levels in ST a higher representation of women.

	Female	Male	Total
Engineers & managers	3,118 (18%)	13,883	17,001
Operators	12,412 (66%)	6,159	18,571
Others	2,577 (26%)	7,505	10,082
<b>Total</b>	<b>18,107 (40%)</b>	<b>27,547</b>	<b>45,654</b>

Others = technicians, administrative, etc.

## Employees by gender

### Employee privacy

All employees are informed about the ST data privacy policy and expected to respect the confidentiality of personal information they may acquire during their work.

### Recruitment

We seek to employ the best graduates from leading universities worldwide. Our success and growth is dependent on attracting and retaining highly talented people. Our induction program for new recruits covers a wide range of issues, including our corporate culture, shared values and practices.

Hiring	2002	2003
Engineers & managers	1,380	2,266
Technicians & Admin	1,240	1,032
Operators	3,042	2,746
<b>Total</b>	<b>5,662</b>	<b>6,044</b>

	2002	2003
Average cycle time to recruit engineers and managers (from job request to acceptance)	65 days	59 days
Offer acceptance rate	94%	95.7%
New graduate recruitment rate	60%	61.8%

## Training and development

The rapid advance of technology makes continuous education essential to our industry and our company. Our aim is to provide enough educational opportunities for our staff to remain motivated and to feel that they can fulfil their ambitions within ST. We support lifelong learning and encourage mobility within and across different job functions. Our policy is to make all job vacancies available internally, encouraging mobility by giving employees the opportunity to work and advance in different parts of the world.

Our HR standard on experienced job vacancies is to fill 70% of posts internally. In 2003, 51% of positions requiring experience were filled by ST employees (61% in 2002).

Our internal standard is to provide 35 hours (minimum) of training to each employee annually. Courses are delivered by regional and central ST University trainers (see ST University). In 2003, the average number of training hours per employee was 46. All operators of manufacturing equipment must be certified and reassessed every 18 months.

We monitor the effectiveness of our training using the training industry standard 'Kirkpatrick Model'. This helps assess the effectiveness of the investment made in developing people's skills. Our internal standard is to reach 100% implementation of Levels 1 and 2 of the Kirkpatrick Model (Level 1 evaluates trainee satisfaction regarding content, facilitation and logistics; Level 2 evaluates improvements in knowledge, attitudes or skills that occur as a result of training). In 2003, 96.1% of ST employees that had participated in training courses received Level 1 evaluation and 89% received Level 2 evaluation.

We have a formal policy to help our people develop their careers. Annual reviews highlight employees' strengths and weaknesses, provide a comparison of existing skills with those required, and a plan to train or recruit to fill any gaps. Discussions on personal development are an important part of these reviews. They identify career development possibilities that meet individual aspirations and help define the steps needed to reach personal goals. All ST professionals have a job description that is reviewed and benchmarked each year against several external surveys.

In 2004 we will finalize the mapping of the required competencies associated with each job in the company. These competencies are split by type: Personal, Technical and Behavioural. Each type of competence is also defined according to the required level of expertise. All employees will then be able to assess themselves against this new referential and discuss the required development or training with their managers. At a collective level, HR managers will use the new competency referential to assess the global training plan to be prepared for the coming year. This corporate tool will be fully embedded in the HR information system, including the online training catalogue.

### The Technical Ladder Project

Radical innovation is one of the critical factors governing ST's success in today's competitive market. We recognize the innovative skills of the technical specialists that work for us and believe that they should enjoy career opportunities that equal those that exist in line management. Our Technical Ladder project formalizes the competencies required to progress in a technical career, up to top levels for the best performers.

## Average Training hours by category

	2002	2003
Engineers and managers	31	35
Operators	61	62
Technicians, admin etc.	33	35
Total	44	46

In 2003, more than 95% of our employees had their performance reviewed and more than 82% of all technicians, engineers and managers discussed their individual development plans in their annual performance appraisal.

ST University (STU) was founded in July 1994 to help us make ST a permanent learning organization. It operates on a worldwide basis, with a central organization located in Fuveau, France, close to our Rousset manufacturing site, and four branches in Phoenix (USA), Catania (Sicily), Singapore and Shanghai (China).

A core team of 30 professionals and 700 associate trainers provide courses to employees across the company. Associate trainers are certified after receiving extensive training from STU ('Train the Trainers') and contribute to delivering the courses that are developed by our core training team. Over the past 5 years, STU has delivered 460,000 hours of training to more than 21,000 students. Our associate trainers' contribution has developed very fast and we estimate that in 2003 they delivered 200,000 hours of training, double the amount delivered by our core team (104,000 hours).

STU offers more than 100 different types of courses covering four major categories: Management (representing 50% of total hours); Personal Development (20% of total hours); Job Specific (21%); and Schooling, our school of associate trainers (9%).

Over the past 2 years, STU has started to develop and deliver e-learning courses through our intranet network, using the most recent distance-learning techniques. This category of courses is growing very fast and represents 20% of the total hours delivered in 2003. This approach allows STU to train a large number of our employees at a low cost.

In 2003, STU's training effort covered all of the regions in which ST operates. Out of the total hours delivered by STU's core team (104,000), 22% were delivered to Asia-Pacific employees, 26% to France, 23% to Italy, 13% to USA and 16% to our Mediterranean and 'Emerging Markets' area.

## Training hours history STU core team activity

1996	36,500
1997	62,900
1998	41,700
1999	95,800
2000	134,800
2001	65,300
2002	58,800
2003	104,000
2004 est.	140,600

### Performance reward and recognition

All ST jobs are described and evaluated to guarantee fairness and transparency. They are benchmarked against industry and market standards. Salaries are based on corporate guidelines, the job's specific parameters, market value, employee performance and personal skills. Employee benefits include health insurance and country-specific packages.

Senior employees are offered stock option plans as part of their remuneration package.

The percentage of 'exempt' employees that are entitled to stock options is 65% (the term 'exempt' refers to those employees who hold positions normally requiring graduate or post-graduate education and who are not eligible for overtime compensation).

ST aims to recognize and reward outstanding performance, innovation, responsible behaviour and teamwork. Recognition ceremonies are organized throughout ST during the year.

### Empowerment & management leadership

We promote effective management by encouraging empowerment through delegation of responsibility and transparent communication (see the section on Total Quality Management on p.14). Some of the TQM tools we use to put our principles into action are presented below.

## Total Quality Management Tools

Total Quality Management (TQM) provides ST with both values and principles and the practical tools to implement them. These tools and practices include, but are not limited to, Policy Deployment, Management Review, Project Management, Business Process Management and Statistical Process Control. Within this context we put strong emphasis on employee empowerment through our Knowledge Sharing Initiative, which aims to increase company competitiveness and efficiency by effectively tapping the resources of our people. The Initiative emphasizes both practical, technical characteristics and the important social benefits of working together towards a common goal.

## ST's Knowledge Sharing Initiative

The Knowledge Sharing Initiative was started in 1999 with the aim of "managing what we know in a way that adds value to what we do". It seeks to tap the tacit (unarticulated) knowledge that emerges as a result of the connection between people and people and the explicit (articulated) knowledge that flows between people and information (formalized documents etc.). The challenge is to find ways to capture the most valuable knowledge contained in people's informal experience and relationships and make it available to the company as a whole by formalizing it and keeping it updated and relevant. Communities of Practice (COPs) and Online Communities (OLCs) are two of the tools we use to manage this dynamic process. The activities and results of the communities' interactions are documented on IT systems that make them available to others in the company.

Between 1999 and 2003 the Online Community tool has been used by:

- 5780 members
- 450 facilitators
- 450 communities
- An av. of 80 active communities per month

In 2003, 10 Communities were recognized at corporate level for their contribution to the company.

### OnLine Communities (OLCs)

Year	People participating in OLCs	Contribution growth rate	Connection growth rate	Monthly rate contribution/connections & ratio
2001	1,975			300 contrib/2,000 connect. (1 to 6)
2002	4,191	46%	25%	440 contrib/2,500 connect. (1 to 5)
2003	5,778	17%	68%	514 contrib/3,754 connect. (1 to 7)
2004 goal	7,000	+20%	+20%	



## The ST Employee Suggestion Scheme (ESS)

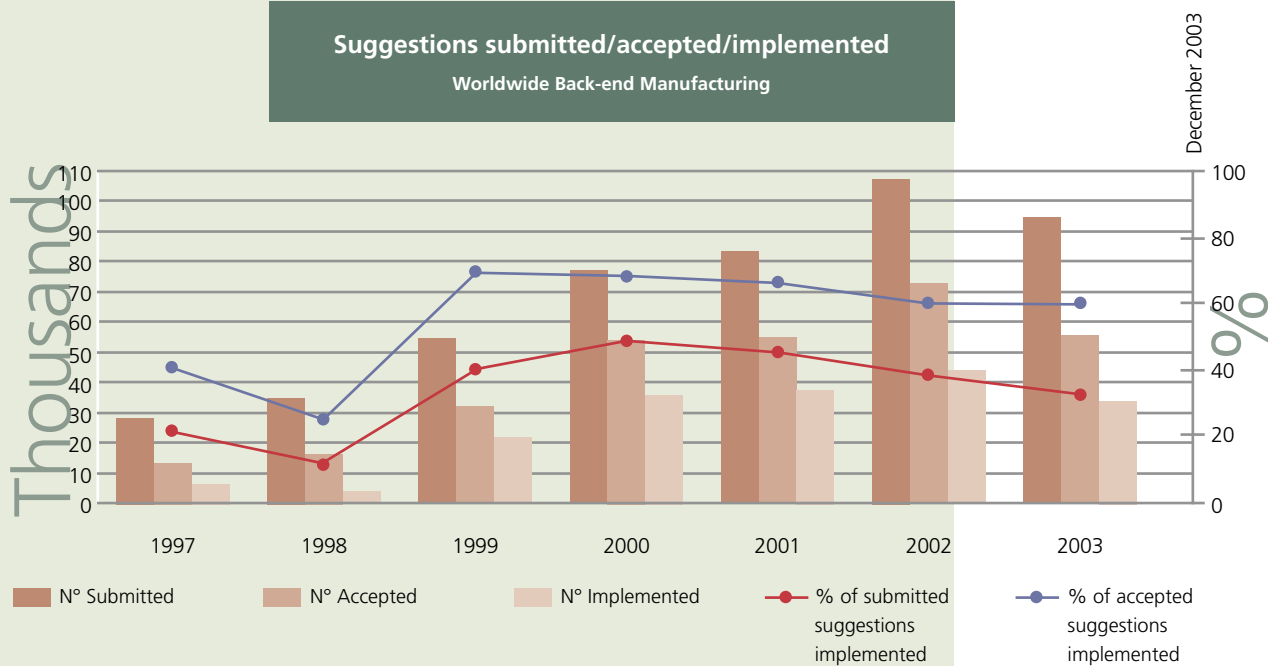
ST's Worldwide Back End Manufacturing launched the Employee Suggestion Scheme in 1992 as part of the initial deployment of TQM. The number of suggestions made by employees has regularly increased since then:

- 12,478 suggestions in 1992
- 95,517 suggestions in 2003.

The average number of suggestions per employee increased from 1.9 in 1992 to 7.3 in 2003.

### Suggestions submitted/accepted/implemented

Worldwide Back-end Manufacturing



The suggestions made by individuals or teams establish a mechanism for steady improvements in productivity, service, quality, environment, safety, communication and cost-reduction. The electronic ESS scheme allows suggestions to be evaluated quickly (the goal for response time is one week) and tracked in the reporting system. This system classifies the suggestions and monitors their status, reducing cycle time and facilitating visibility and recognition of the most effective contributions of employees.

Recognition, a tangible demonstration of the company's appreciation, is an important element of the scheme and represents a source of pride and motivation for employees. In addition to the spontaneous recognition of direct management, there are formal recognition processes at different local and corporate levels within the company right up to the Executive Total Quality Council (ETQC), chaired by the CEO.

The Employee Empowerment Scheme is run locally, but monitored and overseen at corporate level.

### Suggestions in Back End plants: 2003

Suggestions received	95,517
Suggestions reviewed	92%
Suggestions accepted	64%
Suggestions implemented / accepted	57%
Participation	71%
Average time to response (days)	24,9
Average time to implement (days)	25,6



## Employee opinion surveys

Every 18 months we conduct anonymous worldwide employee opinion surveys, which include questions on social responsibility topics. The results are consolidated by an independent external partner, benchmarked against industry and market standards, communicated to all employees, and analyzed by each organization. They are used to generate specific action plans at divisional and local levels.

### *What our people think about ST*

Employee opinions of ST and of the opportunities the company provides for its people have remained constant or deteriorated since 2001, according to the 2003 employee survey. This largely reflects the severe economic downturn in our sector but also highlights areas where we must do better. We take the results of our regular surveys very seriously and use the information to improve.

The 2003 survey shows an improvement since 2001 in several key areas. For example, ST is perceived to be socially and environmentally responsible and differences in cultural background and lifestyles are accepted. The company is customer-focused, with employees having a clear idea of customer needs. Managers provide frequent communications meetings and supervisors give regular feedback on personal performance.

But employees say they are concerned about a number of management and training issues. For example, compared with 2001, a greater number feel there are insufficient opportunities to improve their skills and managers provide insufficient encouragement for employees to give of their best. Opinions have deteriorated on the opportunities for career advancement and more people feel there is a gap between management actions and company values. Survey data suggest that if the work culture were to become more empowering and personally stretching, employees would feel a greater sense of pride and more would be prepared to recommend ST as a good place to work.

The voluntary survey, called ST Dialogue, was conducted in May and June 2003, with 87% of employees taking part. This excellent participation rate demonstrates a high level of trust in the survey and the value it provides.

All our locations have developed action plans to improve. For example, training budgets have been increased, greater use will be made of e-learning and more support provided for those who want to move to different parts of ST. The results have been cascaded through the organisation and local managers have been requested to take action, including:

- Reconnecting management decisions with company values
- Encouraging cooperation between people and further technical innovation
- Promoting more on-the-job training, coaching and more job rotation.

In 2003 we announced our intention to close our manufacturing site at Rennes in France, with the loss of 429 jobs. This announcement was made reluctantly after several years of deliberation and persistent efforts to avoid closure. A restructuring plan was drawn up with the aim of minimizing the social impact of this action. A detailed explanation of the economic reasons for the closure was communicated to stakeholders, together with the plan to relocate employees within the company or assist them in finding alternative employment if they preferred not to leave the Rennes area. A dialogue with stakeholders followed, as a result of which further efforts were made to ensure relocation of as many employees as possible within ST. What follows is a summary of these communications.

#### **The economic context and reasons for the closure of Rennes**

Rennes was opened in 1967 for the manufacture of integrated circuits on 2 and 3-inch silicon wafers. With the advance of technology that has progressively increased wafer diameter, the site was converted to be able to produce 5-inch and, finally, 6-inch wafers.

In order to compete with a fast-moving market, which is rapidly switching from 6-inch to 8 and 12-inch wafers, ST must invest in 8 and 12-inch technology and transfer its 6-inch lines to its manufacturing site in Singapore, where production capacity is 9 times higher than in Rennes, with a 60% reduction in costs. ST will save approximately \$29 million dollars per year as a result of this transfer.

ST's strategy for aligning with these market conditions requires its 6-inch manufacturing sites to be converted into 8-inch 'fabs' (factories) wherever possible. This conversion is not possible at Rennes because of its small size and location in an urban area that does not allow expansion. The cost of building a new 8 or 12-inch site in the Rennes area (approx. \$1.5 billion for an 8-inch site) is not justified given that ST has existing 8 and 12-inch fabs. Concerted efforts have been made since 2001 to find a way of keeping Rennes in activity (cost reduction, alternative technologies, ongoing search for partners or new owners), but they have not been sufficient to avoid closure.

Our policy is to constantly upgrade our manufacturing sites until this becomes impossible. This was the case in Rennes over 35 years of technological evolution. We would have continued with this evolution, had it not been for the physical limitations of the site.

#### **ST's plan to minimize the social impact of the closure of Rennes**

ST's aim is to avoid job losses altogether or limit their number to an absolute minimum and to assist any employees who do not wish or are not able to be relocated in finding alternative employment. We also aim to contribute to the creation of jobs in the Rennes area. These two objectives reflect the social policy and values of the company and its strong sense of responsibility towards its employees and the local community. The following points summarize the ways in which we are implementing our plan:

- Relocation of jobs: this is our first priority. Our wish is that all employees affected by the closure continue to work for ST, to the extent that this is possible. Our initial plan to relocate employees to other manufacturing sites according to the availability of posts has evolved as a result of dialogue with stakeholders. We have now committed to finding an appropriate post for any Rennes employee who requests it in any of ST's manufacturing locations in the world. Training and logistical support for the employee and his or her family (helping the spouse find a job, help in finding accommodation and the expense of moving house) are included in this offer.

- Assistance to employees not wishing or able to relocate: We have committed to providing two valid permanent job offers to every employee. We will do all we can to help all employees who do not accept our offer of relocation to find another job, change career or start a business of their own. Training, the time necessary to pursue potential alternatives and financial support will be provided to make this possible, together with the support of a team dedicated to providing assistance on an individual basis.
- Detailed and personal attention to employees' needs on a case-by-case basis: We commit to treat each case individually, paying careful attention to the professional, family and personal situation of each employee and considering the constraints that limit freedom to relocate so that the best possible solution can be found.
- Contribution to the creation of jobs in the Rennes area: ST has commissioned two companies to explore potential regional partnerships with other members of the economic community and to help implement the projects that it identifies as capable of creating jobs in the area. Stakeholders are being regularly informed of the progress that is being made.

We regret that the closure of Rennes has become necessary and that jobs have been lost. We would like to take this opportunity to allay any fears that the closure of this plant represents an intention to reduce our presence in Europe. We are a European-based multinational company and we will continue to invest and grow in Europe. The number of ST employees in France and Italy has increased consistently in the last two years. (See head count by region in the Company Profile).

#### Progress in 2003

- Conducted a worldwide employee satisfaction survey
- A new global recruitment Standard Operating Procedure published and cascaded, covering some human rights and non-discrimination rules
- 84.4% of local HR processes certified to ISO 9000 quality standard (37.3% in 2002)



#### Plans for 2004

- Increase internal job mobility
- Define and deploy a global HR scorecard, including HR standards, with quarterly reviews
- Finalize mapping of competencies associated with each job in the company and embed in HR information systems
- Implement plans to make improvements based on results of employee opinion survey



## Our workplace

Our aim is to provide a safe, healthy and stimulating workplace where human rights are protected and promoted. Our new Social Policy covers all aspects of human rights, some extracts of which are presented in this section. In 2004 we will begin the implementation of this policy and start training our employees on our responsibilities to different stakeholder groups. For Business Ethics, see the section on Corporate Governance and CSR.

### Human Rights

ST supports the UN's Universal Declaration of Human Rights and the core standards of the International Labour Organization (ILO). As a member of the UN Global Compact, we are committed to advance the principles of human rights within our sphere of influence. See more about the ILO's standards ([www.ilo.org](http://www.ilo.org)) and the nine principles of the Global Compact ([www.unglobalcompact.org](http://www.unglobalcompact.org)).

### Child labour

We do not employ people under the age of 16 years, anywhere. We support the abolition of child labour and seek to promote the health, safety and education of children.

### Forced labour

We do not use forced labour in any of our facilities. We condemn all forms of forced and compulsory labour.

### Indigenous Rights

We respect the rights of indigenous and tribal people.

### Security

We consider the overall security of our tangible and intangible assets from the perspective of all of our stakeholders. ST's profitability and social responsibility requires us to protect human, physical, intellectual and logical assets, as well as providing a proper response to emergencies and incidents. We do what is necessary, through the application of the best security practices in all of our sites, to protect our employees, contractors and property without endangering local communities.

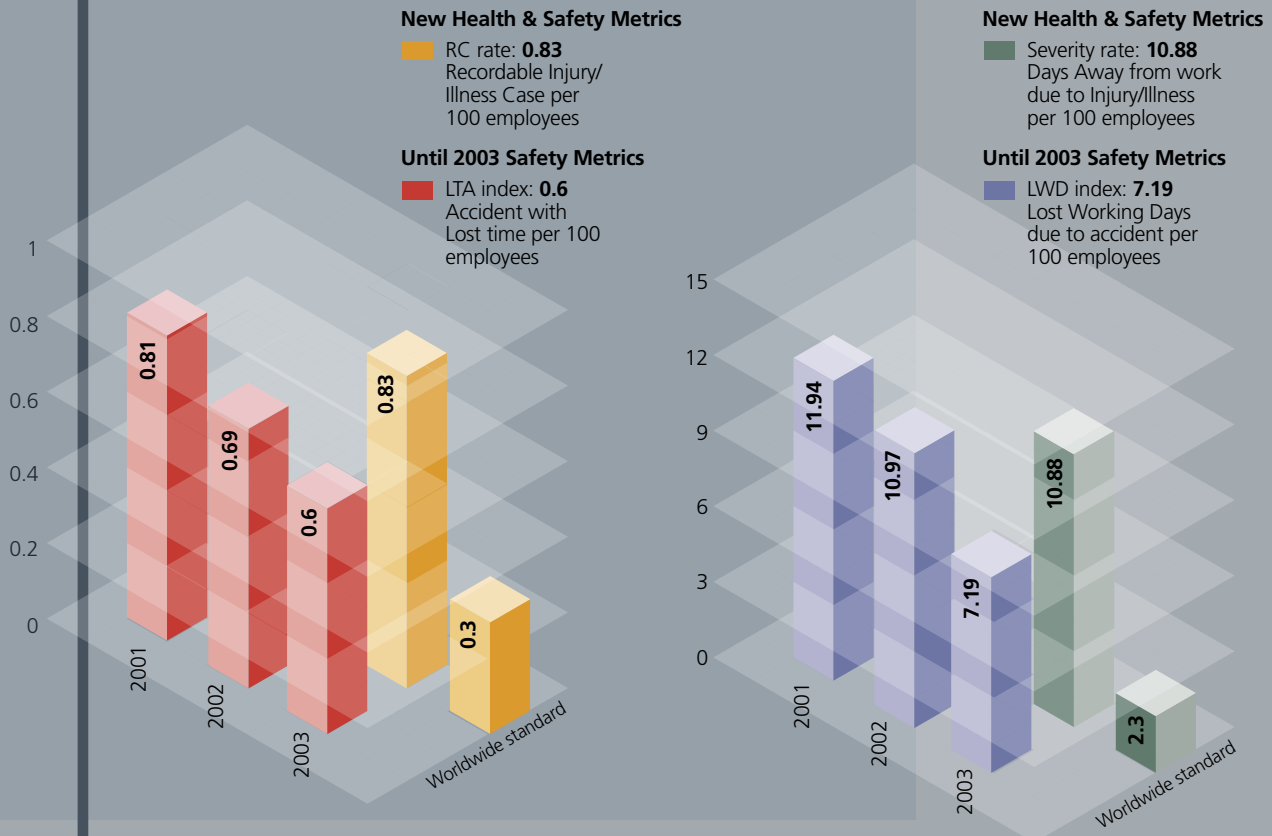
ST considers health & safety to be one of its primary responsibilities to its employees. As such, it is one of the areas which we have been working hard to improve over the past few years. The results of this hard work are beginning to show and we are making progress in implementing our strategy for further improvement.

