

# The Impact of Medicines Sustainability in Environment, Health and Safety **Report 2002**



GlaxoSmithKline

Do more, feel better, live longer

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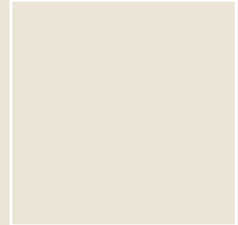
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## ABOUT THIS REPORT



Welcome to Sustainability in Environment, Health and Safety 2002, the GlaxoSmithKline review of environment, health and safety programmes and performance for 2002. It is a companion to *The Impact of Medicines, Corporate and Social Responsibility Report 2002* and provides additional information about our EHS programmes and details of our EHS performance and progress to targets.

By publishing the EHS report on the web<sup>1</sup>, we can include detailed information that has been requested by some of our reviewers. We can also link information within the report to make it easier to read just what each individual reader wants to see. Although some of the information about our Framework and programmes has not changed from last year, we have included it within this report and the download file to facilitate complete understanding of our EHS performance without having to refer to previous reports.

This report is aimed at several audiences. For our external stakeholders it outlines how we manage our EHS risks and presents our EHS performance. For our internal stakeholders, our employees and managers, it provides a broad overview of how we manage EHS and the progress we have made as a result of their contributions.

 **GRI Part C, Section 2 Profile**

### Global Reporting Initiative

We have referred to the **Global Reporting Initiative Sustainability Reporting Guidelines** (<http://www.globalreporting.org>), published in 2002, in setting the content of this report, although the report covers only the EHS aspects of sustainability.

The GRI icon, appearing in this report, refers to related GRI sections.



<sup>1</sup> This is a copy of "The Impact of Medicines: Sustainability in Environment, Health and Safety Report 2002" as it appears in "The Impact of Medicines: Corporate Social Responsibility Report 2002" which can be found at [www.gsk.com/financial/rep02/csr02/front.html](http://www.gsk.com/financial/rep02/csr02/front.html)

## About GSK

To facilitate understanding of this report some facts about GSK are covered here but more information about GSK can be found in the ***Annual Report and Accounts*** and on [gsk.com](http://gsk.com).

GSK is a world-leading, research-based pharmaceutical company with a mission to improve the quality of human life by enabling people to do more, feel better and live longer.

Headquartered in the UK and with operations based in the US, the company is one of the industry leaders, with an estimated seven per cent of the world's pharmaceutical market. GSK leads the market in four major therapeutic areas: anti-infectives, central nervous system (CNS), respiratory and gastro-intestinal/metabolic. In addition, it is a leader in the area of vaccines and has a growing portfolio of oncology products. The Consumer Healthcare portfolio of over-the-counter (OTC) medicines, oral care products and nutritional healthcare drinks, all are among the market leaders.

GSK has over 100,000 employees worldwide. Of these, over 40,000 are in sales and marketing, the largest sales force in the industry. Over 42,000 work at 99 manufacturing sites in 39 countries and over 16,000 are in R&D. R&D is based at 24 sites in seven countries. The company has a leading position in genomics/genetics and new drug discovery technologies.

 **GRI Part C, Section 2.1 to 2.8**  
**Organisational Profile**



## Report scope

This EHS report covers the calendar year 2002 and is the second produced by GlaxoSmithKline after the merger of Glaxo Wellcome and SmithKline Beecham. (The 2001 report can be found on [gsk.com](http://gsk.com). The environmental data in the Performance section covers manufacturing and R&D operations worldwide, since they are the primary sources of emissions and waste, as well as some aspects of our commercial operations. We have included the partial year information in the report whenever this is feasible for manufacturing and R&D facilities that have closed since last year.

We collected injury and illness data from all manufacturing and R&D operations and from most office and sales locations. Between 2001 and 2002 we collected data from an additional 25 office and sales locations. We may be missing 10 more small sales and office locations and we will continue to try to establish basic reporting from all locations.

For the first time this year we have worked with our key contract manufacturer to collect EHS data. We will include it in our EHS report once we have verified that our collection methods are understood and yielding dependable measures.

This report is prepared by the Corporate Environment, Health and Safety (CEHS) department at GSK by Nancy English, PhD, Director, EHS Global Impact Assessment and Reporting with contributions from Corporate Employee Health Management and many staff members.

### myEHS



Underpinning all of the framework, providing support for all programmes and enabling collection and analysis of the data in this

report is a state of the art intranet system that we have called the myEHS Community web site or myEHS for short. It has three main functions:

- It is primarily a comprehensive EHS information management system that provides sites with tools for managing all of their EHS responsibilities and measuring their progress.

- It is the repository for EHS Standards, Guidelines, Tools and other EHS information as well as the central point for EHS-related announcements, news and listings of events as well as a place to share good EHS practices and ideas.
- It is the central collection point for EHS data provided in this report and used by GSK and its business units to monitor progress and drive continuous improvement.

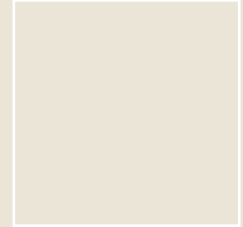
In addition to serving as the central collection point for the data, myEHS functionality includes:

- Creation and distribution of Material Safety Data Sheets (MSDS).
- Eco-design, occupational hygiene, hazard assessment and other tools.
- For sites that are currently ISO certified or that are in the process of ISO certification, myEHS provides all of the support functionality needed for the required documentation and EHS management.

Structurally, myEHS is a combination of two commercial software packages, several collaborative working tools used within GSK and other information technologies. 2002 was the second year for myEHS although elements of it, such as the MSDS system, have been in use in heritage organisations for several years. Its capabilities, especially the range of capabilities for managing site EHS issues, are not yet fully used. However, as the functions and capabilities are integrated into the way people work and they come to depend on it, it should become even more useful.



## EXECUTIVE STATEMENTS



### Chairman of the Board

"GSK puts great value on the safety of employees and the protection of communities and the environment. I am pleased to present ***Sustainability in Environment, Health and Safety***, our EHS report for 2002, which we publish as a separate report on [gsk.com](http://gsk.com) so that we can provide details of our EHS performance. It represents the environmental element of

sustainability. You can also see our progress in many of the social and economic aspects of sustainability in *The Impact of Medicines, Corporate and Social Responsibility Report 2002*."

Sir Christopher Hogg



### Chief Executive Officer

"Sustainability, by definition, is good for business, society and the environment. To be integrated into the way we do business, it must be driven from the top. That is why I take a personal interest in sustainability issues like finding a sustainable way to provide medicines to people with the most need and protecting the environment and the health and safety of our employees. This report is a companion to the CSR report and describes our programmes in

environmental sustainability and our progress in 2002 toward our 2005 targets. Sustainability is a long term aspiration but we are making steady progress toward that goal. We will continue to build on what we have done and try to find innovative ways to progress the sustainability agenda."

Dr. JP Garnier



## Senior Vice President and General Counsel

“GSK is responsible for building our business in a sustainable manner; but to make progress, we need to define sustainability for the many aspects of our business. To help us define what sustainability means for GSK, we dialogue with internal and external stakeholders. And to achieve our long-term commitment for sustainability, we put in place a series of manageable projects. The projects that we launch address the needs of the company and its shareholders, the needs of society, the needs of our employees and the needs of the environment. In this way, we work toward a better world for our children and ensuing generations.”

Rupert Bondy





## Vice President, Corporate Environment, Health and Safety

Sustainability in EHS is a long term commitment and I believe that the key to progress is creating an EHS strategy that builds on GSK business drivers and meets the fundamental requirements of environment, health and safety. In 2001 we put in place a framework of policies and standards that set out our requirements for managing EHS. In 2002, we developed the EHS Plan for Excellence, a strategic plan with aspirations that are directly aligned with business drivers. The plan systematically addresses key risks, moves us toward leadership by enhanced EHS performance in all aspects of the business and ultimately leads to competitive advantage and sustainability.

A sharp focus on employee safety is incorporated throughout the Plan for Excellence. In it we lay out our plans for reducing workplace injuries and illnesses; protecting people from health effects of chemical and biological exposures; identifying programmes that will drive continuous improvement in this area and developing an inherent safety culture within GSK. Ensuring that safety and health concerns are properly addressed at our facilities to minimise residual risk and avoid disruption of product supply is foundational to the Plan and to our aspirational long term goal of avoiding workplace injuries and illnesses.

In following the Plan toward environmental sustainability, we will first focus on manufacturing processes that minimise resource use and environmental waste. Secondly, we will examine the possibility of using renewable resources and evaluate the life cycle of GSK's products and processes to help us understand how they fit into the natural cycle. Fitting into the natural cycle means that raw materials would come from renewable sources and wastes would be assimilated into the environment without causing harm.

R&D is critical to the path to sustainability. R&D is involved in designing sustainability and environment, health and safety concepts into the processes that deliver our medicines to customers. This kind of "product stewardship" benefits the business' financial, social and environmental sustainability.

Also, the innovative ways of working that result from product stewardship create the opportunity for GSK to lead the pharmaceutical industry's thinking about product development and manufacture. It is our goal to stimulate continuous improvement in industry practice.

By taking the path to sustainability we believe that GSK can make a significant contribution to the goals of the UN 1987 Brundland Commission: to ensure that future generations have their needs met at least at the current levels. We also believe sustainability is the platform from which GSK will achieve its mission to enable people to do more, feel better and live longer.

I look forward to hearing your comments about the content and format of this report. Your feedback will help ensure that we are adequately communicating the progress GSK is making in Sustainability in Environment, Health and Safety.

James Hagan, PhD, PE



## Vice President, Employee Health Management

GSK, recognising that our people are the single greatest source of competitive advantage, has established Employee Health Management (EHM) to protect and enhance the health of GSK's employees worldwide. EHM accomplishes this through:

- Providing effective and efficient risk management.
- Enhancing individual and organisational capability and productivity.
- Integrating health considerations into business processes and work culture.
- Supporting compliance with the global health policy and standards.

EHM teams work with the businesses to provide integrated and targeted programmes. These teams provide employees a wide range of services to reduce risk of illness and injury, enhance well-being and to positively impact the quality of life for individuals and families, for instance, *lifematters*® programmes.

EHM, in partnership with corporate and site Human Resources, Employee Health and Environment, Health and Safety (EHS) groups, helps the business care for its employees. Global policies on Employee Health and EHS approved by our operating board are supported by mandatory standards that integrate employee health and safety and environmental requirements. We apply these standards to all our facilities and operations around the world. EHM's Global Health Team helps GSK sites identify gaps in understanding of and compliance with the global standards and provides ongoing support and action planning.

Employee Health metrics help EHM measure progress against its global health goals and allow for effective targeting and resource allocation to improve health outcomes. Based on the first year global health experience data, we have identified three major health areas on which we will provide additional near-term focus.

These three areas of focus are musculoskeletal, mental health and conditions related to material handling. Multidisciplinary teams are working to set baselines, align reporting and develop

interventions. This joint effort will help to reduce the incidence and impact of these conditions in the future.

To accomplish our health goals, EHM depends on business strategy, GSK's culture, other departments' processes and programmes, and the quality of line management. Therefore, EHM strives to integrate health and safety considerations into business processes, GSK culture and leadership practices. It is through these integrated efforts that GSK will safeguard and enhance the health and well being of employees and as a consequence, enhance shareholder value.

Robert W. Carr MD, MPH

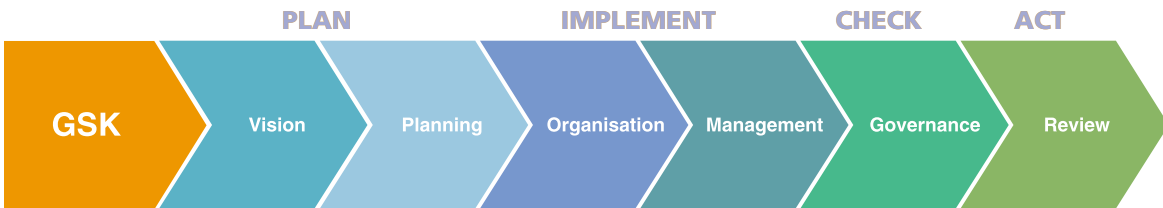




### Vision and Strategy

The GSK EHS Framework is the EHS management system for GSK. It includes policies, standards, guidance materials, tools and activities that support and assist the network of EHS professionals in managing EHS at their sites and throughout key business operations.

### FRAMEWORK FOR SUSTAINABILITY IN EHS



### EHS ACTIVITIES AND RESPONSIBILITIES INTEGRAL TO BUSINESS

Global	Vision Policies Aspirations	EHS Strategy EHS Objectives EHS Targets	Board, CET, ROCC CEHS EHM	Standards Guidelines Tools	Performance Monitoring, Auditing and Reporting	Public Report, Internal and External Dialogue and Recognition
Business Unit		EHS in Business Plan	Business Executives Teams and Compliance Boards	EHS in Business Processes	Business Performance Monitoring and Reporting	Business Review and Recognition
Operations		EHS in Operational Plan	Operations Executive Teams and EHS/EH	Operations Management Systems	Performance Monitoring and Self Audit	Operational Review and Recognition
External Supply		Contract Requirements/EHS in Supply Plan	GSK Sourcing and Contract Management	External Supplier Management System	Performance Monitoring and Reporting	Annual Performance Review

## EHS and EHM vision

GSK's Environment, Health and Safety (EHS) and Employee Health Management (EHM) Visions align with GSK's strategic intent ... to become the indisputable leader in our industry.

The EHS vision embraces the concept of sustainable development focused on environmental sustainability. It recognises that sustainable business advantage occurs when we understand and address EHS issues. From the development of products to their delivery, GSK has embarked on a journey to identify and understand its relationship to society and the environment. That is why in our EHS vision we strive for excellence in EHS.

*Our vision is to achieve sustainable competitive business advantage through leadership and excellence in environment, health and safety.*

**Dr. Tachi Yamada, Chairman, R&D**

"Sustainability principles are part of the development process in R&D. This benefits not only the environment but also the bottom line because it leads to design of material and energy efficient processes. By incorporating green chemistry and green processes into the products of the future, R&D leads the way in sustainability in GSK."



The EHM vision supports the value we place on our employees.

*GSK is a recognised leader in protecting and enhancing the health of its employees globally, enabling sustainable business success.*

GRI

**GRI Part C, Section 1.2 Statement from the CEO**

## Environment, health and safety policy

The GSK Environment, Health and Safety policy was one of the first policies the Corporate Executive Team approved for the new company. The policy outlines the broad principles that GSK expects all operations to live by to achieve the EHS vision. The EHS policy and EH (Employee Health) policy cover complementary aspects of the principles underlying responsible treatment of the environment and of our employees.

### Purpose

To achieve the GlaxoSmithKline Environment, Health and Safety vision.

### Scope

This policy applies to all GSK employees worldwide.

### Policy

Reflecting its commitment to global leadership and excellence in Environment, Health and Safety, GSK requires all operations to:

- Protect the health and safety of our fellow employees, contractors, visitors and others affected by our operations;
- Operate our business in an environmentally and socially responsible manner;

- Commit to continuous improvement of Environment, Health and Safety performance;
- Comply with legal requirements and global GSK Environment, Health and Safety Standards;
- Make Environment, Health, Safety and Loss Prevention integral to all GSK business processes, planning and decision making;
- Establish business practices and Environment, Health, Safety and Loss Prevention strategies that optimally utilise resources and prevent pollution to ensure the long-term sustainability of GSK and the global environment;
- Adopt a comprehensive approach to product stewardship, which includes key suppliers and contract manufacturers;
- Interact and cooperate actively with key stakeholders in resolving issues and improving performance.

GSK will use effective systems, metrics and goals in the management of all of our Environment, Health and Safety activities.

### Responsibilities

The Corporate Executive Team is responsible for ensuring the health and safety of GSK's employees and the protection of the environment and the communities in which GSK operates. The primary responsibility for implementation of this policy rests with local executives for each business unit. Employees are encouraged to participate actively in, and accept individual responsibility for environment, health and safety matters and work in partnership with management to assure compliance and support continuous improvement.

#### David Stout, President, Pharmaceutical Operations

"EHS has long been an integral part of GSK's R&D and manufacturing operations but it is also a key priority for commercial operations reflecting our ethical commitment to ensure the safety of our work force and the protection of the environment. Our strategy for sustainability starts with an improvement to our efficiency, which safeguards our workers, consumes less natural resource and generates less waste. This approach is a "win-win" for the business, our employees, the community and the environment."



## Employee health policy

### Purpose

To establish a policy to protect and enhance the health of GlaxoSmithKline's employees, thereby making a positive impact on productivity and reflecting the value we place on all our employees.

### Scope

This policy applies to all GSK employees and facilities worldwide.

### Policy

GSK is committed to global leadership in protecting and promoting the health, well-being and resilience of its employees. Integrating health principles and practices into Human Resources strategy and business processes will contribute to GSK's sustainable business success.

### The company will

- Protect the health of its employees and others affected by its operations, aiming to eliminate all work-related injuries and illnesses.
- Assess health-related risks to employee individual and organisational productivity and proactively manage those risks.
- Ensure GSK's competitive advantage by optimising the mental and physical well-being of its employees.
- Make health considerations integral to its Human Resource strategy and business processes.
- Develop a culture where employees feel valued and are not discriminated against because of disability.

- Promote awareness of health issues and their impact on all employees.
- Comply with legal and ethical requirements and GSK Health standards.

GSK will use effective systems, metrics and goals to drive continual improvement in the health of GSK employees.

### Responsibilities

The Corporate Executive Team is responsible for fostering and supporting a culture of health, productivity and resilience and ensuring the health, safety and well-being of employees at work. Managers are responsible for implementing the principles and practices embedded in this policy. Employees are responsible for workplace health within the scope of their job and are encouraged to take responsibility for their own health and well-being.

Employee Health Management and Corporate Environment, Health and Safety will work in partnership to support managers in the implementation of this policy.

**Dan Phelan, Senior Vice President, Human Resources**

"The protection of employees in the workplace is the foundation of our human resources programmes."





## Planning

### Strategy

GSK's EHS strategy of continuous improvement supports corporate social responsibility and encourages a sustainable business culture. It is based on the principles of the GSK Spirit:

- **Passion:** GSK works to protect people and the environment in a company dedicated to improving the quality of human life.

Dr. David Pulman, President,  
Global Manufacturing and Supply

"In manufacturing, our employees can be at risk from many hazards. It is my responsibility to ensure that all manufacturing operations are managed safely and that a culture of proactive risk minimisation is established. Employee health and safety is a key business priority and must be at the forefront of all managers' and staffs' activities. Equally, we must ensure that all resources are used responsibly and efficiently so that the environment and communities in which we operate are not at risk from emissions and process waste. A significant amount of our technical effort is focused on minimising waste. By safeguarding our staff, and using resources in an efficient manner, we will move further down the track of sustainable and responsible manufacturing. This is good for patients, shareholders, employees, communities and the environment – and hence good for our business. This will continue to be a focus in the future."



- **Sense of Urgency:** The absence of EHS programmes could endanger the lives and health of our employees and the quality of the environment.
- **Entrepreneurial:** We look for new ways of working throughout the organisation - from R&D to manufacturing to sales - in order to improve our efficiency.
- **Innovation:** We want to be among the leaders in the way we manage our EHS responsibilities by adopting new approaches to chemistry, manufacturing processes, waste treatment, safe working, transparent reporting and everything we do.
- **Integrity:** We include our responsibility for good environment, health and safety management in our definition of integrity. It is fundamentally the right thing to do.

The EHS strategy also aligns with GSK's five business drivers:

### People

The single greatest source of competitive advantage is GSK's **people**. It is vital that we protect the health and safety of employees, contractors, visitors and others affected by our operations. We will design our facilities and processes, conduct risk assessments and provide training in order to eliminate work-related safety and health hazards. We will focus on employee health enhancement, mental well-being, causes of absence and methods of rehabilitation in order to have a productive and resilient work force.

### New Product Portfolio

Our **new products** are carefully designed to help millions of people around the world live longer, healthier and happier lives. To treat disease, the products must have biological activity and as a result have potential EHS risks and impacts throughout their life cycle i.e. from raw material acquisition to R&D and manufacturing through to patient use and disposal. We will apply the principles of product stewardship throughout our organisation to deliver positive EHS benefits and minimise risks to our business, people and the environment. Product stewardship encompasses

## Planning (cont.)

the assessment of the health, safety (excluding patient safety which is assessed separately), and environmental risks created during all stages of the product's life cycle and in particular at the key decision stages in R&D. We will also apply product stewardship principles to our contract manufacturers and key suppliers.

### Product Commercialisation

Environment, health and safety play an important role in **commercialising products**. By integrating environment, health and safety planning into decision-making on manufacturing processes, packaging design and product labelling, we help differentiate our products and protect and extend product life cycles. By fully embracing EHS principles, the sales organisation can minimise the cost of motor vehicle accidents and maximise the productivity of sales and distribution staff while optimising their environmental efficiency.

### Global Competitor

As a **global competitor**, GSK seeks to be a leader in EHS within the pharmaceutical and consumer health sectors by applying best business processes globally and fostering a culture of continuous improvement. As a global corporate citizen, we will demonstrate our commitment to corporate responsibility by implementing global standards, guidelines, targets and management systems, auditing our programmes and reporting publicly and openly on performance. We will seek dialogue with external stakeholders and consider their views when developing our approaches to EHS management.

### Operational Excellence

GSK's operations must achieve legal compliance with EHS regulations. In the spirit of **operational excellence** they must also continuously improve performance particularly in the areas of accident and occupational illness prevention, waste minimisation and emissions reductions. We seek to integrate EHS aspects into GSK's business processes, such as capital planning, decision-making, purchasing, training and communications.

## The EHS Plan for Excellence

During 2002 we developed a strategic approach to environment, health and safety to be published early in 2003 as The EHS Plan for Excellence. The Plan for Excellence shows how GlaxoSmithKline's environment, health and safety framework aligns with the company's vision, strategic intent and key business drivers. It shows how GlaxoSmithKline will progress through management systems to leadership and excellence.

In the Plan for Excellence we enunciate our long-term aspirations for environment, health and safety. Though we recognise that it may be difficult to deliver these aspirations quickly, they will guide the global organisation through the implementation of EHS management systems to leadership and towards sustainability during the period of 2002 through 2010.

To help focus global EHS efforts on key strategic issues and draw attention to a progressive evolution from managing our key risks to advancing our sustainability, the Plan calls for a yearly theme to be set. We have projected themes for the years until 2010, but these recommendations will adjust year by year to take into account current business circumstances, long-term business direction and emerging issues.

**Jack Ziegler, President, Consumer Healthcare**

"My experience in manufacturing and commercial operations reinforces my commitment to safeguard GSK's employees, the community and the environment."



### EHS Theme for 2001: Laying the Foundations

Specific objectives:

- Implement a new GSK EHS organisation
- Define the GSK EHS strategy
- Integrate EHS management systems from the heritage companies
- Establish EHS improvement targets
- Involve internal stakeholders

### EHS Theme for 2002: Building the Framework

Specific objectives:

- Develop programme implementation plans and schedules
- Develop GSK EHS guidelines and the audit programme
- Launch an intranet system to support EHS programmes
- Measure improvements against EHS targets
- Launch the CEO's EHS Excellence Awards
- Establish a dialogue with external stakeholders

## The EHS Plan for Excellence (cont.)

The 2001 and 2002 objectives were accomplished, setting the stage for the 2003 objectives.

