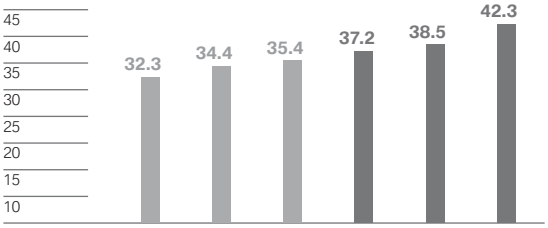
Sustainable Value Report 2003/2004
Innovation. Efficiency. Responsibility.

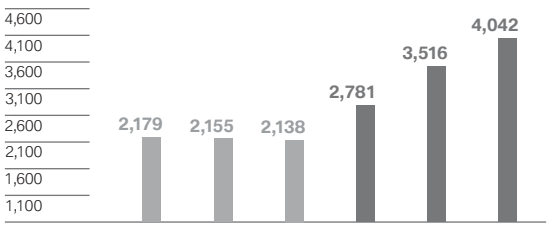
Rolls-Royce
Motor Cars Limited

BMW Group

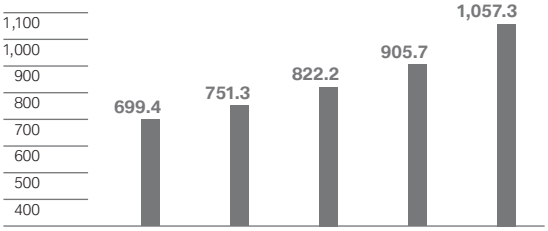
BMW Group Revenues
in euro billion



BMW Group Capital expenditure
in euro million

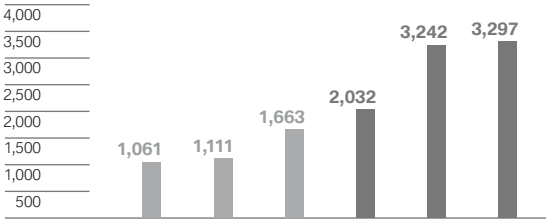


BMW Group Deliveries of automobiles*
in thousand



*adjusted for Rover/Land Rover

BMW Group Profit from ordinary activities
in euro million



BMW Group in figures

Economic		1998 HGB	1999 HGB	2000 HGB	2000 IAS	2001 IAS	2002 IAS
Revenues	euro million	32,280	34,402	35,356	37,226	38,463	42,282
Capital expenditure	euro million	2,179	2,155	2,138	2,781	3,516	4,042
Cash flow	euro million	2,479	2,807	3,198	3,779	4,202	4,374
Profit from ordinary activities	euro million	1,061	1,111	1,663	2,032	3,242	3,297
Net profit/loss for the year	euro million	462	–2,487[1]	1,026	1,209	1,866	2,020
Vehicle production							
BMW	units	706,426	755,547	834,519		904,335	930,221
MINI	units	–	–	–		42,395	160,037
Automobiles, total[2]	units	1,204,000	1,147,420	1,026,755		946,730	1,090,258
Motorcycles[3]	units	60,152	69,157	93,608		100,213	97,553
Deliveries to customers							
BMW	units	699,378	751,272	822,181		880,677	913,225
MINI	units	–	–	–		24,980	144,119
Automobiles, total[2]	units	1,187,115	1,180,429	1,011,874		905,657	1,057,344
Motorcycles[3]	units	60,308	65,168	81,263		95,327	103,020

1] net profit of euro 663 million before extraordinary result 2] includes Rover Cars from 18 March 1994 to 9 May 2000 and Land Rover from 18 March 1994 to 30 June 2000
3] includes BMW F 650 assembly at Aprilia S.p.A. until 1999, and C1 production at Bertone since 2000 4] includes C1 deliveries since 2000

Social		1998	1999	2000	2001	2002
Workforce at end of year[1]		118,489	114,952	93,624	97,275	101,395
in Germany		67,661	68,848	68,905	72,863	76,143
outside Germany		50,828	46,104	24,719	24,412	25,252
BMW Group employees according to segment						
Automobiles[2]		111,485	107,607	81,913	89,292	93,216
Motorcycles		2,039	2,191	2,397	2,699	2,847
Financial Services		1,339	1,561	1,671	1,973	2,196
Other[3]		3,626	3,593	7,643	3,311	3,136
Number of trainees		3,295	3,483	3,698	3,829	4,199
Years of service in company[4]	years	13.4	13.9	14.2	14.1	14.0

1] figures since 1998 excl. suspended contracts of employment, employees in the vacation phase of pre-retirement and low-income earners 2] after adjustment to take account of disposals and transfers of group companies, the automobile segment had 88,280 employees as at 31 December 2001 3] in 2000 includes Oxford plant, Hams Hall and other UK companies 4] refers to BMW AG

Environmental[1]		1998	1999	2000	2001	2002
Energy consumption, total	MWh	2,517,528	2,581,423	2,636,565	2,788,126	3,503,102
Energy consumption, per unit produced	MWh/unit	3.56	3.42	3.16	3.08	3.21
Process water input, total	m^3	2,737,398	2,650,677	2,481,127	2,277,757	2,293,257
Process water input, per unit produced	m^3/unit	3.87	3.51	2.97	2.52	2.10
Process wastewater, total	m^3	870,815	868,044	882,286	971,938	998,917
Process wastewater, per unit produced	m^3/unit	1.23	1.15	1.06	1.07	0.92
Carbon dioxide (CO_2), total	t	803,386	833,232	870,862	897,507	1,068,690
Carbon dioxide (CO_2), per unit produced	t/unit	1.14	1.10	1.04	0.99	0.98
Waste, total	t	259,000	278,232	291,082	305,634	317,129
Waste, per unit produced	kg/unit	367	368	349	354	291

1] figures for all BMW Group automobile and engine production plants

The nine principles of the Global Compact

Human rights
- Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence.
- They should make sure that they are not complicit in human rights abuses.