**Results so far**

In July 2001 our corporate Safety and Risk Management department launched the program to certify all of our manufacturing sites to the OHSAS 18001 Management System as a first step towards harmonizing performance measurement and management.

In 2002 we reported that three sites had been certified. In 2003 we reached our goal of certifying the remaining 14 manufacturing sites. In 2003 we used the new management system to track health & safety results back over 2001 and 2002 in order to obtain a clear picture of how our performance has evolved. This performance is measured against the baseline of semiconductor industry best practice, which we have adopted as our reference. We have also updated and improved our indicators to measure the frequency and severity of injuries. The scope of the results shown in the graphs below is for all ST employees working in manufacturing sites (excluding sub-contractors).

While we consider our OHSAS 18001 certification of all sites an achievement to be proud of, we are aware that this is just one step in the right direction. As our performance results show, we are making progress in reducing the number of incidents of injury, and we are focusing strongly on reaching the best-in-class standard.



At present we provide health & safety guidelines for our subcontractors, but they do not take part in our training programs. By 2005 we will be asking our suppliers and subcontractors to assure us that they have adequate health & safety management systems.

#### **The road ahead**

- We are working on a project to design new indicators to show the hidden financial costs of injuries in the workplace.
- In 2004 we will be training 13 corporate staff and 17 site safety officers to become internal safety auditors.

#### **Environmental Safety & Health (ESH) Chemical Risk Assessment**

Over the past few years we have developed programs to fully assess the ESH (Environmental Safety & Health) impact of all chemicals and gases used or considered for use by the company. This assessment includes how chemicals are created, stored, distributed, used and disposed of and takes governmental and industry regulations as the minimum level of stringency. ST continually updates these programs to include the most recent information available. Chemical selection and screening are crucial to ensure early and effective minimization of potential ESH concerns. Each ST manufacturing location worldwide has to comply with an internal list of approximately 1000 banned and restricted substances and must perform chemical risk assessments for the substances used on site. A site chemical committee must approve the use of all substances.

We require all of our suppliers to comply with our list of banned substances and to produce a certificate to this effect. We refuse to work with any suppliers that do not comply.

Our risk reduction program is driven by the prevention principle. We minimize employee exposure by the creation of 'closed systems', which isolate production process modules from employees and the environment. Each manufacturing site has a dedicated emergency response team trained to deal with hazardous substance release incidents. Employees receive regular training on chemical hazards and ways of protecting themselves.

In 2003 we focused on harmonizing and consolidating our systems for chemical risk assessment in all of our sites and we defined the methodology to assess employee exposure at workstation level. In 2004 we will complete the evaluation of all workstations in all of our manufacturing sites.

The chemical risk assessment program is an internal ST program which is being integrated into the OHSAS 18001 management system.



Working time	2002	2003
Employees having at least 1 day off every 7 days	100%	100%
Employees with regular work time < 48 hours per week	89%	100%
Average overtime per week (hours)	3.5	2.2



### Working time

We set working hours to comply with all applicable laws. Operations are carried out in ways that limit overtime to a level below industry average, ensuring that working conditions are both humane and productive. We do not ask our people to work for more than 48 hours in a regular scheduled week. Employees may refuse to work overtime, without threat of discrimination, penalty, punishment or dismissal. Employees have at least one day off in seven and get leave and holidays as required by law, or according to the local industry standard, whichever the greater.

### Sexual harassment

Sexual harassment of employees is not tolerated and such behavior can lead to dismissal.

### Freedom of association

Employees are free to choose whether or not to lawfully organize and join associations, including trade unions. ST does not threaten, penalize, restrict or interfere with employees' lawful efforts to join an association of their choice. ST has a European Works Council, a requirement under European Union law. The aim of the council is to promote the participation of every worker in a social dialogue within the company. The Council has 21 representatives and meets annually.

Should exceptional circumstances occur that affect the interests of the workers and employment, extraordinary meetings can be called. The Council is informed on transnational issues that affect the interest of workers.

Total time lost to strikes in 2003 was 0.04% of time worked.

### **Progress in 2003**

- Corporate Social Policy prepared and formalized
- 14 remaining ST manufacturing sites certified to the OHSAS 18001 management system
- Methodology drawn up to assess the exposure of employees to chemicals at workstation level

### **Plans for 2004**

- Implement new corporate Social Policy
- Begin setting up global system to assess, monitor and manage compliance with social policy, including human rights and labour standards
- Start global training program for employees on awareness of social responsibility
- Complete evaluation of all workstations in all manufacturing sites for risk of exposure to chemicals
- Finalize new indicators for the hidden financial impact of health & safety incidents
- Train 30 site safety officers to become internal safety auditors and begin raising awareness of and preparation for reaching new health & safety targets



## Our communities

In 2003, we donated US\$402,000 to charitable causes (\$203,000 in 2002).

We are committed to be good corporate citizens, contributing to the well-being of the communities in which we operate and to society in general. We believe that we have a responsibility to fulfil our ethical obligation to society as well as to maximize returns to shareholders. We seek to find ways of balancing these two objectives when conflicts of interest arise and generally view corporate citizenship as a factor of our financial success. Dealing with local issues is the responsibility of local management, who are encouraged to take an active role in community affairs.

Besides our basic economic impact on communities and society (see the Economic Impact section), we contribute to them through donations of cash, products and a broad range of employee volunteering activities. Local projects are an important source of support to communities and improve our relationship with stakeholders. They also help us to recruit and retain the most talented people and motivate our employees.

staff hours spent on volunteer projects	2003
Environment	62,880
Education	287,219
Other non-business related activities:	34,145
	<b>384,244</b>

## Research & Development

Research & Development represents an area of activity in ST that creates value within the company and for the local and national economies and scientific communities of the countries in which it operates. We consider R&D to be one of our most significant contributions to society.

From an internal point of view, there are two main dimensions to R&D development: the complexity of technology and the creation of a favourable environment for efficiency. The overall complexity of microelectronics technology is increasing at a tremendous pace, and requires both a broadening of the scope of scientific and technological domains covered, and a deepening of expertise in each specific field. Our R&D research covers a vast spectrum of specialized fields, from quantum mechanics and nanostructures to software development and automated theorem-proving. The challenge we face is to develop and integrate all of this knowledge into a coherent working environment for the production of technologies and products.

Our strong track-record in this area is based on a robust internal scientific base (7,000 people worldwide dedicated to R&D) and a large network of partnerships with specialists from private companies and public laboratories. We work with approximately 150 public laboratories around the world and we award roughly the same number of grants to support PhDs and other post-doctoral studies. Through this support, we aim not only to develop our own expertise and knowledge, but also to train future research engineers whose work will contribute to scientific progress in general. Our work with public laboratories also requires long-term cooperation with different social actors (notably local and national authorities). This cooperation has proven to be a key factor of joint scientific and economic success.

Our partners include:

- France: CEA/LETI; Centre Nationale de la Recherche Scientifique (CNRS); Institut National de la Recherche en Informatique et Automatique (INRIA), and many other research institutes.
- Italy: Consiglio Nazionale delle Ricerche; Istituto Nazionale per la Fisica della Materia and Ente per le Nuove Tecnologie, l'Energia e l'Ambiente.
- Belgium: Interuniversity Micro Electronics Centre (IMEC).

The universities with which we have partnerships include: Bordeaux, Grenoble, Lille, Limoges, Lyon, Montpellier, Orsay, Paris, Toulon, and Toulouse in France; Bologna, Catania, Genoa, Milan, Modena, Naples, Padua, Turin, Verona and Udine in Italy, and Carnegie-Mellon, Stanford and MIT in the USA; the Shenzhen graduate school at the University of Tsinghua.

In 2003, R&D expenditures were US\$1,238 million (from \$1,022 million in 2002).

**See the section on Sustainable Product Design and Development (Environment) for the energy-saving characteristics of our products.**

## *The STMicroelectronics Foundation*

The Foundation was created in August 2001 as a non-profit organization, based in Geneva, to promote the company's contribution to sustainable development. It has three main objectives:

- To share and build on ST's culture, based on Total Quality Management, environmental care and social responsibility;
- To raise awareness of the vital importance of microelectronics and how it can contribute to sustainable development;
- To maintain visibility on and coordinate the company's local charity initiatives worldwide.

### **Bridging the Digital Divide**

One of the main areas of focus of the Foundation is to contribute to bridging the 'digital divide': the gap between those who have and those who do not have high quality access to modern digital technologies. The digital divide is an additional obstacle to the eradication of poverty, which is still a tragic reality for the 3 billion people (half the world's population), who live on less than two dollars a day. According to the UN Human Development Report 2003, in 2001 only 7.96% of the world's population had access to the Internet. Missing out on the benefits of the digital revolution will only increase the disparity between the rich and the poor. Bridging the digital divide will simultaneously help overcome tremendous inequalities in education, access to know-how and information, chances of personal and entrepreneurial success, access to health services, and individual wealth.

The Foundation's Honorary Chairman, Pasquale Pistorio, is a member of the United Nations' Information Communication and Technology Task Force, founded by the UN Secretary General, Kofi Annan, to reduce the digital divide. Within this Task Force, Pistorio has proposed that all medium to large-sized companies with over 250 employees, should donate, on a voluntary basis, up to:

- 0.1% of annual revenues
- 0.1% of employees' hours worked

in order to provide the equipment and education required to use a computer and access the Internet.

### The Foundation's Digital Unify Program

Our Digital Unify Program involves providing not only technology but also the necessary training for the basic use of a PC and the internet. In 2002, ST University and STMicroelectronics developed an introductory course called 'Informatics and Computer Basics' (ICB). This 20-hour course is free of royalties and is available in Italian, English, French, and Hindi. It has been designed for ST employees, their families and the local community in the areas in which ST is present.

The deployment strategy is to identify a number of schools, universities, local authorities, NGOs, private and public companies and institutions in the vicinity of ST sites, and supply them with the necessary technology and initial training so that they, in turn, can 'cascade' the ICB. In addition, computer labs at ST sites will run regular ICB classes for ST employees and their families.

ICB classes at ST sites are delivered by volunteer ST employees who take the ICB Facilitation or 'Train the Trainers' (TTT) course to become trainers themselves. This is a key factor of our program: the involvement of people on a voluntary basis, both for the actual training as well as for organizational aspects.

#### Activities in 2003

2003 represented a 'debugging' phase for the Digital Unify Program. ICB classes at ST sites ran at full steam throughout the year for ST employees, their families, and people from the local community at Agrate, Italy, Malta, and Morocco. The Program received the recognition of the Maltese government, which asked ST to initiate their police force in the cascading process. In Morocco, the local authorities in Casablanca put the local ST management in touch with a number of NGOs, including young people's and women's groups. These groups subsequently benefited from our classes. ST Digital Unify Program Trainers have also been trained in India, where the Program will be launched in January 2004.

By the end of 2003, the Digital Unify Program counted 110 ST trainers and 1,016 people who have completed ICB classes, of which 15% from ST and 85% outside ST.

#### 2004 and beyond

The plan for 2004 is to identify a number of locations (schools, universities, local authorities, NGOs) near ST sites in which to set up a lab and train external trainers who will further cascade the course. A strong emphasis will be placed on the developing countries in which ST operates. The Foundation will expand the program to France, Malaysia, Eastern Europe and Tunisia.

We are currently exploring the possibility of adapting the course for e-learning to be able to reach a greater number of people. Long-term perspectives include the establishment of free internet kiosks in villages surrounding ST sites.

We hope to encourage other companies to join in our effort by adopting our course and following our example. The reasons for participating in the Digital Unify Program (or any other similar initiative) are numerous:

- To respond to an ethical mandate;
- To encourage employee participation and increase the sense of belonging to the company, which represents an even greater return on the sponsorship of charitable initiatives than good corporate image;
- Because socially responsible companies that are committed to promoting the well-being of the communities in which they work generate more value, not only for stakeholders but also for their shareholders;
- Because more advanced economies will benefit in the long term from a better distribution of wealth and the creation of new market opportunities;
- And last but not least, because there are invaluable benefits to be reaped in terms of the future safety and peace of societies around the world.

In last year's report we provided a brief description of this community program. This year we offer a more in-depth view of the project and some of its benefits according to the people involved in it.

### **ST Toa Payoh's (Singapore) approach to community involvement**

The spirit of kindness and care for the less fortunate in society has always been an integral part of our corporate ethos at ST Toa Payoh (Singapore). During the 1990s we organized many social programs to help the under-privileged in our community. Besides cash contributions and donations in kind, we make a point of spending time with people and doing our best to share our emotions as well as our financial resources. Recognizing that the welfare of disadvantaged groups requires life-long commitment and support from us, we created the CARE@ST program in January 2003.

### **CARE@ST**

CARE@ST (Community Acts of Responsible Employees) is our social accountability program aimed at creating a culture of sharing and giving among our employees. Objectives of the program include:

- To create greater awareness among staff of the needs of the less fortunate and the importance of protecting our environment;
- To increase our efforts towards social responsibility by incorporating social programs into our corporate initiatives;
- To direct our efforts and contributions towards one primary beneficiary that is not supported by the government.

A team was formed and organized in such a way that each member's strengths and expertise could be fully utilized. By coming together to share knowledge, the team has come up with many innovative ideas and found solutions to seemingly impossible problems. The greatest challenge that we faced was to change the beliefs of staff and create the awareness that giving affection and kindness is just as important as giving money.

The individual programs we have launched include:

- The Agri-Care Project, focusing on in-house agriculture to grow hydroponics vegetables (and give them to our beneficiaries);
- Official adoption of the Red Cross Home for the Disabled, including spending time with residents and doing badly needed repair and maintenance work;
- ST Charity Walk to raise money for our charity fund and donate to our adopted home;
- ST Heart Bus, to support a national charity campaign. For every \$10 donated, employees signed their name on a special double-decker bus;
- Blood donation and mammogram programs;
- Nature Reserve Reforestation Program;
- Sponsorship of students from recognized institutions.

### **The benefits of CARE@ST**

We evaluate and measure the effectiveness of our programs by tracking the percentage of employees' participation in social programs, the amount of donations collected by the ST Charity Fund and employees' level of awareness and consideration of the needs of the community.

One of the benefits of our CARE program is the strong spirit and culture of compassion and kindness that it has created in the company. ST is now recognized nationally as a socially responsible company and our sponsorship of students with outstanding academic performance has paid off: we are one of the 'Employers of Choice' in schools and universities.

### **Stakeholder perspectives**

As our primary beneficiary, we focused on the Red Cross Home for the Disabled when gathering opinions and feedback on the CARE program.

"We thank all employees of ST for their generous support and donations. We would like to make friends with you and wish you would visit us more often and take us out. We have always been neglected by the public and we would very much like to enjoy a friendship with you."

*Agnes and Pauline, residents*

"As a non-profit charitable organization, the Home relies primarily on public donations. ST's support has definitely made a real difference for the Home and its residents. It was very run down and many of our facilities and equipment were out of order. For example, before the Facilities team from ST came we didn't have hot drinking water for months because the heater was broken!"

*Amy Tan, Home Administrator*

"When I first became a volunteer at the Home I wasn't sure if I would be able to cope with the residents. They need special care and attention and I wasn't confident that I would be able to give it to them. When I fed them, I was so worried that they would choke. But when I looked into their eyes and saw their appreciation I was deeply touched and felt that it was all worth it."

*Pan Kian-Hua, ST Associate Engineer*

"I signed up as a volunteer because I would like to do my bit for the under-privileged. Volunteering has added more meaning to my life and changed it completely. It requires a lot of patience. You should never expect anything in return, but the best reward you get is a sense of satisfaction as well as gratitude from the residents."

*Jothibharathi Ramalingam, Senior Technician*

"I have worked with ST for more than 20 years and I must say that ST is a socially responsible company that cares for the interest not only of its shareholders and employees but also of the community. I am glad that I was able to contribute to the society through the CARE program."

*An Ananthajothi, local Labour Contractor*



“Trees are

the extreme endeavour of the

earth

to speak to the sky.”

“Trees are  
the extreme  
endeavour of  
the earth to  
speak to the  
sky.”

Rabindranath Tagore

1913 Nobel laureate in literature

1861-1941, Bengala, India

## Environment

### Changes to this year's environment section

On request from stakeholders and in response to the new consensus in sustainability reporting, absolute values have been introduced for the first time, alongside normalized values, in order to allow readers to evaluate the actual impact of our activities on the environment. We have also changed the way we present normalized values. Instead of indicating environmental impact per dollar of added value, we now refer to impact per unit of production (wafers or finished products). This is because added value is strongly affected by market conditions, while production volumes allow for a more meaningful comparison year on year.

### Information regarding indicators

The values presented in this report are given separately for Front End and Back End manufacturing sites, which produce different end products.

- Front End sites produce finished silicon wafers of different diameters and different technological complexity. We have adopted a reference unit of an 8-inch wafer with a complexity level of 20 'masks' (photolithography processes). All wafers are converted to this reference.
- Back End sites produce the finished product or 'package' (a silicon chip assembled into a plastic or ceramic package). We refer to this finished product in million 'units'. In the sole case of energy we refer to million 'pins' (wire connections on the package) because this is more suitable for measuring the consumption of electricity during the production process.

## General Principles

ST's Environmental Policy is based on the belief that it is our responsibility to society to protect the natural world from our industrial processes. Our commitment to the environment is a strong characteristic of our identity and a genuine source of pride and motivation within the company. We also believe that environmental care makes good business sense and contributes to the overall efficiency of the company.

Our aim is to demonstrate our commitment to the environment by understanding and meeting the expectations of our stakeholders and of society in general and responding to those expectations through initiatives and programs based on our Environmental Decalogue: a set of ten quantified, timed and measurable targets created to help the company reduce its impact on the environment.

Far from being a passive statement of principles, the Decalogue (presented as an appendix to the Environment section) is part of the company's basic operating principles and helps create a culture where employees at all levels are encouraged and rewarded for being environmentally aware.

### Our Objectives

- To strive for improvement of the global environment and aim to achieve sustainable development through all of our business activities;
- To incorporate environmental criteria into all stages of our production cycle, from the design phase to procurement, sale and end of life;
- To strive for pollution prevention, reduced consumption of natural resources, reduction of waste, and minimized impact (social and environmental) of chemical substances;
- To promote an open dialogue with workers and the communities in which ST operates; and to cooperate in a positive spirit with industrial and scientific communities, governments and non-governmental organizations to develop laws, regulations and guidelines for continuous improvement within these communities, promoting a healthy global competitiveness.

# Environmental Management

## Organization

Environmental care is a high-level concern. It is among the responsibilities of our Executive Total Quality Council (ETQC), which is chaired by our CEO. A Corporate Vice President heads our Total Quality Environmental Management Organization.

A lean centralised corporate team (the Corporate Environment department) has the task of coordinating the company's global activities in this area. It is the responsibility of the Corporate Environment department to develop and monitor plans and strategies to help us meet our Decalogue goals. Its role is to:

- Drive the company towards CO<sub>2</sub> neutrality using the ST Energy and PFC roadmaps.
- Use corporate environmental auditing and quarterly environmental reporting to ensure that the environmental policy and management systems are understood and implemented.
- Appoint and lead cross-functional environmental working groups of skilled technical experts.
- Ensure compliance with environmental legislation and regulation in every country in which ST operates.
- Keep the company list of banned and restricted chemical substances in line with worldwide regulations and promote best practice in chemical use across ST.

### Our Mission

Our Total Quality Environmental Management Mission is to:

- Develop strategies and programs supporting the company's journey to Business Excellence, with a specific focus on customer satisfaction, sustainable development and the deployment of our guiding principles in work practices.