### EHS Theme for 2003: Reducing Key EHS Risks

Specific objectives:

- Initiate a driver safety programme
- Assess occupational chemical exposures
- Develop tools to manage stress and ergonomics
- Enhance process safety focus and tools
- Ensure site emergency plans are in place
- Provide tools for new product development

### PROGRESS THROUGH ANNUAL THEMES



## Targets

GlaxoSmithKline has set targets for improving environment, health and safety performance to be reached by the end of 2005, starting from a baseline set in 2001. These improvement targets are an integral part of the EHS Plan for Excellence.

Targets are based on practical operational improvement plans and forecasts. All GSK manufacturing operations contributed information about environment, health and safety improvement plans and forecasts. The resulting proposals for company targets were compared with benchmarking information and closely reviewed by environment, health and safety professionals, senior managers and management teams throughout the business.

Each GSK operation has improvement targets based on its own unique EHS profile and includes identified local projects so that site resources can focus on areas of greatest potential impact. Sites with the largest impact have the most aggressive reduction targets, while sites with smaller impact have continuous improvement targets. In this way each operation has targets, tailored to its impact, that should result in GSK achieving the overall company targets.

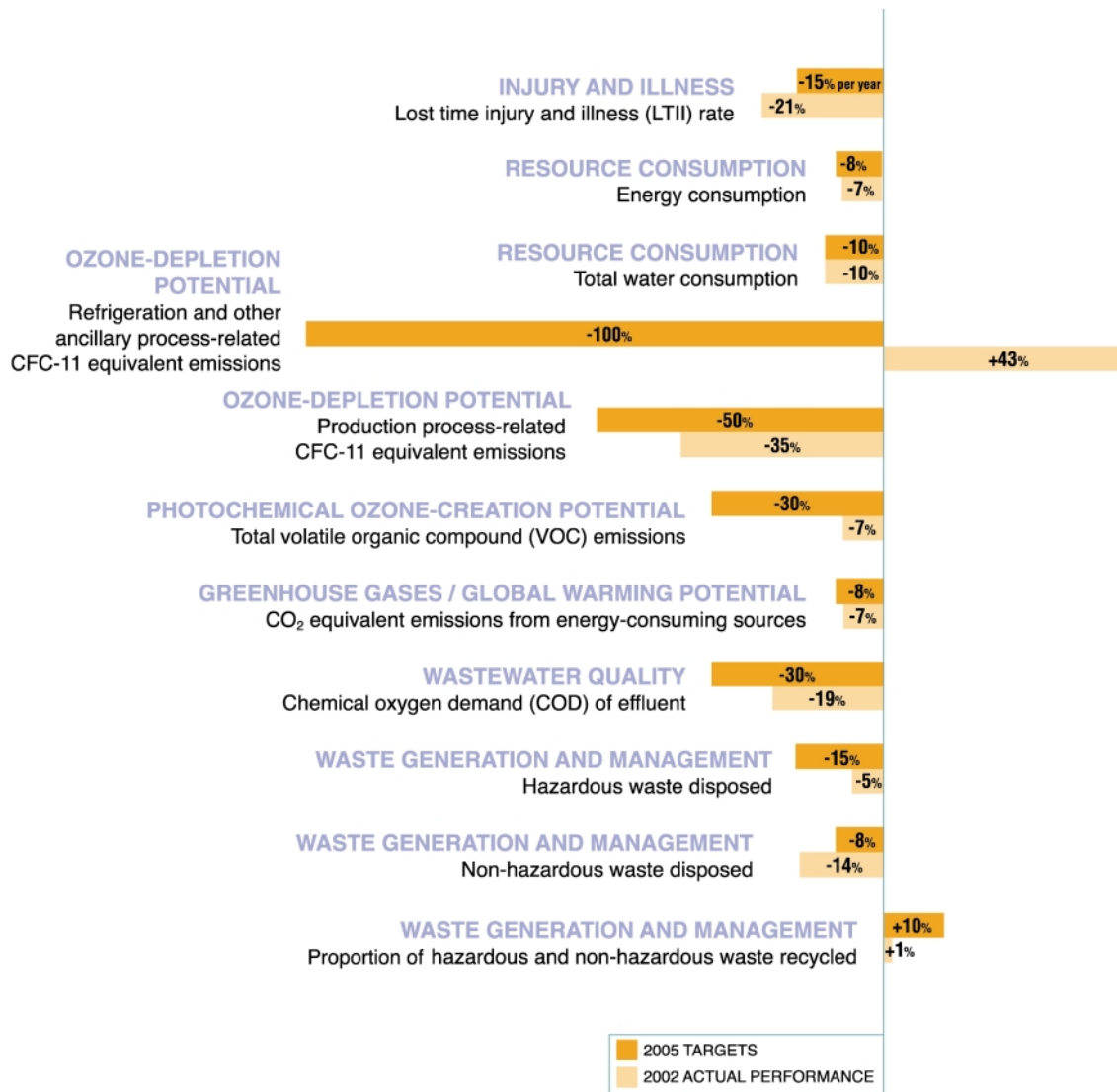
**Jonathan Box**, Senior Vice President, North America Supply, Global Manufacturing and Supply

"US manufacturing operations are heavily regulated but our approach to EHS often exceeds regulatory requirements. This reflects our comprehensive understanding of the EHS risks of our business and our ethical commitment to protecting employees, the community and the environment. In addition to being ethical, this makes business sense because it means we can reduce our costs to deliver a higher quality product more efficiently."



## Targets (cont.)

## 2002 PROGRESS TO TARGETS



Environmental measures are normalised by sales.



## Organisation

GlaxoSmithKline has several groups that identify governance and ethical issues, recommend ways to manage them and periodically review the management of the issues. EHS issues are among those reviewed and addressed by these groups.

The **Risk Oversight and Compliance Council** (ROCC) is responsible for co-ordinating the internal control and risk management activities of the company. EHS is identified as one of the areas of the business that has the potential for serious adverse consequences if not managed properly. The Vice President, Corporate Environment, Health and Safety is a member of ROCC. The ROCC reports its evaluation of EHS risk management to the Corporate Executive Team.

The **Corporate Executive Team** (CET) actively manages EHS issues. JP Garnier has identified himself as the champion of environment, health and safety for both the CET and the Board. He ensures that EHS issues are regularly debated to verify that we are pursuing responsible programmes for all GSK operations.

The Board of Directors has two committees that evaluate the management and effectiveness of our EHS programme. These review and oversight mechanisms provide opportunities for environment,

health and safety issues to be considered at the highest level of the organisation.

The **Audit Committee of the Board** reviews EHS performance to confirm that issues are properly managed and controlled. The Vice President, Corporate Environment, Health and Safety makes regular presentations to the Audit Committee so that they can review measures of environment, health and safety performance and track our progress toward meeting EHS targets. They also review the results of EHS audits of GSK operations, contract manufacturers and key suppliers. The level of scrutiny of the Audit Committee is in line with requirements of Sarbanes-Oxley.

The **Corporate Social Responsibility Committee** (CSRC) advises the Board on social, ethical and environmental issues that have the potential to seriously impact GSK's business and reputation. The Vice President, Corporate Environment, Health and Safety provides reports to the CSRC on those aspects of EHS that have social implications above strict regulatory compliance such as sustainability.

**Ed Kaufman, MD, Vice President,  
Corporate Ethics and Compliance**

"GSK's ethical culture invigorates the approach to compliance across the business. The company manages risks to meet its own aspirations as well as to comply with external requirements. The high priority placed on EHS risks at GSK reflects a concern for the environment, employees and the wider community; it is also good for our business. I fully support GSK's formal process for managing EHS, which is based on global policies and standards and takes a management system approach."



## Corporate environment, health and safety organisation

The **EHS Regulatory Advocacy and Strategy** team identifies emerging issues and works with government and regulatory bodies to influence the development of regulations. It also co-ordinates the EHS Plan for Excellence that will enable GSK to achieve its EHS aspirations.

The **EHS Product Stewardship** team promotes the ethical management of environment, health and safety throughout the life cycles of GSK products. This group champions sustainable EHS practices and works with R&D and New Product Supply (NPS) to identify potential EHS life cycle issues early in the development process. Once the team assesses EHS issues, they recommend measures to mitigate, control, and manage EHS risks. The team also recommends to R&D strategies for developing manufacturing processes that use resources efficiently and that minimise emissions. And they help by developing and promoting innovative tools, systems and methodologies.

**Janice Whitaker**, Senior Vice President, Quality, Global Manufacturing and Supply

"EHS is closely aligned with Quality, sharing the basic principles of management systems and continuous improvement. Moreover, the success of the Quality programme (ie right first time, lower rejects, etc.) directly affects the success of the EHS programme (ie less waste, safer working conditions). Both Quality and EHS are top business priorities."



The **Hazard Assessment and Communication** team identifies and communicates environment, health and safety hazards and risk information associated with research, development and manufacture of GSK products. This team focuses on R&D materials in the Pharmaceuticals, Biologicals and Consumer Healthcare businesses and especially on all new GSK products. Its task is to provide information that will support safe and effective controls for protection of employees and the environment. In 2002, the team began to systematically identify and fill gaps in hazard information resulting from merger-related transfers of products within the manufacturing network. The goal is to ensure consistent, high-quality hazard information for all GSK materials.

The **EHS Global Business Support** team develops partnerships and cost effective solutions that support GSK in managing key EHS risks. The Global Business Support team members serve as Corporate Environment, Health and Safety's lead contacts with senior management and EHS staff in each global manufacturing supply chain. This team also provides internal consulting and supports programme management by offering technical specialists in the following EHS disciplines: environmental engineering, process safety, safety engineering, driver safety, occupational hygiene and transportation of dangerous materials.

The **EHS Global Audit** team delivers an internal audit programme, in co-ordination with Employee Health Management, for all manufacturing and supply, research and development and key office and warehouse locations. In addition, this team performs risk-based assessments of key contract manufacturers and suppliers and EHS due diligence assessments for acquisitions and divestitures. In all cases the aim is to ensure that EHS risks and impacts are managed effectively and to identify opportunities to reduce risks and contribute to continuous improvement.

## Corporate environment health and safety (cont.)

The **EHS Global Impact Assessment and Reporting** team collects and analyses data from all operations for reporting to internal and external stakeholders. It evaluates data contributed by all GSK operations and uses the information to assess the effectiveness of EHS programmes and drive continuous improvement. The team also provides EHS information management software that can be used to manage EHS programmes and measure improvement and progress to targets. In addition, it manages EHS reward, recognition and awareness programmes that are the parts of the overall GSK EHS Framework devoted to motivating employees, raising awareness and driving continuous improvement.

## Employee health management organisation

Corporate Environment, Health and Safety (CEHS) reports through the Legal Function and Employee Health Management (EHM) reports through Human Resources. The two groups work closely together and are connected organisationally: the Vice President of CEHS has a dotted line relationship with the Global Health Strategy and Governance group within EHM. The two groups collaborate on audits, health and safety programmes and initiatives, as well as on injury and illness reporting.

### Employee Health Management Organisation

The **Global Health Strategy and Governance** team develops employee health-related policies, standards, guidance and tools. The team also reviews their implementation via a global audit process conducted in partnership with CEHS. They support a global employee health network through recruiting, coaching, training professionals and by the development and implementation of best practice programmes and initiatives. They also serve as lead contacts with selected senior management and staff in each GSK business unit. In partnership with CEHS, they collect, analyse and report employee health data from all GSK operating units. In addition they co-ordinate and align activities with CEHS, and Corporate Compliance groups and support product stewardship initiatives.

### Managing health issues not related to work

In addition to preventing adverse health effects related to work, GSK realises the importance of managing behaviours that may be detrimental to health, but not related to work. This broader view of health management means GSK can better influence behaviours that present risks to good health and go beyond the boundaries of the workplace, such as smoking, eating and exercising. This view benefits employees and GSK because managing health issues, whether they are related to work or not, reduces the costs of health care. Studies have shown that individuals with more than three health risk factors are significantly more likely to file a workers' compensation claim for occupational illness or injury or to lose time from

work because of short-term disability or sickness absence. Therefore reducing health risk factors in employees has a positive influence on work-related health costs and incidents. Several of the Employee Health Management teams support personal health programmes.

The **Employee Health Support and Organisational Resilience** team develops GSK's global vision, strategy and programmes for resilience, work-life balance, and health enhancement to all GSK sites. It delivers these programmes in the US and UK via a shared services model. The team collects and synthesises information on best practices in these programme areas and uses metrics and diagnostic tools to support workforce health and resilience and to measure effectiveness.

The **EHM Shared Services** teams, in partnership with management, Corporate and site Environment, Health and Safety, and Human Resources, manage health risks associated with business activity in the US and UK. They maximise employee productivity by protecting and restoring health and by minimising health-related absence from work. They support organisational productivity by promoting resilience and advising managers on issues where health impacts performance. They collect, analyse and report validated data to facilitate evidence-based decision making.

The **Health Planning and Analysis** team provides the analysis and planning to inform decision making for EHM shared services in the US and UK. The team identifies new Occupational Health regulatory and legislative issues that affect GSK. It supports the healthcare benefits team to plan, analyse and develop effective health benefit plans. Finally it co-ordinates the planning and development of EH tools that support GSK's products used in occupational settings.

The **Communications and Technology** team manages technology projects and interfaces with other technology groups in data management and reporting processes to enhance service delivery to the business. It also co-ordinates EHM's internal and external communications.

## Partner organisations

GSK has established functional and reporting relationships for Corporate Environment, Health and Safety (CEHS) and Employee Health Management (EHM) to encourage the integration of EHS throughout its business.

### Research and Development (R&D) EHS Group

To support a unified and consistent approach to EHS across the company and to facilitate integration of EHS into the R&D agenda, the EHS function in R&D reports with a dotted line to CEHS.

### R&D Chemical Development

By using more focused and data-driven development, GSK can significantly improve efficiency of new processes. This will make the transfer of processes to manufacturing more streamlined and give GSK a competitive advantage. CEHS supports Strategic Technologies within Chemical Development by providing supporting documentation and tools.

### New Product Supply

To support processes that are safer and more environmentally benign, CEHS' Product Stewardship team identifies occupational hazards and risks and environmental aspects of specific chemicals and

processes so that R&D scientists and engineers can use this information when selecting materials and processes for producing active pharmaceutical ingredients.

### Global Manufacturing and Supply

To ensure that EHS issues are integrated into manufacturing decisions, the Vice President of CEHS has a dotted line reporting relationship to the President of Global Manufacturing and Supply.

### Sales and Marketing

To integrate EHS into sales and marketing activities, CEHS' Global Business Support team investigates the need for expanded EHS programmes, such as driver safety and office safety, in this area of the business.

### Partnerships with Support Organisations

- Engineering, Technology and Capital Management (ETCM) - The partnership with ETCM ensures that capital projects are efficiently designed with EHS considerations built in.
- Quality - CEHS uses quality principles in managing EHS and we cooperate with the quality organisation in the approach to management of EHS.
- Human Resources - To support GSK employees and ensure EHS is integrated into employee management, CEHS has a close working relationship with EHM, part of the Corporate Human Resources organisation.
- Operational Excellence - GSK's business enhancement programme, "Operational Excellence" is applied to EHS programmes and incorporates EHS into process improvement projects.
- Corporate Communications - CEHS integrates EHS messages with corporate messages to build environment, health and safety into the GSK culture.
- Global Government Advocacy and Public Policy (GGAPP) - CEHS and EHM work with the GGAPP organisation in the Corporate Social Responsibility programme and contribute to policy statements on environment, health and safety issues.

**Ray Scherzer**, Senior Vice President, Engineering, Technology and Capital Management, Global Manufacturing and Supply

"The natural alliance between Engineering and EHS promotes successful site operations because EHS needs, such as occupational hygiene, process safety, ergonomics and pollution prevention, are incorporated in the design of new and upgraded facilities and manufacturing processes. Engineering is also completely aligned with the concept of sustainability as it pertains to improved material and energy efficiency. This is an inherent responsibility of an engineer who needs to accomplish a task efficiently, safely and cost effectively."



## Management systems

### Global EHS Standards

Supporting GSK's EHS and Employee Health policies is a comprehensive set of 64 Global EHS Standards that establish specific requirements for the company worldwide. The Standards also establish a management system approach to legal compliance, continuous improvement and the management of key EHS-related business risks which is consistent with internationally recognised management system standards, such as ISO 14001 and OHSAS 18001. They were developed in consultation with internal stakeholders, and approved by J P Garnier, in 2001 and came into effect on 1st January 2002.

### EHS Guidelines

EHS Guidelines are key components of GSK's EHS Framework. They support the Global EHS Standards by providing further information on the requirements of the Standards and by setting out an approach for achieving compliance that has been approved by EHS and Employee Health functions. They incorporate existing good practice, from both within and outside GSK. Draft Guidelines for each Standard were prepared and circulated for internal consultation in 2002. Approved versions incorporate feedback received and are published on the EHS intranet site. They will also be available in print in 2003.

### Supporting Technical Information

At times EHS professionals in GSK may need a more detailed and technical level of information than the EHS Guidelines provide. EHS technical experts prepare tools covering technical areas that impact EHS, including technical information guides, training packets, business process explanations and product stewardship guides. The technical information guides and training packets cover a wide range of subjects from general information such as Managing Health and Safety at GSK to highly specialised technical information such as Confined Space Entry. They cover environmental information such as Waste Management and health and safety information such as Ergonomics. The product stewardship guides cover information related to handling products and other materials and expand the information included in Material Safety Data Sheets. These tools are distributed primarily on the intranet with limited paper copies.

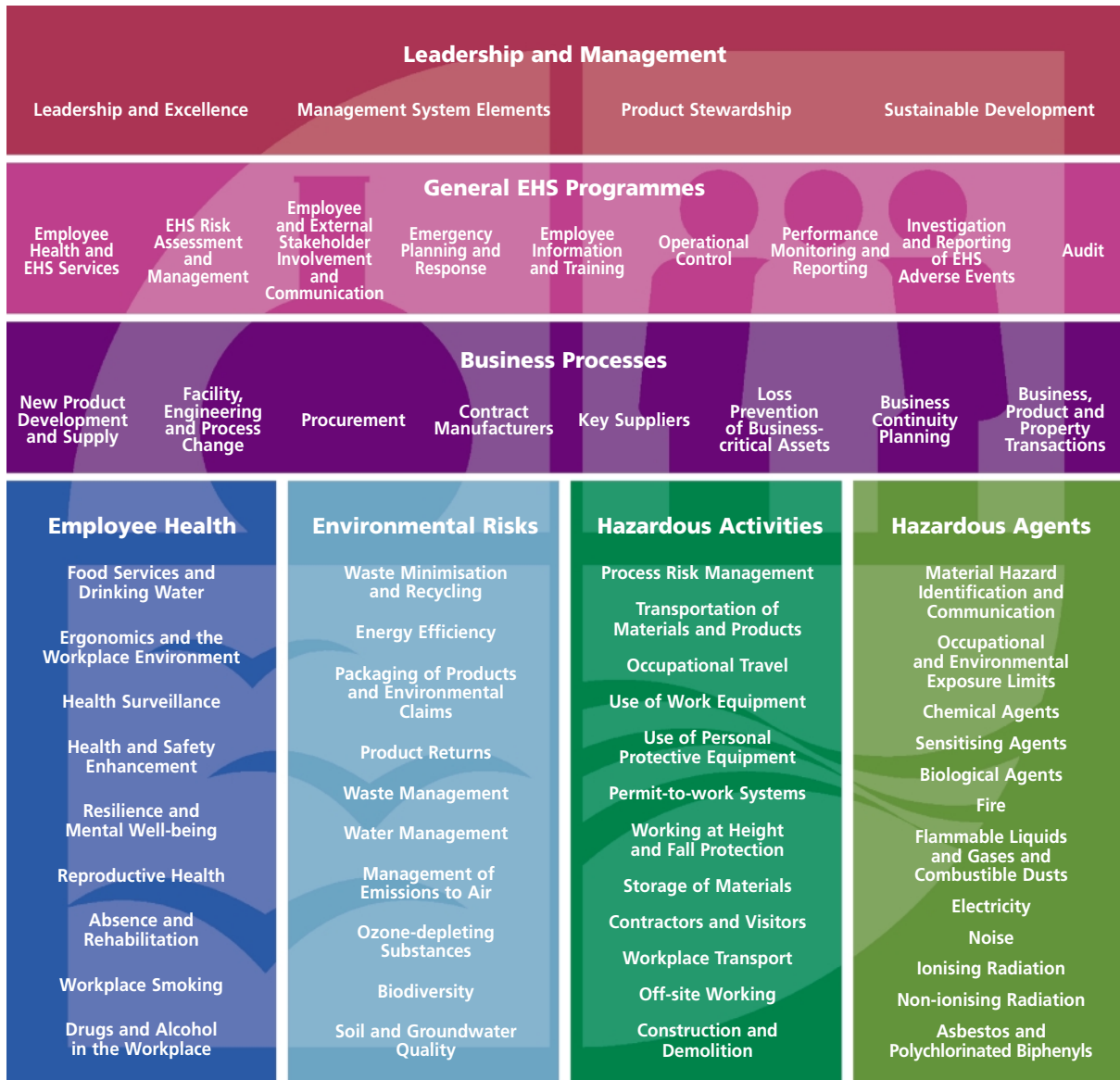
**Anton Herbig**, Senior Vice President, International Supply, Global Manufacturing and Supply

"In international manufacturing, we operate in many areas of the world with very different levels of EHS legislation. Maintaining good EHS practices can be challenging, however, I am pleased that we utilise GSK EHS Standards as a guide which has driven us to have a lost time injury and illness record that is one of the best in the company and to make significant progress to improve our environmental profile."





Management systems (cont.)



**GRI** GRI Part C, Section 3.1 to 3.20  
 Corporate Governance and  
 Management Systems

## Business processes

### Capital and Procurement

Teams representing engineering, procurement, EHS and other departments developed a technical review process for major capital investment proposals. The process ensures that GSK considers environment, health, safety, security and loss prevention in the design of new facilities and processes. By identifying EHS issues early in a project, GSK can engineer facilities and processes that are efficient, safe for workers and the environment while still being cost effective.

As GSK strives to standardise and streamline its procurement systems, the purchasing department is building EHS considerations into their processes so that all new equipment meets EHS specifications. This is particularly critical in areas such as containment, noise control, ergonomics, machine guarding and energy management.

### New Product Supply

In 2002 a framework called the EHS Milestone Aligned Process (EHS MAP) was drafted. EHS MAP is intended to be an integral part of the GSK new product development process that will address EHS issues during new product development and supply. The process will:

- Incorporate EHS sub-processes and activities aligned to New Product Supply Milestones.
- Ensure EHS hazard and risk assessment information is provided in sufficient time to allow early identification of issues during product development and technology transfer.
- Facilitate product development by ensuring that EHS issues do not impede new product introductions.

- As GSK translates its high potential R&D pipeline into new products, EHS MAP should ensure that EHS issues are appropriately resolved in a pro-active and timely manner.

### Contract Manufacturers and Key Suppliers

GSK uses contract manufacturers in a number of countries to supply certain products for local markets and, in a few cases, for specialist processes or technology. Initial agreements for new contract manufacturers include GSK's EHS requirements based on the applicable GSK standards. As existing contract manufacturers renew their agreements, GSK's EHS requirements are included.

To ensure that these companies are managing EHS risks and impacts responsibly, internal EHS audit teams conduct EHS audits to assess conformance with GSK requirements and with legislation. In addition, they conduct a programme of assessments of identified key suppliers. Areas for improvement are highlighted to the contract manufacturer or key supplier and progress is monitored.

In 2002 EHS performance was generally good; some exceptions were identified and are being followed up. A greater number of assessments and reviews are planned for 2003 and the EHS management process will be further developed to include performance monitoring through collecting and analysing EHS data.