Labour standards
- Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining,
- the elimination of all forms of forced and compulsory labour,
- the effective abolition of child labour, and
- eliminate discrimination in respect of employment and occupation.

Environment
- Businesses should support a precautionary approach to environmental challenges,
- undertake initiatives to promote greater environmental responsibility, and
- encourage the development and diffusion of environmentally friendly technologies.

Global Reporting Initiative. The Sustainable Value Report 2003/2004 of the BMW Group follows the 2002 Sustainability Reporting Guidelines of the Global Reporting Initiative (www.bmwgroup.com/sustainability). GRI is the official partner of the United Nations Environment Programme (UNEP).

The world is mobile, because people are. We want it to stay that way, while taking into account the needs of people and the environment alike. As a result, it is essential today to develop ideas that others do not dare to think. For the mobile society of the 21st century – for future viability, with passion and responsibility. This is the way we understand sustainability – in the interest of our company, our customers, our employees and our shareholders. In the interest of future generations and of tomorrow's world.

Dr. Helmut Panke
Chairman of the Board of Management

"Sustainable action is firmly anchored in the BMW Group's corporate management. The company's economic success and the efficient use of resources in the entire value added chain depend on one another. In this respect, it is an economic necessity to sparingly use resources in a value cycle and to consider the later impact of this use. The experience of the BMW Group shows that economic efficiency and sustainability can be compatible with one another. In recent years, the company has generated excellent sales, revenues and profits. This is largely the result of our sustainable, long-term corporate strategy.
A company also needs the strength to carry out its plans while having the long-term results in mind as well. Positive financial results are essential for above-average investment – investment in the training and know-how of our employees, in products and production plants, and in the BMW Group's ambitious research and development projects. The company's future thus depends in every respect on responsible action.
In our company, we pursue a corporate culture that combines the determination to achieve economic success with cosmopolitanism, trust, transparency and responsibility for our environment. This attitude is reflected in all areas of the company and is absolutely essential if we are to put the BMW Group's current product and market offensive successfully into practice and thus safeguard the future of the BMW Group on a sustainable basis."

"In a competitive world, it is extremely important to be one of the most attractive employers. Only then can we recruit the most suitable and dedicated employees. We want to achieve this objective through high social standards, a climate of mutual trust and the active promotion of our employees by creating unique individual perspectives. Measures to safeguard continued employment and different models for flexible work time which reconcile the requirements of the company and its employees, contribute to our success. These measures create a success-oriented corporate culture that is based on the principle of performance and reward."

Ernst Baumann
Board Member, Human Resources and Industrial Relations Director

Dr. Michael Ganal
Board Member, Sales and Marketing

"The BMW Group's economic success depends on us managing not only to satisfy our customers, but also to generate enthusiasm and make them customers for life. In addition to strong brands and excellent products, we offer our customers premium service throughout the product's life. This ranges from purchase consultation and service for new and used cars to the recycling of end-of-life vehicles. With innovative technical concepts, such as Condition Based Service, or sophisticated recycling technologies, we create real value added for the customer (convenience) and conserve resources and the environment."

Dr.-Ing. Burkhard Göschel
Board Member, Development
and Purchasing

"Innovations create success and safeguard the future viability of companies. They are also essential for sustainable development. That is why we have concepts to manage innovations. They focus not only on the development of our products, but also on production, sales, service and the recycling of end-of-life vehicles. We think consistently in product life cycles with overall responsibility."

"Responsible, sustainable corporate activities and profit- and growth-oriented business operations depend on one another. This is clearly evident in the development of shares of particularly sustainable companies at the international stock exchanges and in the attention that investors pay to corresponding share indices for sustainable and ethically responsible activities. Thus, stakeholder and shareholder value are inseparably linked. Investors and other stakeholders, such as our customers, employees and business partners, all benefit from our growth."

Stefan Krause
Board Member, Finance

Dr.-Ing. Norbert Reithofer
Board Member, Production

"Uniformly high standards of quality, work safety and environmental protection apply throughout our production network worldwide. Thus, we ensure that all our products live up to the BMW Group's premium claim. At the same time, we guarantee that the sparing use of resources as guiding principle in production planning and sequences in the BMW Group has our full attention. The most recent example is the development of the world's most modern automobile plant in Leipzig with flexible architecture, work and production structures."

The BMW Group's strategy is geared to long-term, profitable growth. Our goal is to be the most successful premium manufacturer in the automobile industry with a comprehensive product range in all the relevant segments of the automobile market. In order to achieve this goal the company is carrying out the largest product and market offensive in its history.

The BMW Group's value and asset management is characterised by sustainability. By gearing its policy to economic sustainability, resources are used more efficiently, the reputation of the BMW Group and the image of its brands are increased and risks are minimised.

1.0 Sustainable thinking. Responsible action. Permanent success.

1.1 Economic success and responsibility. For the BMW Group, long-term economic success provides the basis for its activities. It is only on this basis that the company can assume responsibility permanently and sustainably.

In the coming years, the BMW Group aims, with new models, to capture new market segments, develop business on the existing triad markets and, when the opportunity arises, expand on new markets. With its current product and market offensive the company will grow to a new dimension. By 2008, the sales of the BMW Group are expected to increase to more than 1.4 million cars.