Corporate  
Vice President  
Total Quality  
and Environment

Corporate  
Quality Director

Corporate  
TQM Director

Corporate  
Environment  
Department Director

TQEM Programs Director

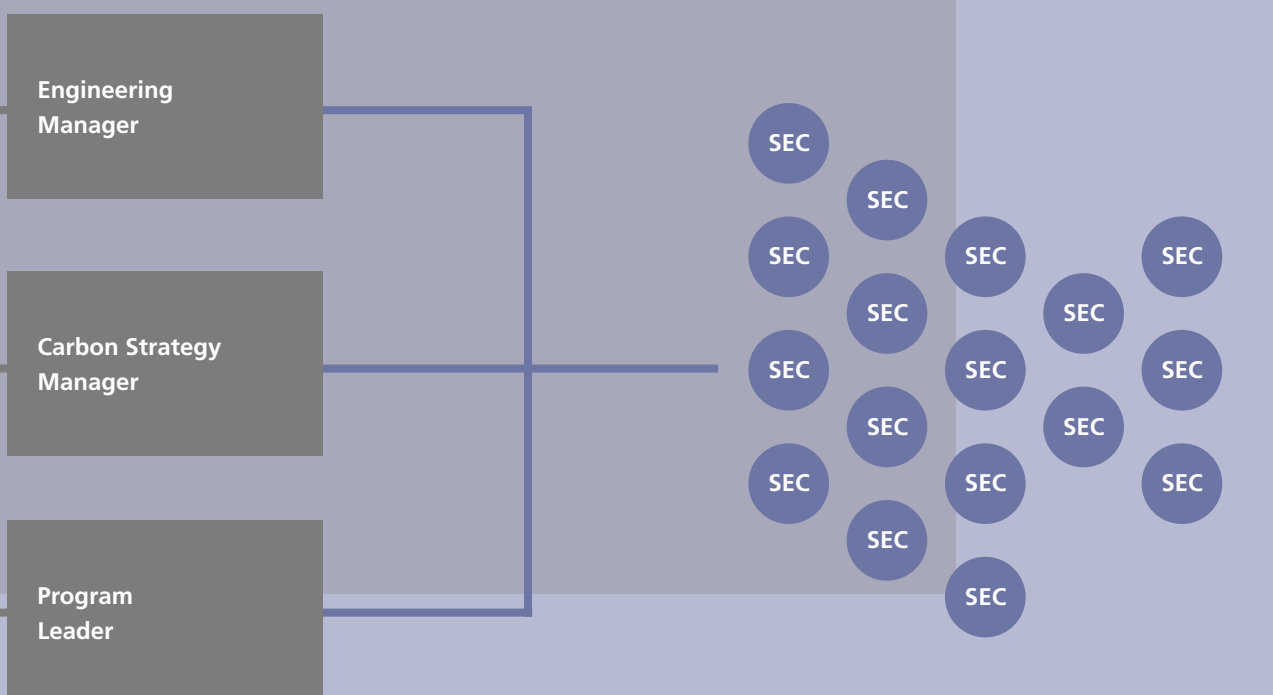
<sup>1</sup> Front End sites are where the first stage of the manufacturing process takes place. Wafers of silicon are prepared through a series of complex industrial processes under conditions of extreme precision and cleanliness. The wafer is then transferred to Back End sites for assembly, testing and packaging. The individual squares of silicon or 'chips' are cut from the wafer and 'packaged' or sealed into tiny boxes with metal wires that will connect the chip to the final electronic device.

At each of ST's 18 manufacturing sites (Front End and Back End) around the world there is an Environmental Steering Committee and a Site Environmental Champion (SEC).<sup>1</sup> Both work closely with the Corporate Environment department, forming a link with the Site Management. The Site Manager is Chairman of the Steering Committee and the Site Environmental Champion is its Secretary. The responsibilities of the Steering Committee and Site Environmental Champion cover the implementation and control of the Site Environmental Management System, including the supervision of the site's environmental programs and targets and the harmonization of these with the company's global objectives.

An Environmental Steering Committee at corporate level serves as a link between local site management and the Executive Total Quality Council (ETQC).

### Certification

All of our manufacturing sites have been EMAS validated and ISO 14001 certified since 1997. ST's new plant in Bouskoura, Morocco, was validated and certified in 2003. As a prerequisite to obtaining EMAS validation, every site has prepared and published a detailed environmental statement presenting its consumption of natural resources and its emissions, together with relevant studies and additional information relating to its environmental management program. This report is updated and published annually, as required by EMAS. These individual site environmental reports are available to anyone who requests a copy. At present they are only published in the local language. We intend to make electronic copies of these reports available on our website in the near future. To maintain ISO 14001 certification and EMAS validation all sites are independently audited. EMAS full revalidation and ISO recertification take place every three years with annual surveillance visits.



# Measuring our performance

Our experience with TQEM over the years has reinforced our belief that measuring is one of the main factors that drive behaviour. As we have discovered, it is not the only one. Leadership, top management commitment and culture are also extremely important. But we must measure and track our performance effectively in order to reach our goal of overall business excellence, which includes top quality environmental care.

## Information systems

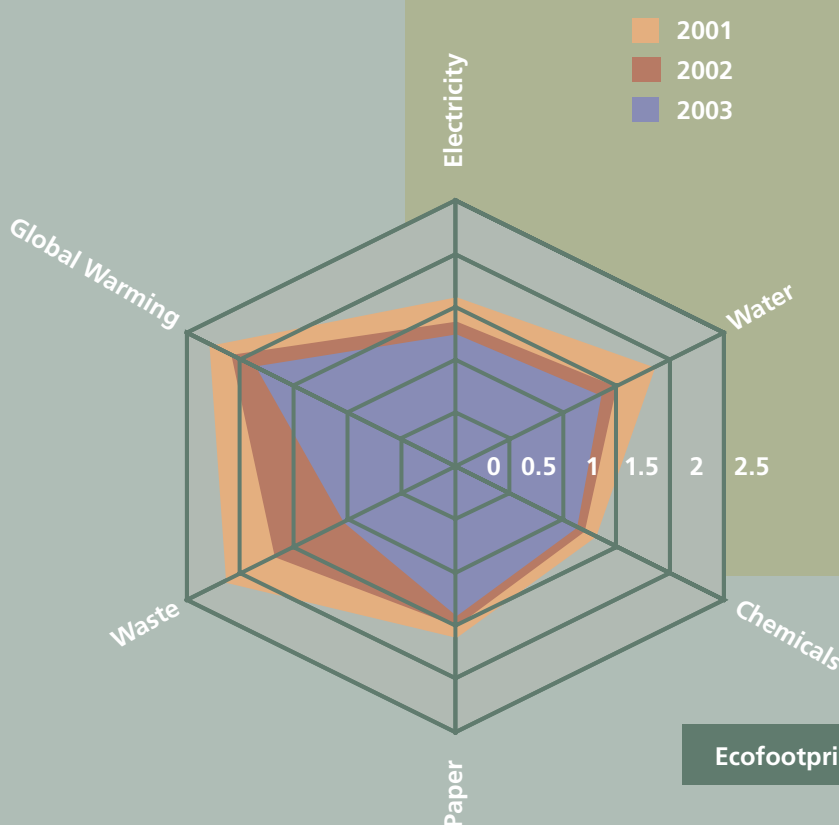
Environmental data from each site is measured against the relevant Decalogue targets. This process is managed through the environmental database, a reporting and benchmarking tool that enables environmental indicators to be compared site by site. This is one of the ways in which best practice is shared across the company. A summary of the performance of all sites on various environmental topics is especially useful when preparing for our regular environmental management reviews. We refer to this summary as the 'Environmental Dashboard'.

Our environmental database is currently being upgraded to include more information, notably with regard to the inventory and use of chemicals in all sites. The upgraded system will also allow greater interactivity between corporate and local environment 'knowledge pools', making more information available faster in all directions (corporate to local, local to corporate, local to local) to increase overall awareness and knowledge levels.

The Corporate Environmental department carries out regular benchmarking activities and works with other companies to develop and share best practice. It uses internal information and management systems to 'cascade' the results of its research to all sites.

## Ecofootprints

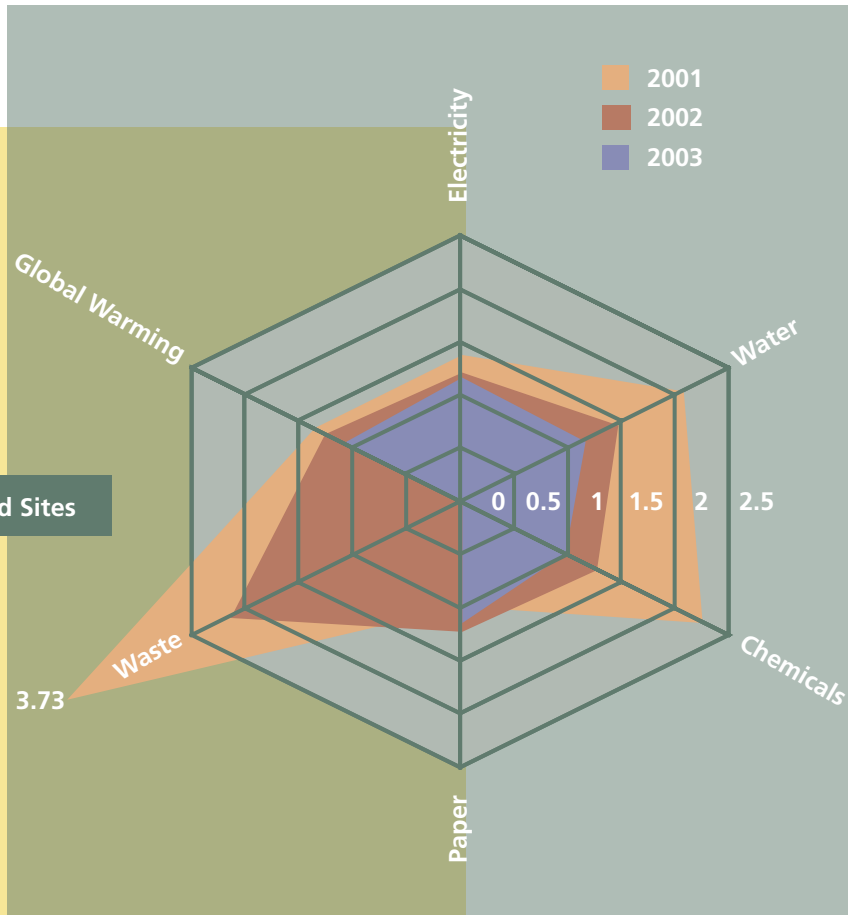
We use Ecofootprints to allow a fast, fact-based evaluation of environmental performance and a comparison of data from different sites. The ratio of actual performance versus standard performance (typically the best-in-class) is plotted on a radar chart to indicate the company's overall 'footprint'. A footprint equal or below 1 means we are performing well. The smaller the footprint, the better the performance. These charts illustrate the evolution of our environmental performance through 2001-2002-2003 for Front End and Back End sites respectively.



Ecofootprint Total Front End Sites

The Back End sites' total elimination of landfill waste in 2003 is particularly noticeable, and is explained in more detail in the section on Waste.

**Ecofootprint Total Back End Sites**



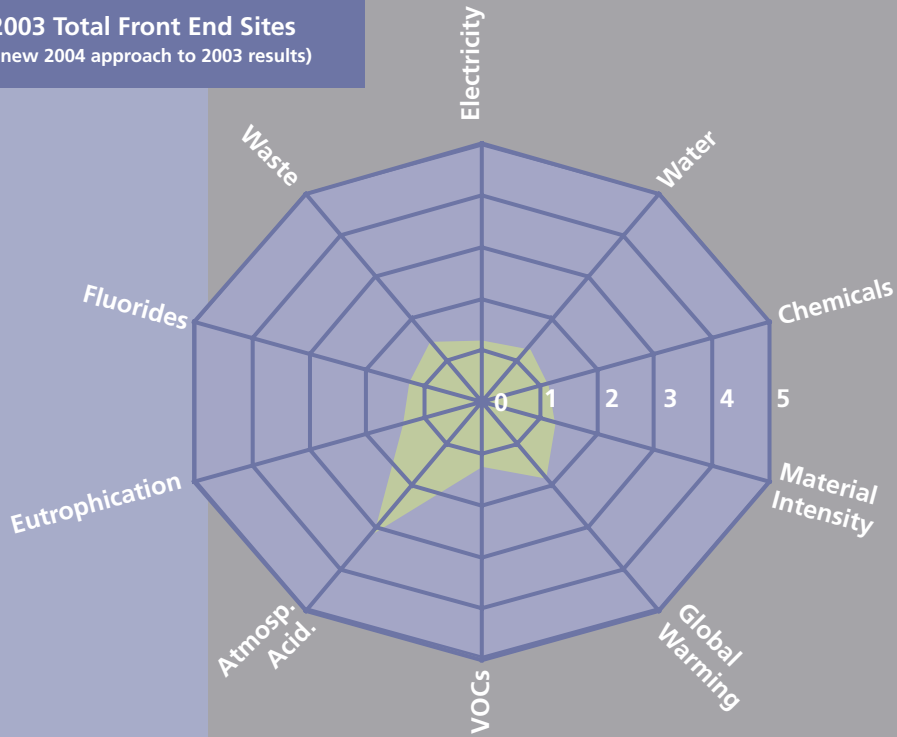
By the end of 2003 we had finalized an extended set of indicators that we will use from 2004 on to measure our performance at all sites and worldwide on a quarterly basis. The new ecofootprint indicators have been selected from the Environmental Burden method (described overleaf) and added to the six original indicators that ST has used to measure its performance: electricity, global warming, chemicals, water, paper and waste. The new footprint shows the same indicators as before, with the addition of Material Intensity, Volatile Organic Compounds (VOCs), Acidification, Heavy Metals, Fluorides and Eutrophication. The new footprint will be officially introduced in 2004, but we have prepared a simulation on our 2003 results to give readers an idea of what to expect next year. Some of the standards against which we will measure our performance have yet to be finalised (e.g. VOCs).

Besides the addition of several indicators, the new ecofootprint format introduces a few significant changes. The indicator 'Material Intensity' replaces 'Paper' and represents all of the materials that enter the sites and that are consumed in the production process. These include chemicals, but chemicals are also presented separately so that their specific impact can be evaluated. The materials used in Front End and Back End sites differ slightly. Front End sites use mainly silicon and chemicals; Back End sites use mainly resins, chemicals and metal frames. Other indicators differ slightly for Front and Back End to reflect their respective use of resources and their impact on the environment.

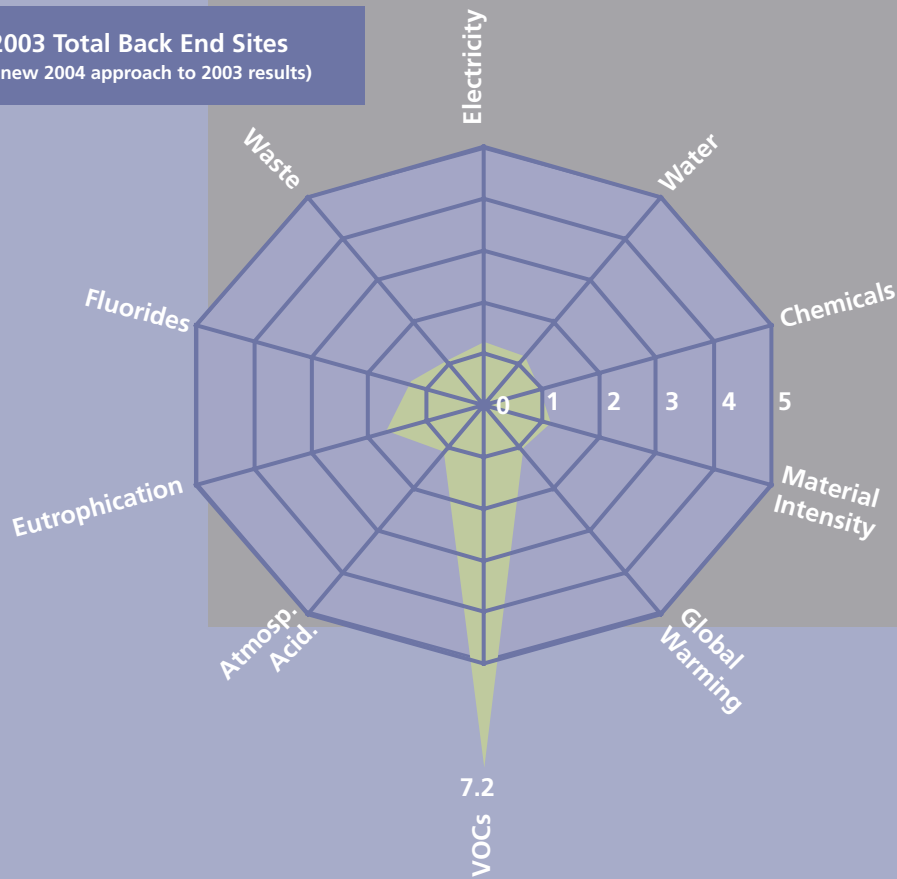
Simulation of our new ecofootprint

on 2003 results

Ecofootprint 2003 Total Front End Sites  
(application of the new 2004 approach to 2003 results)



Ecofootprint 2003 Total Back End Sites  
(application of the new 2004 approach to 2003 results)





## **Environmental Burden: the impact**

### **of emissions to air and water**

ST has worked closely with the World Business Council for Sustainable Development (WBCSD) over the last few years to define and implement eco-efficiency indicators. One of the methods we have adopted as a result of this collaboration is the environmental burden approach. We began using this method in 2001 to estimate the potential environmental impact of emissions and waste as a more meaningful alternative to just stating quantities against local legislation limits. This informative and scientifically sound way of quantifying the environmental performance of a global company like ST is also useful for setting and monitoring targets for improvement. We use 10 impact categories, six dealing with emissions to air and four to water.

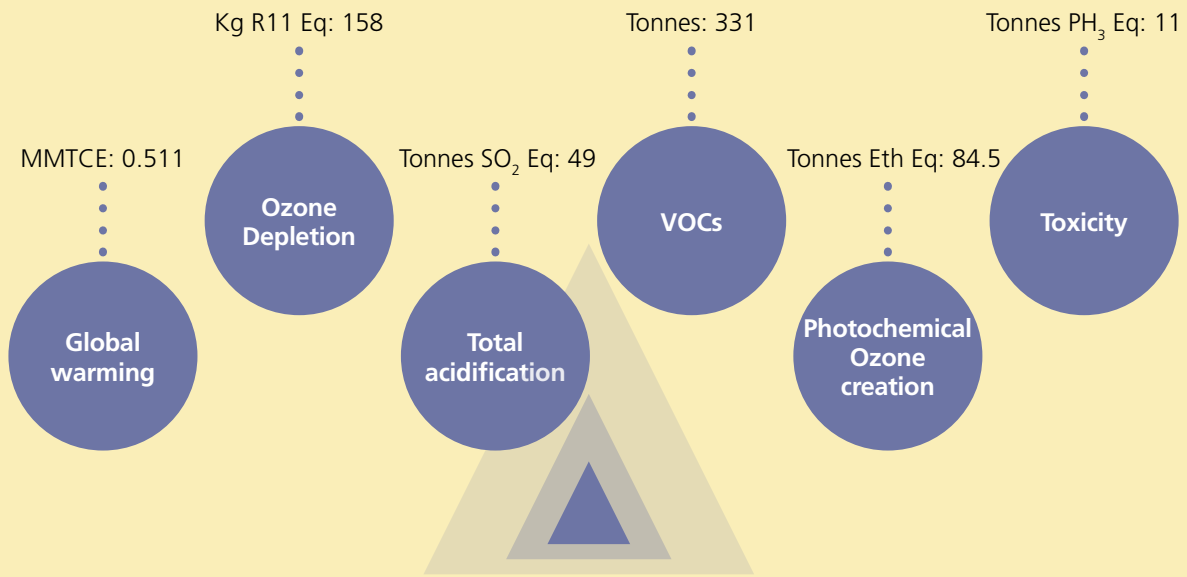
#### **Air**

- Global warming: includes direct greenhouse gas emissions from our manufacturing plants and indirect emissions from energy consumption and transport, reported in Metric Tonnes of Carbon Equivalence (MTCE).
- Ozone Depletion: deals with marginal releases of ozone-depleting substances measured in R11 equivalence.
- Total VOC Emissions: reported as net volatile organic compounds emissions in tonnes.
- Atmospheric Acidification: total acidic emissions expressed in sulphur dioxide (SO<sub>2</sub>) equivalence.
- Photochemical Ozone Creation: deals with the potential to form low-level ozone.
- Air Emission Toxicity: emissions of substances are considered with threshold limit values below 3 ppm, expressed in Phosphine equivalent.

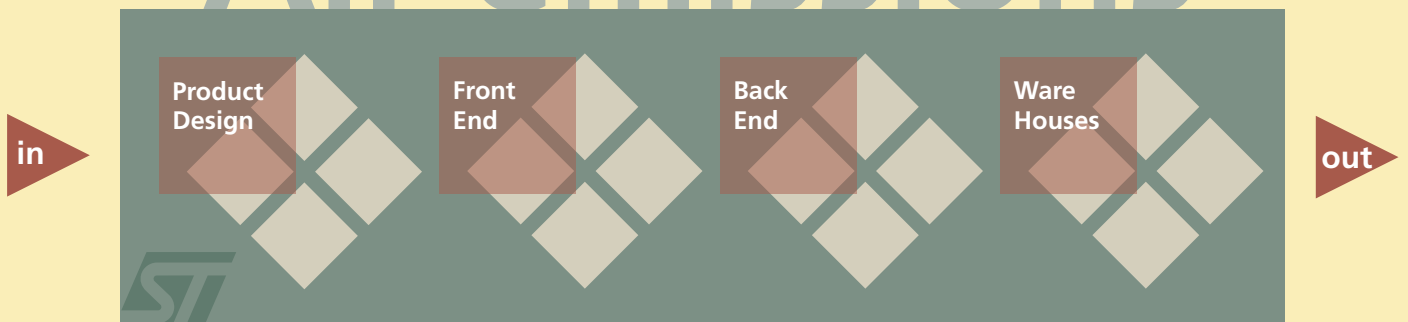
#### **Water**

- Aquatic Oxygen Demand: total Chemical Oxygen Demand (COD).
- Eutrophication: deals with Phosphorous and Nitrogen emissions.
- Heavy Metals: total heavy metals emissions.
- Aquatic Eco-toxicity: includes mass emissions of various metals expressed in copper equivalent.