### Safe Transport of Materials

Research and manufacture of pharmaceuticals involves transporting various chemical, biological and radioactive materials and products around the world. To ensure compliance with national and international transportation laws and conventions and to safeguard employees, the public and the environment, GSK employs transport safety advisors and specialists at sites throughout all GSK business units that transport materials. This global network of over 150 advisors in 38 countries, shares technical and regulatory information, best practices and lessons learned in order to continuously improve.

**Dr. Harry Ferres, Senior Vice President,**  
Pharmaceutical Development, R&D

"In developing manufacturing processes for formulating our products, many parameters need to be considered, not least of which are those that relate to environmental, health and safety matters."

## Business processes (cont.)

### **Emergency Response and Crisis Management**

The discovery, development and manufacture of pharmaceutical and consumer products involve the use of hazardous materials and processes. GSK manages the risks associated with these materials and processes using sound engineering principles and robust EHS programmes. All sites also incorporate emergency response and crisis management programmes into their management plans. These programmes ensure that accidents would be effectively managed and that any impact on the site, community, environment, or business would be minimised.

### **Acquisitions and Divestitures**

As part of business due diligence, GSK employs an EHS due diligence process to ensure EHS aspects are fully assessed and integrated into decision making and resulting provisions. A number of assessments were conducted during 2002.

## Hazard assessment and communication

GSK assesses environment, health and safety hazards associated with the research, development and manufacture of our products in order to meet ethical and regulatory requirements and to ensure the workplace is safe and environment unharmed.

### Hazard Testing

In 2002, we identified basic or "core" EHS hazard information for all GSK materials and processes, following extensive benchmarking and assessment of regulatory and business needs. Core information includes such things as process reaction hazards, flammability, dust explosivity, possible adverse health effects, occupational hygiene analytical methods and environmental fate and effects.

Our in-house hazard laboratory tests flammability and dust explosivity properties. In 2002, the number of tests conducted and the sample throughput at our GSK testing facility increased by over 40%. We used innovative, in-house testing and a sequential, tiered approach for characterisation of occupational health effects to assess occupational health hazards for GSK materials and therefore required significantly fewer animals compared to traditional approaches. In 2002 we also integrated environmental hazard assessment with safety and health effects assessments. Assessments will continue with new Pharmaceuticals in R&D with a major, additional focus in 2003 on EHS hazard testing for existing products and processes.

**John Elliot, Senior Vice President, Primary Supply, Global Manufacturing and Supply**

"In primary manufacturing we must adhere to the highest standards of EHS practice because of the range of hazards that we face."



### Occupational and Environmental Exposure Limits

GSK develops occupational and environmental exposure limits for our materials in order to guide the design and selection of chemical control systems to protect our employees' health and the environment. During 2002, our experts established new occupational exposure limits for 45 materials and completed innovative approaches for the rapid development of data-driven environmental limits.

### Distribution of EHS Hazard Information on GSK Materials

GSK provides EHS hazard information in a unified format to all operations using a global GSK intranet system called MSDS@gsk. This system provides material safety data sheets (MSDS) and related information for GSK materials and products and for key manufacturing and process chemicals. The information is updated and available almost instantaneously worldwide. Information on GSK products and materials is available in English, French, Portuguese and Spanish; German and Italian versions are planned for 2003. To meet United States right-to-know requirements, in 2002, MSDS were completed for all pharmaceutical and consumer healthcare products marketed in the United States. These MSDS are now accessible on the GSK internet site (gsk.com) helping distributors, hospitals and other companies handling our products to protect their own workers. In 2003, we will work on similar systems for GSK markets outside the United States.

## Environmental programmes

### Air

GSK identifies, characterises and assesses emissions to the air from operations so that we can minimise them or manage them in a way that eliminates adverse impact to the public or the environment. We have achieved significant reductions in solvent releases through reformulation of final dosage forms using water-based technologies. We have developed detailed guidance to support the EHS Standard on Managing of Emissions to Air.

 [Read about our air emissions, page 57](#)

### Wastewater

GSK is committed to ensuring that discharges to the environment are controlled to levels that will avoid adverse impact and conserve resources. We have developed detailed guidance for the standard that addresses wastewater management and have a target to reduce chemical oxygen demand, a measure of water pollution.

 [Read about our wastewater management, page 71](#)

### Waste

GSK identifies and assesses waste arising from site activities and then minimises or manages waste through the following hierarchy:

- Eliminate or reduce waste generation whenever feasible.
- Substitute with sustainable materials whenever feasible to minimise overall impacts on air, water and land.
- Reuse waste whenever feasible.
- Recycle wastes in a manner consistent with local regulatory requirements.
- Use treatment and disposal options that minimise the overall EHS risks and impacts on air, water and land.

 [Read about our waste management, page 65](#)

### Natural Resources

GSK strives to reduce natural resource consumption by our operations to minimise impact on the environment. GSK has adopted global standards on Sustainable Development, Energy Efficiency, Water Management and Biodiversity to ensure the sustainability of our operations. The Corporate Environment, Health and Safety department works with Procurement, Engineering Technology and Capital Management and other corporate functions to identify and implement natural resource conservation projects.

 [Read about our water usage, page 56](#)

## Environmental programmes (cont.)

### GSK Energy Programmes



GSK recognises that managing energy supply can result in short term savings, but medium and long-term savings come

from energy conservation and efficiency measures. So the company has a Global Utilities Sourcing group that evaluates energy usage throughout our manufacturing and R&D operations. This group focuses on both energy supply and energy demand because decreasing the amount of electricity and fuel used saves money and also is closely tied to a decrease in CO<sub>2</sub> production, a significant environmental benefit.

To foster on-going energy savings, many sites have “energy teams” or “energy champions” that monitor energy use, make energy conservation suggestions and set energy conservation targets. In addition to site-based programmes, operational organisations, such as the company’s pharmaceutical division, also have energy-user groups which set energy conservation targets.

Over the last two years, GSK has sought an external perspective on our energy management. An external energy consulting company has conducted energy audits at eight GSK manufacturing and four GSK R&D sites. Many of their suggestions have been implemented including installation of energy efficient lighting, motion sensors to automatically turn off lights, energy efficient boilers and computer display screens, and automated thermostat set-back in facilities that have automated building control systems. Over time we expect these to contribute to decreases in electricity and fuel use.



[Read about our R&D energy programmes, page 55](#)



## Health and safety programmes

### Driver safety

We recognise that our sales representatives can be at risk especially from road traffic accidents, and ergonomic stressors such as manual handling. With the number of sales representatives GSK has employed around the world, and with the wide range of countries in which we operate, there may at times be unfortunate accidents or fatalities.

The lost time injury and illness rate for our commercial organisation of 0.41 is greater than that of our manufacturing organisation. The main cause of these lost time injuries in commercial is motor vehicle accidents. In total 21% of lost time injuries resulted from motor vehicles. In addition, two of the three fatalities that occurred in GSK in 2002 were from motor vehicle accidents. Therefore, reducing the number of motor vehicle accidents in commercial operations is a key priority for GSK.

In 2002 we worked on reviewing current programmes and developing a programme for commercial operations focused on driver safety, office safety and on improving reporting of incidents. Rollout of these programmes for commercial operations will be a major focus in 2003. We will be working with a few pilot locations to test the programmes and will in the future focus driver safety training on areas of the world with the highest number of road traffic incidents. The main elements of the programme being developed include:

- Educating drivers and their managers on roles and responsibilities.
- Improving investigation and reporting of work-related vehicle accidents.

- Developing driver check lists for use by line managers.
- Making available defensive driving courses and training.
- Assessing driver profiles to identify individuals needing additional training.
- Advising on car selection including safety, security, environmental and ergonomic advice.
- Promoting safe driver behaviours.
- Providing guidance on mobile phone use.

### Ergonomics

Ergonomic-related illnesses remain the most frequent illnesses at GSK. In 2002, 43% of all illnesses and 65% of all lost time illnesses were musculoskeletal in nature and resulted in 1,450 lost days. Office and production tasks caused 75% of these illnesses. While the impact on GSK remains substantial, these figures represent reductions from 2001 when ergonomic-related illness was 53% of total illness, causing 193 cases and 1,023 lost days. In addition to illness, 18% of all occupational injuries and 19% of lost time injuries were due to overexertion and strains. These injuries resulted in 2,231 lost days. Taken together, ergonomic-related injury and illness account for 23% of all injury and illness and 23% of all lost time days. Sustained improvements in ergonomics will help GSK operations meet the objective of a 15% annual reduction in lost time injury and illness rate.

Reducing ergonomic illness and injury has been a key focus for 2002. Current and past data, programmes and initiatives were reviewed. An EHS guideline and supporting tools were developed, providing a preferred approach to prevent and manage the health and safety aspects of ergonomic risks. GSK sites progressed successful local initiatives. Continued rollout of these programmes will be a major focus in 2003, supported by joint Corporate and GMS business objectives, local consultation, site audits, and global training. One key objective is to use operational excellence processes and tools to establish an ergonomic improvement process that reduces ergonomic injuries and illnesses and improves

**Andrew Witty**, President, Europe Pharmaceuticals

"As a trans-national organisation we need to ensure that our actions are responsive to our customers' concerns about environment, health and safety governance."



## Health and safety programmes (cont.)

productivity and quality. Collectively, these efforts have combined to reduce the impact of ergonomic illness and will form the focus of our continued efforts.

### Occupational Hygiene and Control of Chemical Agents

The pharmaceutical industry discovers and manufacturers compounds that are designed to have biological effects on the body. As a result, safe handling precautions are required to protect our employees in R&D and manufacturing. At GSK we try to create a work environment that relies on engineering controls and technology to maintain exposures below the Occupational Exposure Limit (OEL) and comply with both GSK and legislative requirements.

In 2002, many of our occupational illnesses and injuries resulted from chemical exposures. For example, the second most common category of occupational illness was non-allergic dermatitis which includes irritant dermatitis and steroid withdrawal rash. There were 154 and 64 cases reported in 2002 and 2001, respectively. The large increase was principally due to improvements in reporting recurrent cases of steroid withdrawal rash. While the number of cases increased dramatically, the number of lost days in 2002 decreased to 13 from over 290 in 2001. Two additional categories of chemical exposure-related illness merit special notice: allergic dermatitis and allergic respiratory disease, which together account for eight percent of all occupational illness. These illnesses remain a special area of focus as they result in life long health effects that can be life threatening. The primary causes of allergic dermatitis and respiratory disease continued to be chemicals, laboratory animals, and latex. There were some individual successes in 2002, such as a 54% reduction in latex allergy as compared to 2001 experience. Sustained improvements in chemical agent control will help GSK operations meet the objective of a 15% annual reduction in the lost time injury and illness rate. Work-related mental illness is not included in these statistics but is discussed below.

Managing Chemical Exposures has been identified as a key theme for GSK for 2003. To support this theme, GSK has set objectives, established a Chemical Agents Steering Committee (CASC) and made tools available. The objectives include assessing worker exposures to high hazard compounds at primary and secondary manufacturing facilities. Corporate Environment, Health and Safety and Employee Health Management, in conjunction with Engineering, Technology and Capital Management, R&D and Global Manufacturing and Supply have launched several tools to provide assistance with assessing risk and designing controls. These tools include guidelines, technical information documents, exposure control matrix and exposure control engineering design solutions.

### Work-Related Mental Health

Work-related mental illness is evaluated separately from other work-related illnesses and is not included in rates or numbers in this report unless specifically noted. As compared to 2001, work-related mental illness dropped to the third most common cause of occupational illness, accounting for 20% of all illness cases, 53% of all lost time illnesses and 3,133 lost days of productivity. In addition, persons with mental illness had the highest case severity, with a mean of 51 days absence per case vs. 36 days for all other illness. Of course, the impact of mental illness extends beyond the number of days lost to directly affect both productivity and quality of life.

While many of the immediate stressors of the merger have passed, the focus for GSK continues to be protecting and enhancing the mental health of employees by fully implementing the requirements of the Global EHS Resilience and Mental Well Being Standard. This effort includes:

- Ongoing identification and assessment of job related risks to mental well-being through such tools as the Global Leadership and Organisational survey, numerous business initiatives, and the launch of an intranet-based team assessment tool for managers.

## Health and safety programmes (cont.)

- Reductions in risks and promotion of the general mental well-being of employees through such programmes as wellness initiatives and mental health care support systems.
- Confidential investigation, reporting and corrective actions to prevent recurrences.
- GSK ensures appropriate provision for the care of HIV positive regular employees, their long term partners and immediate families, including access to voluntary testing with counselling, and provision of anti-retroviral medicines.
- GSK maintains medical confidentiality at all times.

During 2002, progress was made in establishing globally consistent diagnosis, investigation, reporting, and management of work-related mental illness cases. The number of cases increased as did the geographic and business distribution of reporting. Because the data lacked consistency for the entire year, details of mental ill-health cases will again be reported separately from key injury and illness measures as in 2001. However, given the past years' progress, it is intended to review these illnesses for inclusion in the GSK lost time and other performance measures in 2003 and 2004.



[Read about our health and safety performance, page 74](#)

### Human Immunodeficiency Virus (HIV)

GSK provides HIV/AIDS healthcare programmes for employees. While arrangements differ depending on local circumstances, all the programmes are based upon a set of principles that reflect current best practice and draw upon Guidelines agreed jointly by the International Organisation of Employers and UNAIDS. Included in the principles:

- GSK does not discriminate against any employee based on HIV status.
- GSK provides information and training to staff on HIV and AIDS prevention appropriate to their needs.

### Process safety

Controlling process hazards is a continuing programme in GSK with a goal of minimising risk through the use of expert engineering design and good manufacturing processes. Many GSK products begin with the formulation and processing of hazardous materials such as flammable solvents and combustible powders. Through GSK's Green Chemistry and Green Technology programmes scientists look for opportunities to eliminate the use of these hazardous materials.

Where this substitution is not feasible our Process Safety Programme ensures that safety is built into the process. GSK EHS Standards require all hazardous operations to complete Process Hazard Analysis (PHA) studies that include the identification of hazards, the evaluation of risk and the development and implementation of corrective action where needed. The Process Safety Programme is a continuing management system that is in place for the life cycle of every process ensuring that the highest level of safety is maintained as the process is operated, refined and finally decommissioned.

During 2002 several major projects were initiated to improve the Process Safety Management Programme at GSK. Corporate Environment, Health and Safety developed technical guides specific to process safety that provide details of the risk assessment process as well as recommended best practice. These guides were distributed to GSK manufacturing and R&D facilities. PHA assessment tools including the intranet-based Process Safety aspect of the Control Matrix, and Hazard and Operability (HAZOP) PHA systems were launched.

## Health and safety programmes (cont.)

GSK R&D and manufacturing sites continue to implement robust Process Safety Management Systems based on GSK's Standards and on global and local regulatory requirements. Using the GSK tools and best practice, research and production facilities continue to ensure that GSK's processes are designed, installed and operated at the highest level of safety and environmental control.

In 2003 GSK will continue to enhance the Process Safety Programme through the launch of additional PHA tools, engineering guides and training seminars.

### Safety engineering

GSK's safety engineering programme focuses on construction, plant safety and emergency response activities to ensure that our employees, contractors, visitors and the community are protected from the operational hazards within our facilities. Through innovative programmes such as the Risk Assessment and Control Processes, Construction Contractor Safety Programme, Capital Project EHS Review Process and our Emergency Response Programmes we ensure that safety is built into and maintained at our sites worldwide. The reward for such actions can be seen at sites such as Sonapat, India where a major construction project spanning three years involving 1,700 construction workers recorded 6 million hours worked without a lost time injury. During 2002 and continuing into 2003 the GSK safety engineering community initiated site improvements and awareness campaigns to protect our UK sites and employees' homes during the UK's Fire Brigade Union strikes. In addition, fire safety

awareness campaigns were launched in other countries to reinforce fire safety in the workplace and at home.

A continuing process within our Safety Engineering Programme is the development and distribution of safety engineering guides and safety alerts. These intranet-based tools provide engineered solutions to fire, explosion, electrical, machine guarding and other operational risks. These guides provide a standardised GSK global approach to difficult safety risks.

For 2003 we will be expanding our globally standardised approaches to manufacturing hazards by developing safety engineering design guides and by implementing process safety risk analysis programmes for manufacturing operations that are traditionally not covered by government-regulated process safety programmes.

**Robin Harvey**, Senior Vice President, Consumer Supply, Global Manufacturing and Supply

"In the manufacture of the large volumes of consumer products, we hold protection of employees and the environment among our highest business priorities."



## Audit

In 2002 GSK introduced a new EHS Audit process and validated an audit scoring system. The scoring system will be fully implemented in 2003. An EHS audit assesses implementation and conformance with the Global EHS Standards and with key legislation and is a key element of the continuous improvement process.

Auditors have a broad range of EHS experience and knowledge and include Environment, Health and Safety and Occupational Health professionals. All auditors are certified as lead auditors against the International ISO 14001 Environmental Management standard. GSK aims to audit sites once every three years with more frequent visits for selected sites, depending on risks and issues raised.

In 2002 auditors assessed 21 GSK sites and performed seven audit follow-up reviews. In general, there was a good level of performance at most sites. In particular performance was good against many of our environmental standards but aspects related to employee health and handling of chemical agents were identified for improvement. As part of the continuous improvement process, auditors monitor progress on actions arising from audit findings. The implementation of a web-based tool is planned for 2003 to assist with this process.

A pilot certification programme began in 2002 with Global Manufacturing and Supply to determine the

feasibility of obtaining company-wide certification to the International Standards on Environmental Management Systems (ISO 14001) and health and safety management systems (OHSAS 18001). In the pilot programme a third-party registrar reviews GSK's EHS Standards and auditing procedures and completes certification audits of up to five GSK sites. The aim is to validate a sampling method so that the company can consider a sector or company-wide approach to certification in the future. Currently 12 of our manufacturing sites are ISO certified; three of these also are OHSAS certified. The certified sites are in Belgium, Egypt, France, Germany, India, Italy, Spain and Turkey.

**Jean-Paul Reynaud**, Senior Vice President, Europe Supply, Global Manufacturing and Supply

"With regulators and the public expressing increasing concern about EHS issues in Europe, we need to continuously improve our manufacturing processes to get better EHS results in our European sites in order to achieve our goal of improved environment for our employees and the community in general."



## Stakeholder communication

We maintain an active dialogue with our internal stakeholders, our employees and managers, to share with them the information necessary to integrate EHS considerations into all aspects of the business and their jobs and responsibilities. We communicate with EHS professionals at sites through meetings, e-mail, the intranet site and documents. These EHS professionals review and add value to the development of the Framework, including the Standards, guidelines and tools, to the Plan for Excellence, to target setting and to all aspects of the EHS programme.

Our external stakeholder meetings include representatives from academia, government, investors, customers and non-governmental organisations. Each year we give stakeholders the opportunity to review our programmes, reporting and progress against their expectations and provide us with suggestions for improvement.

We participate in many surveys of our EHS practices and performance for investment management companies and rating organisations. Business in the Environment rated GSK first in the pharmaceutical sector in the 2002 7th Index of Corporate Environmental Engagement. With a score of 96%, GSK was placed in the Premier League. We are included in the Dow Jones Sustainability Index and in the UK FTSE 4Good. GSK ranked fourth out of 22 in the pharmaceutical industry with a score of B- overall and B in environment performance by OEKOM, an investment rating agency in Germany. We work closely with major socially responsible investment groups in the UK.

In addition to the stakeholder dialogue conducted by Corporate Environment, Health and Safety on behalf of the corporation, many of our operations have continuing dialogue with their neighbours and communities; with regulators and local authorities; and with trade unions where workers are unionised.



## Reward and recognition

The Chief Executive Officer's Environment, Health and Safety (EHS) Excellence Awards Programme promotes improvements in GSK's use of human, environmental and economic resources by rewarding innovation, effective over the long term, that can be shared within GSK. A panel of experts, drawn from academia, government and non-government organisations, and the GSK Board of Directors, recommends award winners from a list of finalist projects prepared for them by a review committee internal to GSK. Nominations of projects to be considered in the programme may come from any part of GSK's organisation.

The programme makes awards in three categories. Initiatives that foster responsible use of human, environmental and economic resources with the local community may be awarded an EHS **Community Partnership** Award. Programmes that demonstrate improvements in EHS management and performance and heightened EHS awareness may win an **EHS Initiative** Award. Projects that benefit environment, health and safety through new and efficient chemistry or technology may win a **Green Chemistry/Green Technology** Award. Each winning site is recognised with a specially designed trophy and the opportunity to make a donation to a charitable organisation selected by the winning team.



"I am proud of the GSK people who have won the Environment, Health and Safety Excellence Awards. They have been innovative and passionate about making sure we are safe, healthy and good stewards of the environment. It is to encourage people like this that I sponsor these awards."

**Dr. JP Garnier**  
Chief Executive Officer,  
GlaxoSmithKline



Winners in each category receive a trophy based on the shape of a Möbius strip, a one sided surface having a continuous edge, chosen

to suggest the unity of a committed team and the continual challenge of EHS improvement.

In 2002, the first year of the awards programme, 67 applications were received from 40 sites in 20 countries. The winners in the first year were:

### Community Partnership

- **First Prize:** "Helping Hands To Small Businesses" Ulverston, UK. GMS Primary Supply

### EHS Initiative

- **First Prize:** "Innovative Health and Safety Concepts and Approach for Construction of New Horlicks Facility" Sonapat, India. GMS Consumer Healthcare.
- **Second Prize:** "Waste Management Projects at Ankleshwar" Ankleshwar, India. GMS Primary Supply.
- **Third Prize:** "Leave Work The Way You Came - A Total Approach to Safety in a Manufacturing Organisation" Aiken, USA. GMS Consumer Healthcare.
- **Special Commendation:** "Integral Waste Management System" Bogota, Colombia. GMS Consumer Healthcare.
- **Special Commendation:** "Safety And Environmental Achievements in Demolition And Construction Activities For Augmentin XR Tablet" Quality Road, Singapore. GMS Primary Supply.

### Green Chemistry/Green Technology

- There were no Green Chemistry/Green Technology awards made in 2002.



## Reward and recognition (cont.)

In 2002 winning project teams nominated the following charitable organisations to receive donations: American Cancer Society, USA; Charities Aid Foundation, India; Missionaries of Charity, India; and Ulverston Life Education Support Group, UK. Members of the external selection panel who helped in the adjudication of the awards selected the following organisations to receive donations from GSK on their behalf: Brigham and Women's Hospital, USA; Fairlynch Art Centre and Museum, UK; Millview Resource Centre, Ireland; Otter Valley Association, UK; Oxfam, UK.



[Read about our environmental programmes, page 28](#)

### EHS Community Partnership Winner



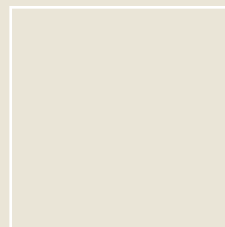
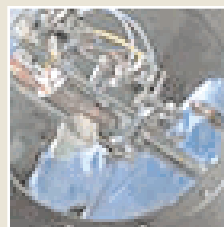
"Helping Hands To Small Businesses" first place winner in the EHS Community Partnership category of the CEO's EHS

Excellence Awards described a £326K project to deliver waste minimisation and environmental management improvements to small businesses throughout the County of Cumbria, UK which was initiated by the GSK Ulverston site. They developed it with private and public sector partner organisations. Over a three-year period from April 2002 - March 2005, this project will support small businesses to promote waste minimisation. It will also encourage the use of formal environmental management systems to improve small businesses' ability to respond to environmental legislation and supply chain pressures. The panel of external judges felt this effort illustrated GSK's leadership in environmental matters, social responsibility, involvement with environmental management systems and the nurturing of small businesses through economic and environmental improvement.