The year 2003 shows the scale of the product and market offensive. The new Rolls-Royce Phantom started off the year. A diesel-powered MINI was added to the existing model range. The BMW brand launched the new BMW 5 Series. In addition, the BMW Z4 was introduced in Europe and Asia, and three revised versions of the BMW 3 Series were presented. Two new models, the BMW 6 Series Coupé and the BMW X3, will also be introduced. They will be followed next year by the BMW 1 Series, the new BMW 5 Series Touring and the BMW 6 Series Cabrio.

By consistently serving the premium segments of the car market, the BMW Group creates the right conditions for profitable, long-term growth.

Sustainability – managed by BMW Group

According to market researchers both inside and outside the company, the premium segments will grow almost twice as much as the mass segments in the next few years. At the same time, above-average growth in Asia will stimulate demand. The BMW Group recorded the highest growth rates there in 2002.

Internationalisation continues resolutely.
In Asia, the BMW Group pursues a long-term strategy that dates back to 1981. The BMW Group was at that time the first international car manufacturer to have its own subsidiary in Japan and thus laid the foundations for its long-term commitment in the region. Subsidiaries in South Korea and the Philippines followed. In 2003, the BMW Group continued this strategy resolutely with the extension of the assembly plant in Rayong, Thailand, and the establishment of a subsidiary in Malaysia. In 2003, the first BMW to be made in China will roll off the assembly line in Shenyang in northern China. There the BMW Group will manufacture up to 30,000 BMW 3 and 5 Series cars a year as part of a joint venture with its Chinese partner Brilliance China Automotive Holdings.

Thus, the BMW Group is taking a second major step forward in the company's internationalisation and is continuing the strategy that had led ten years earlier to the establishment of the Spartanburg plant in the United States: production follows the market. The strength for this growth course is generated by the company itself. The BMW Group's capital expenditure is entirely financed out of the cash flow.

Success and responsibility belong together.
For the BMW Group, economic success is both the prime objective and stable basis for assuming responsibility – for the company, its employees, its shareholders and business partners, as well as for the environment and society. In addition, the BMW Group helps to safeguard its own future by assuming social, economic and ecological responsibility. Sustainability is a management task and a success factor.

The economic relevance of sustainability management is seen in three elements: resources, reputation and risks.

Sustainability is resource management. The BMW Group's resource management includes finance and human resources, as well as the use of materials and energy and their influence on the environment. The aims of sustainable use of resources are efficiency and future competence in finance and human resources, as well as in product development and production. Frequent cost reductions, increases in productivity and sustainable products enhance the company's future viability.

Sustainability enhances reputation. The BMW Group's commitment to social, economic and ecological responsibility as an international company is in keeping with its performance as a corporate citizen. Thus, reputation management serves to develop the company as a responsible partner in the global community. A company that is firmly anchored in society as a reliable partner creates acceptance for its products. This acceptance is particularly important for a premium supplier, such as the BMW Group with its brands BMW, MINI and Rolls-Royce.

Sustainability reduces risks. Companies that act responsibly take account of the economic and social interests of various stakeholders: from the

interest of employees in an attractive and secure workplace to the interest of society in environmental protection and compatibility in both production and product design. At the same time, company activities should be transparent and calculable. This helps to build up trust in the company among employees, customers, shareholders, investors, suppliers, business partners and the general public – a trust that reduces risks.

Sustainability as management task. The BMW Group recognised at an early date the connection between resources, reputation and risks as the economic dimension of sustainability. According to a resolution by the Board of Management in 2000, "Sustained development is becoming the main guiding principle for economic and social prosperity, as well as for the interaction of market and democracy."

With this commitment to sustainability, the BMW Group supported Kofi Annan's "Global Compact" from the start. This international initiative by the Secretary General of the UN aims to create an alliance between the spheres of business and politics in order to establish and strengthen worldwide the role of companies as the advocates and promoters of sustainability. Kofi Annan's voluntary initiative is based on nine principles for the observation of human rights, labour standards and a far-sighted, cautious approach to the environment.

The BMW Group supports Kofi Annan's initiative with its long-term corporate strategy, which includes not only business targets but also social and ecological aspects, and with concrete examples in the Global Compact's worldwide "Learning Forum". This is the place where the newly developed Sustainability Management System and CleanEnergy are discussed as the concept for introducing alternative hydrogen-based fuels for automobiles.

Shareholder value through stakeholder value. The world of finance increasingly honours corporate activities that are geared to the long term. And for good reason: it is now generally accepted that sustainability is a suitable concept for increasing and positively influencing a company's value. The development of the Dow Jones World Composite Sustainability Index, considered an important benchmark in the field of sustainable investment, was compared over many years with the development of the Dow Jones World Stock Index, compiled according to conventional economic criteria. The comparison shows a yield advantage for sustainability-oriented investors. This also applies to the recent past, which brought significant price losses on the

international stock markets because of continuing uncertainty about world economic and political development. Growth rates for investment guided by principles are still high, suggesting that in the near future we shall see a further increase in demand for shares in companies whose management decisions are based not only on economic but also on social and ecological criteria.