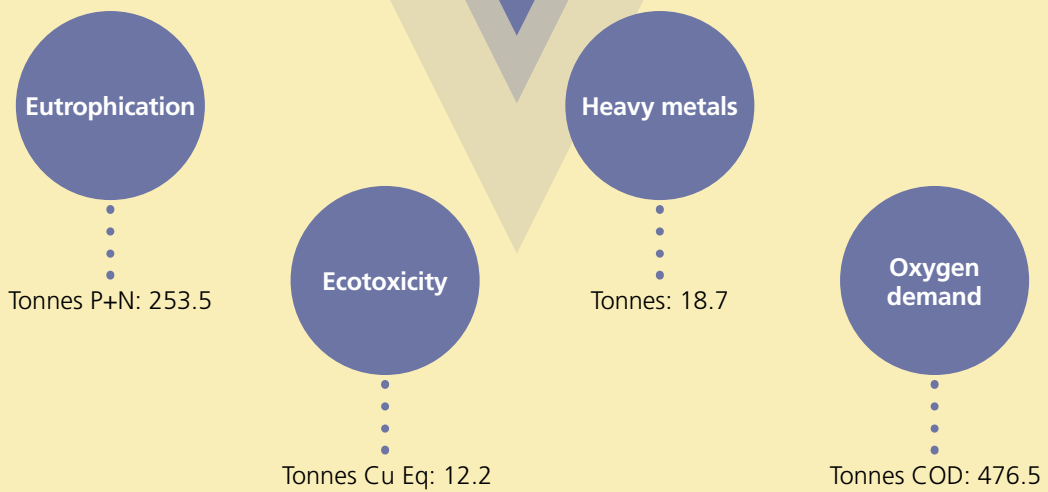
In 2003 we used these ten indicators to measure our performance in all of our manufacturing sites for the third consecutive year. Unlike the Ecofootprint indicators, which we use to measure our performance on a quarterly basis, the Environmental Burden indicators track our annual overall performance. The results are shown in the diagram on the next page. These absolute figures show the impact of our industrial processes on the environment.



# Air emissions



# Emissions to Water



<sup>2</sup> Last year these normalized figures were presented per million dollars of added value. We are now reporting per unit of production to allow for more meaningful comparisons year on year.

The tables below present the normalized values for the Environmental Burden indicators by total Front End and Back End sites. While absolute values represent the actual quantities of resources we consume (input) and emissions and waste we produce (output) (tonnes, m<sup>3</sup>, kWh), normalized values represent the ratio of absolute values to production units (silicon wafers or finished products)<sup>2</sup>. In order to maintain the confidentiality of our production volumes, these normalized values have been reported against a baseline reference value of 100.

#### Normalized Figures: Front End

Indicators	Units	2001	2002	2003
Global warming	MTCE / Wafer	100	81	74
Ozone depletion	mg R11 Eq / Wafer	100	11	0.7
VOCs	gr / Wafer	100	90	75
Atmosph. Acidification	SO <sub>2</sub> Eq / Wafer	100	130	150
Photochemical Ozone creation	gr Ethylene Eq / Wafer	100	246	207
Air Emission Toxicity	g PH <sub>3</sub> Eq / Wafer	100	164	250
Eutrophication	kg [P + N] / Wafer	100	70	47
Aquatic Oxygen Demand	kg COD / Wafer	100	57	57
Heavy metals to water	g Heavy metals / Wafer	100	70	70
Aquatic Ecotoxicity	g Cu Eq / Wafer	100	48	36

#### Normalized Figures: Back End

Indicators	Units	2001	2002	2003
Global warming	MTCE / M. Pins	100	97	80
Ozone depletion	kg R11 Eq / MUnits	100	85	22
VOCs	kg / MUnits	100	156	130
Atmosph. Acidification	g SO <sub>2</sub> / MUnits	100	66	78
Photochemical Ozone creation	g Ethylene Eq / MUnits	100	783	134
Air Emission Toxicity	g PH <sub>3</sub> Eq / MUnits	100	138	86
Eutrophication	kg [P + N] / MUnits	100	53	74
Aquatic Oxygen Demand	kg COD / MUnits	100	60	34
Heavy metals to water	kg Heavy metals / MUnits	100	59	62
Aquatic Ecotoxicity	kg Cu Eq / MUnits	100	53	66

Despite the fact that there has been a significant increase in production, good progress has been made in net emissions for several eco-indicators. There have also been some significant improvements in normalized figures for most of these indicators. Thanks to the installation of abatement systems and the deployment of our best practices, we expect good progress in the future for several indicators, for example VOCs. We encourage our sites not to be satisfied with strict compliance to their local permit but to think in terms of their contribution to the environmental burden of the company as a whole.

### Key inputs and outputs 2003

<sup>3</sup> kTonnes =  
thousand tonnes.

Inputs		Outputs	
Electricity	1973 GWh	GHG*	1.65 million tonnes CO <sub>2</sub>
Chemicals	15 kTonnes <sup>3</sup>	SO <sub>2</sub>	49 tonnes
Water	19.8 million m <sup>3</sup>	Waste	33 Ktonnes
		Reused & Recycled Waste	24 Ktonnes

\* This figure corresponds to GHG emissions (CO<sub>2</sub> direct and indirect plus PFCs)

### Environmental accounting

Environmental accounting is a tool that allows the company to calculate the costs and savings relating to its environmental activities and provides crucial support to the internal decision-making process. Costs resulting from environmental activities include laboratory monitoring, waste treatment and disposal, water and wastewater management, air treatment, the maintenance of our environmental management system and the depreciation of equipment. Savings arise from using less energy, chemicals, water and other resources and the money raised from recycling activities.

The table below presents the total costs versus savings for the three key resources used in our industrial processes (energy, water, chemicals). The savings in a given year are calculated with reference to our performance in 1994, our baseline year (when we started our environmental initiative). Taking the example of electricity consumption in 2003, we proceed in three steps:

1. We look at the actual consumption of electricity in 1994 and at the actual number of products manufactured during the same year. The ratio between the two gives our energy efficiency in 1994.
2. We apply this ratio of energy efficiency to the number of products manufactured in 2003, which gives us the theoretical amount of energy that ST would have used if it had maintained the same energy efficiency as in 1994.
3. Then we compare this theoretical energy consumption with our actual consumption, which is much lower. The difference between the two gives the savings we have made and can easily be translated into dollars.

Costs (M\$)	2001	2002	2003
<b>Total costs</b>	<b>30</b>	<b>32</b>	<b>35</b>

Ecology is free

Savings (M\$)	2001	2002	2003
Energy saving	33	59	78
Water saving	6	10	13
Chemicals saving	17	31	42
<b>Total</b>	<b>56</b>	<b>100</b>	<b>133</b>

The environmental accounting framework is completed by the amount of money invested in environmental activities. In 2003 this amounted to \$24.4 million. Environmental investments accounted for 2% of the company's capital investments.

## Environmental care in context

In this section we present our activities relating to environmental care in the context of our responsibilities to and interactions with different stakeholder groups.

### **Industry, peers and competitors**

Representatives of our company participate in a range of national and international organizations and associations to share our experiences and learn from others in a context that challenges us to think and behave differently. This also gives us the opportunity to apply our know-how in a way that helps ensure the sustainability of the semiconductor industry.

At a European level, we participate through ESIA (European Semiconductor Industry Association) in different working groups focusing on energy management, hazardous chemicals, legislative issues and emissions from PFCs (Perfluorinated Compounds). At a worldwide level, we participate in the World Semiconductor Council (WSC) through dedicated working groups in the Environment, Health & Safety (EHS) Task Force, and in the World Business Council for Sustainable Development (WBCSD).

### **Government**

ST's internal policy is that rather than adhere to the minimum local legislation of each country in which it is present, it will apply the most stringent legislation of the countries in which it operates to all of its sites without distinction.

#### **Corporate regulation tracking**

Environmental and Health & Safety (EHS) regulations have come to play an increasingly important role in international business in recent years as part of the overall drive towards sustainable development. In order to be able to track these changes effectively we have subscribed to a management tool to identify, monitor and analyse critical EHS policies and regulatory developments occurring in the countries in which ST operates. The tool is used to ensure regulatory compliance worldwide and to protect against the business risks of administrative or criminal liabilities.

The reports provided by this system give a full analysis of developments in the legislative framework and cover issues including industrial manufacturing operations and associated EHS requirements as well as general product policies, product design requirements, recycling, disposal and marketing conditions. In addition to this, the reports analyze how regulatory initiatives could have an impact on our business and how we can respond to significant changes. Strong and weak signals are evaluated to extrapolate the trends in market regulation and prepare for anticipated future scenarios.

All employees have access to the information provided by this system through a dedicated website on our environmental intranet site. An e-mail alert system brings critical information relating to regulation tracking to the attention of those employees that are most concerned by it.

### **Non-compliance**

Given the fast pace of change in environmental legislation, it is possible that ST sites fall out of compliance for brief periods of time. This sometimes happens because laws come into force before equipment that will ensure compliance can be modified or replaced or because of the time required by local government to make administrative changes. In both cases, the ST site in question works closely with local government to ensure that the situation has been fully acknowledged and is being resolved as quickly as possible. As a result of this close collaboration, there were no major non-compliance issues in 2003 and the company did not receive any fines.

### **Lobbying**

STMicroelectronics takes part in government lobbying at an industry level on issues that it deems important. In the past we have lobbied the European government through industry associations to avoid legislation banning the use of Perfluorinated Compounds (PFCs). ST and the semiconductor industry took this position because there are no viable alternatives to the use of these chemical compounds in the manufacture of electronic components. ST and other member companies of the European Semiconductor Industry Association (ESIA) signed an agreement to voluntarily reduce PFC emissions before opposing the European government's proposed total ban on PFCs. For our progress on PFCs, see the dedicated section.

## **Shareholders & the financial**

### **community**

As part of our activities in environmental management, we are in regular contact with financial institutions and the financial community. We receive and answer numerous questionnaires on our environmental performance and maintain an ongoing dialogue with financial analysts specialised in this area to ensure that they have the information they need to form an accurate picture of our competences.

As a result of our consistently good results in environmental protection, ST continues to hold a high ranking among companies pursuing goals in sustainable development. ST is represented in the following main sustainability indexes:

- Dow Jones Sustainability Group Index (DJSI), which was created in 2000 and includes 200 companies worldwide;
- FTSE 4 GOOD, launched in 2001. ST is present both in FTSE 4 GOOD Global 100 and in the FTSE 4 GOOD Europe 50 Index;
- ASPI, created in June 2001, sponsored by VIGEO, an independent French corporate social responsibility rating agency, which includes 110 companies selected as best-in-class from the DJ EuroStoxx universe;
- ESI, managed by ETHIBEL, for which Standard & Poor maintains and calculates its Ethibel Sustainability Index;
- EIE, created and managed by Italian corporate social responsibility rating agency Capital Partners SA, which included ST in its index in 2002.

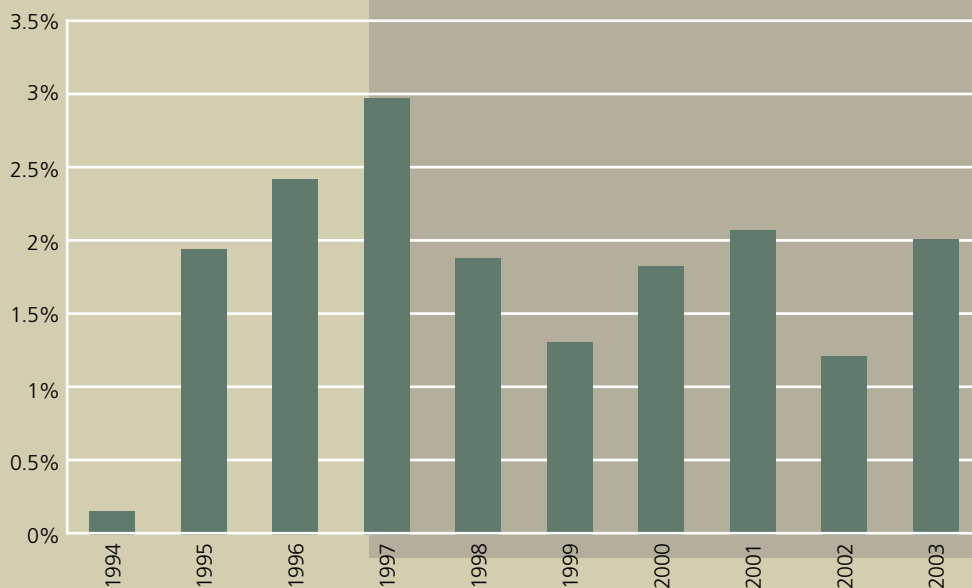
### Investing in environmental protection.

We strongly believe that any investment in environmental protection that reduces emissions and the consumption of resources will be repaid. We have proved that business can be both environmentally responsible and profitable. All of our investments in energy conservation have been repaid within three years, many within two years. We are also committed to finding ways of making progress in other aspects of environmental care that require investment but that do not have an immediately tangible payback, as in the case of reducing PFC emissions (see the section on PFCs).

The recent downturn in the semiconductor market forced us in 2002 to reduce our environmental investments to 1.2% of ST's capital investments. In 2003 this percentage was increased to 2% (\$24.4 million). The table below illustrates the trend in our environmental investments.

### Environmental Investments

(% of total Company-approved investments)





## Employees

Although operating principles and policies are crucial for effective environmental management, any good work we carry out is only possible thanks to the commitment of individual employees and their transformation of guidelines into culture and practice.

### **Environmental awareness and training**

Training is provided at all ST sites to raise environmental awareness among our employees and internal contractors. Special attention is paid to people whose work may have a significant impact on the environment. All new employees are given a detailed introduction to ST's Environment Policy, Environmental Decalogue and their responsibilities in the site's environmental management system.

Local trainers offer specific instructions to people operating, monitoring or maintaining environmental equipment, such as wastewater treatment, scrubbers and chemical stores. They are trained to ensure optimum performance of equipment and to eliminate the potential of non-compliance with environmental laws or company environmental standards. This training is part of our job certification program and employees are given a refresher course at least every two years. Some external contractors are also required to attend training courses. An advanced environmental seminar on CD-ROM, developed at ST University, is available to ST's suppliers and customers.

One of the strengths of ST's Environmental Management System lies in the internal communication of information to keep employees informed and involved. We use internal magazines and intranet to provide employees with news and updates. Every ST site displays information about the environment on walls and notice boards.

### **ST Environmental Network and other initiatives**

This network was set up to improve communication on environmental matters between ST offices and sites around the world. A network of regional representatives participates in national and international organizations and events where they share information and identify opportunities to improve our environmental performance.

Employees play a crucial role in environmental initiatives organized by individual sites. See the section on the Local Community for an example of this kind of proactive behaviour.

## The Supply Chain

### Customers

In recent years we have seen a substantial increase in the number of customer requests for information on the chemical contents of our products. After an initial period during which individual answers were provided product by product, we have begun to construct a database on our website indicating all of the substances present in our products in order to improve the cycle time of our responses. This is now saving internal resources as a result of giving customers direct access to information on relevant enquiries.

One of the most pressing questions we receive is for information regarding the phasing out of lead in electronic components, which is part of the European RoHS directive that will ban the use of lead from July 1st 2006. The challenge arising from this major change in the semiconductor industry and the way we are meeting it is featured in the Lead 'case study'. ST's lead-compliance program is well under way and will meet the phase-out requirements in most 'packages' (silicon chips packaged into an outer casing) by mid 2005.

Part of our future strategy for the effective management of customer needs is currently being explored and implemented through the design of a new structure for the database containing information about our products. We anticipate that we will need to provide product information regarding the environment in a significantly different way in order to meet the needs of a consumer market that is increasingly aware and demanding on these matters and which will continue to be shaped by EHS legislation.

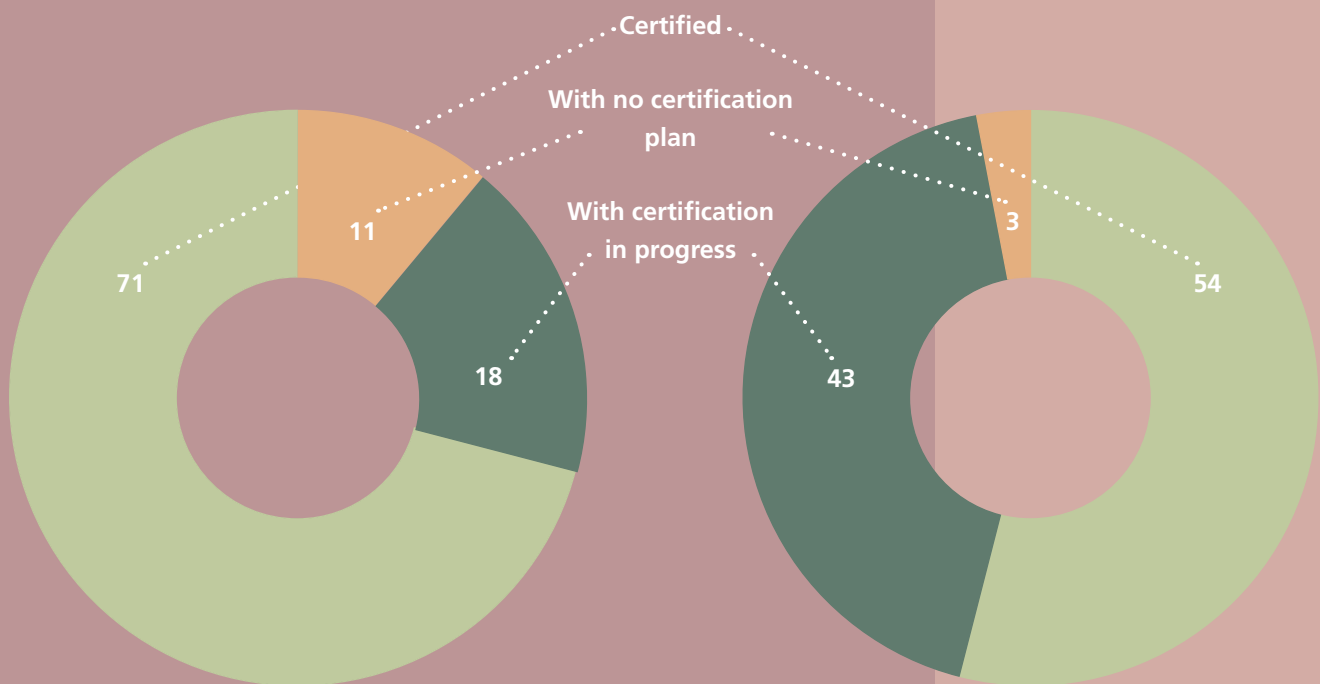
Product end-of-lifecycle disposal is one area in which we can offer assistance to our customers. We make information available on request regarding the companies we use for specialised disposal of products. Information regarding the material and chemical content of our products is available on our website (see Sustainable Product Design and Development). We also take back and re-use or recycle some of the packing materials we use to transport our products.

## Suppliers

Our environmental policy extends to the activities of our suppliers, who must also comply with our environmental requirements. Finding ways of reducing pressure on our suppliers through the streamlining of questionnaires and the creation of shared information systems will be one of ST's main areas of focus in the coming months and years.

We strongly encourage both suppliers and subcontractors to become EMAS validated or ISO 14001 certified and help them to do so. At the end of 2003, 71% of our materials suppliers were certified, with certification in progress at a further 18% (2002: 72% and 16%). The 2003 certification levels were 54% and 43% respectively for our equipment manufacturers and facilities suppliers. These figures show a significant improvement for equipment and facilities suppliers (2002: 36% and 55%), while the percentage of certified material suppliers remains stable (due also to the introduction of some new suppliers).

Key corporate suppliers typically provide more than 85% of our total worldwide supplies.



Material Suppliers (%)

Equipment & Facilities Suppliers (%)

# Lead-free products at ST

study

## Why is it important to eliminate lead from electronic components?

Lead is a heavy metal that can cause serious illness (known as lead poisoning) when ingested by the human body. Over the past few years it has been eliminated from various products on the market, from paints to petrol. When evaluating the risks related to lead, one must consider its toxicity, the ways in which it can enter the body, and also the level of exposure that will determine whether or not toxic effects will occur.

The electronics industry is not the major user of lead. 80% of lead used today is found in batteries, about 5% in paints and ceramics, about 5% in ammunition and less than 0.5% in electronic solder. The risk is linked to the quantity used, but also to the level of exposure. In the case of car batteries, for instance, the risk is minimal because the recycling process is well established and well controlled. In the case of electronic components, there is a risk that lead could be found in landfills through the dumping of electronic appliances. Although there does not seem to be any evidence that lead will eventually find its way into groundwater (due to its very low mobility), the presence of lead in landfills would make the take-back and recycling process much more complex.

New environmental regulations have been introduced that ban the use of lead in products and require retail manufacturers to take products back at the end of their lifecycle. The electronics industry is now preparing for the enforcement of these regulations. In Europe lead must be eliminated from electrical and electronic products by 1st July 2006 (Directive 2002/95/EC on the Restriction of Hazardous Substances - RoHS).

## Where can lead be found in our components?

Most of the lead in our products is found in the metallic connections between the silicon-based component and the printed circuit board of the application. There are several technologies that use alloys containing lead:

- The coating of package<sup>4</sup> terminals by plating or dipping.
- The 'balls' of Ball Grid Array (BGA) packages.
- The 'bumps' for the flip chips (silicon chips used directly on the printed circuit board without being integrated in a plastic or ceramic package).

Lead can also be found inside the package:

- As solder paste to position the silicon 'die' or squares on the metal frame.
- As one of the elements that are included in the composition of ceramic packages (most ceramics will contain a small proportion of lead).

The solder paste and the interior of the ceramic packages contain much lower quantities of lead and are not affected by the 2006 deadline of the new European legislation. They are currently being studied by our development teams for future replacement.

## What action are we taking at ST?

We produce a very wide range of packages (more than one hundred), with very different characteristics. Our engineers have developed three different technologies to cover lead replacement for all of them:

- Nickel/Palladium/Gold alloy as a pre-plating to coat the terminals of small power surface mount devices.
- Matt Tin as a post plated coating for the terminals of power surface mount devices and for insertion packages.
- Tin/Silver/Copper alloy for the solder balls of all Ball Grid Arrays (BGAs).

From the technical point of view, these solutions are now ready; they have been validated by numerous quality and reliability trials and are in the process of being approved by our customers. We are now in the most challenging part of the process of planning the production change from leaded to lead-free packages. A number of factors are causing the implementation of this significant change to the production process to be particularly complex:

- Most customers will want to have both leaded and lead-free packages for several months in order to facilitate their own production changes. This means that we may be obliged to keep two technologies running in parallel.
- Our lead-free packages must be compatible with older manufacturing processes at our customers' factories (i.e. using leaded solder pastes).
- Our finished goods inventories must be managed in such a way that we do not have any more products containing lead at the end of the transition period.