Ulverston, one of the largest primary manufacturing sites in GSK, produces antibiotics by fermentation and has extensive chemical processing facilities, solvent recovery, incineration and energy generation. Ulverston currently employs 1,100 staff in a town with a population of 12,000. The site has a very high profile in the area as a major employer and in terms of the site environmental footprint. It produces a local environmental performance report that is delivered to all houses in Ulverston. In addition it has a site liaison committee which includes local residents, town councillors and the Environment Agency.



## ISSUES



## Designing products for environmental sustainability

GSK aspires to be a sustainable company and recognises that moving from aspiration to reality may take years. Initially we will work toward enhancing our environmental sustainability while delivering new products faster and better. We have launched an eco-design toolkit that is primarily for new product development, but may also be of help for product transfer or redesign of processes.

The toolkit will help GSK bring products to market faster because the eco-design principles and practices will guide scientists and engineers to design-out potential problems early in development.

**Dr. Robert K. Lynn, Senior Vice President, Pre-Clinical Development, R&D**

“R&D is committed to EHS as an integral part of our development process. Our primary focus at present is to improve production efficiency, which has benefits for the business and for the environment while helping the company attain its sustainability goals.”



It will help us bring products to market more cost effectively because eco-design principles and practices will enable GSK to use less material and energy to make our products. It enables R&D to address potential environment, safety and health issues before a process is handed over to manufacturing where the cost to address EHS issues is considerably higher.

The toolkit is currently composed of several modules. Each of these modules considers the EHS impacts of materials, processes and services from the time raw materials are extracted through to the ultimate fate of products and wastes in the environment. The modules currently available include the following:

**Green Chemistry Guide** - offers guidance to GSK scientists and engineers on applying Green Chemistry concepts to enable more efficient use of resources, reduce environment, health and safety impacts and minimise costs. It includes:

- A ranking and summary of the most used chemistries and ‘best-in-class’ examples from well developed GSK processes.
- A ranking and review of issues encountered during process design and development.
- A ranking and summary of common technology alternatives for chemical processing.

## Designing products for environmental sustainability(cont.)

- Guidance on materials, process alternatives, synthetic route strategies and metrics for evaluating chemistries, technologies and processes.

**Solvent Selection** - contains information on alternative solvents and solvents that should be avoided. It:

- Compares and ranks 45 solvents according to environmental waste profile, environmental impact, safety profile and health impact.
- Compares International Conference on Harmonisation (ICH) guidelines on allowable concentrations of solvents in active pharmaceutical ingredients against EHS characteristics of solvents.
- Provides information on boiling point and azeotrope formation to assist in the selection of separable co-solvents.

- Provides detailed information on physical properties, safety, health and environmental issues.

**Base Selection** - ranks 42 chemical bases according to their environmental waste profile, environmental impact, safety profile and health impact. It also provides detailed information on each base.

**Green Packaging Guide** - provides a life cycle assessment tool, guidance and a business process for selection of packaging for the Pharmaceuticals and Consumer Healthcare businesses.

In 2002, we completed a new component of the eco-design toolkit called **FLASC** (Fast Lifecycle Assessment for Synthetic Chemistry). **FLASC** is a web-based application that allows bench chemists to perform a “life cycle” evaluation of the environmental consequences of new or existing processes based upon the input materials used. It quantifies the energy and materials used in product manufacture, as well as emissions released and potential environmental impacts.

**FLASC** will:

- Facilitate the comparison or benchmark of process routes and allow chemists and managers to rapidly identify the greenest option.
- Identify the materials that have the biggest impacts and provide guidance on how to reduce those impacts.
- Quantify the energy and materials used in product manufacture, the emissions released, and potential environmental impacts.

**Dr. Dermot Moynihan, Senior Vice President, Chemical Development, R&D**

“When we develop new chemical processes, we rely on a range of technologies and predictive tools to aid and enhance process understanding and increase the speed of delivery of high quality products to GSK. We continuously develop and apply better technologies and improved ways of working to achieve a more efficient and streamlined process. This has the practical benefit of lowering costs, improving the ease and efficiency of manufacturing and reducing the consumption of natural resources and generation of waste, moving us toward our sustainable development goals. In addition to the practical benefits, it moves GSK to best in class for quality of technology and process knowledge.”



## Designing products for environmental sustainability(cont.)

**FLASC** is a process and tool that will enable an assessment of eight different environmental impact categories associated with materials used in a synthetic route or manufacturing process:

- Mass of materials used
- Energy required
- Photochemical Ozone Creation Potential (POCP)
- Greenhouse gas equivalents
- Acidification
- Eutrophication
- Total organic carbon generated before any waste treatments
- Oil and natural gas depletion for raw materials manufacture

**FLASC** uses a scoring system that enables a quick identification of areas for improvement, facilitates comparison of processes and serves as a tracking system for synthetic route or manufacturing process improvement throughout GSK.

Our second web-based application developed this year is the **WRAP** (Weighed Resources for Assessment of Packaging) Tool. With WRAP packaging development managers can determine if pack modification or new designs offer environmental improvement when compared with benchmarks of existing packs. The benchmarks use packaging profiles from over 200 individual packs and are also related to product type. They consist of a number of metrics that cover the product life cycle. The metrics are:

- Manufacture of packaging
- Mass of packaging
- Biodegradability
- PVC content
- Resource depletion

Using a scoring mechanism, **WRAP** generates a colour-coded report that clearly shows if the pack is better or worse than the appropriate benchmark. The developer may then interactively investigate other pack options to find where improvements can be made and what is currently the best GSK example of packaging for that type of product.

Scenario analysis is also possible so the developer can change elements of the pack profile and quickly see the effect on the score. The benchmarks will be updated and expanded as more data on packaging for GSK products are collected.

An application under development is a materials assessment site that will assess chemicals common to the pharmaceutical industry, other than solvents and bases. In the longer term, we envision an increasing number and variety of applications that will apply not only to R&D and manufacturing, but to commercial operations as well. We envision applications that move from merely providing information to providing expert knowledge.

## Ozone depletion

GSK is taking significant steps to eliminate any ozone depleting impact arising from our processes, products and operations. We have a target to eliminate use of ozone depleting compounds in refrigeration and air conditioning equipment by substituting materials that do not deplete ozone. We are also working to reduce the environmental impact from the manufacture and use of our asthma and chronic obstructive pulmonary disease (COPD) medications.

### Asthma medication and the environment

Asthma is a chronic and life threatening disease that affects 300 million people around the world. It is a disease of chronic inflammation and bronchoconstriction with symptoms such as cough, wheezing and chest tightness. Asthma prevalence is increasing. In developed countries it currently affects 10% of children and 5% of adults. In developing countries like Brazil, Peru and Uruguay the prevalence of asthma is estimated to be between 20 and 30 percent of the population. Asthma and COPD are linked to over 1,700 deaths per year in the UK.

Metered Dose Inhalers (MDIs) are one of the main forms of treatment for asthma. MDIs were first introduced in the 1950s. The MDI is a pocket-sized, hand-held, pressurised multiple dose inhalation system that can deliver a precise dose of medication to the airways when used appropriately. Essential components of an MDI are a canister, the drug substance, a gas to propel the drug into the patient and a device for releasing and directing the dose.

For decades, CFCs were the most suitable propellant for use in MDIs because they are non-toxic, non-reactive, non-flammable, odour and taste free and excellent solvents. However, CFCs have now been recognised as ozone depleting and global warming gases.

In recognition of their importance in the fight against asthma and COPD, the production of CFCs to manufacture MDIs in the developed world has been deemed as an 'essential use' under the Montreal Protocol, until adequate alternatives to

CFC-containing medications are available. Each year GlaxoSmithKline applies for volumes of CFC to be used to manufacture our MDIs under this 'essential use' exemption. GSK's requested volumes have recently been declining each year and GSK will soon no longer need to request any essential-use volumes. GSK takes the issue of ozone depletion seriously and supports the objectives of the Montreal Protocol. We believe that the Parties to the Protocol should now move to adopt a decision that, with due notice, phases down and closes the essential use exemption for MDIs for developed countries. Such a Protocol decision should include strong interim measures to significantly reduce volumes of CFCs used for MDI manufacture after 2005.

GSK offers a wide range of options for the treatment of respiratory disease including MDIs, dry powder devices and liquids for use in nebulisers. We have done extensive research into developing replacements for the CFC propellants and have reformulated the majority of our MDI products to use the non-ozone depleting gas HFC 134a. In 2002 GSK manufactured over one hundred million non-CFC MDIs and launched our first non-CFC MDI in the US namely, CFC-free Ventolin.

GSK is taking steps to reduce the ozone depleting impact arising from our processes, products and operations by:

- Reformulating the propellant in the MDIs from CFCs to HFC 134a, a non-ozone depleting replacement.
- Minimising emissions arising from MDIs rejected during the manufacturing stage in accordance with national standards.
- Launching globally the non-CFC MDI as soon as possible after obtaining regulatory approval.
- Removing the corresponding CFC product from the market within 6-12 months of launch depending on individual country health practices.
- Offering a choice of an MDI or DPI (dry powder inhaler) device for our respiratory drugs.

## Ozone depletion (cont.)

- Continuing to invest in research and development of novel inhaler devices with even lower environmental impacts.
- Minimising fugitive emissions of CFCs and other ozone depleting gases from our manufacturing sites through engineering controls and replacing halons (fire fighting gases) and refrigerants.

GSK also takes the issue of climate change seriously and supports the objectives of the Kyoto Protocol. Although some uncertainties remain, we believe that the potential global significance of climate change is too serious to ignore and that, under the precautionary principle, it warrants a measured global response. Even though the HFC 134a MDI propellant is a recognised greenhouse gas, GSK believes that in the interests of public health, as there is no real alternative for many active ingredients, the small and critically important medical use of HFCs in MDIs deserves special safeguards in international and national climate change strategies.

However, we will continue to pursue options that employ compounds that don't have an adverse impact to the environment.



[Read about our management of ozone depleting substances, page 61](#)

## Pharmaceuticals in the environment

When pharmaceuticals are consumed by patients, there may be some active ingredient that is not completely metabolised (biochemically altered and inactivated). The patient excretes the portion that is not metabolised. These small quantities of material are then transported to wastewater treatment systems where most of them are removed but some are discharged to receiving streams.

Historically, the presence of pharmaceuticals in environmental media has been estimated. Recently, as a result of advances in analytical techniques, pharmaceuticals can be measured in wastewater, surface water (rivers and streams) and drinking water.

Pharmaceuticals in the environment have been regulated in the USA since 1977 with the US Food and Drug Administration (FDA) taking responsibility under the auspices of the National Environmental Policy act of 1969. Regulation occurs through the environmental review process for New Drug Applications submitted to the FDA. In the late 1980s additional information was required from pharmaceutical companies by the FDA and more extensive information was provided in environmental risk assessments that accompanied New Drug Applications. An evaluation of the data submitted from the late 1980s through the mid-1990s led the FDA to revise the regulations in 1997 to minimise environmental risk assessment data required in New Drug Applications.

This issue has also received regulatory attention in Europe through the submission of Environmental Risk Assessments to accompany Marketing Authorisation Approval. In Canada, a requirement for environmental assessment is under consideration.

GSK has been actively involved in industry efforts to develop improved environmental risk assessment models. These models can then be used to identify potential risks of GSK pharmaceutical products entering the environment through patient use. Assessments using these models and currently available human and environmental effects data indicate that GSK pharmaceuticals in the environment do not present a risk to humans or the environment. As part of its product stewardship activities, GSK continues to monitor the latest scientific studies and findings to continually improve risk assessments in this area.



## Biodiversity

While GSK does not use natural product collection as a major source for existing products or as a major source of compounds for development of pharmaceuticals, we do work with collaborative partners such as Extracta in Brazil and the Centre for Natural Product Research in Singapore to collect some natural products. Because of the impact that their collection might have on biodiversity, medical researchers must follow rigorous standards regarding evaluation and collection of natural products. We are confident that our screening activities are conducted according to the principles set out in the Convention on Biodiversity (CBD).

### Public Policy Position

- Natural resource materials are potentially valuable sources of novel biologically active molecules which, once identified, and their properties fully analysed, can serve as models for the invention of new, lifesaving medicines.
  - GSK recognises that all nations have sovereignty over the biological resources and indigenous knowledge within their territorial boundaries. Equally, unauthorised or unrestrained removal of natural materials from their indigenous habitats can harm the ecology and economy of the country concerned.
  - GSK's drug discovery efforts increasingly focus on high-throughput screening of synthetic chemical compounds. We therefore have limited interest in natural material collecting and screening programmes. However, where screening programmes are in place, the company supports the principles enshrined in the Convention on Biological Diversity (CBD).
  - In the event of GSK developing a commercial product from our natural material screening programmes, GSK will ensure a clear benefit is returned to the country of origin. This benefit sharing may amount to payment of fair and reasonable royalties or other means determined by mutual agreement on a case-by-case basis.
- GSK has a number of patents based on natural products and it is possible that more patents will arise from our screening programmes.
- Specifically, GSK has always undertaken to:
- work only with organisations and suppliers with the expertise and legal authority to collect plant and other natural material samples. These include botanic gardens, universities and research institutes around the world;
  - ensure that the governments in developing countries are informed of and consent to the nature and extent of any proposed natural materials collection;
  - protect biodiversity by classifying samples of plants and other organisms taxonomically and only investigate species if their supply is reproducible and sustainable;
  - work with small quantities of natural materials to discover bioactive principles. Where possible further supplies of lead compounds and derivatives are synthesised;
  - develop sustainable harvesting procedures to preserve the ecosystem from which the source material is derived where further supplies of the active compounds cannot be synthesised;
  - where appropriate, collaborate with organisations to educate and train local people in collecting and screening skills;
  - ensure an agreed benefit is returned directly or indirectly to the country of origin in the event of GSK developing a commercial product based on a natural material;
  - only transport potentially hazardous R&D material under contained use conditions and in accordance with the CBD's Cartagena Biosafety Protocol.

## Biodiversity (cont.)

### Conclusion

GSK is fully aware of our responsibilities towards protecting biodiversity, respecting nature, and working with the communities in which these natural resource materials are found. By adhering to the principles of the CBD, we are confident that we are operating in a sustainable manner and in a way that will enable us to continue developing, manufacturing and marketing new and innovative medicines that enable people to do more, feel better and live longer.

### Biodiversity



GSK and employees in the UK have joined with community groups, government agencies and non-government

organisations in projects that promote biodiversity in the areas close to GSK sites. GSK's site at Ulverston, for instance, is located at the edge of the Lake District National Park, an area of outstanding natural beauty in the UK. In 2002, GSK staff, in conjunction with the Cumbria Wildlife Trust, completed a habitat and species survey on 250 acres of GSK land around the Ulverston site. Employees and some retired staff completed record cards on species and then entered their work into a database during their lunch hours. GSK employees added 8,600 records and found over 500 species. Cumbria Wildlife Trust have produced a Biodiversity Action Plan for the site and the site has integrated the maintenance and enhancement of biodiversity into its EHS Management System.

In Summer 2002, GSK's UK Barnard Castle site and Teesdale District Council, sponsored a survey of 67km of roadside verges across the North Pennines Area of Outstanding Natural Beauty to identify verges that contained diverse flora and could be improved if better managed. Nineteen sites of prime botanical interest were identified. The surveyors found 240

species of vascular plant and up to 74 species of flowering plant in just one site. Five species of Lady's Mantles (including the nationally rare *Alchemilla monticola*) were identified. In November, Barnard Castle employees accepted a challenge from the North East Biodiversity Forum to help protect and develop the flora of three roadside verges in upper Teesdale which are remnants of Upland Hay Meadow which has declined nationally by more than 45% since 1945. The challenge was met by a team of nine GSK employees who worked to cut brambles, coppice ash and remove cuttings to give rare plants, like the Lady's Mantle, room to grow.

The Meads Nature Reserve, situated between Ware and Hertford, was established in October 1999 through an agreement between the various landowners, including GSK, and the Hertfordshire and Middlesex Wildlife Trust. It is the largest area of grazed, riverside, flood meadow remaining in Hertfordshire. The Meads Nature Reserve partnership aims to maintain and enhance the range of species, habitats and landscapes in the Meads by sympathetic management. Although at an early stage of the project, recent surveys show that several key wetland species are either increasing in population or spreading their range throughout the Meads. More water is being retained on the site and several breeding birds have increased their numbers as a result. Vegetation has colonised the wetter land, including several species that are scarce in Hertfordshire. New fencing means that traditional managed grazing regime is restored to most of the site.

For the last five years, GSK's Dartford UK site, along with the UK's Environment Agency and other organisations, has worked to safeguard the future of the

## Biodiversity (cont.)

Dartford Marshes, the largest remaining fragment of marshland near London, south of the River Thames. The marshes, which have a history from the eleventh century, now play a vital role in flood control. The network of ditches and mosaic of wet grassland, reed beds, salt marsh and scrub land provide havens for rare and protected species including one of Britain's rarest mammals, the water vole. A new management plan will restore the marsh to optimal conditions for wildlife and create a beautiful place to visit. Water voles, birds, grass snakes and bats; rare invertebrates; plants; and human visitors will all benefit.



Read about our environmental programmes, page 28



GRI, Part C, Section 5 Environmental Performance, EN7, EN25 Biodiversity

## Genetically modified organisms

GSK is in the forefront of the development and application of new scientific techniques to discover and develop new medicines and vaccines. GSK routinely uses genetically modified organisms (GMO's) in the research and discovery of new therapeutic agents and also in the efficient manufacture of certain medical products such as vaccines. GMO's are used to identify the genetic targets and causes of disease, and to develop new drugs such as antibiotics and drugs for conditions such as heart disease, diabetes and depression. We use a number of different GMO's, predominantly harmless organisms such as disabled strains of the bacterium E.coli and eukaryotic cells in culture.

All work with GMO's within GSK is controlled to the strictest national and international regulations, and we apply best practice across all our facilities. Any work with GMO's is subject to full risk assessment including safe conditions of use, storage and disposal. Any laboratory work with GMO's is performed under conditions of contained use, using containment laboratories appropriate to the risk of the materials handled. The large scale fermentation or propagation of GMO's in research and development is always undertaken in fully contained systems. All processes are performed in closed vessels minimising the risk of release, in line with existing legislation and best practice. All work is controlled by written procedures and regular maintenance checks ensure the processes are operated to the necessary level of contained use.

GSK also manufactures a number of products, such as Hepatitis B vaccine, derived from genetically modified materials. GMO's are sometimes used as intermediates in the manufacturing processes for medicines such as antibiotics, but GSK does not produce any products that are or contain viable organisms. All manufacturing processes also operate under conditions of contained use to prevent the release of any GMO's to the environment. GSK has a policy of routinely treating all waste from our GMO operations, to ensure we do not release viable GMO's from our contained processes into the environment. As a result, all GMO's used by GSK are inactivated prior to disposal by chemical or heat treatment.

GSK does not routinely undertake research and development involving the cultivation of genetically modified plant species. However, one exception is a small scale field trial undertaken in Australia to develop morphine-containing medicines, which are only available on prescription from a doctor. Research is focused on increasing the yield of alkaloids in poppies with enhanced properties to develop more effective pain management medicines. The Australian government strictly controls these trials.

## Contaminated land

Land may become contaminated as a result of past practices in the management of materials, for example, through inadequate containment, accidental release or poor disposal practices. Depending on the circumstances there may be potential for harm to the environment. GSK employs global standards that require, among other things, the identification and management of contaminated land. GSK enters into agreements with relevant authorities to assist in the remediation of contaminated land when required. GSK then directs the remediation of contaminated areas to levels that are consistent with the expected future use of the land and with local regulatory requirements.

Following GSK's earlier investigation of operational sites in the UK, it was determined that the majority featured low probability of contamination, or low hazard and pollution potential if contamination were present. A group of seven sites remained for further study, of which five are thought to require some remediation and two of these sites are undergoing partial or full decommissioning in preparation for sale.

In the US, GSK is currently involved with some 25 sites where sites must be remediated. These include 13 sites on the US Environmental Protection Agency's National Priority List (NPL) of so-called "Superfund" sites, as well as several sites listed under various state programmes. Most of these sites are abandoned waste disposal sites where waste generated from a GSK facility may have been found among waste generated by several (in some cases, hundreds) parties and often over many years.

In dealing with remediation sites over nearly 20 years, GSK has always cooperated with the government upon notification and confirmation of our connection to a site, and worked with the other parties to effect the remediation. GSK pays its fair share according to an agreed allocation of costs among the parties participating in the remediation. Even in cases where we cannot initially agree on an allocation, we employ an interim allocation to allow the work to go forward and settle final allocation later. GSK generally participates in groups of companies organised to remediate sites in

accordance with its allocation, among other factors. Participation varies from monitoring the activities of a committee to taking a leadership position in the committee.

Since 1980, GSK and its heritage companies have spent over £100 million on remediation of more than 50 sites. Many of these sites will require long term operation and maintenance (O&M) for systems such as groundwater treatment facilities. For "mature" sites - where "construction" is complete and O&M may or may not be required long term - GSK and its corporate partners assess the possibility, and implement the return of such sites to beneficial use, such as community parklands.

## Occupational hazard evaluation and use of animals

Creation of GSK products from earliest research and development through to full-scale manufacture requires that employees work directly with or in proximity to chemicals. While GSK is committed to safety in all aspects of its operations, circumstances arise in which workplace exposure to chemicals may occur. To safeguard worker health, GSK health and safety programmes for chemicals have been organised to define health protective occupational exposure limits and provide information on unique chemical hazards. This dual approach supports design of equipment and facilities to contain and control chemicals in the workplace. It also provides information for first aid and other care in the event of accidental contact with chemicals.

GSK occupational toxicologists in the Corporate Environment, Health and Safety group focus on understanding the potential effects of GSK drugs and the chemical building blocks for these drugs encountered in R&D and manufacturing settings. Occupational toxicologists specialise in understanding the results of possible chemical exposure on the skin, eyes, and respiratory system (common routes of workplace chemical exposure) as well as other human systems.

Historically, achieving an understanding of the effects of chemicals in the workplace has involved use of laboratory animals as models for human systems. However, growing scientific and public awareness around ethical use of laboratory animals has guided GSK efforts to continuously reduce reliance on animal models for occupational toxicology wherever possible. Use of refined test strategies for occupational toxicology testing in GSK and alignment of testing with the scale of product manufacture (i.e., only limited testing until initiation of large scale manufacture) has resulted in a 15 to 20% reduction in animal use for worker safety testing on each product brought to commercial development over the period 1999 - 2001.

In the first two years of GSK's corporate history (2001 and 2002), testing for the potential harmful effect of chemicals in the workplace has been organised to achieve continued progress toward the goals of reducing, refining and replacing laboratory animals. New published practices involve the use of a tiered approach to occupational health hazard assessment in GSK. This approach uses a variety of predictive tools including computer models and cell culture systems allowing rapid and accurate evaluation of the potential effects of chemicals on human skin, eye, and other tissues possibly subject to direct chemical contact.