"We are in the midst of a process which will end with the philosophy of sustainability being a self-evident component of good corporate management. Ultimately, on the markets the view will prevail that sustainability and shareholder value do not contradict one another. Sustainability is, in fact, absolutely essential in order to maximise long-term shareholder value. In future, companies that fail to take it into account can expect significant markdowns on the capital markets and shrinking market share on the product markets."
Dr. Hendrik Garz, Director Equity Strategy Research, WestLB Panmure

In September 2002, the BMW Group was included for the fourth time in succession in the family of the world's leading sustainability indices of Dow Jones, STOXX Limited and SAM Group. In the SAM Group's ranking for the Dow Jones Sustainability Index World the analysts found that the BMW Group had above-average ratings for 27 out of a total of 33 different criteria. The company also qualified for the FTSE4Good Europe 50 Index of the Financial Times and the London Stock Exchange as well as for the German Sustainability Index of Oekom Research. The new sustainability internet platform of the Institute for Ecology and Corporate Management at the European Business School ranks the BMW Group with a listing in seven sustainability indices among the leaders in this field.

Transparent activities, open communications. The policy that the BMW Group has adopted is confirmed by UNEP and the international business consultancy SustainAbility. The BMW Group's Sustainable Value Report 2001/2002 ranks among the top fifty sustainability reports worldwide on UNEP's and SustainAbility's list. In the car industry segment, the BMW Group achieved one of the top rankings.

Excellent capital market communications. The BMW Group's communications with shareholders and investors are marked by transparency and fairness. According to the results of a survey by the investor magazine "Börse Online", private investors appreciate the outstanding credibility and comprehensibility of the BMW Group's capital market communications. In 2003, the company was awarded the new Prize for the Best Investor Relations in Germany (BIRD). 160 large German stock corporations were included in the survey.

On sustainability strategy
www.bmwgroup.com/responsibility

On corporate strategy
www.bmwgroup.com/ir

BMW Group
Corporate Governance Code
www.bmwgroup.com/ir
–– Investor information
–– Corporate facts

Official website of
Global Compact
www.unglobalcompact.org

Official website of UNEP
www.unep.org

Website of the German Forum on Sustainable Development
www.econsense.de

Websites of rating agencies
www.ftse4good.com
www.oekom.de
www.sam-group.com
www.sustainability.com

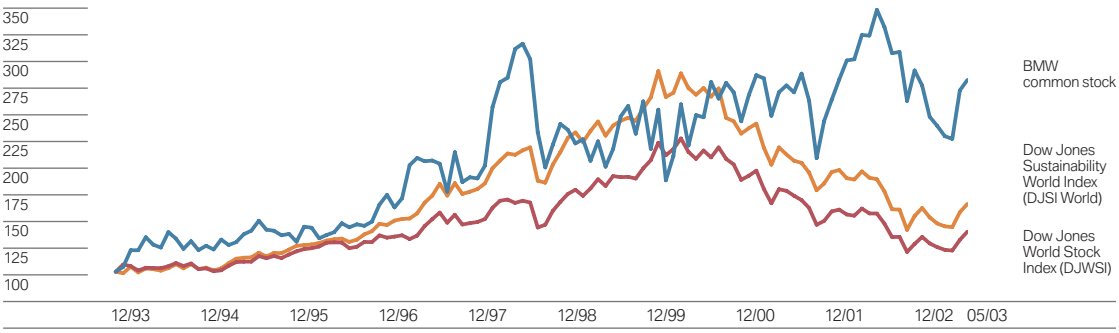
Institute for Ecology and Corporate Management at the European Business School
www.nachhaltiges-investment.org

Corporate Governance Code for BMW Group.
In view of the growing responsibility of companies with international operations and the discussion about corporate governance, transparency plays an important role for the BMW Group. The company supports the recommendations and suggestions made in this code and, using the German Corporate Governance Code as a basis, has developed its own code to take account of the company's specific circumstances. In addition, a coordinator for all corporate governance issues reports regularly to the Board of Management and the Supervisory Board.

However, exemplary corporate governance is not achieved simply by obeying rules. It is also important to promote trust in the company. For the BMW Group, corporate governance is an all-embracing issue that affects all areas of the company. Taking responsibility for our actions, transparency and trust in others have long been the principles of our corporate culture. This corporate culture is essential for the success of the BMW Group both today and in the future.

"Corporate sustainability is an approach that maximises shareholder value in the long term and at the same time minimises risks."
Dr. Alois Flatz, Head of Research, SAM, Sustainable Asset Management

Development of the DJSI World, the DJWSI and BMW common stock, December 1993 to May 2003
(Index: December 1993 = 100)



Dow Jones World Stock Index (DJWSI). Increase in price 12/93–05/03: 37.6% (in USD)
social and ecological Dow Jones Sustainability World Index (DJSI World). Increase in price 12/93–05/03: 63.6% (in USD)
BMW common stock. Increase in price 12/93–05/03: 179.8% (in USD)

1.2 Dialogue generates trust. The BMW Group holds an open dialogue with numerous stakeholder groups. In doing so, it aims to make its activities transparent and to generate trust. An example: participation in the World Summit on Sustainable Development in Johannesburg.

Late August 2002, Sandton Square, Johannesburg, South Africa. Only a few steps away from the Convention Centre where the United Nations held its World Summit on Sustainable Development, an unusual dome-shaped structure attracted attention: the BMW Group's EarthLounge.

Around 15,000 guests from all over the world visited the EarthLounge during the UN Summit between 26 August and 4 September 2002. There, and in an exhibition on Sandton Square, they gathered information on the BMW Group's economic, ecological and social responsibility and on concrete solutions and approaches for sustainable mobility.

"This is a World Summit of partnerships."
Professor Klaus Töpfer, Executive Director of the United Nations Environment Programme, in the EarthLounge on 27 August 2002

Sustainability. It can be done. The motto of the presentation at the World Summit in Johannesburg was "Sustainability. It can be done." Dialogue with industry, science, politics and society was central to the BMW Group's involvement. Measures for sustained development were analysed during numerous events in the EarthLounge. The BMW Group presented its concepts for clean production and sustained mobility as well as examples of its social commitment. International experts discussed the responsibility of global players and the opportunities on the financial markets for companies committed to sustainability.