In 2003 we set up a special internal task force to manage all issues relating to the manufacture of lead-free packages. The task force is composed of people from different departments – technology, marketing, product groups, quality – in order to ensure an integrated company response to this event. The overall strategy and schedule will be defined and published on our website by the end of June 2004.

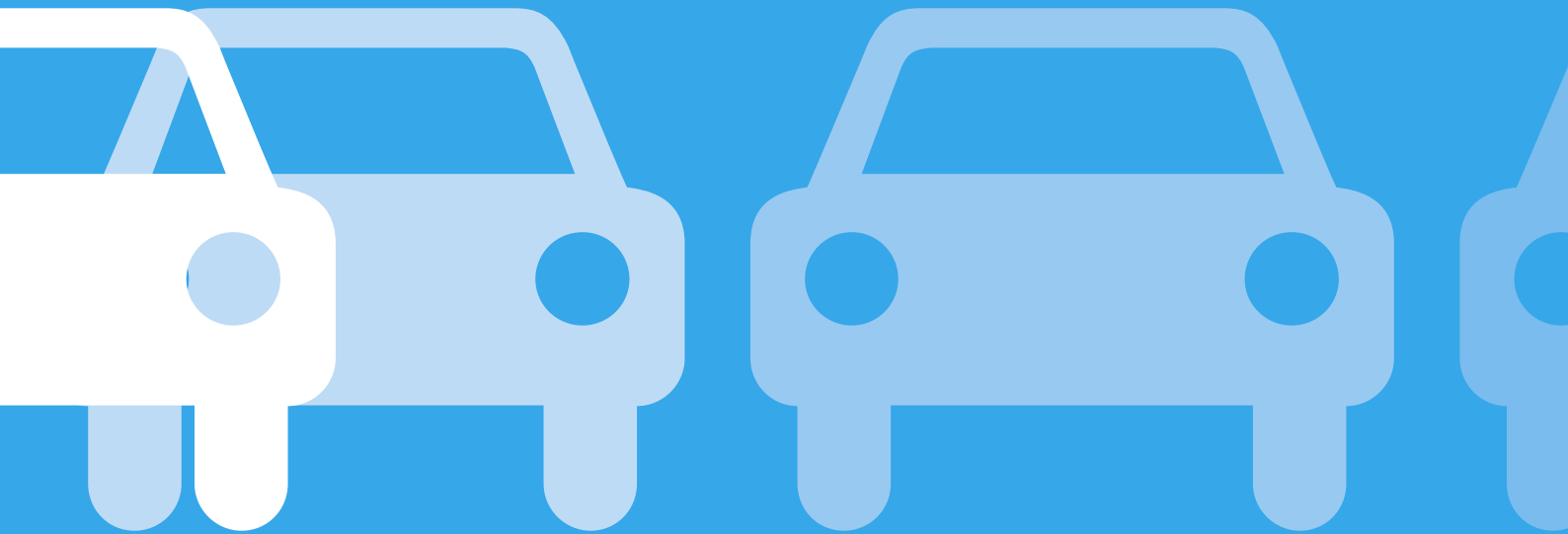
<sup>4</sup>The term 'package' is used to refer to the finished product: a silicon chip packaged or wired into a box that fits inside the electronic device and conducts the electronic signal.

ST's presence in a local community cannot go unnoticed. Our manufacturing plants often occupy large industrial sites. All ST manufacturing sites work hard to develop good relationships with the local community and often carry out environmental projects and initiatives to improve overall environmental conditions. Social as well as environmental benefits usually arise from these initiatives.

# Sustainable Mobility Programs

study

In last year's report we presented the five-year transportation plan adopted by our site in Grenoble, France in 2000. The plan aims to reduce air pollution, CO<sub>2</sub> emissions and energy consumption by providing employees with alternatives to car use when travelling to work. This project is ongoing and has become a normal part of life in Grenoble, with steady progress being made.



A similar sustainable mobility project was started at our site in Agrate, Italy, in September 2002 through an official agreement with the Italian Environment Ministry, the Province of Milan and several other municipalities. The specific targets of the project are:

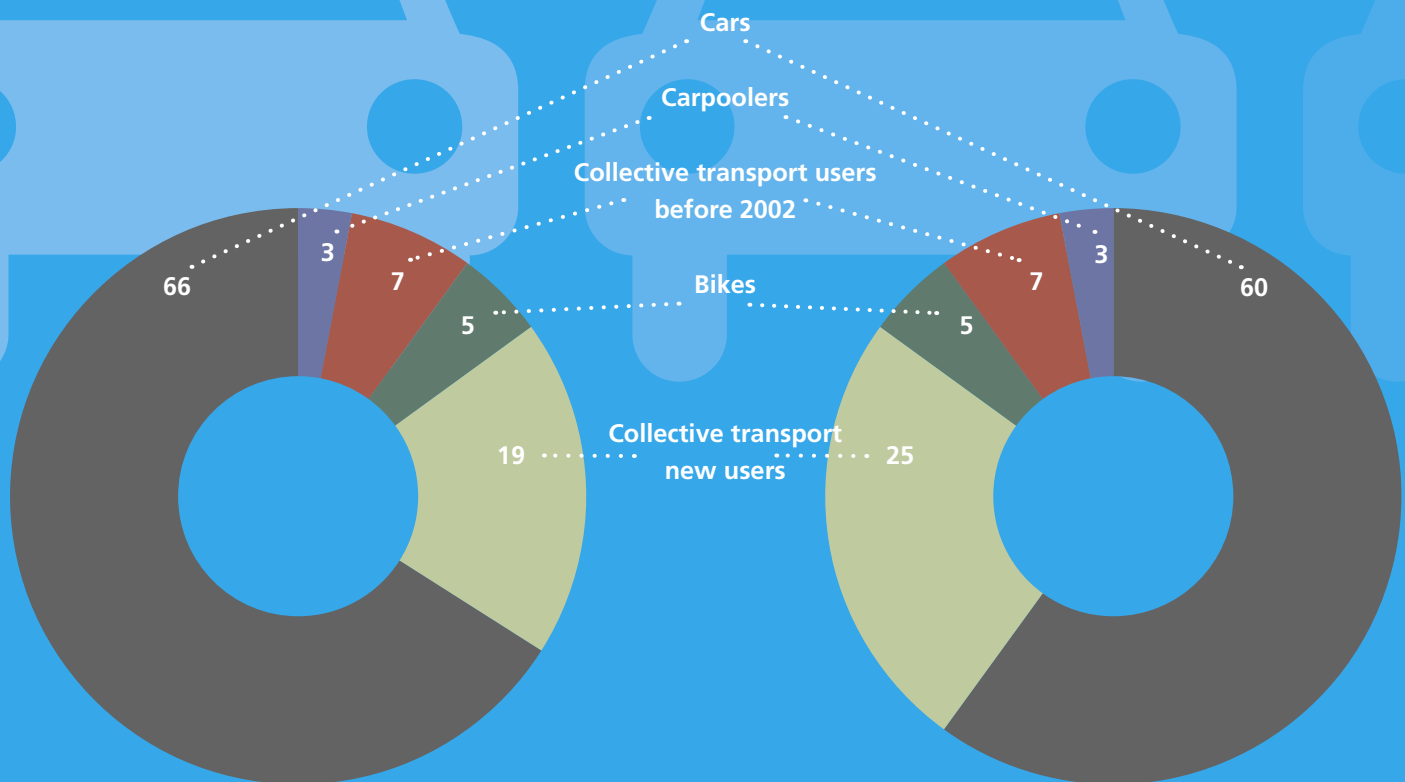
- To decrease the number of people coming to the site by car (reduce by 500 per day)
- To reduce CO<sub>2</sub> emissions due to vehicle use (reduce by 3 tonnes per day)

### Results and future targets

By the end of 2003 the Agrate project had achieved the following results:

- 630 new bus users (19% of employees coming to ST's site each day)
- 30 carpooling teams (90 employees)
- A reduction of 4 tonnes of CO<sub>2</sub> each day

The target for 2004 is to add a further 200 new bus users and to reduce CO<sub>2</sub> emissions by a further tonne every day.



Year 2003 Results (%)

Year 2004 Target (%)

# The path to carbon neutrality

We continue to believe, as we have stated in previous years, that the most pressing environmental threat is climate change, which is caused by increased levels of greenhouse gases (GHGs) in the atmosphere. Carbon dioxide (CO<sub>2</sub>) is the main greenhouse gas and is produced when fossil fuels – gas, coal and oil – are burned. Although our total contribution to climate change is relatively small in global terms (1.65 million tonnes of CO<sub>2</sub>), we are determined to do all we can to reduce our impact. We have developed a Carbon Roadmap to help us achieve our ambitious target of becoming CO<sub>2</sub> neutral by 2010. This roadmap consists of an Energy Management Program, the PFC Management Program, the Carbon Offset Program and the Emission Reduction Trading Program.

# CO<sub>2</sub> neutral by 2010

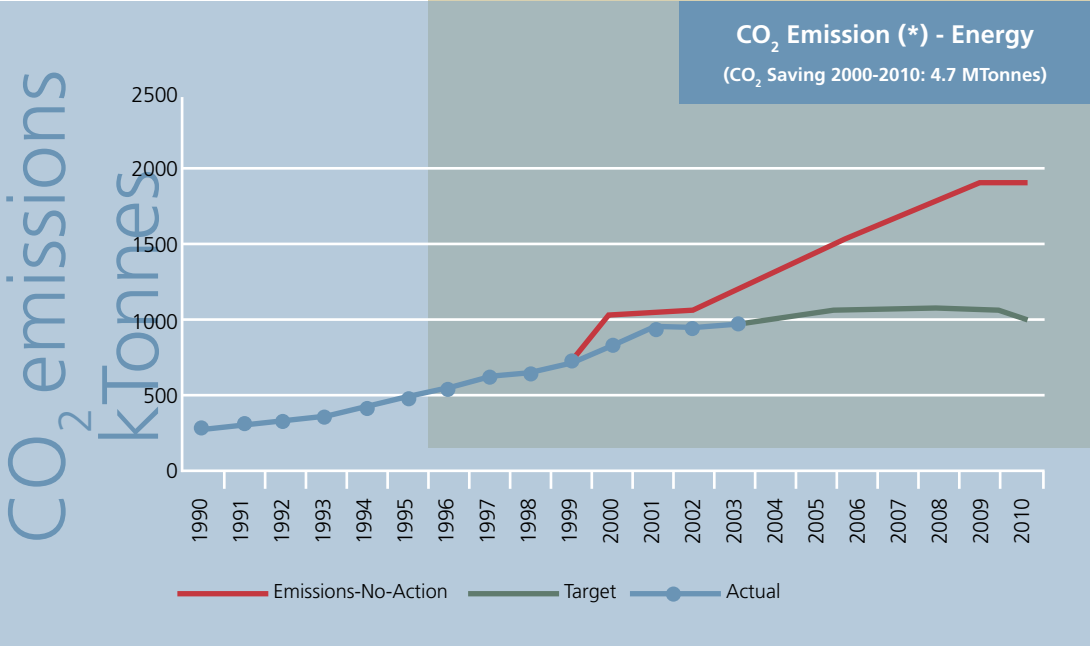
## Energy Management Program

Our Energy Management Program covers energy efficiency and alternative/renewable energy.

### Energy Efficiency

Most of our emissions of carbon dioxide come from our use of conventional energy. These emissions are 'indirect' because we purchase the electricity from power stations that burn fossil fuels. They also include some 'direct' emissions from the use of boilers in our plants. Our target is to reduce total energy consumption by at least 5% each year per unit of production.

In 2003 our emissions due to electricity and gas consumption amounted to 971,000 tonnes of CO<sub>2</sub>. The graph below shows the trend in CO<sub>2</sub> emissions due to energy consumption until 2003 and the forecasted reductions considering only the implementation of our Energy Efficiency action.

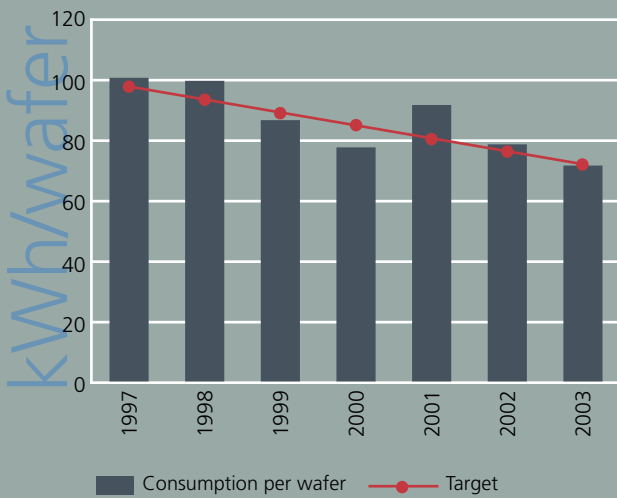


(\*) Considering only energy efficiency actions

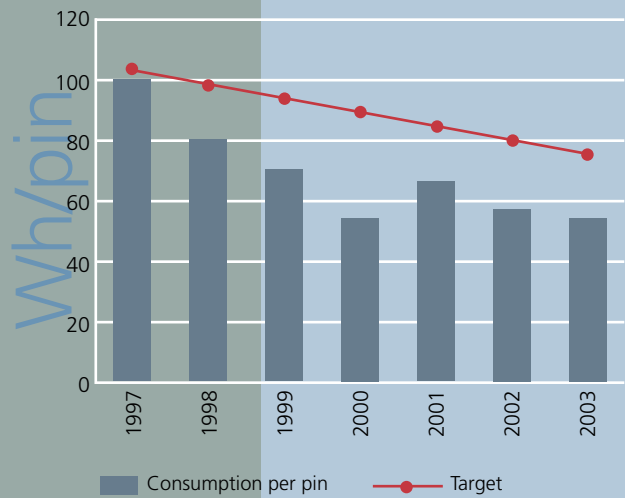


In 2003 we made improvements in energy efficiency, cutting electricity consumption per production unit (compared with 2002) by 9% in Front End sites and 5.2% in Back End sites.

**Front End Electricity Consumption**  
(Baseline reference value of 100)



**Back End Electricity Consumption**  
(Baseline reference value of 100)



Decalogue Reference	Key Performance Indicators	Year						
		1997	1998	1999	2000	2001	2002	2003
Energy	<i>Electricity consumption:</i>							
	kWh/wafer	100	99	86	77	91	78	71
	Wh/pin	100	80	70	54	66	57	54

(Baseline reference value of 100)

We are continuing to implement energy efficiency improvements identified in our 2002 Energy Conservation Self Assessment Survey of all ST sites. Last year we reported on the identification of 350 energy efficiency actions that we had identified and that we planned to implement by the end of 2005. By the end of 2003, 80% of these 350 actions had been implemented. In addition to this, we identified other actions representing a new saving of 180 GWh per year, which are being implemented over the 2003-2004 period.

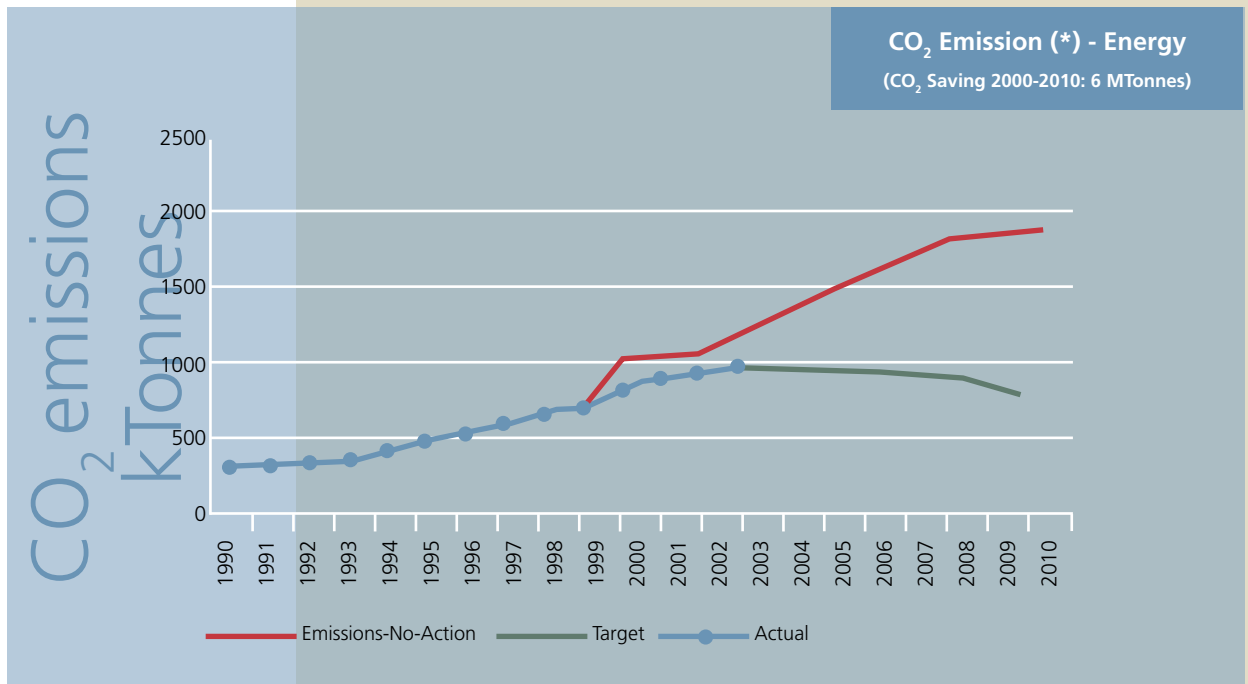
**Examples**

- We have installed Variable Speed Drive (VSD) on most of our facilities systems at Agrate (Italy) and Ang Mo Kio (Singapore) to allow the most flexible use of equipment (exhaust, compressed air, re-circulation units), which saves 7600MWh per year.
- At our Carrolton (US) and Rousset (France) sites, we have installed Variable Frequency Drive (VFD) on primary pumps to boost chiller capacities (Chillers), which saves more than 7200 MWh per year.

<sup>5</sup>We make this calculation by comparing our forecasted emissions following the energy roadmap with the results we would have obtained if we had maintained the same performance as in 1999.

### Alternative and renewable energy

In addition to energy efficiency actions, we plan to source a greater percentage of our energy from alternative energies (combined heat and power: cogeneration plants), which are more efficient and emit less CO<sub>2</sub> per unit of energy, and from renewable energies such as wind and solar, which emit no CO<sub>2</sub>. Thus the total savings in CO<sub>2</sub> emissions due to the adoption of renewable and alternative energies plus the implementation of energy efficiency actions will be approximately six million tonnes of CO<sub>2</sub> between 2000 and 2010.<sup>5</sup>



(\*) Considering alternative and renewable energies plus energy efficiency actions

### Cogeneration

Conventional power stations that burn fossil fuels give off a lot of heat, wasting as much as 70% of the energy consumed. We are now implementing our plan, reported on last year, to use more efficient generating technology, known as combined heat and power (CHP) or cogeneration, which turns the waste heat into steam or uses it to provide heating. In 2003 at our plant in Catania, Sicily, we began to build a tri-generator able to provide electrical power of 45MWel, heat power of 10MWth and cold power of 30MWth saving 92,000 tonnes of CO<sub>2</sub> per year. The electricity production from the first phase of this project (10 MW) will start at the beginning of 2005.

### **Wind and solar energy**

Wind and solar energy are clean, renewable sources of power but are more expensive than fossil fuel technologies at current prices. However, wind power can be competitive in certain windy areas and the cost of solar power is falling gradually as the technology improves and demand increases. Wind power is currently a financially viable source of renewable energy in some countries where it is subject to government subsidies. At present we have a limited solar portfolio because the price of producing solar energy is still too high for it to be a viable alternative.

As we gain more experience in the use of renewable energy, we are beginning to realize that it is both more sensible and cost effective to increase the amount of wind and solar energy we use than to plant more forests to sequester CO<sub>2</sub> emissions from conventional sources of power. We are also aware of the more significant risks attached to reforestation projects. Forests can be destroyed by natural and manmade fires and may be at risk simply because of their location in developing countries, where environmental protection is less rigorously implemented (see the section on Carbon Sequestration). A mixture of these considerations has led us to increase the target percentage of renewable energy to be reached by 2010 from 5% (our Decalogue goal) to more than 15%. In 2003 we have made good progress in our use of wind and solar energy.

### **Examples**

- Our 10.5MW wind farm located in Opoul Perillos (the Western Pyrenees in the South of France) started producing electricity, as planned, on 14th March 2003. During the course of 2003 (March-December) it produced about 20,000 MWh. (The expected annual production for this wind farm is 33,450 MWh per year.) The electricity produced by this wind farm in 2003 would have emitted 18,000 tonnes of CO<sub>2</sub> if it had been produced by a coal power station.
- We are now at a more mature stage of our investigations of potential wind farm sites, especially in Italy, but also in Morocco, France and the USA.
- In October 2003, ST's site in Agrate, Italy produced solar and water powered energy without carbon dioxide emissions. This is part of the Photovoltaic Fuel Cell System (PVFC-SYS) program in which ST is participating. The project is sponsored and funded 50% by the European Community. The system works by feeding a fuel cell with the hydrogen produced through an electrolyzer energized by solar cell panels. The fuel cell generates up to 1200 Watts of electrical power and steam. The project represents an excellent opportunity for ST to test the feasibility of the use of solar energy.

## Perfluorinated Compounds (PFCs)

PFCs are chemicals that are transformed through industrial processes into 'greenhouse gases' that trap heat in the earth's atmosphere and contribute to climate change. The unit used to measure their impact is known as the global warming potential. PFCs are very stable and remain in the atmosphere for long periods of time. However, they are non-toxic and do not damage the ozone layer. PFCs are widely used in the semiconductor industry during the production of silicon wafers for CVD chamber cleaning and etching processes. Several types of PFCs are used with global warming potentials ranging from 6,500 to 23,000 times the CO<sub>2</sub> equivalent.