In this approach, evaluation of the potential effects of chemicals is initiated with searches for all applicable information from literature databases. Structure-activity computer models are also used to predict possible effects. Initial research is complemented by evaluation of chemical parameters (such as acidic or basic character) that can contribute to possible adverse effects. In many cases, this first tier of assessment is sufficient to understand the hazards posed by chemicals making it possible to avoid use of laboratory animals altogether by projecting likely effects from previously characterised materials to new materials. When insufficient or equivocal information is available from the initial tier of assessment a second tier of testing is invoked. This second tier of testing involves use of cell culture, tissue culture and bacterial models. GSK scientists have adopted several animal-use reduction techniques recognised by health regulatory and advisory agencies (such as the UK HSE and US NIH) to organise the second tier of evaluation. GSK scientists actively develop, publicise and validate alternative methods used in the second tier to allow increased reliance on test methods not using laboratory animals. Again, results of Tier II testing exempts many materials from evaluation in animal models. Finally, only

## Occupational hazard evaluation and use of animals (cont.)

when chemical production levels reach certain high volume levels (thereby increasing the potential for inadvertent or accidental chemical exposure) are tests with laboratory animals considered. In many cases these tests are required by regulatory guidelines. Even in these cases, alternate means for identifying chemical hazards are sought, and testing is done with reduced animal numbers.

Consistent application of the tiered approach to chemical hazard assessment from 2002 forward is anticipated to minimise use of laboratory animals in chemical hazard assessments for worker health and safety purposes. In addition, GSK strongly supports continued innovation in development of alternative means for learning about the potential health effects of workplace chemicals. Success in these efforts is measured by improved predictive ability of these alternatives and continued reductions in use of laboratory animals.





Reporting our performance and impacts drives continuous improvement and communicates GSK's global EHS impacts to stakeholders. Internally, we use the data to inform senior management, to identify areas for improvement, to set and refine targets and to raise awareness.

EHS performance at GSK is measured using a series of EHS performance indicators selected based on

- Industry benchmarking and best practice.
- Assessment and prioritisation of our operations and our areas of greatest emissions.
- Guidelines set by external technical and professional organisations.

In 2002 we collected environmental data from 100 global manufacturing sites, including one that is closed, 24 research and development (R&D) facilities, 6 distribution centres, 1 drinks manufacturing facility and 3 main office buildings. We collected health and safety data from all of these locations as well as from 56 sales offices. An intranet data collection tool was used to collect and collate the global data.

In addition to the EHS data collected from sites, we collected GSK business travel air miles from Global Procurement, US fleet injury and illness information from Employee Health Management and product freight miles from Global Distribution. We also initiated a pilot programme in 2002 to collect core EHS data from five major contract manufacturers.

There were several sites that were closed or sold during 2002. Depending on the time of the sale or closure, the sites did not contribute materially to overall GSK aggregate emissions and resulting impacts and we collected data from only one.

The data were reviewed and analysed to determine the impacts on air, water and land. These impacts were compared to the impacts in previous years to assess our performance in the key areas of concern. In the process of providing 2002 data, GSK sites reviewed the data they reported in 2001. Corrections made as a result of this review improved the accuracy and consistency of the data and the impacts reported. For this reason, the 2001 baseline has been modified for certain performance measures. This is most evident in the new baseline for carbon dioxide. The other significant changes in the 2001 baseline data were ozone depletion potential, volatile organic compounds, wastewater chemical oxygen demand and non-hazardous waste. Minor changes were made to the 2001 baselines for energy, hazardous waste and waste recycled.

The 2002 data show that GSK is on track to meet the 2005 targets for most key performance indicators although we need to focus on phasing out the ancillary use of ozone depleting substances.

## Fines, penalties and serious events

There were seven environmental fines and penalties issued in 2002. Six of them were in the US, for a total of \$11,500 (£7,000). All were for minor non-compliance with permits, two for air emission non-compliance, three for substances in wastewater and one for waste labelling. One was a P767,000 (£10,000) penalty in the Philippines paid over the past five years for periodically exceeding effluent discharge limits. There were also 12 notices of violation and 68 excursions above permitted limits for releases to air or water that did not result in fines or penalties.

In addition, there were several environmental events that did not result in fines, penalties or notices of violation. There were two significant spills, one of ethanol and one of diesel fuel, there was one leak of solvent from a drain, one explosion of a keg and one site evacuation during a fire to avoid exposure to fumes. There were 22 small fires all resulting in only minor damage.

## Fatalities and serious occupational injuries and illnesses

Our goal is to avoid all work-related injuries and illnesses and we have programmes in place aimed at achieving this goal. However, in 2002 there were three work-related fatalities. Two of the fatalities were motor vehicle accidents involving sales employees, one in India and one in Poland. The third fatality was a contract worker in Belgium who died in a fall. In addition there were four severe injuries, one involving chemical burns and three involving crush or fracture injuries of hands or feet. There was one case of mesothelioma due to past occupational exposure to asbestos and several cases of disability due to noise induced hearing loss and sensitisations.

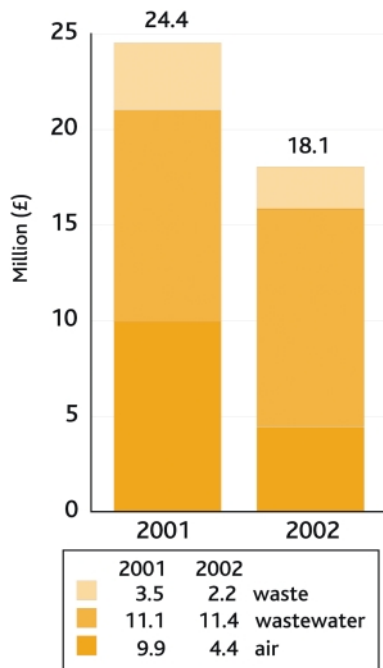
## EHS costs

The 2002 capital investment projects were primarily devoted to expansions and upgrades to onsite wastewater treatment and management systems. Operations and maintenance costs include costs incurred by GSK manufacturing and R&D operations for operating and maintaining equipment and systems related to air pollution control, wastewater treatment and waste management.

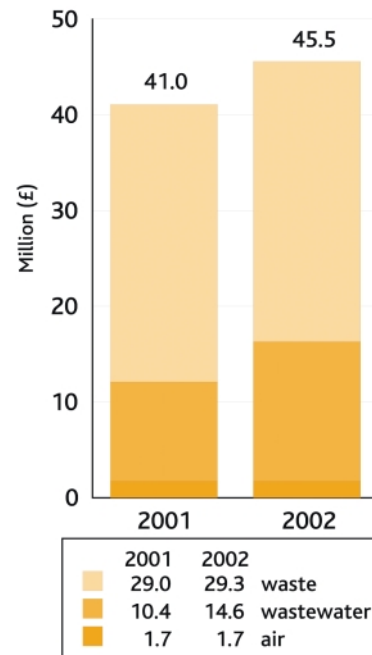
Capital investment for EHS projects totalled £18 million in 2002 a decrease of 33% from £24 million in 2001. During 2002, GSK continued to streamline the network of manufacturing sites. This rationalisation effort and general cost control measures contributed to the decrease in capital investment.

The operations and maintenance costs reported in 2001 was revised from £43 million to £41.0 million due to better reporting. In 2002, GSK manufacturing and R&D operations spent £45.5 million which represents an 11% increase in operations and maintenance expenditure.

### CAPITAL COSTS



### OPERATIONS AND MAINTENANCE COSTS



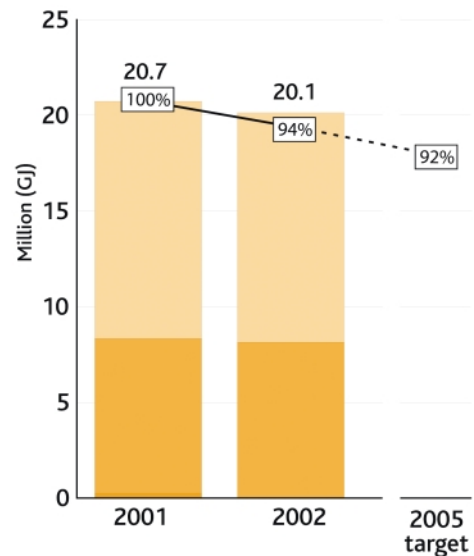
## Energy consumption

The measure of energy is defined as all energy consumed at GSK facilities during the year in the form of electricity and steam imported and fuels burned in fixed combustion equipment on site, including emergency generators. Fuels used for onsite transport have not been included but fuels used to generate steam and electricity on site have been included.

The 2001 baseline originally reported for energy consumption was 21.4 million gigajoules. This included electricity and steam imported and fuels burned in fixed combustion equipment as well as onsite transport fuels and energy generated on site. The revised 2001 baseline, 20.7 million gigajoules, does not include fuels used for onsite transport and does not double count fuels used onsite to generate electricity and steam. In 2002, GSK consumed 20.1 million gigajoules of energy. Compared to 20.7 million gigajoules in 2001, this is a decrease of 2.9%. Nearly 60% of energy consumed is through the burning of fuel to support manufacturing processes and heating buildings and other uses not related to transportation. Forty percent (40%) of energy consumed is electricity.

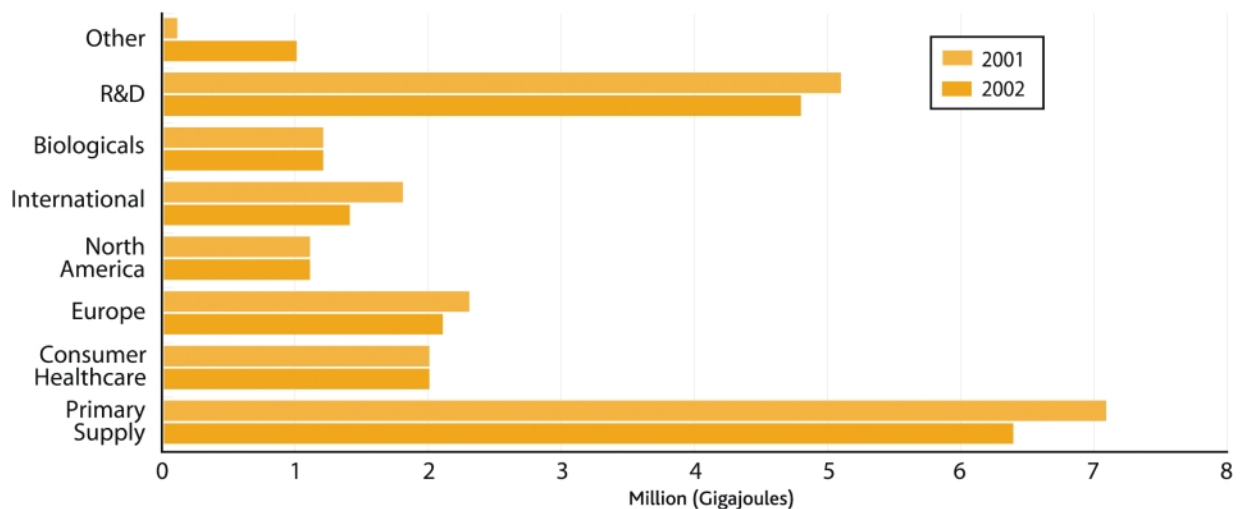
A target has been set to reduce energy consumption from site activities by 8% on a per unit sales basis by the end of 2005.

### ENERGY CONSUMPTION



2001	2002	
12.4	12.0	non-transport fuels
8.1	8.1	electricity imported
0.2	0.0	steam
— Per unit sales as a percentage of 2001 baseline		

### ENERGY CONSUMPTION BY BUSINESS



## Energy consumption (cont.)

### R&D Energy Programmes



In 2002 a group of eight of the UK Pharmaceutical R&D sites consumed 8.81% less energy, than in 2001 and emitted approximately

19,900 fewer tonnes of CO<sub>2</sub> to the atmosphere. This result was delivered by “energy management teams” that drove energy saving initiatives by reviewing operational requirements and efficiencies and promoting energy conservation through energy awareness, auditing and energy saving campaigns. For instance, the team at Stevenage targeted the air handling ventilation system in a microbiology building. Their review revealed a system of six 75 kW air-handling fans, feeding into a common manifold duct system providing air distribution throughout the building. Originally air volume control was provided by inlet guide vanes, which were inefficient in operation and did not provide good control for reduced air flows where required. They replaced the existing fan motors with high efficiency motors, installed variable speed drives on the fan motors and removed the inlet guide vane mechanisms to improve operational efficiency. Overall the air handling units used 15% less energy and provided better control of air volume during “unoccupied” periods. This project has resulted in a potential saving of approximately 460,000 kWh per annum, representing savings of around 330 tonnes of CO<sub>2</sub> emissions.

GRI

GRI, Part C, Section 5 Environmental  
Performance Indicators EN3, EN4

## Water usage

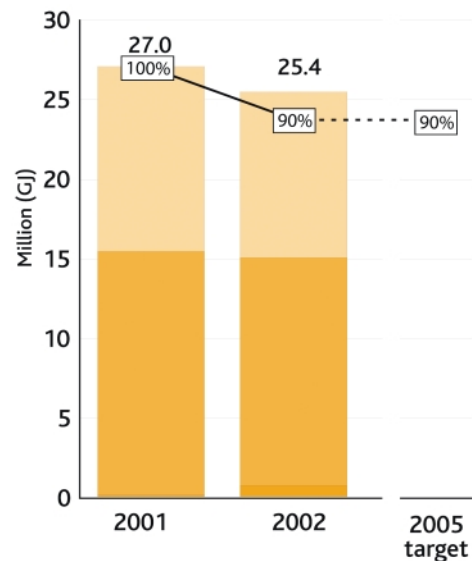
Water is a valuable natural resource that we can help to conserve through efficient use and recycling. GSK operates in several regions of the world that are classified as “water stressed” - Africa, Asia and the Middle East. Many countries in water-stressed areas have legislation that closely regulates and monitors the use of surface and ground waters. Sites in these regions are particularly concerned with water use and conservation and sites in other regions have taken on water conservation projects proactively and strategically to be better prepared for stricter regulation of water use. An example of this is the Ermington, Australia site. It implemented a proactive programme that included the innovative use of resources and redundant equipment to reuse wastewater and education of employees in water conservation principles.

Water is used in manufacturing processes, sanitation services and for general site uses and is extracted from municipal sources, wells, boreholes and other sources.

Water usage is reported by manufacturing and R&D operations from all sources. Water used for GSK operations comes primarily from municipal sources (56%) and wells and boreholes (41%). In 2002, GSK used 25.4 million cubic meters of water. Compared to 27 million cubic meters used in 2001, this represents a 6% decrease in the amount of water used. This decrease is due to water conservation and reuse programmes.

A target was set to reduce water consumption 10% by 2005. The target has been reached and we will continue to implement water conservation programmes to maintain this level of water usage or continue to improve.

### WATER USAGE

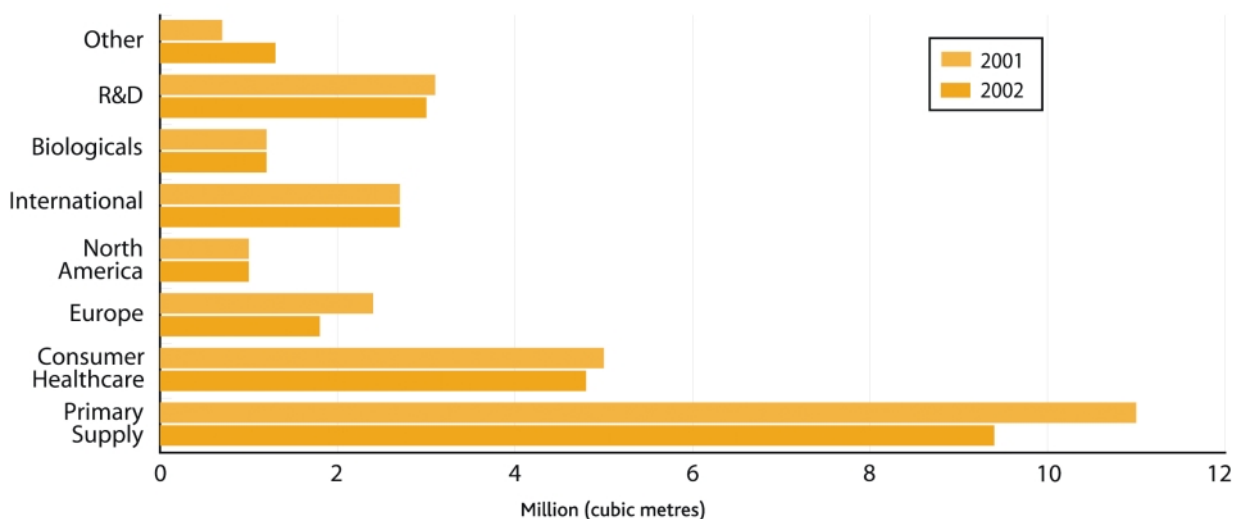


Source	2001	2002
wells/boreholes	11.6	10.4
municipal sources	15.3	14.3
other*	0.1	0.7

— Per unit sales as a percentage of 2001 baseline

\*includes direct from river, incorporated into products, recovered/reused on site and tankers.

### WATER USAGE BY BUSINESS



## Air emissions

GSK operations result in a range of air emissions and related impacts. These air emissions include:

- Carbon dioxide (CO<sub>2</sub>) from the energy that we use to power our processes and to heat, cool and light our facilities, CO<sub>2</sub> generated from some manufacturing operations and CO<sub>2</sub> generated by the fuels that power the vehicles and aircraft we use to transport our products and people.
- Ozone Depleting Substances (ODSs) (e.g. chlorofluorocarbons, hydrochlorofluorocarbons and hydrofluorocarbons) released in the course of manufacturing our metered dose inhalers, used in refrigeration equipment in some of our manufacturing facilities and released when patients use our metered dose inhalers.
- Volatile organic compounds (VOCs) from our manufacturing operations.

The resulting impacts have the potential to affect climate (global warming), deplete the ozone layer and generate smog.



[Read about our carbon dioxide emission performance, page 58](#)

### Carbon Trading



Although the International Emissions Trading mechanism of the Kyoto Protocol has yet to be set-up, GSK participates in the

Greenhouse Gas Emissions Trading Scheme (ETS) initiated by the UK in 2000. This scheme allows UK companies that exceed their targets for energy reduction to “bank” credits for the reduction in carbon dioxide emissions that result. ETS provides a mechanism for companies to trade banked credits. Credits have a monetary value based on demand and by trading them companies can profit from, or balance the costs of, energy saving programmes.

In 2002, several of GSK’s UK Primary Supply Manufacturing and R&D sites reached their targets for carbon dioxide emission and went on to exceed the targets by emitting 40,000 fewer tonnes of carbon dioxide. That 40,000 tonnes of carbon dioxide, which didn’t get emitted to the atmosphere, are equivalent to what would be emitted when producing energy to run 6,800 average homes in the UK for a year. When verified by external auditors these tonnes were converted to credits and banked for GSK.

ETS requires that participants have a consistent, programmatic approach to energy conservation which demonstrates that they are doing more than targeting the quick wins. GSK has been able to participate in carbon trading because our Global EHS Standards, particularly on energy conservation, meet or exceed these requirements.

GSK’s participation in the ETS scheme makes sustainable energy sources more economically viable and encourages investigation of opportunities for future global sustainable energy projects.

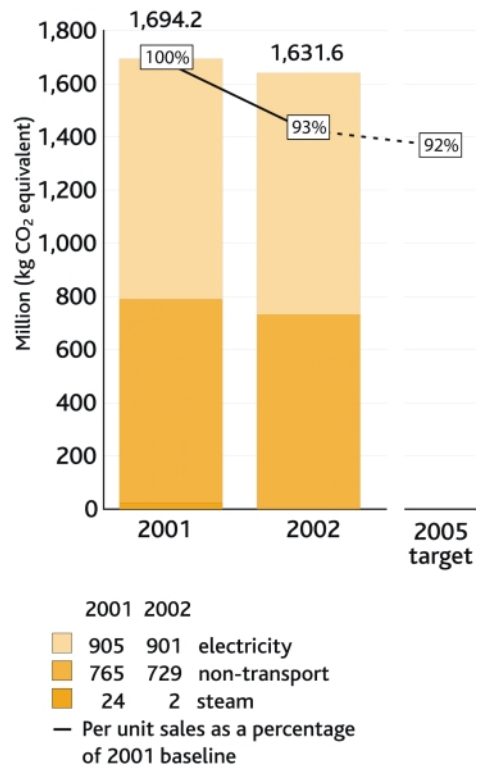


## Carbon dioxide (CO<sub>2</sub>)

Climate change is a gradual change in the global temperature caused by the accumulation of greenhouse gases in the atmosphere. Carbon dioxide is the most significant greenhouse gas and results from the generation of electricity, generation of steam and combustion of fuels. A small amount of carbon dioxide is also emitted from fermentation operations. The other greenhouse gases include methane emitted from waste treatment and halocarbons, emitted from production operations and ancillary cooling systems.

GSK reports carbon dioxide, including CO<sub>2</sub> equivalents, in million kilograms. For CO<sub>2</sub> related to energy, GSK includes electricity imported (not generated onsite), steam imported (not generated onsite) and combustion of fuel used for non-transport related activities (e.g. onsite generation of electricity and steam). The 2001 CO<sub>2</sub> from energy sources baseline was originally reported as 1,950 million kilograms. The calculations resulting in this value were reviewed as part of the data reporting and analysis process this year. Incorrect application of CO<sub>2</sub> conversion factors, the incorrect inclusion of site-based transport fuels and double counting the fuels used onsite to generate steam and electricity were uncovered making a change to the 2001 baseline necessary. This new 2001 baseline is 1,694 million kilograms. For 2002, the CO<sub>2</sub> generated from these energy sources is 1,631 million kilograms representing a 3.7% decrease. Carbon dioxide generated from non-transport fuels,

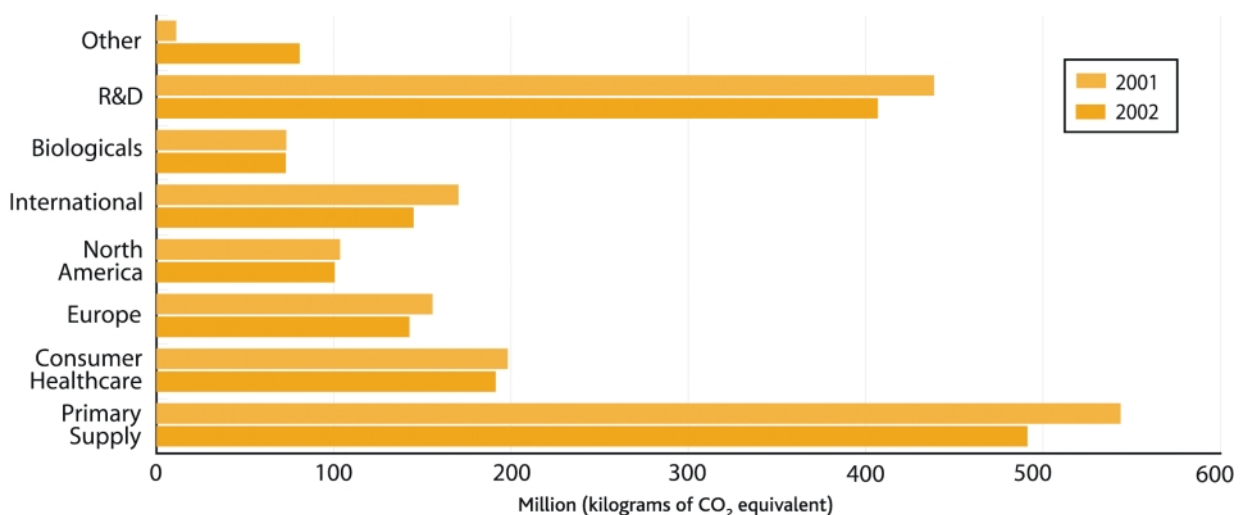
### GLOBAL WARMING POTENTIAL FROM ENERGY



production of imported steam and production of imported electricity decreased by 4.7%, 92% and 0.4% respectively.