Involvement in the World Summit encourages dialogue at international level, generates trust in the company and increases acceptance for its products. Growing numbers of experts and organisations consider the BMW Group a trendsetter in the field of sustainable company management. The positive response strengthens the BMW Group in its opinion that it should continue its dialogue with stakeholders worldwide as an integral part of sustainability management.

BMW Group EarthLounge at the World Summit in South Africa

BMW Group at the WSSD
www.worldsummit.de
www.bmwgroup.com/publicaffairsletter
–– Archive
–– Public Affairs Letter September 2002

Official website of WSSD
www.johannesburgsummit.org

Eberhard von Kuenheim Foundation
www.kuenheim-stiftung.de

BMW Foundation Herbert Quandt
www.bmwstiftunghq.com

Chair for Sustainability donated. The Chair for Sustainability at the University of the Witwatersrand in Johannesburg, which the BMW Group donated during the World Summit, contributes to the dialogue. The Chair is to form the basis of a new network for sustainability. In addition to scientific research on the subject of sustainability, the Chair will be involved in a concrete exchange of experience between developing and industrial nations, as well as between industry and science. Experts from the BMW Group support the Chair in both research and teaching.

"With the donation of the new Chair, the BMW Group has contributed significantly to our work on environmental protection and sustainability."
Professor Herold Annegard, Dean of Science, University of the Witwatersrand, in the EarthLounge on 27 August 2002

Promoting dialogue worldwide. The BMW Group's involvement in the Johannesburg Summit is only one of the components of the company's continuing dialogue. Another element is its cooperation, since 2000, in the UNEP Mobility Forum, a voluntary initiative by automobile manufacturers and the United Nations Environment Programme. The aim of cooperation is to discuss at an international level environmentally and socially compatible mobility and to elaborate solutions that take account of the interests of everyone concerned. The BMW Group supports the forum, for example, in topics relating to production, sustained consumption, reporting and stakeholder dialogue.

"Today, it is particularly important to increase cooperation between NGOs and representatives of industry and finance on the basis of reasonable conditions."
Dr. Claude Martin, President of WWF International, in the EarthLounge on 29 August 2002

[left] Exhibition on Sandton Square in Johannesburg
[right] African music created the right atmosphere for the events held in the EarthLounge every evening.

In 2002, the first global Sustainability Report of the Automobile Industry was compiled for the UNEP Mobility Forum upon the initiative and with the coordination of the BMW Group, together with the European Automobile Manufacturers Association (ACEA) and twelve car manufacturers from Europe, the United States and Japan. Other fields on which the forum focuses include the development of new strategies for threshold countries, the compilation of reporting standards for the Global Reporting Initiative (GRI) and the forming of partnerships in the field of sustained development.

In Germany, econsense – Forum for Sustainable Development takes a similar approach. The BMW Group was one of the first companies to participate in this forum, which is an initiative of leading German companies and organisations that have integrated the concept of sustainable development into their business strategies.

In addition, the BMW Foundation Herbert Quandt and the Eberhard von Kuenheim Foundation serve to intensify dialogue with science, politics and society and thus to analyse and influence global trends of relevance to an automobile manufacturer with worldwide operations.

Qualified and contented employees are crucial for the company's success. Guidelines for a value-oriented human resources and social policy have been a well-established component of a corporate culture based on trust, tolerance, performance and reward for 20 years. The BMW Group also assumes social responsibility vis-à-vis society, for trust in the company's work and recognition of the BMW Group's efficiency are essential factors for operating successfully in a stable environment.

2.0 Assuming social responsibility.

2.1 Employees as success factor. The success of the BMW Group depends decisively on its attractiveness as employer. Human resources development, qualified young employees, lifelong learning and flexible working hours form the bases for successful human resources management.

Qualified employees are essential for economic success. In 2002 alone, the BMW Group created 5,132 new jobs and increased its workforce to almost 101,400 employees. This corresponds to 5.3 per cent growth. In Germany, the number of the BMW Group employees increased by 4.5 per cent to more than 76,100.

In 2002, the Group's attractiveness as employer was reflected in the low fluctuation rate of 1.4 per cent and the numbers of applicants for jobs in Germany: more than 30 applications were received for every vacancy among salary earners.

Uniform human resources policy worldwide. The need for qualified employees will continue to increase in the next few years as a result of the ongoing product and market offensive. The BMW Group's long-term and worldwide human resources policy is based on many criteria. It includes:

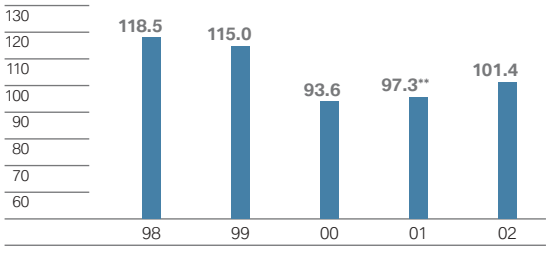
- targeted human resources development,
- an associate and leadership model, which is valid worldwide,
- internationally applicable criteria and systems for assessing employees,
- guidelines on work safety and health protection,
- efficient work structures with flexible working hours, as well as
- above-average and success-oriented remuneration and additional benefits.

In addition, the BMW Group takes account of the Global Compact of the United Nations, the standards of the International Labour Organisation (ILO), the Guidelines for Multinational Enterprises of the Organisation for Economic Cooperation and Development (OECD), as well as the Business Charter for Sustainable Development of the International Chamber of Commerce (ICC).