The World Semiconductor Council (WSC), in which ST leads the European participation regarding the use of PFCs, has set a challenging goal of reducing the aggregate of absolute PFC emissions to 10% below 1995 levels by 2010. ST has set its own internal target for PFCs, which is to reduce its emissions to 10% of 1995 levels (reduction by a factor of 10) per unit of production by 2008, two years before the WSC deadline. ST participates in the European PFC task force, within which 19 companies have agreed to share all technical information on PFCs and to report their progress and results according to the international standards developed by the IPCC (Intergovernmental Panel for Climate Change). In 1997 we made a similar commitment by signing the US Memorandum of Understanding with the EPA (Environmental Protection Agency).

### ST's PFC road map

There are a number of technical ways in which PFC emissions can be reduced. In 1998 we created company-wide and individual site road maps (revised in 2000) for all our Front End plants to set out how we will achieve our ambitious target for PFCs. The measures we identified to cut emissions include more efficient process 'recipes' (the blend of chemicals used), the use of alternative chemicals and the installation of abatement systems capable of destroying the PFCs almost completely. The tests we carried out indicated that abatement systems are the most effective way of reducing emissions.

### Results in the reduction of PFC emissions

As we reported last year, since embarking on our PFC mission, ST has managed to cut the emission rate, expressed in Kg of carbon equivalent per wafer, by 53% compared with the 1995 baseline. This means that the production of 1 wafer in 2003 emitted roughly half the emissions compared to an equivalent wafer in 1995. However, our net emissions of PFCs in 2003 increased by 12.3% compared to 2002. This is clearly not a good result.

The management of PFC emissions has put Front End sites in a challenging position. They are responsible for meeting corporate environmental objectives (following the PFC roadmap) and balancing them with financial efficiency targets. In order to follow the PFC roadmap, manufacturing sites have to invest in abatement systems, inevitably pushing up production costs. In the case of reducing consumption of resources like energy, water and chemicals, there is a tangible 'payback' on investments within a short period of time (1-3 years). Investments in the reduction of PFCs have a less tangible financial payback, making it more difficult to balance environmental and financial targets.

Understanding this challenge has helped us to find a way to overcome it. The corporate environment team has worked with Front End sites to help them review their strategy and re-align their management of PFC emissions with the corporate target. Despite the considerable efforts that had been made to reduce PFC emissions through process optimization and the use of alternative chemicals, the decision was taken to proceed with a systematic installation of abatement systems. The cost will be higher in the short term, but it has been agreed internally that our commitment to the environment requires the investment to be made. If, as ST hopes, carbon trading becomes commonplace in the future, the company will also benefit from this decision financially.

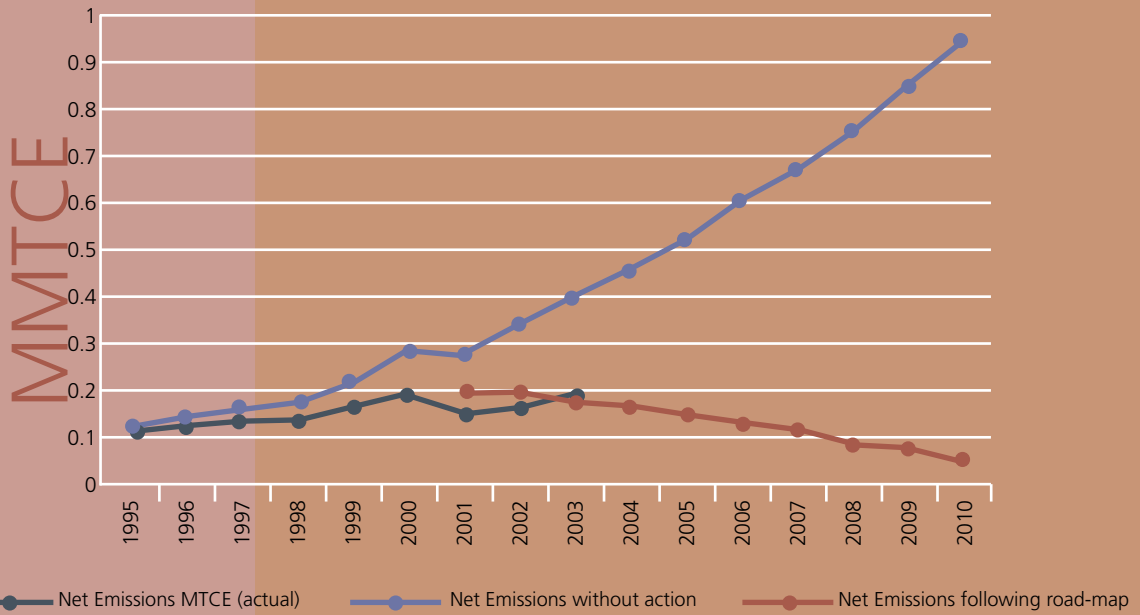
We will continue to seek improvements both in our chemical recipes and our use of alternative chemicals. In 2003 we reached a rate of 40% alternative chemicals compared with 2% in 1995. The examples below illustrate how we are beginning to get back on track with our PFC target. Our aim is to come back to our original roadmap by the end of 2005.

#### **Examples of positive action**

- Our new 12-inch (wafer diameter) lines in Crolles, France, have begun with 100% abatement systems in place. Innovative plasma abatement systems have been installed for etching tools.
- About 100 PFC point-of-use abatement systems have been installed in different manufacturing sites.
- Alternative compounds such as  $C_3F_8$  have been widely tested and implemented in several of our locations in Europe, USA and Asia ( $C_3F_8$  provides 40 to 70% emission reduction compared with the traditional process), and new equipment using  $NF_3$  is now being used in our advanced Front End sites providing more than 95% emission reduction.
- We are testing innovative solutions such as plasma abatement technologies in Rousset (France), Agrate and Catania (Italy) and Phoenix (USA) and catalytic absorption systems in Catania. We are also involved in research activities in partnership with universities to find alternative compounds.
- $C_3F_8$  has been replaced by  $C_2F_6$  at a number of sites with good results in several cases.

The graph on the next page presents our net PFC emissions until 2003 and the forecasted savings we will make by following our PFC Roadmap. Emissions are shown in million metric tonnes of carbon equivalent.

### Net PFC Emission Trends



Decalogue Reference	Key Performance Indicators	Year					
		1998	1999	2000	2001	2002	2003
Greenhouse Gas Emissions	CO <sub>2</sub> direct and indirect emissions (energy) (*) kTonnes	643	701	822	929	940	971
	PFCs direct emissions kTonnes of CO <sub>2</sub>	506	605	689	532	601	677

(\*) direct emissions (boilers) represent about 6% of the total emissions

## Closing the carbon loop: Carbon sequestration and emissions trading

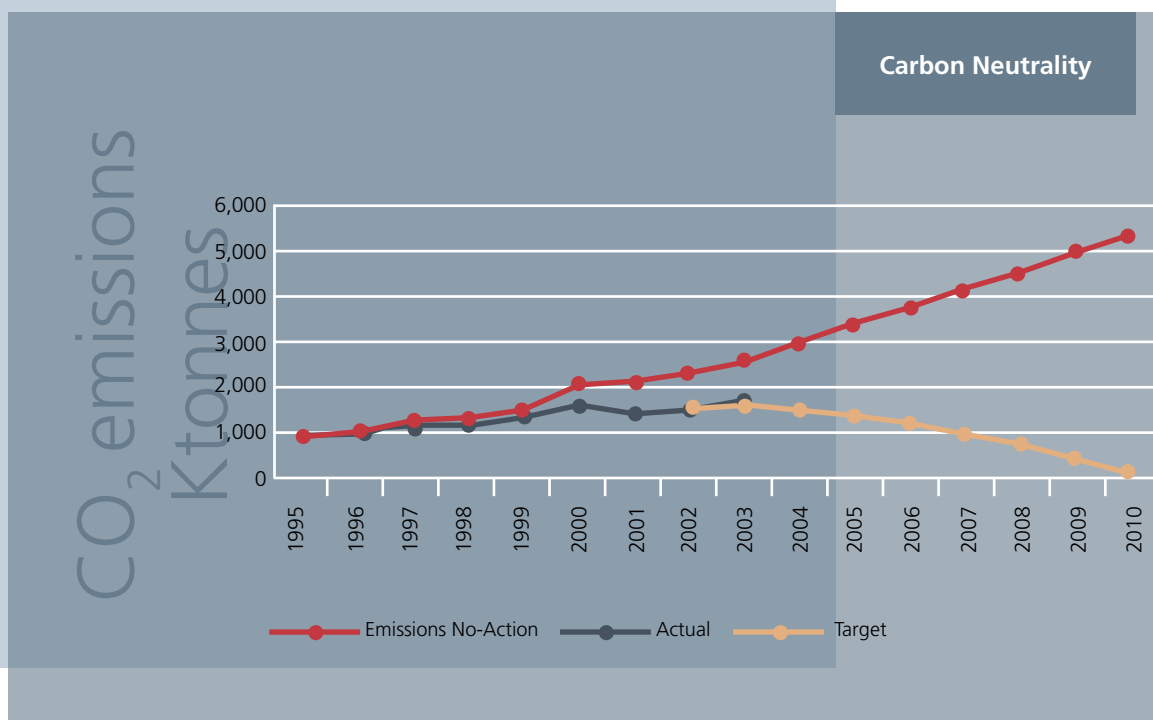
In 2003 our greenhouse gas (GHG) emissions totalled 1.65 million tonnes of CO<sub>2</sub> compared to about 1.54 million tonnes in 2002. These figures include emissions from our facilities, including PFCs and manufacturing processes, and emissions from energy consumption. In terms of normalized figures our efficiency is improving although, as these figures show, our absolute emissions are increasing as a result of our increase in production. These absolute figures would be much higher without the action we are taking.

Given our economic growth, if no action had been taken, our emissions would have been 2.3 million tonnes of CO<sub>2</sub> in 2002 and 2.6 million tonnes in 2003.

CO <sub>2</sub> Emissions (PFC+Energy) kTonnes	2002	2003
Without Carbon Road Map	2291	2624
With Road Map (Actual)	1545	1650

Our Carbon Offset Program aims to neutralize any remaining carbon emissions (both direct and indirect) by 2010. It will allow us to sequester three million tonnes of CO<sub>2</sub> between 2001 and 2010 through reforestation projects in different countries around the world. Plants use carbon from the atmosphere in photosynthesis as part of their natural support process. Because forests sequester carbon, it is now widely recognised that they can be used as part of global efforts to combat climate change. Reforestation also encourages the sustainable production of timber and can help conserve biodiversity, soil quality and natural habitats.

According to our Carbon Roadmap we will avoid emitting over 5 million tonnes of CO<sub>2</sub> in 2010 thanks to our Energy and PFC Management Program and to our Carbon Offset Program.



We anticipate that the accumulation of 'carbon credits' obtained through reforestation (and through our renewable energy projects) will benefit us in the future when carbon trading becomes a permanent feature of mainstream international business. Because we believe that it is important to support the creation of this international carbon-trading market, we are participating in pilot projects that we hope will generate momentum in this crucial area of environmental care.

In an earlier section we mentioned the higher risks associated with reforestation (fires, lax environmental protection systems in developing countries). In order to reduce these risks to a minimum, we spend a long time investigating potential reforestation sites and evaluating the safety of our investments. Some investigations (for example in South America) have led to us abandoning potential sites precisely because we considered these risks to be too high.

By the end of 2003 our Carbon Offset program had resulted in approximately 3,800 hectares of land being reforested. We are also making good progress in setting up the projects that will help us meet our reforestation targets over the next 6 years.

#### **Examples**

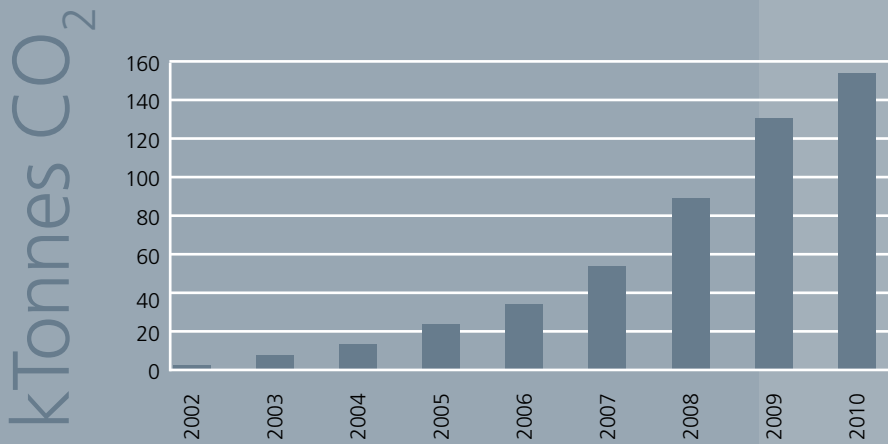
- As we reported last year, ST signed an agreement with the Environment Ministry of Morocco to be able to plant trees in an area covering 10,000 hectares over the next six years, helping us to reach our Decalogue targets. This area will sequester 5.8 million tonnes of CO<sub>2</sub> over the next 40 years. ST will pay all costs relating to the planted forests and will be the owner of associated carbon credits. Almost 1,600 hectares were planted in 2003 and by the end of 2004 the program will have covered 3,000 hectares.
- We are exploring a potential 10,000-hectare reforestation project in New South Wales, which would offset about 5.4 million tonnes of CO<sub>2</sub> during the lifetime of the forest. A pilot project was carried out on this site in 2003, during which an area of 1,600 hectares was planted. This area alone will offset approximately 800,000 tonnes of CO<sub>2</sub> during its estimated lifetime.



This graph shows the amount of carbon sequestered so far in the 3,800ha of reforested land and the projection of the amount of CO<sub>2</sub> that this reforested land will capture by 2010 (500,000 tonnes).

### Carbon Sequestration Curve

(3,800ha)



### Emission Trading Program

ST is currently taking part in the Chicago Climate Exchange (CCX) program, a voluntary greenhouse gas trading program in North America involving around 30 companies from multiple industrial sectors. The Exchange, which initiated the program in January 2003, aims to:

- Demonstrate that companies can reach an agreement on a voluntary basis to reduce greenhouse gases and implement a market-based emission reduction program
- Demonstrate the viability of a multi-sector greenhouse gas emission cap-and-trade program
- Encourage improved emissions management
- Harmonize and integrate with other international trading schemes
- Develop a market architecture that rewards innovative technology and management

The CCX commitment to reduction of emissions and to trading will apply from 2003-2006 according to the following rule:

Year	Emission Reduction Schedule	below member's baseline
2003	1% below member's baseline	
2004	2% below member's baseline	
2005	3% below member's baseline	
2006	4% below member's baseline	

ST is participating in the program through its two manufacturing sites in the United States: Phoenix, Arizona and Carrollton, Texas.

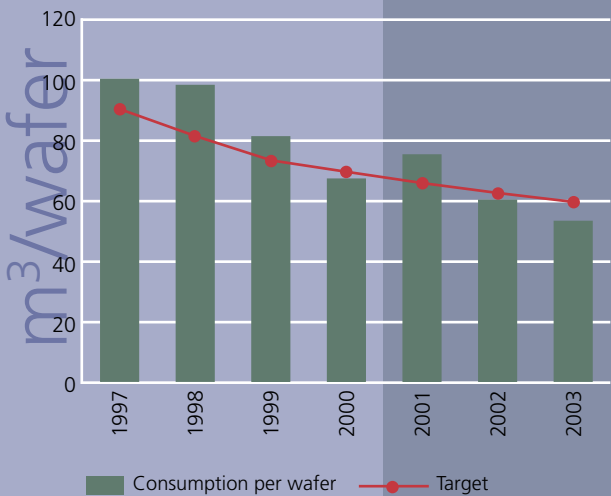
# Water

The manufacture of semiconductors consumes a large quantity of water. It takes about 5,000 litres to make an 8-inch diameter wafer and only ultra clean water can be used because of the precision required. Knowing that water is a precious and increasingly limited natural resource, we strive both to use less freshwater and to recycle water used in our production facilities and offices around the world.

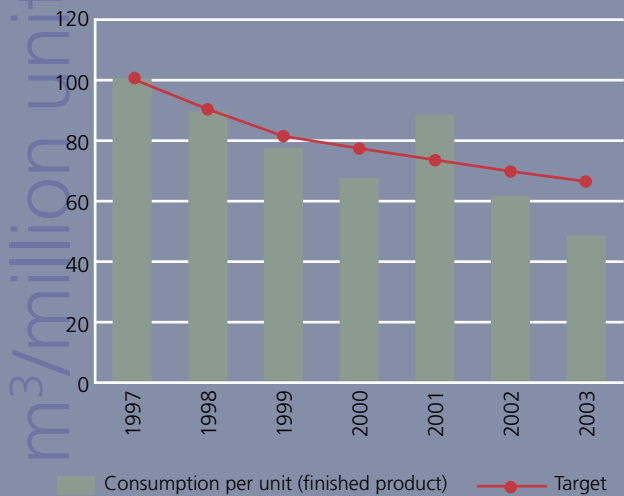
## Results in reducing water consumption

In 2003 we consumed 19.8 million cubic meters. The reduction of water consumption is one of the areas in which we consider we are making good progress. We have consistently exceeded our Decalogue target (of reducing water draw-down by at least 5% per year) and reduced our water consumption by an average of about 10% per year. This has resulted in savings of more than \$45.9 million since 1997. In 2003 we saved 25 million m<sup>3</sup> of water, which represents a saving of \$13.4 million (see page 75 for an explanation of how we calculate our savings).

**Front End Water Consumption**  
(Baseline reference value of 100)



**Back End Water Consumption**  
(Baseline reference value of 100)



Decalogue Reference	Key Performance Indicators
Water	m <sup>3</sup> /wafer
	m <sup>3</sup> /Mill units

Baseline reference value of 100

This good result is in large part due to the recycling of water at many of our manufacturing sites through:

- Microfiltration to remove silicon dust after wafer cutting
- Use of reverse osmosis ion-exchange resin to clean water from plating processes
- Recovery of wafer cutting wastewater
- Reduction of water usage in wafer saw machines
- Electro-deionization technology for Ultra Pure Water (UPW) systems

**Examples**

- In the third quarter of 2003, our site in Shenzhen, China, built a plating wastewater recycling plant to reduce total water consumption and improve the water-recycling rate. By December 2003 the water-recycling rate had increased from 30% before the project to 56%.
- At our site in Rousset in France, water saving and recycling programs have reduced water consumption by up to 3.4 m<sup>3</sup> per silicon wafer, which represents an improvement of 50% compared with 2000.

**Wastewater treatment**

We are continuing to work to improve wastewater treatment at our sites. Our progress at our Rousset site (France) is one example of the progress we are making in this area. The very sensitive river located close to the plant requires careful surveillance of effluents to ensure that it is kept as clean as possible. As a result of the water treatment work carried out at Rousset, it has been possible to reach unprecedented levels of water quality. Tests show that the river contains less than 1 mg/l fluoride and less than 0.2 mg/l ammonium. More detailed testing has revealed that copper pollutant has been kept below 50 ppb.

	Year						
	1997	1998	1999	2000	2001	2002	2003
	100	98	81	67	75	60	53
	100	89	77	67	88	61	48

## Chemicals

Semiconductor manufacturing processes require significant amounts of chemicals. Our Decalogue target is to reduce our consumption of the six main chemicals we use by at least 5% per year. We use a variety of methods to meet this target: substitution, process optimisation, hardware modifications, on-site generation, recycling for reuse and the practice of Total Chemical Management (TCM) in partnership with key chemical suppliers. ST's culture of Total Quality Management is applied here as elsewhere in environmental care to obtain good results by focusing on reaching the highest levels of quality in technical precision and process management.

Process/Recipes Optimization  
Process Replacement Substitution  
On site generation  
Diluted Chemistries  
Recycling for reuse  
Chemical External Recycling  
Total Chemical Management  
Hardware optimization

Chemical engineers working on wet processing in Front End manufacturing facilities (wafer cleaning, wet etching, scrubbing) are at the front line of ST's efforts to reduce the use of chemicals. Their work contributes directly to environmental protection, better safety levels and cost savings. The chemicals we target are Photoresists, Developers, Sulfuric Acid, Hydrogen peroxide, Hydrofluoric acid and a selection of solvent compounds.

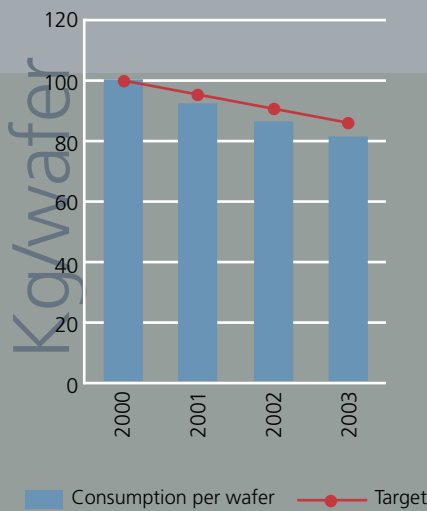
### ST's chemical roadmap

In 1999 ST formalised a corporate chemical saving road map based on international best practice. All of our sites have their own local chemical saving road maps, which adapt the corporate guidelines to local conditions. Each site is committed to reducing its relevant chemical consumption by 5% per year. Particular emphasis is given to the following programs.