In 2001, GSK set an improvement target of 8% reduction on a per unit sales basis by the end of 2005 for CO<sub>2</sub> from these energy sources.

### GLOBAL WARMING POTENTIAL FROM ENERGY BY BUSINESS

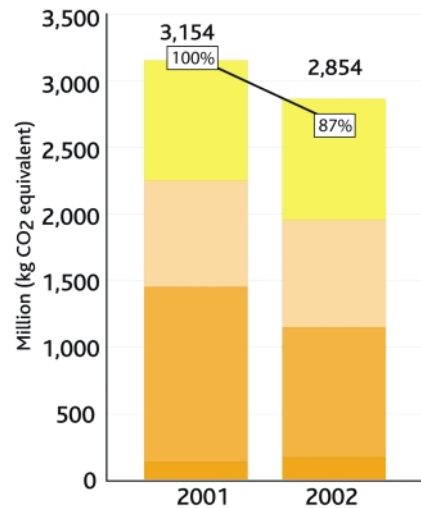


## Carbon dioxide (CO<sub>2</sub>) (cont.)

Carbon dioxide is the most significant greenhouse gas and results from the generation of electricity, generation of steam and combustion of fuels. The other primary greenhouse gases include methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Greenhouse gases such as CO<sub>2</sub> and methane are formed from waste treatment and fermentation. Halocarbons are released during production operations and from ancillary cooling systems. These other greenhouse gases can be compared to carbon dioxide by calculating their CO<sub>2</sub> equivalency. Included in the global warming potential figure in this graph is carbon dioxide generated from energy sources (see summary on carbon dioxide), CO<sub>2</sub> equivalents from halocarbons (ozone depleting substances) and CO<sub>2</sub> equivalents from waste treatment and fermentation.

Inventory methods and factors utilised for conversion to carbon dioxide equivalents are based on the World Business Council for Sustainable Development (WBCSD)/ World Resources Institute (WRI) Greenhouse Gas Protocol Initiative, September 2001, its Stationary and Mobile Combustion Workbooks, and the Intergovernmental Panel on Climate Change (1996).

## GLOBAL WARMING POTENTIAL

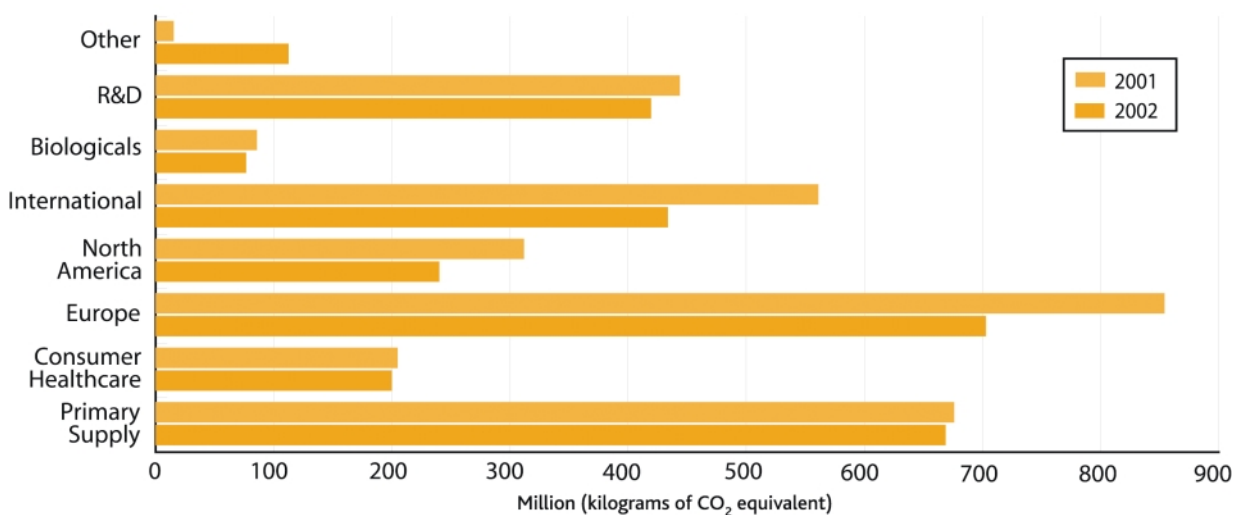


Category	2001	2002
electricity	905	910
all fuels	800	810
ODSs	1,317	980
other	131	164

— Per unit sales as a percentage of 2001 baseline

GSKs total global warming potential expressed in carbon dioxide equivalents, was reported as 3,363 million kilograms in 2001. In light of the baseline changes made to CO<sub>2</sub> from energy there is also a revised 2001 baseline for total global warming potential of 3,154 million kilograms. In 2002, the total global warming potential is 2,854 million kilograms representing a 9.5% decrease.

## GLOBAL WARMING POTENTIAL BY BUSINESS



## Carbon dioxide (CO<sub>2</sub>) (cont.)

Global warming potential is also impacted by the greenhouse gases produced from the consumption of fuels in GSK business air travel and from transport and vehicle fleets, primarily sales fleets. Impacts from these activities have not been included in the previous graphs. Carbon dioxide generation has been estimated for the following activities:

- **Air miles travelled by GSK employees.** GSK employees travelled a total of 641 million kilometres in 2002, an increase of 20%. This includes travel between and within the US and the UK as well as international travel and represents 85.2 million kilograms of CO<sub>2</sub>.
- **Product freight transport.** GSK products travelled a total of 129 million kilometres in 2002. Ninety percent of the distance (116 million kilometres) by air. These air miles represent 14.6 million kilograms of CO<sub>2</sub>.
- **Emissions from vehicles used in GSKs sales and marketing activities.** Global sales fleets drove a total of 686 million kilometres in 2002 representing 81 million kilograms of CO<sub>2</sub>.

The total CO<sub>2</sub> generated from these GSK business operations in 2002 was 180.8 million kilograms or approximately 11% of the carbon dioxide generated from GSK energy sources. Calculation of CO<sub>2</sub> for air travel activities was based on factors from the UK Department for Environment Food and Rural Affairs. There was a significant increase in CO<sub>2</sub> generated from sales fleets due in part to expansion of data collection to include the international sales fleet in 2002. The 26% decrease in global warming potential from ozone depleting substances was due in part to the decrease in ODS containing products.



[Read about GSK's carbon trading scheme, page 57](#)



[GRI, Part C, Section 5 Environmental Performance Indicators EN8](#)

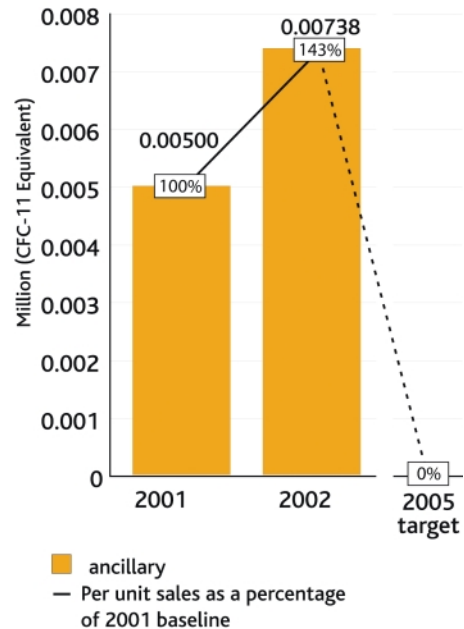
## Ozone depleting substances (ODS)/ ozone depletion potential (ODP)

Ozone depleting substances (ODSs), as defined by the Montreal Protocol and its Amendments, have been measured from their sources at GSK manufacturing operations and R&D facilities. Ozone depleting substances are released to the atmosphere from production operations (primarily production of metered dose inhalers), ancillary cooling systems and fire suppressant systems at GSK facilities. GSK reports ozone depletion potential in CFC-11 equivalents as defined by the United Nations Environment Programme (UNEP) Ozone Secretariat.

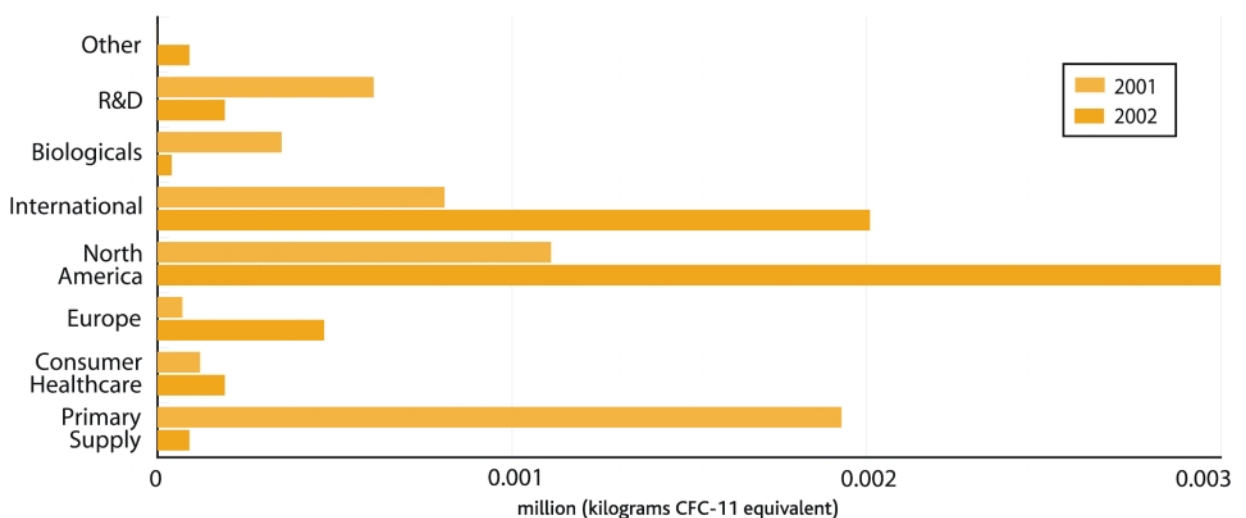
In 2001, GSK set two targets related to ozone depletion potential to be achieved by 2005; 50% reduction in CFC-11 equivalent emissions related to production processes and 100% reduction in CFC-11 equivalent emissions related to refrigeration and other ancillary processes.

For refrigeration and other ancillary releases of halocarbons we reported 0.0078 million kilograms of ozone depletion potential (CFC-11 equivalents) in 2001. During the reporting process this year, sites took the opportunity to revisit the reported values for 2001 to ensure consistency in reporting and some made revisions. In addition, we corrected some of the factors that were used to calculate the ODP values, applied them more consistently for both 2001 and 2002 and applied more specific

### OZONE DEPLETION POTENTIAL FROM ANCILLARY USE



### OZONE DEPLETION POTENTIAL FROM ANCILLARY USE BY BUSINESS

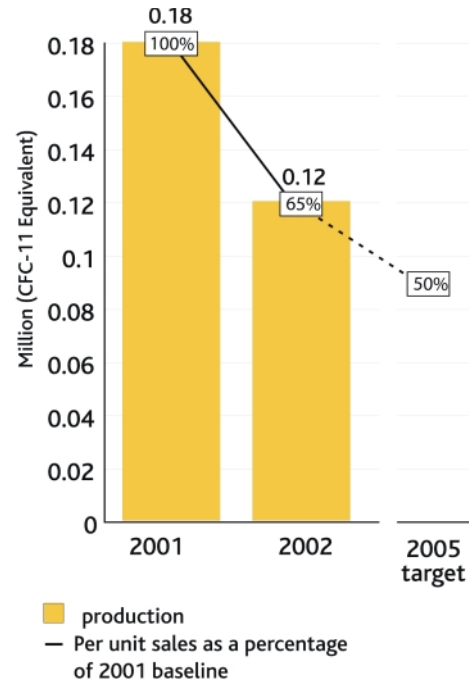


## Ozone depleting substances (ODSs) / ozone depletion potential (ODP) (cont.)

factors to individual ODSs rather than general factors to groups of ODSs. Because of these corrections the 2001 baseline was revised to 0.00500 million kilograms. For 2002, the ODP from ancillary releases is 0.00738 million kilograms representing a 48% increase in CFC-11 equivalent releases. This increase is due in part to better reporting but primarily to one-time facility maintenance activities occurring at one of our major manufacturing sites. This facility alone accounted for nearly 30% of the GSK total for ancillary ODP release in 2002. However, while there has been a significant percentage increase from 2001 to 2002, the actual amount is small. We did not make progress toward our target for eliminating CFC-11 equivalent emissions related to refrigeration and other ancillary processes so the small number of sites that contribute to this parameter will need to work to meet the target.

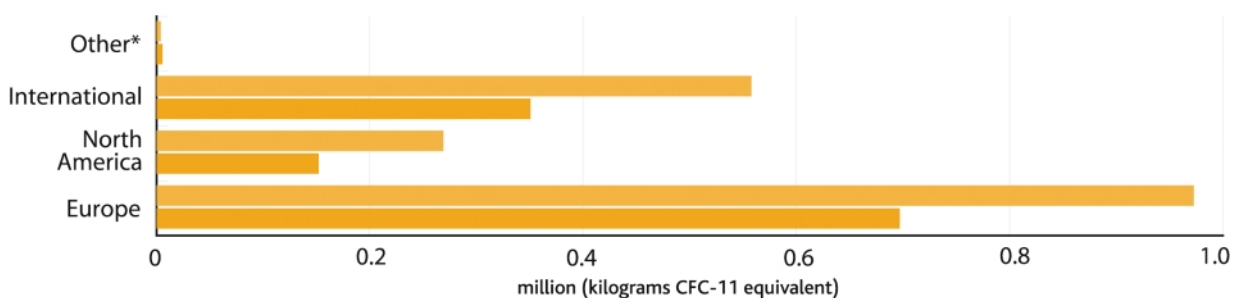
Production process-related CFC-11 equivalent emissions have decreased from 0.18 million kilograms to 0.12 million kilograms, representing a 33% reduction. The decrease is primarily due to changes at our main inhaler manufacturing facilities from production of CFC inhalers to CFC free and dry powder inhalers. In addition to the ozone

### OZONE DEPLETION POTENTIAL FROM PRODUCTION LOSS



depletion potential from production and ancillary releases, the ozone depletion potential from propellant released when patients used our products in 2002 is 1.5 million kilograms.

### OZONE DEPLETION POTENTIAL FROM PRODUCTION USE BY BUSINESS



\*includes Biologicals, Consumer healthcare, Primary supply and R&D



Read more about GSK's reduction of ozone depleting substances in asthma, page 41



GRI, Part C, Section 5 Environmental Performance Indicators EN9

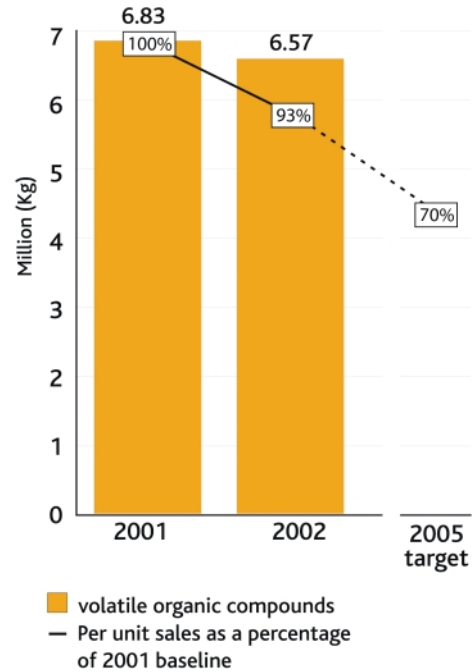
## Volatile organic compounds (VOCs) and photochemical ozone creation potential (POCP)

Emissions of VOCs were measured from point and fugitive sources at GSK manufacturing operations and R&D facilities. VOCs are organic compounds, generally solvents, that are used in large quantities in GSK primary manufacturing operations and in lesser quantities in secondary manufacturing and R&D facilities.

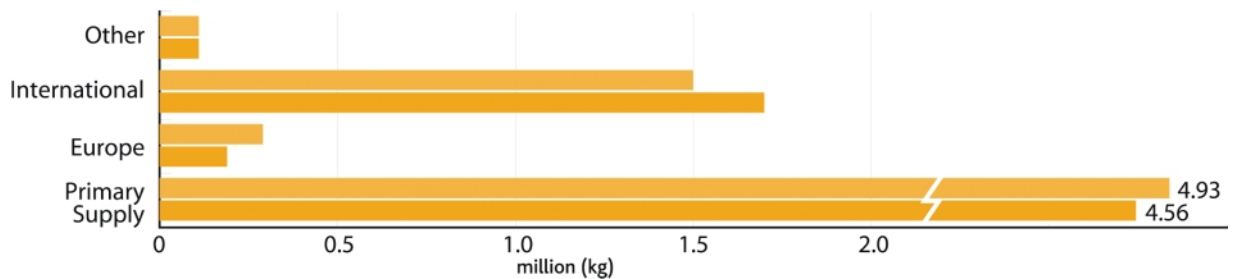
The 2001 baseline for VOC was reported as 6.6 million kilograms in 2002. A focused review of VOC reporting for 2002 by ERM revealed some inconsistencies in reporting. The values reported for 2001 were reviewed and adjusted where appropriate. The new 2001 baseline for VOC is 6.83 million kilograms. In 2002, 6.57 million kilograms was released to air, representing a 4% decrease in total VOCs released to atmosphere. The decrease is due in part to closure of one manufacturing site.

GSK set a target to decrease total VOC emissions to air by 30% by 2005 on a per unit sales basis.

### VOLATILE ORGANIC COMPOUNDS EMITTED TO AIR



### VOLATILE ORGANIC COMPOUNDS EMITTED TO AIR BY BUSINESS

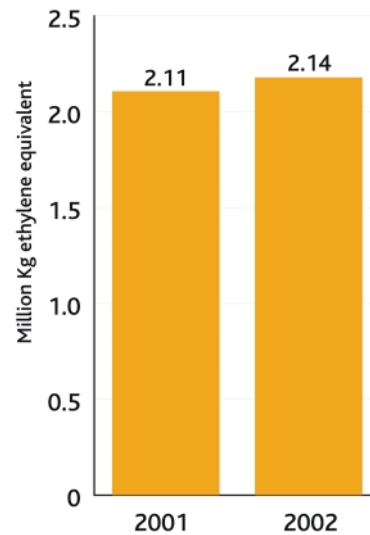


## VOCs and POCP (cont.)

VOCs are capable of producing ozone in the lower atmosphere by reaction with nitrogen oxides in the presence of sunlight. This photochemical reaction results in the formation of smog which is often worse in the hotter months. Releases of VOCs to air can be compared on the basis of their potential to create ozone relative to ethylene. Conversion to ethylene equivalents is based on the European Chemical Industry Council (CEFIC) "Responsible Care HSE Reporting Guidelines" for VOCs (1998).

For 2001, POCP was reported as 1.9 thousand metric tonnes (1.9 million kilograms). Due to changes made to the 2001 VOC baseline data, the 2001 POCP reported value has changed to 2.11 million kilograms. GSK's POCP has increased by 1.4% since 2001 from 2.11 million kilograms of ethylene equivalents to 2.14 million kilograms of ethylene equivalents.

## PHOTOCHEMICAL OZONE CREATION POTENTIAL



**GRI** GRI, Part C, Section 5 Environmental Performance Indicators EN10



## Waste generation and management

Most of our active pharmaceutical products are manufactured using synthetic chemistry. The majority of the waste generated contains solvents and chemicals used in these processes together with materials generated during formulation and packaging operations. The amounts of waste from these manufacturing processes are included in our figures together with general site waste.

GSK generally classifies its waste into three categories: general site waste, solvent waste and demolition/construction waste. Although the definition of what constitutes a waste varies among countries and provinces, for GSK reporting purposes a material is considered a waste if it is no longer fit for its originally intended purpose.

In order to provide consistent reporting, GSK considers a waste to be hazardous if it exhibits any of a number of properties as defined by the Basel Convention in 1989 of the United Nations Environment Programme (UNEP). Included in these properties are flammability, explosivity, water or air reactivity, corrosivity, oxidising potential, acute or chronic toxicity, ecotoxicity or infection. In addition, because of their nature and potential impact on R&D activities, radioactive wastes are defined as hazardous.

In order to provide consistent reporting, GSK considers a waste to be non-hazardous if it does not exhibit any of the hazardous properties noted above.

GSK reports three measures for waste:

- Hazardous waste disposed – includes hazardous waste that has been treated both on GSK property and at offsite destinations and hazardous waste that has been sent to landfill. Treatment includes processes that result in beneficial energy or resource recovery and those that do not.
- Non-hazardous waste disposed – includes non-hazardous waste that has been treated both on GSK property and at offsite destinations and non-hazardous waste that has been sent to landfill. Treatment includes processes that result in beneficial energy or resource recovery and those that do not.

- Waste recycled – includes offsite and onsite reuse, recovery and recycling of waste, including in-process recycling.

GRI

GRI, Part C, Section 5 Environmental Performance Indicators EN11

### Waste Management - Crawley



**ISO 14001 accredits Crawley's waste management by onsite waste contractor.**

European regulations make GSK liable for how waste is managed to the point of final disposal, even when a contractor manages waste.

Although Crawley, a secondary pharmaceutical manufacturing facility, had a successful record with their specialist waste management contractor, the EHS Manager and Facilities Manager worked with their contractor to develop and implement a comprehensive waste management system that complied with GSK's **Environment, Health and Safety Global Standard 505, "Waste Management"**. They then applied to British Standards and received ISO14001 accreditation for the system.

Since 1988, Crawley has used a specialist waste management company to collect waste from production areas, take it to an on-site waste compound where it is treated, packaged and labelled for transport before being sent for recycling or disposal. Using a contractor for waste management has supported Crawley's initiatives to minimise and recycle waste and has helped them to control costs. The total cost to manage waste at Crawley has not risen since 1998 even though production volumes and waste disposal costs have risen in the last five years.

The ISO14001 accreditation that Crawley has received for their waste management system demonstrates they are effectively managing waste from creation to final disposal ("cradle to grave") despite this responsibility being transferred to a third party.

## Hazardous waste

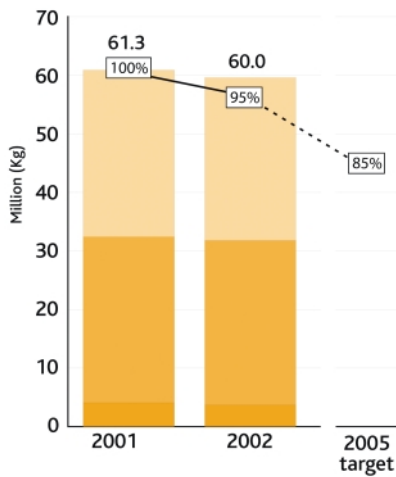
Hazardous waste disposed represents total hazardous waste generated minus the hazardous waste that has been reused, recovered or recycled. Bioengineered and biohazardous waste is included in hazardous waste. Most hazardous waste is composed of waste solvents.

In 2001 we reported 61.2 million kilograms of hazardous waste disposed. Minor adjustments were made to values reported in 2001 resulting in a baseline change to 61.3 million kilograms. In 2002, GSK disposed of 60.0 million kilograms of

hazardous waste representing a 2% decrease. Nearly 80% of the total hazardous waste disposed in 2002 is solvent waste, 18% is general site waste and the remaining 2% (Other) is chemical/biological/radiological and demolition/construction wastes. In 2002, nearly half of all hazardous waste disposed (47%) was treated to obtain beneficial energy/resource recovery.