Human resources and social policy guidelines

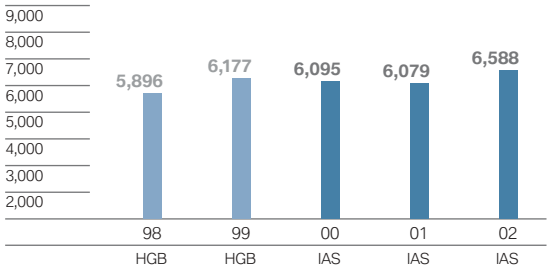
- Mutual respect – a positive culture of conflict
- Thinking beyond national and cultural boundaries
- The performance of our employees is the basis for remuneration
- Team performance is more than the sum of individual contributions
- Secure and attractive jobs for committed and responsible employees
- Respect for human rights is a given
- Social standards for suppliers and business partners are the basis for doing business
- Outstanding benefits for employees and a strong commitment to society

Number of BMW Group employees
in thousand*



*including Rover and Land Rover until 1999
**after adjustment to take account of disposals and transfers of group companies, the number of employees at 31.12.2001 was 96,263

BMW Group personnel costs
in euro million*



*includes basic pay and benefits

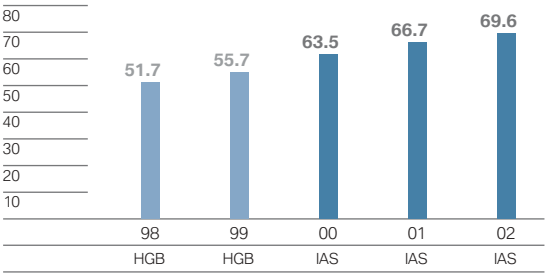
Survey of employees reveals a high level of satisfaction. The BMW Group conducts surveys of employees in order to detect optimisation potentials, particularly for work organisation and processes. They can also be used to monitor the success of human resources policy. In 2002, the surveys were carried out, for the first time, at all group locations worldwide. The BMW Group's comprehensive survey was made with questionnaires prepared in 17 languages with more than 100 local variations for 28 countries. With an average response rate of 86 per cent, 91 per cent of the participants showed a very strong identification with the company and expressed great satisfaction with the BMW Group as employer. In future, the international survey will be carried out every two years. The objective is to strengthen the BMW Group's position as one of the world's most attractive employers.


MINI production at the Oxford plant

Promoting women. Women are generally under-represented in the automobile industry. With 13 per cent, the BMW Group currently has one of the highest shares of female employees in the industry. The share of women in training for technical professions is currently 15 per cent, compared with 8 per cent in 2002. With targeted programmes the BMW Group will also increase its share of women in management positions.

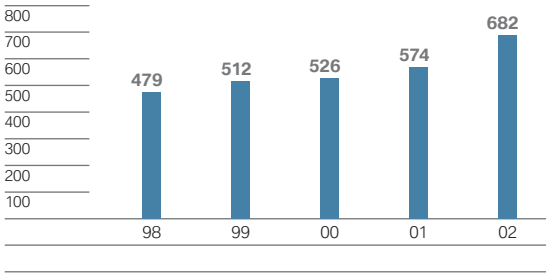
Above-average remuneration. The principle of performance and reward is an important component of employee-oriented human resources policy. In a comparison with competitors in the automobile industry, remuneration is in the top third. It is also influenced by individual performance. Some bonus payments are far higher than those stipulated by collective agreements. In 2002, total bonus payments – profit sharing, Christmas bonuses,

BMW Group personnel costs per employee
in euro thousand*



*figures exclude suspended contracts of employment, employees in the vacation phase of pre-retirement and low-income earners

Bonus payments* paid by BMW AG
in euro million



*include Christmas bonuses, profit sharing, vacation pay

vacation pay – at BMW AG amounted to around euro 682 million.

In addition to above-average remuneration, employees worldwide receive comprehensive benefits. These depend on various factors, such as location. Additional benefits include, for example, contributions to health and accident insurance schemes, as well as pension provisions.

The company's proposal scheme pays off. Employees' ideas for improvements benefit both sides. In 2002, the BMW Group employees submitted more than 44,000 ideas under the company's proposal scheme. Participating for the first time, the international locations submitted 22,000 ideas. The resultant savings amounted to almost euro 63 million.

Managers from within. The BMW Group attributes great importance to the training of managers from its own ranks. As a result of several years of experience, managers and employees are already familiar with many of the company's divisions and processes. Targeted human resources development enables them to fill management positions in the company.

Plans for future viability. Systematic competence management helps the company to plan its personnel requirements. Each year the BMW Group identifies the type of employee skills it requires in future. The results of this process are integrated into future-oriented human resources development and affect

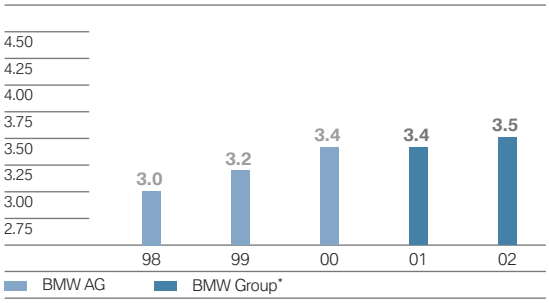
Children in the plant kindergarten in Rosslyn, South Africa

personnel marketing, education and training policy, qualification and targeted recruiting of young people.