- Modifying spray processors to use diluted chemicals
- Using de-ionized water (DI), H<sub>2</sub>O and Ozone (O<sub>3</sub>) for resist removal processes rather than sulphuric acid
- Standardizing pre-diffusion cleaning recipes to use very diluted chemicals for existing wet benches
- Replacing old wet benches with new equipment that uses reduced quantities of chemicals
- Replacing a hazardous solvent used in polymer removal processes
- Developing advanced cleaning sequences that reduce and substitute the main chemicals used in wet cleaning processes

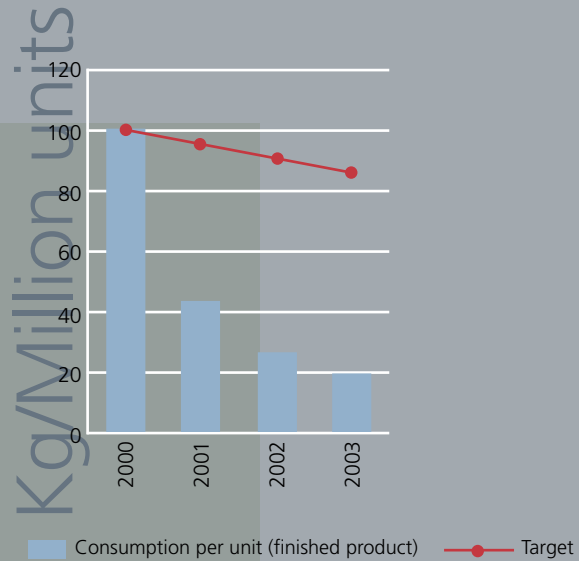
### Front End Chemical Consumption

(Baseline reference value of 100)



### Back End Chemical Consumption

(Baseline reference value of 100)



Decalogue Reference	Key Performance Indicators	Year			
		2000	2001	2002	2003
Chemicals	Kg/wafer (Front End)	100	92	86	81
	Kg/Mill units (Back End)	100	43	26	19

Baseline reference value of 100

#### Examples

- Our Catania M5 site in Sicily has provided a number of examples of best practice, among which the installation of a new dryer to reduce Isopropyl Alcohol (IPA) consumption. This dryer uses the 'marangoni effect' to carry out wafer rinse and dry operations, which avoids the use of IPA vapours at high temperatures. The saving can be estimated at 108kg per day, equivalent to \$392 per day.
- Our Agrate R2 site (Italy) has reduced the use of the Edge Removal solvent RER500 through a recipe change and process optimization. The reduction amounts to 65 tonnes of RER per year, saving over \$400,000 annually.
- Our Muar Back End plant in Malaysia has eradicated the use of H<sub>2</sub>SO<sub>4</sub> through a simplification of the existing process resulting in a saving of 81,200 litres (\$15,000) annually. Another improvement to the de-ionized water system produced savings of \$21,000 per year.
- Our Back End plant in Malta has drastically decreased its consumption of chemicals on a consistent basis over the last few years: by 58% in 2001 compared with 1998, and a further 24% in 2002 and 2003. The successful implementation of a number of different programs at the plant has cut the purchasing cost of chemicals by a factor of 4. Besides the obvious financial benefits, the reduction has reduced the health and safety risks relating to chemicals and improved overall working conditions.

#### Health & safety and chemicals

The management of chemicals has a direct impact on the health and safety of our employees. Our management of the health & safety risks relating to chemicals is presented in the section Our Workplace.

# Waste

Industrial waste has a considerable impact on the local community and on the environment. On the one hand there is the problem of the scarcity of landfill sites, which has the effect of pushing up the price of 'landfilling' waste. There are also concerns about the kinds of waste that are disposed of in the environment (they may be harmful or toxic), which result in pressure on companies to find safe alternatives to landfill, such as reusing and recycling materials. European legislation is becoming tougher as part of an effort to ensure responsible waste management. ST is doing its best to fulfil its responsibilities in this area of environmental care by anticipating and exceeding the targets set by government.

ST's Decalogue target is to reduce the amount of landfilled waste below 5% of our total waste by 2005. We aim to reuse or recycle 95% of our manufacturing and packing waste by the end of 2005. We are also committed to using the EU 'ladder concept' as a guideline in all waste management actions.

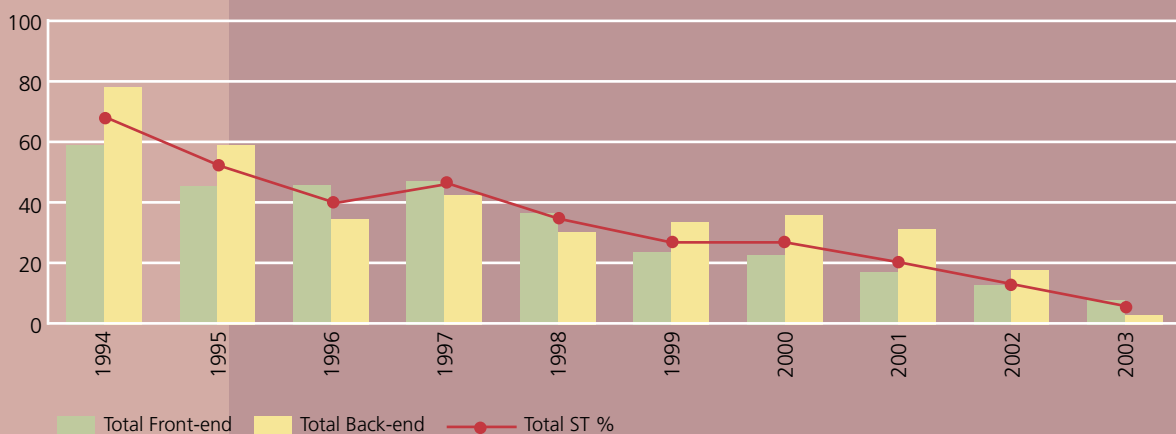
## Results in waste management

Waste represents the area of environmental care in which we have achieved our best results in 2003. In 1994, 70% of waste generated by the company was landfilled. By the end of 2002 we had reduced this to 10.7%. In 2003 we achieved zero landfilled waste in all of our Back End sites and by the end of 2003 our total landfilled waste (all Front End and Back End sites) had dropped to 4.9%, meeting our Decalogue goal of 5% two years in advance of the 2005 target date.

In 2003 we recycled or reused 73% of our manufacturing waste, compared to 65% in 2002 and 25% in 1994. In 2003 the company reused or recycled 24,000 tonnes of the 33,000 tonnes of waste generated.



## Landfilled (%)



Decalogue Reference	Key Performance Indicators	Year					
		1998	1999	2000	2001	2002	2003
Waste	Landfilled waste as a percentage of total waste	36.2	26	25.8	21	14.8	5.9

## Reuse and recycling activities

### Examples

- Sludge produced in ST's waste-water treatment plants is used by the cement and brick industry
- Deflashing waste powders are sent for precious metals recovery
- Gloves and overshoes are cleaned and reused
- Waste silica (a by-product of our epitaxial growth processes) is sold as raw material to the optical fibre industry
- Reject silicon wafers are used in solar panels
- Waste resin from assembly sites is used to manufacture floor tiles and bricks

# Organic Waste

Waste is not always industrial. Our Back End site in Muar, Malaysia, has made a valuable contribution to our zero landfilled waste policy by recycling canteen waste and transforming it into organic fertilizer. By the third quarter of 2004 it had reached its goal of recycling 100% of canteen waste.



### Canteen food waste (300 kg/batch)

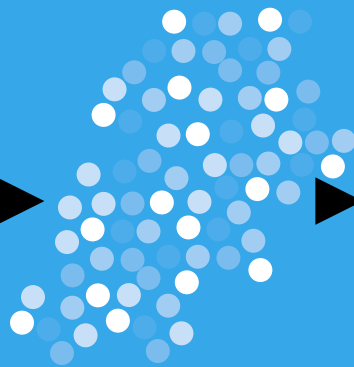
- Left-over food
- Vegetable
- Poultry



### Food mixer & fermentation process

Organic waste composting machine

- Yeast used for fermentation
- Temperature control 90 degree C to achieve maximum rate of decomposition
- Fermentation & decomposition for 24 hrs



### Organic food waste to soil conditioner/fertilizer



## Sustainable product design and development

We are committed to responsible product development. The targets we have set ourselves in this area are:

- To continually improve our products so that they consume less energy and can be used in energy efficient applications
- To contribute to global environmental control by establishing a database containing a Life Cycle Assessment of our products
- To systematically include an environmental impact study in our development process
- To publish and update information regarding the chemical content of our products

### Results in product design for

#### low energy consumption

Providing training and resources for employees is a crucial aspect of our approach. As part of our ongoing effort to raise awareness and help our designers develop a low-power-conscious mindset, we run an innovative training program on power-conscious design with leading European companies and research establishments. The project, which is called INTRALED, aims to increase design competence and skills through systematic training, accelerate the take-up of low-power technology in next generation products, and harness the know-how available within the European research community. We also organize conferences, presentations and tutorials, during which ST employees can learn about low-power technology from ST and external experts.

As part of our Total Quality Management approach, ST engineers are trained to integrate energy efficiency solutions into product design and development from the initial concept through to manufacturing. Due to the laws of physics, it is inevitable that a certain amount of power will be dissipated through data or signal processing. However, just how much energy is lost depends on the choice of parameters and design techniques that are implemented with the use of Computer Aided Design tools (CAD). We have identified four main ranges or groups of parameters that enable us to optimise our low-energy product design:



- System level: software/hardware partitioning, low-power algorithms, interface choices etc.
- Architectural level: pipelined or parallel processing, power-management control units, clock-gating etc.
- Block/cells level: low-power libraries, adaptive power functions, switched capacitor techniques etc.
- Silicon process level: low-voltage processes, low-leakage transistors, low-k dielectrics, silicon-on-insulator etc.

### **OPTIMWATT™ Concept**

As we reported last year, to promote our low-power products among ST's customers and raise awareness internally we have developed the ST OPTIMWATT™ trademark. This will be used to highlight energy efficient features on ST products.

### **Results in other aspects of sustainable product design and development**

#### **Life Cycle Assessment**

We currently provide life cycle assessment details to our customers on request. We are working towards creating a database containing a life cycle assessment of our products.

#### **Environmental Impact Study**

We have not yet arrived at the point of systematically including an environmental impact study in our development process.

#### **Chemical contents of our products**

We now publish regularly updated information on the chemical content of our products on our website: [www.st.com/company/environment](http://www.st.com/company/environment) (see also 'Customer' in the section on the Supply Chain).

## ST Environmental Awards

Recognition in the form of awards designed to encourage individuals, teams and entire organizations represents one effective way of improving performance. We attribute special importance to this kind of recognition, which is a tangible demonstration of the company's appreciation towards the people who have contributed to best performance. The tool of recognition is useful both in reaching challenging targets and as a system designed to spread and standardize best practice throughout the company.

The Corporate Annual Environmental Award was established in 2001 as part of the company's overall recognition plan and is awarded to the Front End and Back End sites (one of each) that achieve the best environmental performance. The award is based on the evaluation of the site's ecofootprint (which includes the most important environmental parameters) and its strict compliance to environmental regulations.

In 2003 the Front End Environmental Award went to our site in Tours, France. The Back End award went for the second consecutive year to Shenzhen, China.

These awards were announced during the annual meeting of the ETQC (Executive Total Quality Council) in April 2004.

Besides this award, there are other opportunities for the recognition of good environmental performance. Single projects dedicated to the protection of the environment can be submitted by all sites for consideration at the Annual Corporate Recognition Award Ceremony.

# The Environmental Decalogue

(Second edition - August 1999)

At STMicroelectronics we believe that a company driven by Total Quality Management has a responsibility to aim for the highest quality in its commitment to the environment. The foundations of this choice are ethical and social, but we also believe that this commitment can make us stronger financially and help us attract the most responsible and competent people to work with us. Our ecological vision is to become a corporation that comes as close as possible to achieving environmental neutrality. In order to achieve this goal we will not only meet all of the environmental requirements of the communities in which we operate, but we will also strive to comply with the following ten 'commandments'.

Please note that we are currently in the process of making a few changes to the Decalogue, notably the decision to report performance by unit of production (standard wafer or finished product) instead of by dollars of added value.

## 1 Regulations

- 1.1 Meet the most stringent environmental regulations of any country in which we operate, at all of our locations.
- 1.2 Comply with all international protocols at least one year ahead of official deadlines at all our locations.

## 2 Conservation

- 2.1 Energy: Reduce total energy consumption (kWh per production unit) by at least 5% per year, through process and facilities optimization, conservation and building design.
- 2.2 Water consumption: continue to reduce water draw-down (cubic meters per production unit) by at least 5% per year, through conservation, process optimization and recycling.
- 2.3 Water recycling: reach a minimum of 90% recycling ratio in two pilot sites by end 2005.
- 2.4 Trees: reduce office and manufacturing paper consumption (kg per employee) by at least 10% per year, and use at least 95% recycled paper, or paper produced from environmentally certified forests.

## 3 Greenhouse gas emissions

- 3.1 CO<sub>2</sub>: reduce total emissions due to our energy consumption (tonnes of carbon equivalent per production unit) by at least a factor of 10 in 2010 versus 1990, which is a goal five times better than the average of the industries meeting the Kyoto Protocol goal.

- 3.2** Renewable energies: increase their use (wind, photovoltaics and thermal solar) so that they represent at least 5% of our total energy supplies by the end of 2010.
- 3.3** Alternative energies: adopt, wherever possible, alternative energy sources such as cogeneration and fuel cells.
- 3.4** Carbon sequestration: compensate for the remaining CO<sub>2</sub> emissions due to our energy consumption through reforestation or other means, aiming at total neutrality towards the environment by 2010.
- 3.5** PFCs: reduce emissions of PFCs (tonnes of carbon equivalent per wafer) by at least a factor of 10 in 2008 compared with 1995.

#### **4 Pollution**

- 4.1** Noise: meet a 'noise-to-neighbours' rate of less than 60dB(A) at any point and any time outside our property perimeter for all sites, or comply with local regulations (whichever is the most stringent).
- 4.2** Contaminants: handle, store and dispose of all potential contaminants and hazardous substances at all sites in such a way as to meet or exceed the strictest environmental standards of any community in which we operate.
- 4.3** ODS: phase out all remaining Class 1 ODS, including those in closed loops of small equipment, before the end of 2001.

#### **5 Chemicals**

- 5.1** Reduce the consumption of the six most relevant chemicals by at least 5% per year (tonnes per production unit), through process optimization and recycling (baseline 1998).

#### **6 Waste**

- 6.1** Landfill: reduce the amount of landfilled waste below 5% of our total waste by 2005.
- 6.2** Reuse or recycle at least 80% of our manufacturing and packing waste by end 1999, and 95% by end 2005.
- 6.3** Use the 'Ladder Concept' as a guideline for all actions in waste management.

## **7 Products and processes**

- 7.1** Design products for reduced energy consumption and to allow for more energy efficient applications.
- 7.2** Contribute to global environmental control by establishing a database containing a Life Cycle Assessment of our products.
- 7.3** Systematically include the environmental impact study in our development process.
- 7.4** Publish and update information about the chemical content of our products.

## **8 Proactivity**

- 8.1** Support local initiatives for sponsoring environmental projects at each of our sites.
- 8.2** Sponsor an annual Corporate Environmental Day, and encourage similar initiatives at each site.
- 8.3** Encourage our people to lead/participate in environmental committees, symposia, 'watch-dog' groups etc.
- 8.4** Include an 'Environmental Awareness' training course in the ST University curriculum and offer it to suppliers and customers.
- 8.5** Strongly encourage our suppliers and subcontractors to be EMAS validated or ISO 14001 certified, and assist them through training, support and auditing. At least 80% of our key suppliers should be certified by end 2001.

## **9 Measurement**

- 9.1** Continuously monitor our progress, including periodic audits of all our sites worldwide.
- 9.2** Cooperate with international organizations to define and to implement eco-efficiency indicators.
- 9.3** Measure progress and achievements using 1994 as a baseline (where applicable) and publish our results in our annual Corporate Sustainable Development Report.

## **10 Validation**

- 10.1** Maintain the ISO 14001 certification and EMAS validation of all our sites worldwide.
- 10.2** Certify new sites within 18 months of their operational start-up, including regional warehouses.

# 1993

## A History of Environmental Progress

These milestones are a testimony to our commitment to the environment:

### 1993

- Change in attitude: from compliance with international and local regulations to a proactive mode.
- Created the Corporate Environment Strategies Management organization; issued the Environmental Policy.
- Launched a long range company-wide initiative with the goal of establishing ST as the world leader in environmental protection by the year 2000.
- Complete elimination of the ODS (Ozone Depleting Substances) Class 1 from our processes.

### 1994

- Initial environmental review of all manufacturing sites and decision to apply for EMAS validation.
- Adherence to International Chamber of Commerce (ICC) Business Charter for Sustainable Development.

### 1995

- First Corporate Environment Day.
- Issued first Environmental Decalogue with environmental objectives (distributed worldwide to all employees, customers, suppliers and partners).
- First Site EMAS validated.
- First worldwide Environment Meeting (all sites represented)

### 1996

- Environmental training for top management and start up of the 'train the trainers' sessions.

## 1997

- All manufacturing sites both EMAS validated and ISO 14001 certified (all 7 European sites EMAS registered by the European Commission).
- ODS Class 1 eliminated from facilities.
- First Life Cycle Inventory on a finished product.
- Publication: Chemical Content of a Semiconductor Package
- Environmental training for suppliers (on CDROM)

## 1999

- Second Environmental Decalogue issued setting the aggressive goal of making ST a CO<sub>2</sub> neutral (zero CO<sub>2</sub> equivalent emission) company by the year 2010.
- Energy, PFC and chemicals road maps defined.
- More than 50% of ST's key suppliers obtained environmental certification.

## 2000

- Considering an equal production rate, electricity and water consumption were reduced by 29% and 45% respectively compared with the 1994 baseline.

## 2001

- First global worldwide Energy Survey on all ST manufacturing sites.
- First non-manufacturing site EMAS validated and ISO 14001 certified.

## 2002

- Construction started on our first wind farm (10.5 MW).
- First big reforestation campaign (600 hectares planted).
- First site achieved zero landfilled waste (another three reduced landfilled waste to less than 5%).

## 2003

- First wind farm (10.5 MW) became operational in March.
- Reforestation completed on 3800 hectares.
- 7 sites reached zero landfilled waste (total landfilled waste was 4.9% by the end of 2003, reaching the Decalogue goal two years in advance).

# 2003

## Awards and Accolades

Since 1991 the Company has received numerous awards, 47 of which were for environmental issues.

Listed below are the main awards over the last six years:

### 1998

- French Ministry of the Environment and French Chamber of Commerce prize for Gestion Environnementale - *All ST sites, France*
- Award and special commendation from the Jury: European Better Environmental Award for Industry: Managing for Sustainable Development - *All ST sites, France*
- Winner: Waste Reduction Award Program (WRAP) California Environmental Protection Agency Integrated Waste Management Board - *Rancho Bernardo, California (USA)*
- Trophy: Trophée Enterprise Environnemental Catégorie Grandes Entreprises by Enjeux-Les Echos and Price Waterhouse Coopers - *All ST sites, France*

### 1999

- President Bill Clinton's letter to CEO congratulating ST on efforts to reduce greenhouse gas emissions - *P. Pistorio- ST CEO*
- Winner: Waste Reduction Award Program (WRAP) California Environmental Protection Agency Integrated Waste Management Board - *Rancho Bernardo, California (USA)*
- Winner: United States Environmental Protection Agency's (EPA) Climate Protection Award *All ST, Corporate*
- Winner: Hassan II Environment Award - *ST, Morocco*
- Dow Jones Sustainability Global Index (DJSI) Ranking: ST World's Leading Semiconductor Company for Sustainability - *All ST, Corporate*
- Financial Times / Corporate University Xchange Award for Innovative Marketing *ST University, Rousset, France*
- Cahners In-Stat Group Award for Exemplary Performance during Semiconductor Industry Tough Times - *All ST, Corporate*
- Arthur Andersen and II Sole 24 Ore Customer Satisfaction Award - *All ST, Corporate*
- Malcolm Baldrige National Quality Award - *STMicroelectronics, Inc, USA*
- Singapore Quality Award for Business Excellence - *STMicroelectronics Asia Pacific, Singapore*
- Co-winner of L'Expansion Magazine award for Innovation - *All ST, Corporate*

### 2000

- Winner: Quality Award from Ministry of Trade and Industry, Morocco - *ST, Morocco*
- Italian Environmental Ministry Award for EMAS registered sites - *All ST sites, Italy*
- Innovest Environmental Research (AAA rating) - *All ST, Corporate*
- Akira Inoue Award for Outstanding Achievement in Environment, Health & Safety *P. Pistorio - ST CEO*
- Best Financial Communications Strategy and Best Financial Communications via Internet from Paris Bourse - *All ST, Corporate*



## 2001

- Tomorrow Magazine Environmental Leadership Award - *P. Pistorio - ST CEO*
- Seal of Sustainability from Sustainable Business Institute (SBI) - *All ST, Corporate*
- 'Innovazione Amica dell'Ambiente' Award from Legambiente and Milan Politecnico - *ST, Italy*
- Environmental Ministry Award - *Kirkop, Malta*
- Arthur Andersen and Il Sole 24 Ore Customer Satisfaction Award - *All ST, Corporate*
- IMPRESA Europe Award for Best European Practices in India - *Noida, India*
- L'Expansion Magazine Award for Best French Company - *All ST, Corporate*
- Arizona State University College of Engineering and Applied Sciences Engineering Award for contributions to the engineering profession, the university and society at large  
*P. Pistorio - ST CEO*

## 2002

- Management award for Sustainable Development from European Commission Directorate  
*ST Kirkop, Malta*
- Seal of Sustainability from Sustainable Business Institute (SBI) - *All ST, Corporate*
- Individual Climate Protection Award (EPA) - *F. Borri - ST former Corporate Environment Director*
- The 'Mrs Aruna Bhorgava Eco-challenge trophy' from the Fluoriculture Society  
*Noida, India*

## 2003

- Prime Minister's 'Hibiscus' Award for Excellent Achievement in Environmental Performance  
*Muar, Malaysia*
- Best in class scoring by VIGEO (European Financial Agency) for Environmental Products  
*ST Corporate*
- Swiss Solar Energy 'Solar price' award 2003 – Photovoltaic Category - *ST Genève*
- Appreciation award for eco-efficiency projects from Singapore Polytechnic - *ST Singapore*
- ST selected among the 10 companies included in the Genius Book (Inventions and people protecting the climate and fragile ozone layer) - *ST Corporate*
- Dangerous Substances Initiative Award (by OHS Authority in association with the European Union Agency for Health & Safety) - *ST Malta*



“Life is a series  
of collisions  
with the future;  
it is not  
the sum of  
what we have  
been, but what  
we yearn  
to be.”