A target has been set to decrease hazardous waste disposed by 15% by the end of 2005 on a per unit sales basis.

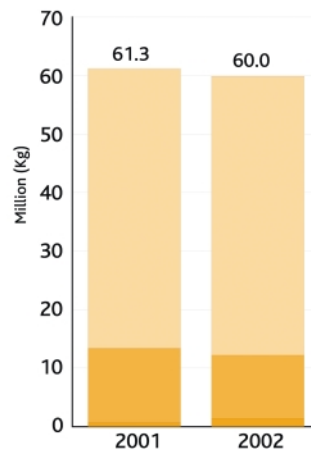
### HAZARDOUS WASTE DISPOSED



2001	2002	Description
28.7	28.0	treatment with partial recovery
28.5	28.3	treatment with no recovery
4.1	3.7	landfill

— Per unit sales as a percentage of 2001 baseline

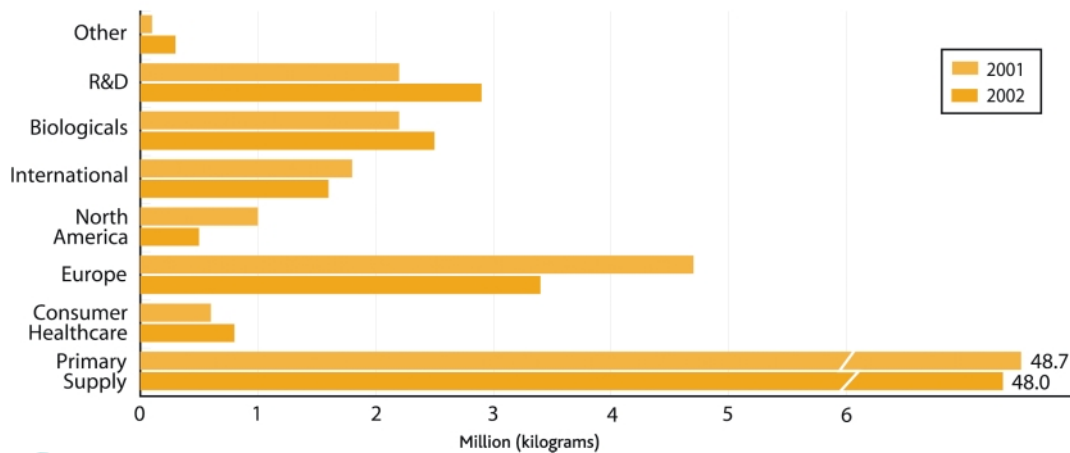
### HAZARDOUS WASTE SOURCE



2001	2002	Description
47.8	47.7	solvent waste
12.7	10.8	site waste
0.7	1.4	other*

\*includes chem/bio/radio/Pharm, demolition/construction waste

### HAZARDOUS WASTE DISPOSED BY BUSINESS



## Non-hazardous waste

Non-hazardous waste disposed represents total non-hazardous waste generated minus the non-hazardous waste that has been reused, recovered or recycled. At GSK, most non-hazardous waste is general site waste. Biohazardous waste rendered non-hazardous after treatment by processes such as autoclaving is also considered a non-hazardous waste.

In 2001, we reported that GSK disposed of 89.1 million kilograms of non-hazardous waste. During a review of the 2001 data and reporting classifications, it was determined that there had been an error in classifying an aqueous waste stream generated by one large manufacturing facility incorrectly incorporating it into non-hazardous waste. The aqueous waste stream has now been included in the wastewater section resulting in a revised 2001 baseline of 77.4 million kilograms of non-hazardous waste disposed. In 2002, GSK disposed of 69.0 million kilograms of non-hazardous waste representing an 11% decrease in the amount of non-hazardous waste disposed. Site waste represents over 75% of non-hazardous waste disposed in 2002, demolition/construction waste more than 22% and other (non-infectious, bio-hazardous waste) the remaining 3%.

A target has been set to decrease non-hazardous waste disposed by 8% by the end of 2005 on a per unit sales basis.

In 2002, 73.9% of all non-hazardous waste was sent to landfill essentially unchanged from 2001 (74.4%). Given that overall non-hazardous waste disposed has decreased by 11%, it could be expected that the amount sent to landfill would decrease proportionately. The percentage of non-hazardous waste undergoing treatment to obtain beneficial energy or resource recovery has increased from 9.7% in 2001 to 12.3% in 2002. These numbers may indicate that while we are treating more waste in ways that provide energy or resource benefit, we have to do more to identify and utilise options for non-hazardous waste that do not involve landfill. Many sites continue to look for ways to reduce waste and have undertaken reviews of their operations to find ways to reduce the amount of non-hazardous waste that must be treated or sent to landfill.

### Waste Management - Bogotá



GSK Bogotá, Colombia is a small site that makes consumer products, primarily oral liquids, for the Latin America market.

A variety of wastes (solids and liquids) are generated at the site. They come from quality assurance laboratories, production lines, or from refunds, expired medicines, rejects and even office activities. To address the situation Bogotá initiated a waste management system to find the best and most appropriate final disposition for each waste material generated by the diverse processes carried out on site. This system calls one or more of the following processes into play: research and investigation, selection, carryout treatment, recycling, disabling and destruction. With the implementation of this system GSK Bogotá has decreased the quantity of wastes that are sent to landfill or incinerated. Fully 71% of the waste formerly incinerated or sent to landfill is now reused or recycled.



[Read about our waste generation and management performance, page 65](#)



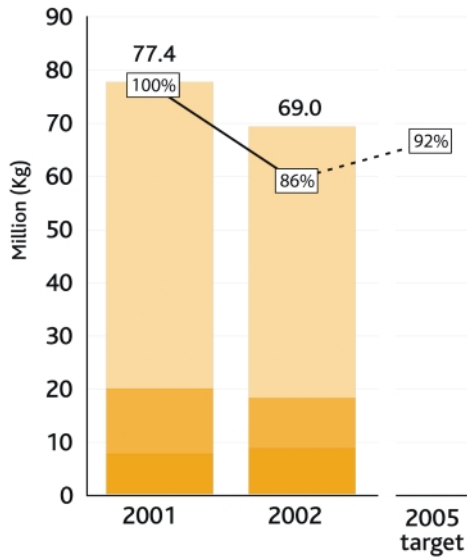
[Read about our special commendation for waste management, page 36](#)



[GRI, Part C, Section 5 Environmental Performance Indicators EN11](#)

## Non-hazardous waste (cont.)

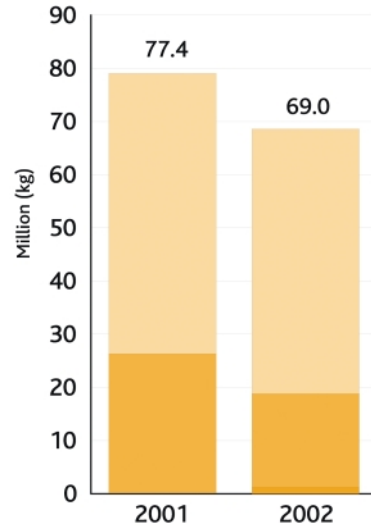
### NON-HAZARDOUS WASTE DISPOSED



2001	2002	
57.6	51.0	Landfill
12.3	9.5	Treatment w/ No Recovery
7.5	8.5	Treatment w/ Partial Recovery

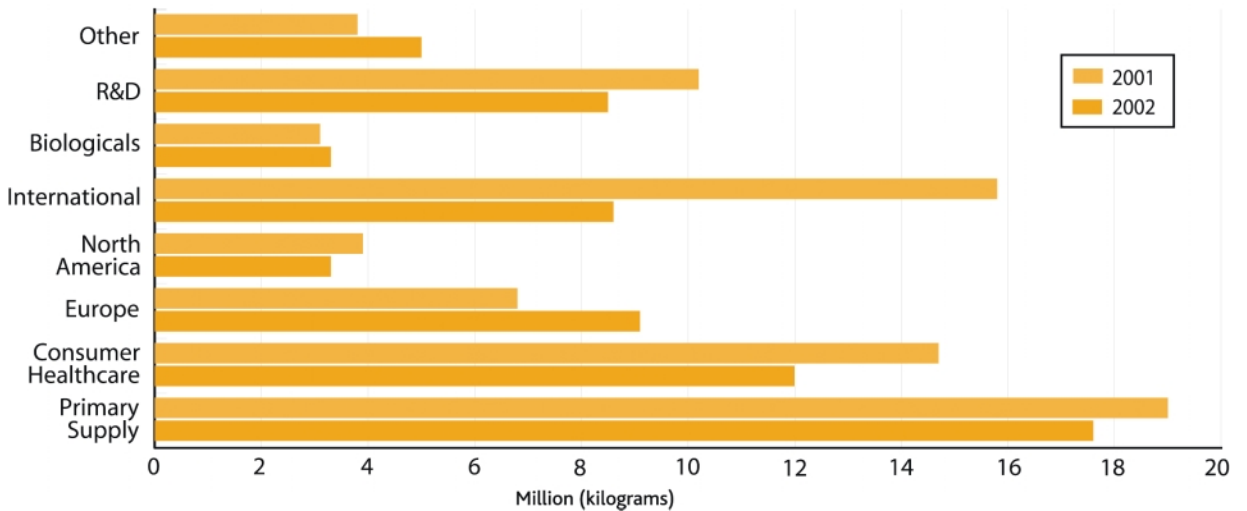
— Per unit sales as a percentage of 2001 baseline

### NON-HAZARDOUS WASTE SOURCE



2001	2002	
55.0	51.9	site waste
22.4	15.5	demolition
0	1.6	biological (not infectious)

### NON-HAZARDOUS WASTE DISPOSED BY BUSINESS



## Recycled waste

Waste recycled includes hazardous and non-hazardous waste reused, recovered or recycled including in-process reuse of solvents. The total waste recycled as a proportion of total waste generated is tracked as a key performance indicator. In 2001 the total waste generated was 510.3 million kilograms. In 2002 the total waste generated decreased 5% to 484.9 million kilograms. In 2001 and 2002 the proportions of waste recycled were 72.8% and 73.4% respectively, a 1% improvement in waste recycled.

In 2001, we reported 365.8 million kilograms of recycled waste. After a review of the 2001 data, a slight revision of the baseline was necessary to ensure consistent reporting. The revised 2001 baseline is 371.6 million kilograms. In 2002, GSK recycled 355.9 million kilograms of waste, 4% less than in 2001, due to an overall decrease in total waste produced. However, waste recycled as a proportion of total waste produced increased 1% reflecting our efforts to produce less waste and to maximise recycling of any waste produced.

Nearly 72% of waste recycled in 2002 was hazardous waste, primarily solvents. Seventy nine percent (79%) of all hazardous waste recycled is the solvents recovered and reused at two large primary manufacturing sites. In addition to hazardous waste recycled onsite there are three other components of total waste recycled: non-hazardous waste recycled onsite, non-hazardous waste recycled offsite and hazardous waste recycled offsite. Percent increases for these components were 106%, 19.6% and 14.7%, respectively. However, since the dominant component of total waste recycled is hazardous waste recycled onsite, which decreased 12.9%, there was an overall decrease in total waste recycled.

A target has been set to increase the proportion of total waste recycled by 10% by the end of 2005.

**GRI** GRI, Part C, Section 5 Environmental Performance Indicators EN11

### Waste Recycling - Harlow



GSK's R&D site in Harlow, UK succeeded in tackling an upward trend in the amount of waste being sent to landfill. New

recycling programmes were initiated and backed-up by a recycling awareness campaign. Waste management and recycling awareness became part of the site's induction training for new employees, and was included in refresher training for groups such as Pharmaceutical Development. It was also made a focus for support staff, who are key to recycling programmes.

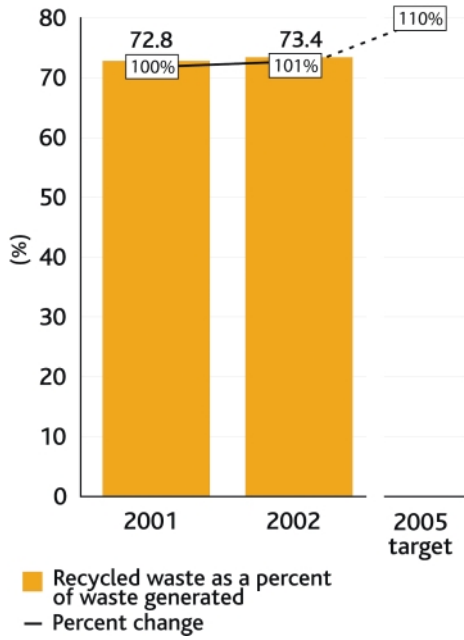
The programmes were uncomplicated and included such things as providing recycling boxes for spent photocopier toner and printer cartridges, providing desktop "Treecycler" boxes for the collection of all types of paper, recycling confidential and non-confidential waste paper. Containers in vending and restaurant areas were designated for the recycling of aluminium cans. Another cardboard baler was provided.

The results of this twofold approach were dramatic. Making recycling more convenient and increasing awareness increased recycling substantially.

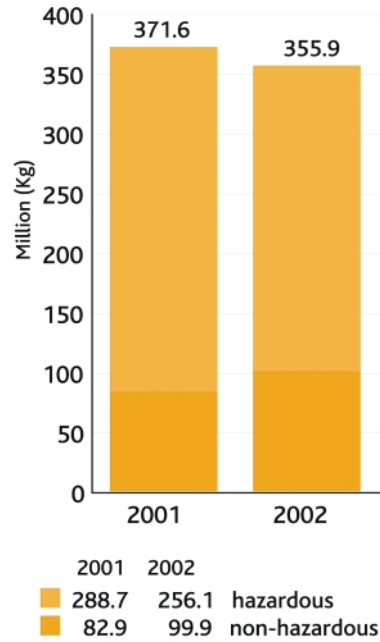
- 716% increase in aluminium can recycling (8 times better than 2001)
- 128% increase in plastic cup recycling (from 1,852kg to 4,221kg)
- 67% increase in toner cartridge recycling (from 1,412kg to 2,358kg)
- 59% increase in paper recycling (from 12,733kg to 195,046kg)
- 38% increase in cardboard recycling

## Recycled waste (cont.)

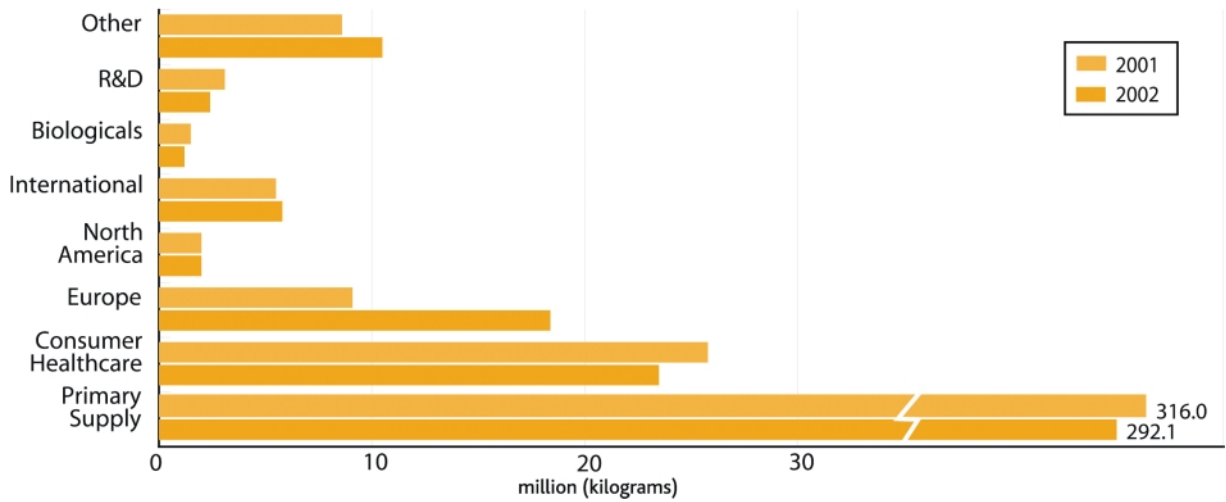
PROPORTION OF TOTAL WASTE RECYCLED



TOTAL WASTE RECYCLED



TOTAL WASTE RECYCLED BY BUSINESS



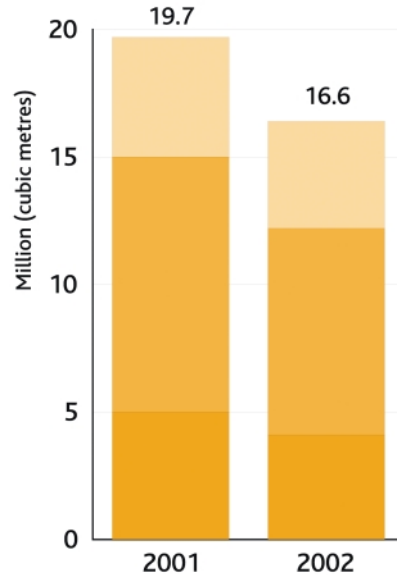
## Wastewater

Wastewater is generated from manufacturing processes and various site operations and contains dissolved and suspended solids. Wastewater quality is measured by Chemical Oxygen Demand (COD) which is a measure of the oxygen required to chemically oxidise organic and inorganic compounds present in the water. COD is therefore an indirect measure of the foulness of wastewater.

The wastewater volume reported by GSK includes all manufacturing and site process wastewater as well as sanitary and food service wastewater. GSK wastewater released to offsite municipal sewers and to sea represents 75% of GSK's total wastewater volume. Wastewater released to rivers and estuaries and wastewater that has been reused, recovered or recycled is included in other and represents the remaining 25% of the total.

In 2002, GSK generated 16.6 million cubic metres of wastewater compared with 19.7 million cubic meters generated in 2001, a 16% overall reduction in wastewater volume. A slightly greater percentage of wastewater was recycled or reused in 2002 (up from 6.6% to 7.9% or 1.3 million cubic meters of wastewater recycled in 2002). Many GSK sites in India and nearby regions have implemented "zero wastewater" discharge programmes due to the restrictions on water usage in the region. One of our sites in Mexico

### WASTEWATER VOLUME

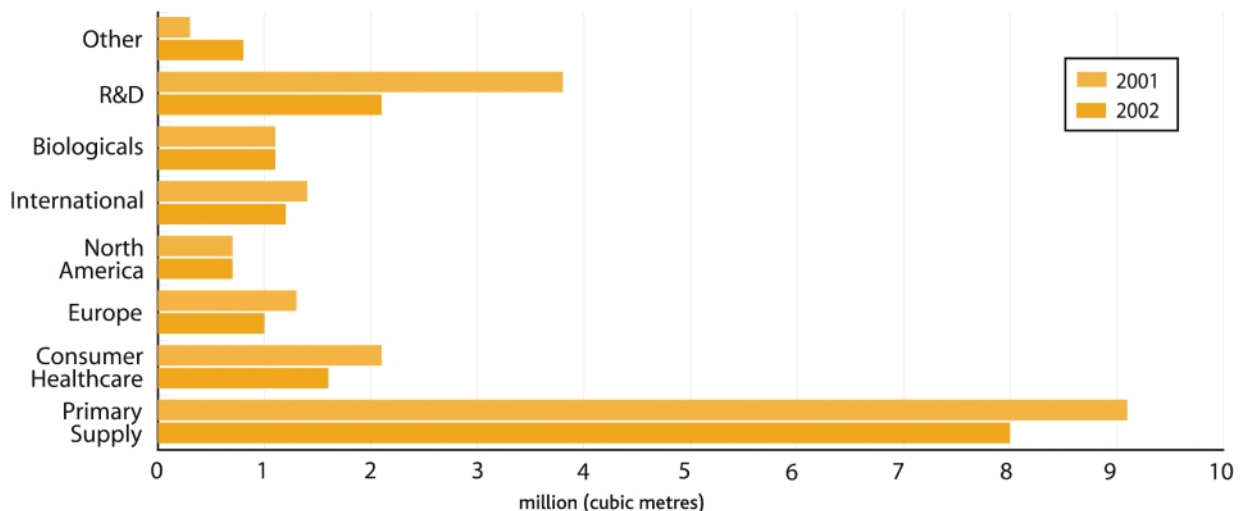


2001	2002	
4.7	4.2	direct to sea
10.0	8.1	municipal sewer
5.0	4.1	other*

\*includes direct to estuary, direct to river, reused, recovered, recycled

implemented an improvement project for wastewater management that resulted in a 95% reduction in the use of offsite treatment and the related costs.

### WASTEWATER VOLUME BY BUSINESS





## Wastewater (cont.)

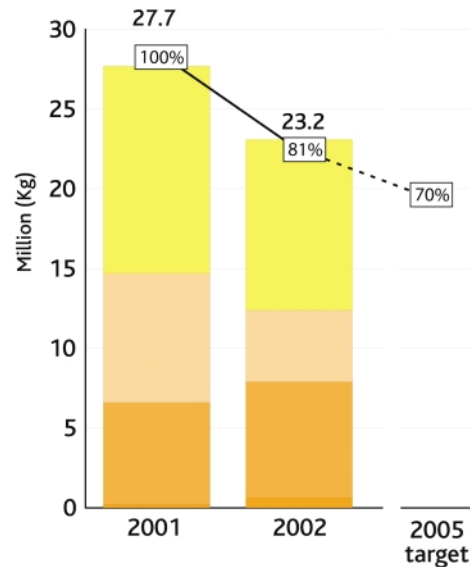
Several GSK manufacturing plants have wastewater treatment plants onsite that provide secondary level treatment of their wastewater. Secondary level treatment removes most organic pollutants by biological systems or physical or chemical treatment. Beginning in 2002, we measure COD after final treatment occurs whether in onsite wastewater treatment plants or in municipal or publicly owned treatment works.

For 2001, we reported COD as 26.9 million kilograms. A focused review of the reporting practices for COD revealed minor inconsistencies in 2001 reporting. These inconsistencies were brought into line with current reporting practices resulting in an increase in the 2001 baseline to 27.7 million kilograms. In 2002, the COD of wastewater was 23.2 million kilograms, a 16% decrease from 2001 attributable to factors such as upgrades to site wastewater treatment operations, improved reporting and the revision of the boundaries for reporting of COD to include offsite treatment.

A target has been set to reduce the COD of wastewater effluent by 30% on a per unit sales basis by the end of 2005.