The project "Excellence in Human Resources" aims to optimise, in stages, all aspects of personnel-related processes and functions by 2006. Simple, uniform processes in the BMW Group's human resources division result in better personal advice for employees and managers.

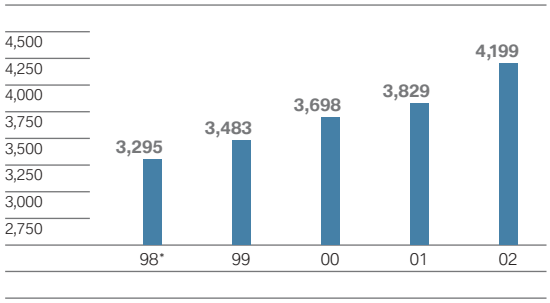
Flexible childcare. Qualified flexible childcare is essential for parents who work. In 1992 the "BMW Strolche" was established as Munich's first company-related parents' initiative. The "FIZ Strolche" of the Research and Innovation Centre (FIZ) soon followed. Both facilities provide care for children up to the age of six. The BMW Group also introduced family service in 1992. Today, many companies interested in childcare issues benefit from the services of this independent consultancy.

Employees with disabilities
in per cent



*data was collected on approximately 87 per cent of the workforce

BMW Group apprentices



*excluding Rover Group apprentices

In South Africa, the BMW Group has run two plant kindergartens since 1989. Almost 150 children between the ages of four and seven attend these early learning centres.

Integrating the disabled. The integration of the disabled into work processes and the outsourcing of work to state-approved workshops for the disabled have been anchored in the company's human resources policy since 1973. The volume of orders grew from euro 23.4 million in 2001 to euro 24.9 million in 2002. The proportion of employees with disabilities increased during the same period from 3.4 to 3.5 per cent.

Measures to promote young employees. According to the results of German and international surveys, the BMW Group is one of the most popular employers. This attractiveness benefits the company in its search for young employees.

In order to spot young talent at an early stage, the BMW Group gives trainees and undergraduates an opportunity to work at the company. Subsequently, the BMW Group recruits potential young employees for the company with its "fastlane" programme.

Network of recruitment programmes. The new-recruitment and career-development programme, Drive, helps university graduates and young professionals to get started in the company. This programme has between 1,100 and 1,300 participants, two-thirds of whom are engineers.

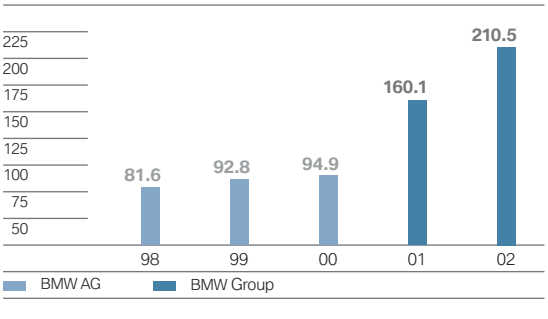
The Trainee Promotion Programme (TPP) for school leavers combines vocational training with a higher education and includes traineeships at the BMW Group plants outside Germany.

Apprentice in production at the Steyr plant

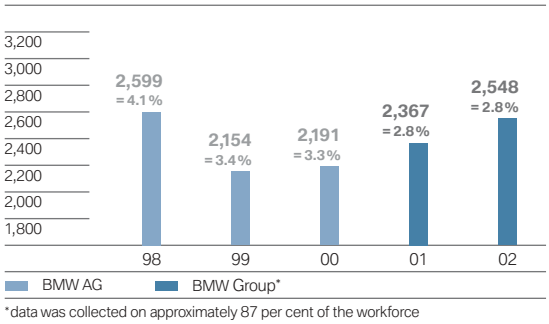
Combining research, teaching and the promotion of young employees. The BMW Group has initiated various projects at university level in order to link research, teaching and the promotion of young employees. A few examples: the plant in Spartanburg, USA, cooperates with local universities. Students have the opportunity to combine their theoretical knowledge with practical experience in the plant. Landshut Technical College introduced courses on "Lightweight automobile construction" in the winter semester 2000/01. In Thailand, outstanding students in various departments of the renowned Chulalongkorn University have been supported since 2002.

Vocational training is attributed great importance. In 2002, the BMW Group established 370 additional apprenticeships and thus increased the

Capital expenditure on training and further education
in euro million



Part-time employees



*data was collected on approximately 87 per cent of the workforce

"Contact!" Since November 2002, the BMW Group's new intranet platform "Contact!" has provided a virtual network for the rapid exchange of information beyond department and project boundaries. Thus, individual knowledge and experience can quickly be made available to all employees. Brief portraits of the individual employees and their specific know-how can be called up. "Contact!" also promotes informal contacts between employees.

number of apprentices to almost 4,200. The European Apprentice Programme is particularly important. Under this scheme, selected participants spend around one-quarter of their apprenticeship in Great Britain. In addition to their skilled worker's certificate, they obtain international professional qualifications and a language certificate that is recognised worldwide. The advantages for the BMW Group are obvious. When they have completed their training, the young skilled workers have broader qualifications and can thus be employed more flexibly in the company.

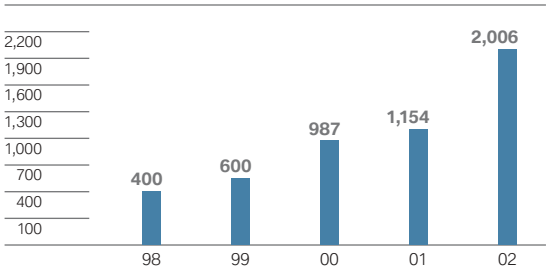
Developing and passing on knowledge. The BMW Group benefits from employees who are prepared to give their best, assume responsibility, and apply and pass on their knowledge. The BMW Group promotes the proficiency of its employees with a wide range of training and further education programmes. The choice of more than 1,000 different measures indicates the variety of themes. From 2001 to 2002, expenditure on training and further education increased from euro 160 to 210 million.