“Life is a series of collisions with the future;

it is not the sum of what we have been,

but what we yearn to be.”

Jose Ortega y Gasset

Philosopher

1883-1995, Madrid, Spain

# STMicroelectronics India

Set up in 1987 as a liaison office with 4 employees, STMicroelectronics India (at Noida, Delhi) has since evolved into a company of more than 1,400 employees. It is now one of our largest design centres outside Europe and contributes in a major way to ST's worldwide success. We are committed to further expansion in the country, with the aim of recruiting another 500 engineers by the end of 2004.

ST India specializes in developing high value Intellectual Property (IP), System-on-Chip (SoC) embedded software for end applications and IT infrastructure. Between 1993 and the end of 2003, ST India filed 106 patent applications (40 in 2003), with the number of patents filed increasing each year. Since mid 2002, 11 patents were awarded in the US and Europe. India has become ST's hub for developing cutting edge technology for applications like set-top boxes, DVD, wireless-telecom, multimedia, imaging and automotive, among others, as well as playing a key role in our worldwide R&D activities.

ST India is also a major hub providing and supporting ST's global IT applications and related activities. It helps in deploying and supporting internal Business systems and HR systems throughout ST worldwide. This arm of ST is also certified to CMM Level 5, the de facto worldwide standard for assessing and improving software processes.

The Noida site supports the growing base of Indian manufacturers that use ST products. ST is among the top three suppliers of semiconductors in India and has maintained a CAGR (Compound Annual Growth Rate) of 20 per cent over the last five years. The Services & Marketing team in Noida is engaged in supporting emerging technologies in the area of automotive, telecom, set top boxes, DVDs and smart cards. The team has designed a low cost, ready-to-manufacture design for an Indian set top box manufacturer, which is the first of its kind for the Indian market.

ST India has established strong relationships with leading Indian Universities and research institutions. Since 1999 it has been operating a joint laboratory in Bangalore with the Indian Institute of Science (IISc), one of the premier academic institutions in India. Our new design centre in Bangalore will employ around 100 engineers by the end of 2004.

As part of our commitment to help bridge the Digital Divide, ST is setting up IT-literacy projects in India (see 'STMicroelectronics Foundation' in the Social section). ST has signed a formal Memorandum of Understanding with the Ministry of Education, Government of Uttar-Pradesh, for teaching school teachers in and around the state.

For the second consecutive year, ST India has been included in the 'Best Employer' category by Hewitt consultants and Business Today, while in 2001 it received the European Bi-lateral Chambers of Commerce & Industry in India's IMPRESA award for bringing European Best Practices to India.

Noida has been highly successful in attracting and retaining young, talented engineers. The average age of its employees is just 27.5 years, with two-thirds holding engineering degrees.

India is not new to the concept of social responsibility in the corporate world. Business houses in the country have always believed in the philosophy of 'giving back to society'. They have set up their own trusts, schools, colleges, hospitals and other services and institutions to serve the needy. One of the oldest and most respected business houses in India, the Tata Group, is centered on the thinking of its founder, Jamsetji N. Tata, that "in a free enterprise, the community is not just another stakeholder in business but is in fact the very purpose of its existence." Mahatma Gandhi, the father of the nation, spoke about the concept of trusteeship in business, according to which businesses must act with the sanction of the wider social community.

However, most corporate activities aimed at social development in India have been and continue to be more philanthropic in nature without any direct links with an organization's business. This is probably in keeping with the fact that many of the traditional development indicators like life expectancy, child mortality, sanitation facilities and access to primary education are still abysmally low and basic aspects of society are in need of support from the corporate world.

In India the range of social development activities undertaken by the corporate world is vast. At one end of the spectrum there is the donation of money, goods or services. CSR may also be practiced by adopting a specific community and building its capability by offering vocational or other training. At a higher end, it involves addressing big issues like primary education on a systematic basis and trying to make a fundamental difference.

Indian society has CSR expectations of multinationals that have set up operations in India that go beyond monetary or ad hoc assistance. Long-term commitment, developing meaningful technology driven by the needs of Indian society and building local community capabilities are among the key expectations.

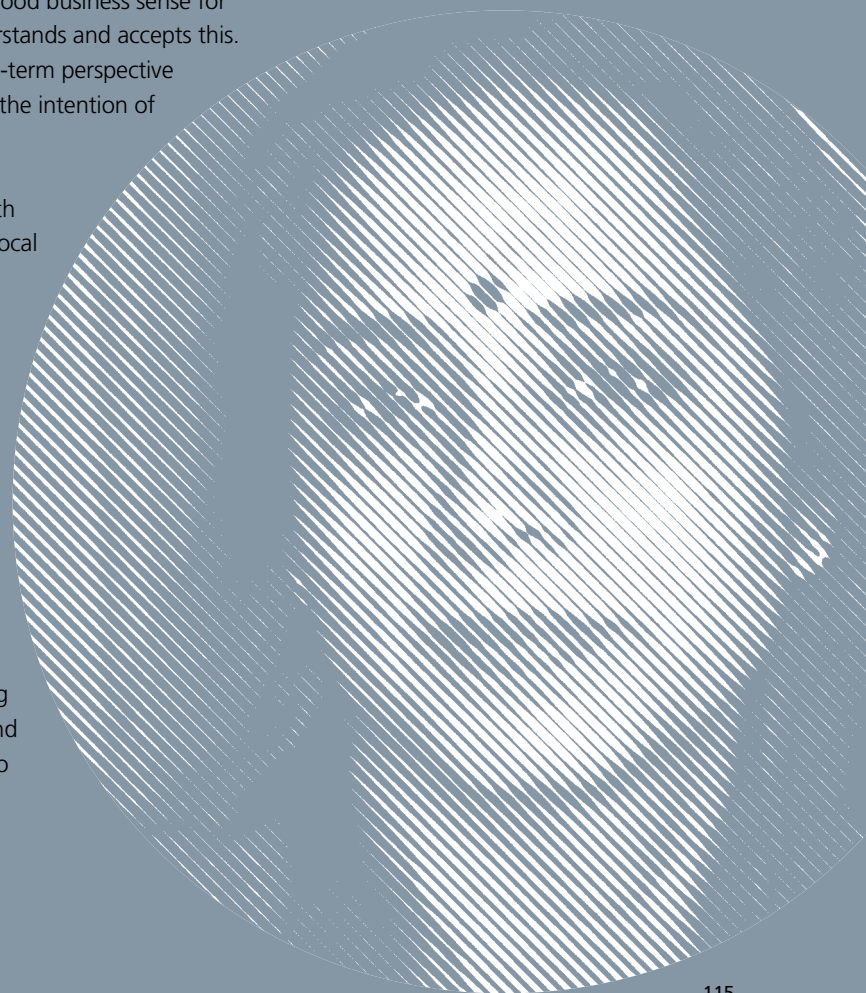
**Long term commitment:** India is an attractive destination for the IT industry because of the country's large and cost-effective talent pool. It makes good business sense for multinationals to have operations in India. Indian society understands and accepts this. However it would like multinationals to come here with a long-term perspective and with an attitude of respect and mutual gain and not with the intention of moving out if a cheaper option becomes available.

**Equip local partners to rise to global standards:** Along with enabling their employees to develop, raising the standards of local partners and helping them to go global is seen as a key social responsibility. Says Anand Nadkarni, General Manager of the Tata Council for Community Initiatives: "STMicroelectronics must create opportunities that will make stakeholders like suppliers and vendors better entrepreneurs."

**Build local community capability:** What stakeholders want from STMicroelectronics when it comes to helping the immediate community and society at large is for it to share the tremendous wealth that it has as a corporate player. We are not talking about financial wealth here, but the knowledge, expertise, talent, skills and networking that it has at its disposal. Multinational companies are perceived as having the ability to use this wealth to empower local communities and to equip them to grow. They are also in a position to be able to address the needs of rural communities and markets.

## Corporate Social Responsibility in India: A Vision for the Future

Meenu Shekar is a freelance business journalist from Bangalore, India. This article is an extract of a research project she is carrying out on behalf of ST to explore the expectations of our stakeholders in India.



Dr Tauni Brooker is CEO of ORM<sub>2</sub> and has worked extensively in investment banking and sustainable development.

## Tauni Brooker

What advice would you give to ST and other companies wishing to evolve in line with the growing expectations of the financial community?

The focus will need to be on clearly communicating all risks inherent in the company's operations and how it plans to manage those risks (especially non-financial risk). Companies are publishing CSR and governance reports as a response to the increasingly powerful role of corporations in society and the environmental price paid for growth. What is interesting about these reports is that they present an illustration of certain business and operational risk areas that concern the company – areas that are rarely covered in financial reporting. A proper understanding of risk is imperative in the investment process and companies must do more to inform investors about their management of material business risks, the perception of which has a direct impact on their market value. It is also becoming a legal obligation under listing and securities regulations in the UK and the US to disclose all operational risk; this includes intangibles and non-financial risk.

How do you see or how would you like to see the future of sustainable business unfolding?

I would like companies to extend their focus on risks to include those non-financial risks that have an impact on the value of the company currently and in the short term. Once the company starts taking a proactive stance on non-financial information, the broader financial community will start to incorporate the message (and underlying management of the risk) into their valuation models. The Investor Relations departments in companies should work to identify those 'active' shareholders and their needs when evaluating the management of non-financial issues.

The only way that sustainable development can find itself on the radar of the mainstream investment community is via risk management. Rule number one in changing behaviour has always been to 'follow the money'. If it hurts (financially) enough or if there is a large enough gain, behaviour will start to change.

How can a company perform effective risk management in this context?

There are limited ways in which companies can manage the financial effects of risks:

- Transfer risks to a third party (typically to insurance companies)
- Take financial responsibility of the risk (put its own capital at risk)
- Avoid the risk (effective management of the risk to prevent losses)
- Reduce the potential losses (good crisis management)

Since most CSR risks cannot be transferred, companies are carrying the potential financial liabilities. CSR risks become financial risks in various ways, the most notable of which are:

- The cost of settling legal claims for damages
- A decline in profitability as consumers boycott products or changes in regulation increase costs that must be absorbed
- A decline in share or bond price as the company's risks are perceived differently by investors holding its securities

Since CSR risks are uninsurable and the potential liabilities of CSR risks can bring about bankruptcy, avoidance of the risk is the only solution. Recent changes in legislation in the US and the UK have given company directors the responsibility of controlling and reporting material business risks. CSR risks are therefore becoming the new area of financial interest because of their material impact on shareholder interests.





# Interview with

## David Stoneham

David Stoneham,  
Director,  
Corporate Social  
Responsibility,  
Nokia.

As a customer of ST that is directly exposed to the consumer market, Nokia represents the first part of the supply chain to come under consumer-related pressure regarding corporate (social) responsibility. What specific responsibilities does this entail?

There are somewhere in the region of 400 million people using Nokia mobile devices. Our responsibilities towards consumers include product choice and usability, product safety and reliability, product information, and specific issues such as supply chain responsibility and product end-of-life practices. We are very aware that our high standard in corporate responsibility has a knock-on effect throughout our supply chain. This is one strategy behind our aim to be not only legally compliant, but a good citizen in all markets we operate in and to really make a difference. Our own ethical commitment, outlined in our code of conduct, is the basis for our set of supplier requirements, which we use to manage supplier relations.

What is your vision of the future of sustainable development/CR? What kind of future are you working towards or seeking to bring about?

The main driver for improving our ethical performance is that it makes business sense. We want to build the right corporate culture in Nokia and demonstrate company values. We recognize the role that responsible business plays in risk management, quality, innovation and cost-efficiency. A large part of our business success has come from taking stakeholder expectations into account. Our aim is to make corporate responsibility a part of everyday business. To this end, we see stakeholder dialogue, internal and external, as being an important way to increase understanding on the different roles of private, public and civil sectors.

As your supplier, how would you like to see ST operating in this 'sustainable future vision'? And what are the key values or criteria against which you evaluate and judge our performance?

Among our suppliers, we see management commitment towards corporate responsibility as being essential. This translates into numerous desirable business approaches and practices in supplier operations, among them transparency, industry cooperation and management of responsibility in the value chain. One of the key tools we use to evaluate supplier performance is through a supplier scorecard, which focuses on Responsiveness, Cost, Supply, Quality and Technology, including questions relating to environmental and ethical issues. Our main expectation for working with ST in supply chain management is 'openness'.

What kind of practical work could ST and Nokia do together, in your opinion, to optimize the resources that each company has at its disposal individually?

There is great potential for sharing best practices and information, such as finding ways to measure progress, codes and guidelines, some level of cooperation on assessments (particularly those of common suppliers), product material data (RosettaNet), and creative solutions towards cultural differences.

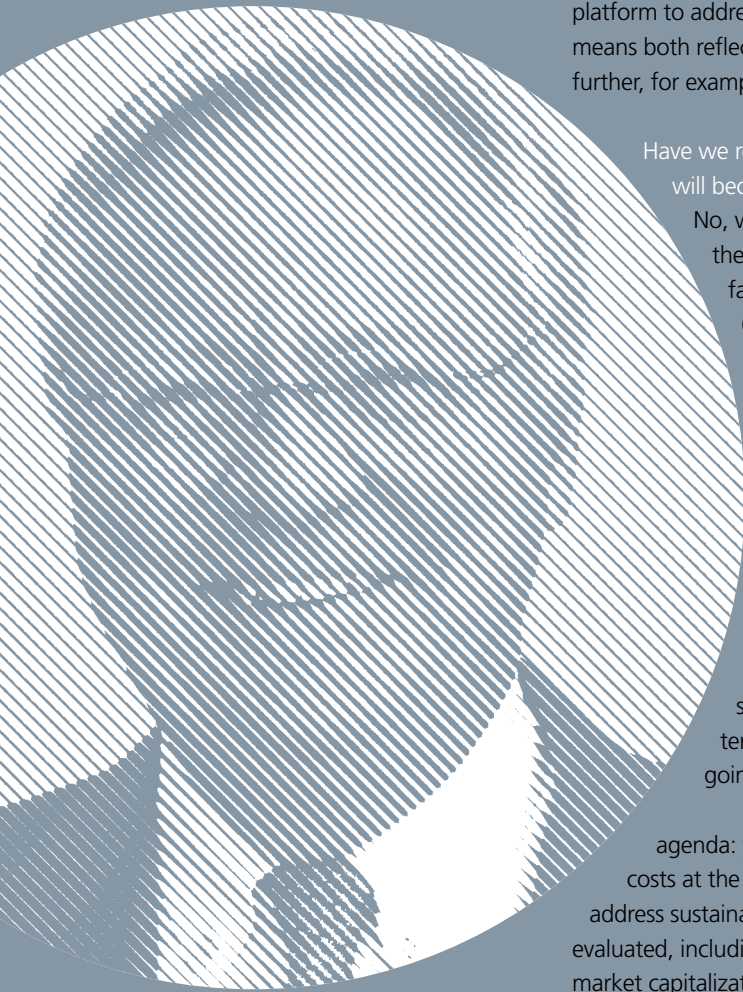
What do you perceive as the main opportunities available to companies like ST and Nokia in their integration of sustainable development strategies and initiatives into their overall business strategy and its implementation? And what about the main risks or challenges?

The challenge of aligning corporate responsibility strategies also represents an opportunity. If our actions, especially those at the implementation stage, complement each other, there will be positive implications for the rest of the supply chain. This is important when it comes to managing supplier relations. In telecoms, large companies typically have complex supply chains that are multi-tier and multi-site. Global strategies have to be clear and consistent but also be matched to cultural differences. The issue is compounded by constant change and new market forces.

Finally, if you were granted one wish to 'spend' on sustainable development and its unfolding future, what would it be?

Our one wish would be that all parties influencing global issues – private, public and civil sector alike – strive to see the big picture and work towards long-term value creation.

# Interview with



Bjorn Stigson, President,  
World Business Council for  
Sustainable Development  
(WBCSD).

Bjorn Stigson

How does the WBCSD see itself?

The WBCSD sees itself as a catalyst for change. It is member led and member driven; a platform to address sustainable development and a tool for companies. Being a catalyst means both reflecting the good practice of our members and challenging them to go further, for example by setting stricter targets.

Have we reached the 'critical mass' necessary to ensure that sustainable development will become a mainstream issue for the majority of companies?

No, we haven't reached critical mass. Sustainable development is a concept that the majority of companies in the business world does not understand. The fact is that this majority is composed of Small and Medium-sized Enterprises (SMEs). How to reach these smaller companies is an issue that still has to be addressed and tackled. One of the ways big companies can help SMEs develop their own approaches to sustainable development is through their supply chains, and by helping form the legislative and general framework that influences smaller companies.

What do you think are the key risks and opportunities as things stand at the moment?

As far as risks are concerned, there is a lot of uncertainty surrounding the resilience of the ecosystems. We are not really sure if we are close to any critical limits on big issues such as climate change, biodiversity and water supplies. The political will of governments is quite limited on these long-term matters. With regard to opportunities, there is a lot of experimentation going on in companies. There is a business case for sustainable development.

I see sustainable development from two angles. The first is the business agenda: you can in fact reduce pollution and the use of resources and reduce your costs at the same time. The second is what I call the public policy agenda: how you address sustainable development issues will determine the way you are perceived and evaluated, including the impact on your market capitalization. A company like ST has a market capitalization that is formed mainly of intangibles, immaterial values like reputation and brands. Your value as a company is influenced by how you respond to the societal expectations on your company for corporate social responsibility.

Do you think that the power to change the balance in the favour of sustainable development lies with any particular 'stakeholder groups' at this point in time?

No, it requires cooperation between a number of important actors. Governments have a very big responsibility to set up a framework, especially on global issues such as climate change. Companies are making efforts to reduce energy consumption, but progress will be slow unless a global framework for Greenhouse Gas emissions is defined. The financial community also has a large share of the responsibility. Unless it understands the importance of sustainable development and attributes financial value accordingly, good performers will not see the benefits and progress will be slow, and unfortunately I think we can say that the financial community is one of the laggards.

What does the WBCSD expect of its members, including ST of course, in terms of their commitment to the shared objectives of the Council?

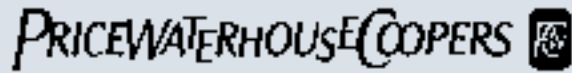
I feel it is very important for companies to walk the talk, to be active and to publish their activities.

Finally, if you were granted one wish to 'spend' on sustainable development and its unfolding future, what would it be?

Here we come back to the financial community. I hope that they will see the light regarding the long-term importance of sustainable development, and realize the importance of the role that their sector plays.








At the request of STMicroelectronics NV, we have conducted diligences regarding the procedures used by STMicroelectronics NV to gather and aggregate social and environmental data from Group sites for inclusion in the 2003 Sustainable Development Report (“SD Report”). This report has been prepared by, and is the responsibility of, STMicroelectronics NV and follows the principles of the Environmental Decalogue, described in page 105 of the SD Report, and of the Group Human Resources Reporting Standards.

The SD Report was prepared under the responsibility of STMicroelectronics management. It is our responsibility to provide our comments following the work we performed.

### **Nature and scope of the work**

Our work involved:

#### **1. At corporate level for environmental data in Agrate, Italy and for social data in Paris, France:**

- Review of internal procedures for data collection and consolidation including interviews of key correspondents, internal documents and procedure analysis, assessment of results versus self-commitments...
- Review of indicators relevance and perimeter
- Review of the data sent by sites, including:
  - Assessment of internal controls;
  - Review of consolidation process and verification of the calculation accuracy of aggregated KPIs identified in the report by  ;
  - Analysis of variations compared to previous year.
- Reading of the 2003 Social and Environmental Report to check coherence with the results of our work

#### **2. At site level (Tours, France):**

- Review of the implementation of the Group’s sustainability requirements in the following areas:
  - Establishment of management system for environmental and social issues at site level;
  - Existence of external certification of environmental and social management (EMAS, ISO 14001, ISO 9001 of human resources processes and OHSAS 18001);
  - Existence and consistency of the sustainability information systems (including data gathering and control).
- Review of the 2003 sustainability data reported to “Corporate Environment Department” and “Corporate Human Resources Department”, including:
  - Comparison of reported data with data from previous years;
  - Check of the reliability of the underlying information sources based on a sample analysis.

We have called on our “Sustainability Business Solutions” specialized team to assist us in carrying out this work.

### **Comments**

On the basis of the work performed, and taking into consideration the inherent limitations of the accuracy and completeness of sustainability data, we have reported to the management the following comments:

- Regarding progress compared to last year, the new normalization method of environmental KPIs by production volume in the 2003 SD Report enables a better basis for comparison than the previous added value normalization method and provides more meaningful data;
- Regarding areas for improvements:
  - Definitions of some social KPIs reported annually may be refined to reinforce the consistent understanding of key performance indicators across the group’s sites;
  - Formalization of social data controls and consolidation procedures at corporate level is in progress and will reinforce and secure the control system built by Corporate HR;
- Regarding the appropriateness of systems, procedures and controls used to compile the sustainability data, we have not identified material misstatement that may affect the:
  - Appropriateness and reliability of STMicroelectronics framework for gathering, reporting and consolidating sustainability data from Group sites;
  - Quality of internal and external controls system on environmental and social management.

Thierry Raes - Sustainability Partner  
*PricewaterhouseCoopers Audit*



For any further information regarding this report or any of ST's activities relating to sustainable development and corporate social responsibility, please send an e-mail to [sd.report@st.com](mailto:sd.report@st.com). We welcome any comments, feedback and suggestions for improvement.



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The Sustainable Development Report and the Annual Report are printed on paper produced by a factory whose environmental management system is ISO 14001 certified. The paper does not contain acid elements and is produced from pulp coming from reforested areas. High recyclability and renewability of the raw material, together with production processes optimized for maximum reduction of impact on the environment, make this paper environment-friendly.

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