In 2002, 400,000 cubic meters of wastewater were released directly to rivers with a COD of zero. Wastewater released directly to sea, a much larger volume of 4.2 million cubic meters, had an

### WASTEWATER CHEMICAL OXYGEN DEMAND

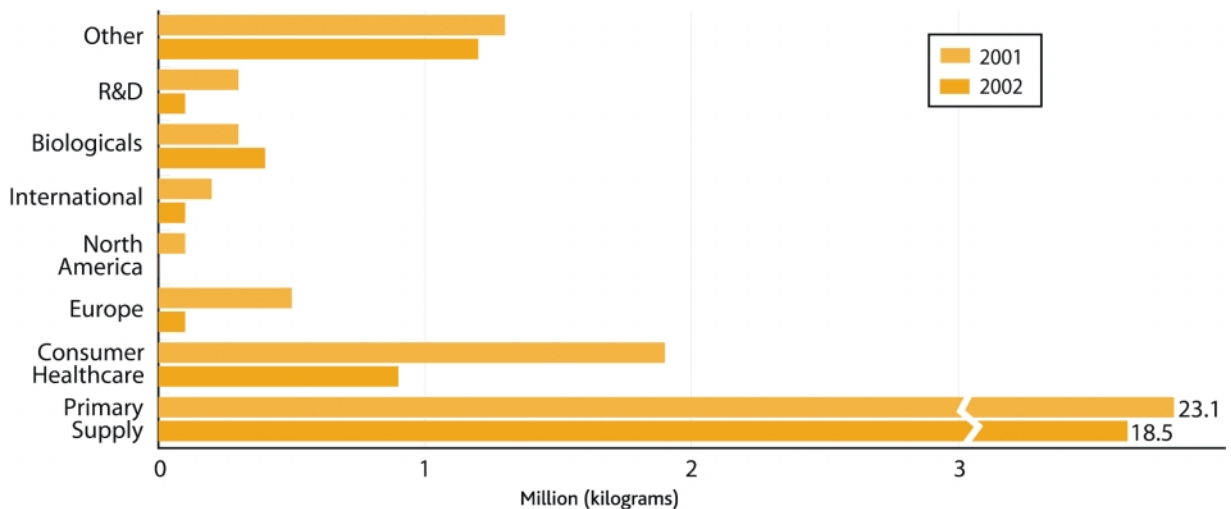


	2001	2002	
13.0	10.7	Direct to sea	
8.1	4.5	Direct to estuary	
6.4	7.3	Municipal sewer	
0.2	0.6	other*	

— Per unit sales as a percentage of 2001 baseline  
\*includes direct to river and reused/recovered/recycled

associated COD value of 10.7 million kilograms. Nearly 50% of all wastewater generated by GSK facilities is treated in publicly owned treatment facilities.

### WASTEWATER CHEMICAL OXYGEN DEMAND BY BUSINESS



## Wastewater (cont.)

### Wastewater Management Programme - Xochimilco



GSK's Xochimilco, Mexico site manufactures and packages tablets, capsules, syrups, inhalers, clean

liquids, creams, injectables, and oral suspensions. In 2001 the site consumed approximately 99,847 m<sup>3</sup>/year of water and discharged 55,504 m<sup>3</sup>/year of wastewater. In 1997 Xochimilco began a site-wide wastewater management programme. In the first year, their efforts focused on minimising wastewater discharge to the facility drainage. In 1998, they measured the flow of wastewater, determined its physical and chemical characteristics and performed treatability studies to learn about the variables inherent in their wastewater generation and how the treatment plant would have to be designed. In 1999, the designs were drawn and in 2002 a wastewater treatment plant that allowed the reuse of water on site was operating. With its new system Xochimilco has achieved:

- A 95% reduction in the volume of sanitary wastewater discharged to the sewers.
- Elimination of industrial wastewater to public sewers.
- A 33% reduction in the amount of water consumed on site.
- A 90% reduction in the amount of suspended solids discharged to the sewer and the biological oxygen demand of the wastewater.

## Health and safety

As indicators of our health and safety performance we measure:

- Work-related injuries and illnesses that are serious enough to cause the injured or ill employees to be unable to work one or more days.
- Calendar days that employees are unable to work due to these injuries and illnesses.
- Work-related injuries and illnesses that do not cause the injured or ill employees to be unable to work.

We report these injury and illness indicators as rates per 100,000 hours worked. Work-related injuries and illnesses experienced by all GSK employees as well as by contract workers who are directly supervised by GSK employees are included. Construction contractors or contract companies on site that supervise and direct their own staff are not included. We do not currently include work-related mental illness in these rates.

We also keep track of the injuries and illnesses that are related to work on GSK premises but that are experienced by people who work for other companies such as contract food service companies, landscape companies and maintenance companies. In 2002, the lost time injury and illness rate for this group was 0.50 lost time injuries and illnesses per 100,000 hours worked. This is higher than the lost time injury and illness rate (0.40) for this group in 2001 and higher than the lost time injury and illness rate of 0.34 for GSK employees. The reportable injury and illness rate is 1.22 injuries and illnesses without lost time per 100,000 hours worked and the lost day rate is 6.66 calendar days lost per 100,000 hours worked. The reportable injury and illness rate and the lost day rate were not measured for this group in 2001. Part of the increase in the lost time rate may be due to improved reporting in this group.

## Lost time injury and illness

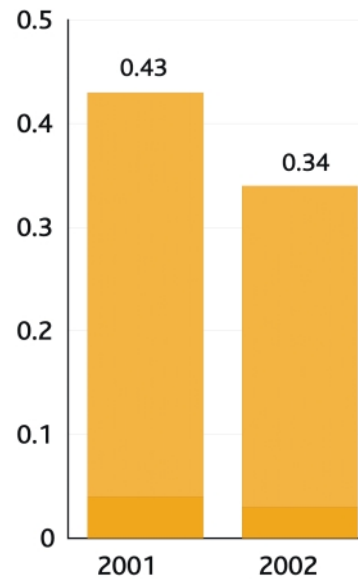
Our primary injury and illness measure is the Lost Time Injury and Illness rate (the number of injuries and illnesses that result in one or more lost work days per 100,000 hours worked). The health and safety target is to reduce this rate by 15% per year through 2005. From 2001 to 2002, the rate declined from 0.43 to 0.34, a reduction of 21%, exceeding our yearly target.

The lost time injury rate per 100,000 hours worked was 0.31 and the lost time illness rate was 0.03 based on 638 lost time injuries and 54 lost time illnesses not including work-related mental ill health. All business units have programmes in place to address safe working conditions and most improved significantly from 2001 to 2002.



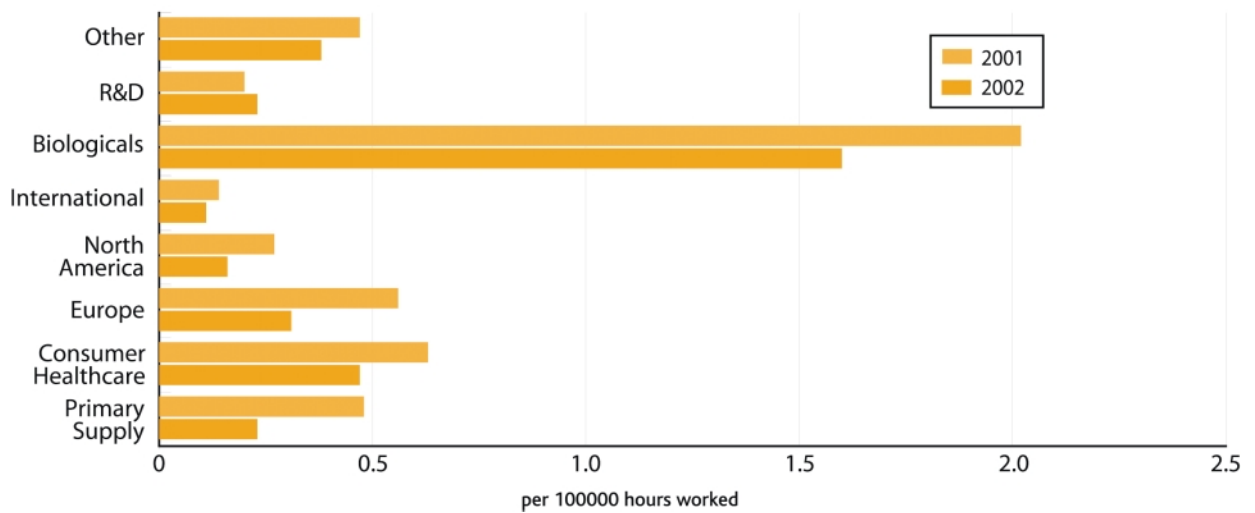
[Read about our work-related mental health programme, page 31](#)

### LOST TIME INJURY AND ILLNESS RATE



Year	Injury Rate	Illness Rate
2001	0.39	0.04
2002	0.31	0.03

### LOST TIME INJURY AND ILLNESS RATE BY BUSINESS



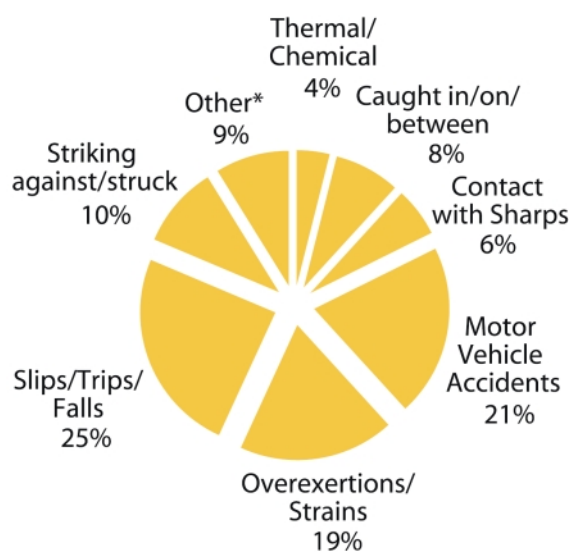
## Lost time injury and illness (cont.)

The Lost Calendar Day rate is the number of calendar days that employees could not work because of work-related injuries and illnesses per 100,000 hours worked. This provides one measure of the severity of injuries and illnesses. It is important to remember that the rate can also vary because of medical and disability management aspects of these events and that some illnesses such as hearing loss and sensitisation can result in permanent disability without resulting in lost time.

There were 14,077 lost days due to injury and 1,932 lost days due to illness in 2002 excluding work-related mental illness. Musculoskeletal illness, generally caused by cumulative trauma, was the leading cause of lost days due to illness at 75%. Illnesses resulting in permanent disability, such as noise induced hearing loss, sensitisations, and some cases of cancer and musculoskeletal illness also merit a special preventive focus. Approximately nine percent of 2002 illnesses resulted in permanent disabilities. Slips, trips and falls were the leading type of lost days due to injury, accounting for 30% of lost days, followed by motor vehicle accidents with 23%.

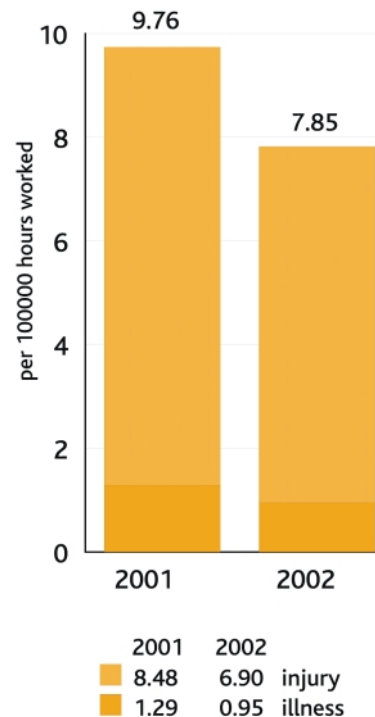
The three leading types of lost time injuries are slips, trips and falls followed by motor vehicle

### CATEGORIES OF LOST TIME INJURY



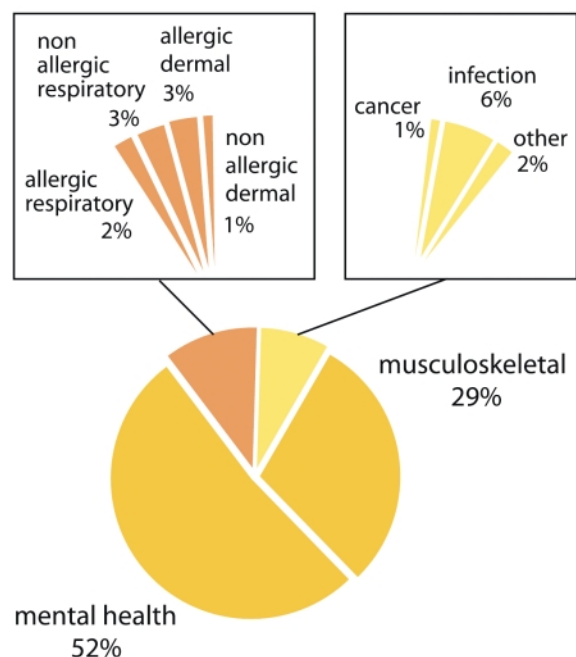
\*includes animal/insect, electric/fire/explosion, foreign bodies/objects and workplace violence

### CALENDAR DAYS LOST



accidents and over-exertion strain injuries. These are the same as the leading types in 2001. The leading type of lost time illness, excluding work-related mental illness, is musculoskeletal illness which is also the leading cause of lost days.

### CATEGORIES OF LOST TIME ILLNESS



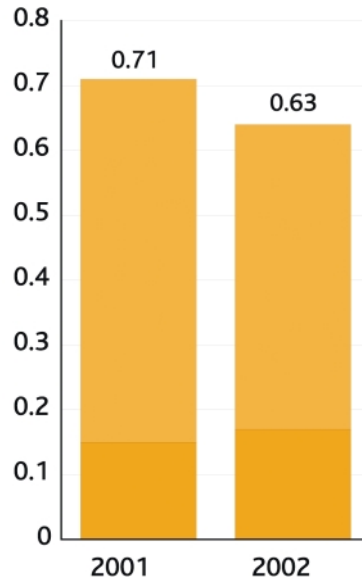
## Injuries and illnesses without lost time

The GSK Reportable Injury and Illness rate is the number of GSK reportable injuries and illnesses that did not result in lost time per 100,000 work hours. GSK reportable injuries and illnesses are those that are more serious than first aid but do not result in lost time. The reportable injury and illness rate declined 11% from 2001 to 2002 with 955 injuries without lost time and 339 illnesses without lost time, not including work-related mental illness.



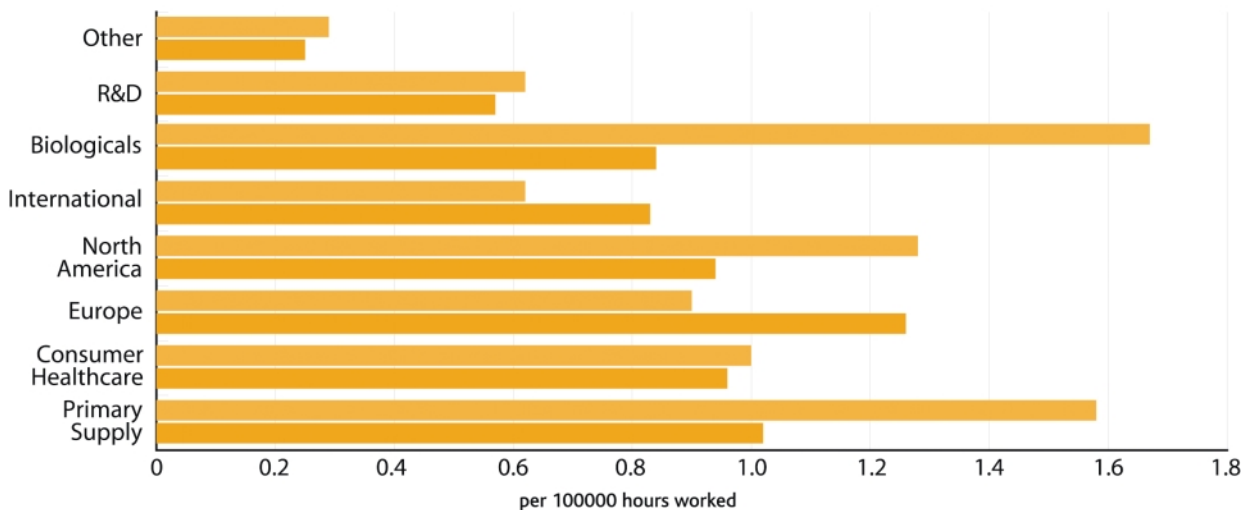
[Read about our work-related mental health programme, page 31](#)

### REPORTABLE INJURY AND ILLNESS WITHOUT LOST TIME RATE



	2001	2002
illness	0.15	0.17
injury	0.56	0.47

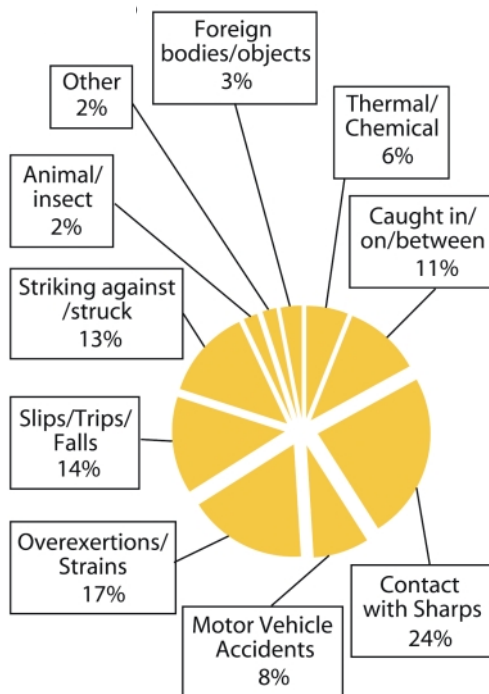
### REPORTABLE INJURY AND ILLNESS WITHOUT LOST TIME RATE BY BUSINESS



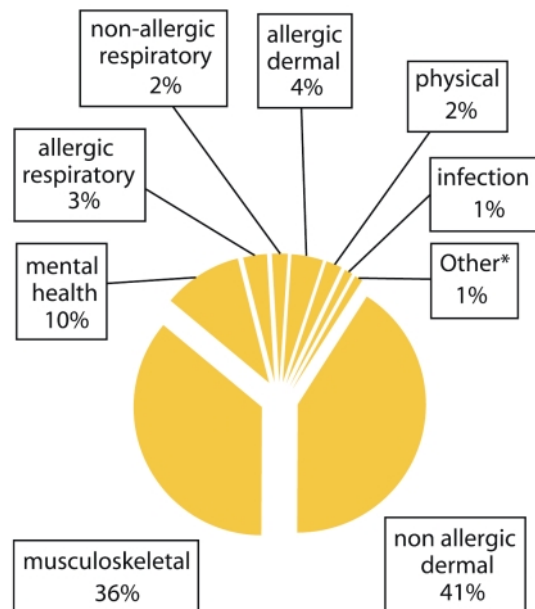
## Injuries and illnesses without lost time (cont.)

In contrast to the types of lost time injury, the leading type of injury without lost time is contact with sharps. This is followed by slips, trips and falls and overexertion/strain, two of the leading types of lost time injury. While musculoskeletal illness is the second leading type of illness without lost time similar to lost time illnesses, the leading type of illness without lost time is non-allergic dermal with work-related mental illness only 10% of the illnesses that do not result in lost time.

### CATEGORIES OF REPORTABLE INJURY



### CATEGORIES OF REPORTABLE ILLNESS



\*includes cancer, reproductive and systemic

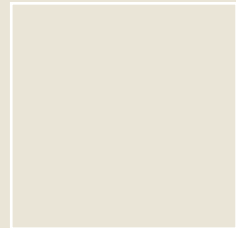
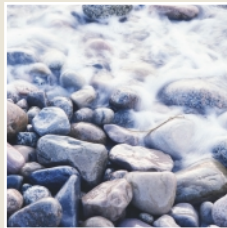
### Injuries and illnesses with and without lost time

The total number of cases of reportable occupational illness including mental illness with or without lost days increased from 448 in 2001 to 494 in 2002. It is likely that this is due to a number of factors including improved recognition, investigation, and reporting of both new and recurrent occupational illnesses. Musculoskeletal illnesses, such as cumulative trauma remains the number one cause, accounting for 34% of total illness. This is followed by non-allergic dermatitis (31%), mental illness (20%), allergic dermatitis (4%) and allergic respiratory (3%) illness.





## VERIFICATION STATEMENT



**GSK selected ERM from a group of qualified companies to serve only as the independent verifier of this report. ERM are not involved in developing our EHS programmes or processes or in correcting any deficiencies that they may uncover in the verification process.**

ERM (Environmental Resources Management), an environmental and social consultancy, was asked by GSK to independently review its 2002 environment, health and safety (EHS) report. This is the second EHS performance report for GSK, following the 2001 report of baseline data and programmes, which was also reviewed by ERM.

Specifically we were asked to:

- Check that the information presented is accurate, and that it represents GSK's performance fairly.
- Critically review the scope, balance and interpretation of the information presented.
- Assess the effectiveness of the company's data management processes that have generated the 2002 data.
- Focus in more detail on 'bottom-up' reporting processes, to complement the focus last year on corporate processes for collating site data and calculating corporate performance data.

### Activities

Between December 2002 and April 2003 we:

- Reviewed corporate processes for collating and verifying environmental and H&S data, including the use of logic tests to identify anomalies in reported data.
- Visited eight manufacturing and commercial sites for a one-day review, and conducted telephone interviews with both environmental and health and safety professionals at 14 further sites, to review site data monitoring, management and reporting. The sites chosen reflected GSK's global coverage and encompassed the full range of manufacturing and R&D operations, as well as some commercial facilities.
- Undertook a detailed desk-top review and telephone interviews with site personnel to focus specifically on emissions of volatile organic compounds (VOCs) for eight sites that contribute the most to total GSK VOC emissions. This activity was initiated after finding material data errors in VOC data during the site visits, in order to investigate the potential extent of such errors.

## Verification statement (cont.)

- Interviewed Corporate Environment, Health and Safety (CEHS) and Employee Health Management (EHM) personnel in order to review data management systems.
- Reviewed drafts of the 2002 report and discussed our findings with GSK.

### Findings - Data Accuracy

In our opinion, the information presented is accurate and statements based on it give a balanced interpretation of GSK's EHS performance. The scope of the report is appropriate to the environmental, health and safety issues of relevance to GSK.<sup>1</sup>

GSK has dedicated considerable effort at corporate and site level to establishing a robust process and web-based tools to collect and report accurate EHS data from all manufacturing and research and development facilities around the world, as well as health and safety data (and limited environmental data) from commercial and office facilities.

During our site visits, data review and focused VOC review, we found material data errors in the reporting of VOC releases to air and post-treatment Chemical Oxygen Demand (COD) in wastewater discharges. GSK took appropriate steps to resolve these errors to ensure accurate reporting in 2002 and amended the 2001 baseline to facilitate performance tracking in 2002 and beyond. We did not encounter material data errors relating to other EHS indicators.

The level and extent of data validation varies at site level. Despite the errors relating specifically to VOC and COD data, in general GSK has improved the effectiveness and efficiency of the corporate internal review process for ensuring the quality of site data, thereby eliminating the majority of errors in site data. Nonetheless, there is scope for further improvement to the corporate review process as well as to site level quality checks of data.

### Findings - Data Management and Reporting

Significant improvements have been made in the data collation, management and reporting systems over the last 12 months. In particular, GSK has:

- Improved the definitions, guidance documents and technical instructions given to sites, resulting in greater consistency and accuracy of site reporting.
- Continued to improve the web-based data reporting and management systems tool.
- Collated data from additional commercial and office sites than in previous years.
- Developed additional tools for reviewing and interpreting the collated GSK data.
- Started to audit contract manufacturers and key suppliers against GSK's environmental, health and safety requirements.

The opportunity exists for sites to understand better their contribution towards GSK-wide performance and their roles in achieving group targets. To assist sites with this process, CEHS should provide more focused, timely feedback to sites from the internal data collation and reporting process.

### Recommendations

With the development of additional tools to facilitate review of corporate EHS data and progress towards targets, we recommend that GSK focuses on:

- Strengthening sites' understanding of the corporate reporting requirements. In particular, improving key sites understanding of their roles in achieving corporate targets, in part through more focused information from CEHS and consultation with CEHS on prioritizing improvements.
- Further improving quality checking of site data, both by sites before it is submitted and by corporate reviewers after receipt of the data.

Finally, we look forward to seeing the benefits to GSK in 2003 of implementing planned processes for tracking progress towards targets, and, where necessary, reviewing and further developing plans for achieving the corporate EHS targets.

### ERM

9th May 2003

<sup>1</sup> ERM did not review GSK's social performance information in the 2002 Society Environment Report.