In 2002, the company recorded more than 262,000 participant days spent in training and further education. This corresponds to an average of 2.7 days per employee. The BMW Group's commitment in this field is greatly acclaimed. In 2002, the plant in Steyr, Austria, received the first prize of the Austrian "Knewledge Initiative", which is supported by various federal ministries, for its further education concepts. The prize is awarded to companies that distinguish themselves with progressive human resources development.

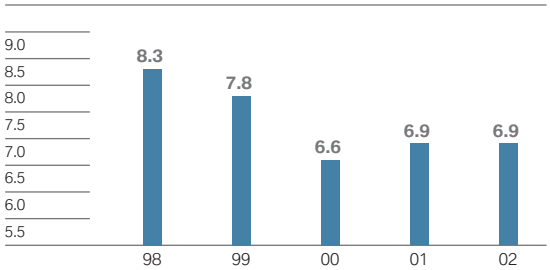
Success due to flexible structures. Well-utilised production facilities reduce unit costs, enhance the company's economic efficiency and thus safeguard jobs. In this respect, innovative, flexible structures play a crucial role. For example, the BMW Group now has more than 300 different work time models. Thus, the company can react swiftly to market fluctuations. When demand is high, production capacity can be increased at short notice. Work time accounts for employees can be balanced at a later date. Thus, professional and private life can be better coordinated.

The BMW Group also offers its employees modern work structures, such as teleworking. By the end of 2002, more than 2,000 employees had opted for this arrangement. At the end of 2003, this number will be well above 2,500.

Teleworking within BMW AG



Accident frequency* at BMW AG



*number of reportable industrial accidents per one million man-hours

On human resources policy and the associate and leadership model of the BMW Group
www.bmwgroup.com/career
–– Fascination BMW Group

On the promotion of young employees at the BMW Group
www.bmwgroup.com/career
–– Entry

Official website of the International Labour Organisation
www.ilo.org

Official website of the International Chamber of Commerce
www.iccwbo.org

Official website of the Organisation for Economic Cooperation and Development
www.oecd.org

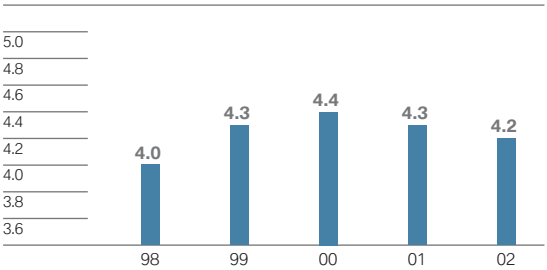
High standards of work safety and health protection. Health and physical well-being are essential for individual performance. They are guaranteed worldwide by uniform, high standards of work safety and health protection.
Measures are carried out on three levels:
- guidelines on work safety and health protection,
- promotion of individual responsibility of employees and managers,
- safe organisational structures and working environment.

The health of employees has priority. Prevention is an essential part of health protection. The company's guidelines are based on the "Luxembourg Declaration on Workplace Health Promotion in the European Union". Health protection is the responsibility of various areas of the company. Measures include, for example, the ergonomic design of workplaces, medical services, as well as health information and education programmes.

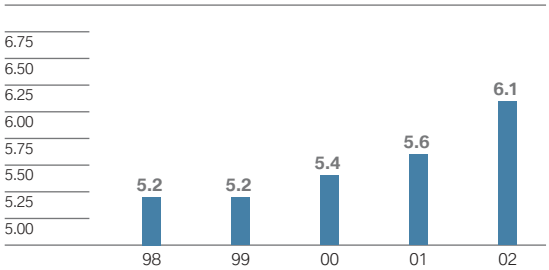
At the German locations, the range of health measures includes voluntary testing for intestinal cancer. The Spartanburg plant in the USA holds a "Health Day", and the Steyr plant in Austria offers special training for employees with cardiovascular and circulatory diseases or diseases of the locomotor and support system as part of its "Fit for the job" programme. At the Rosslyn plant in South Africa, the BMW Group's social activities include a wide-ranging programme against HIV/AIDS.

Plants promote a feeling of well-being. Numerous plants were placed in the offices of around 20 employees in the Customer and Product Service Department in Munich as part of a pilot project. Result: employees feel better with plants around them. Measurements showed that the office air contained significantly less carbon dioxide and noxious substances. Humidity increased and noise was dampened. There are plans to extend the pilot project to a production unit.

Sickness rate at BMW AG
in per cent



Expenditure on work safety* at BMW AG
in euro million



*includes, for example, personnel, materials and room costs

2.2 An active part of society. Mutual trust between society and industry is essential for political, social and economic stability. With this in mind, the BMW Group is committed to social projects worldwide.

The BMW Group's social commitment extends beyond plant boundaries at all its locations. More than 20 years ago, the BMW Group began to develop relations with different stakeholder groups outside the company. It pays special attention to children and youngsters.

Goals of project work. Following the motto "We assume responsibility", the BMW Group's social programmes focus on:

- increased road safety,
- the promotion of understanding among peoples and prevention of violence,
- educational projects for children and youngsters, and
- mutual trust and acceptance in communities with company plants.

These goals apply worldwide. However, the choice of project is also influenced by the political, cultural and economic circumstances in the individual countries. Outside experts in education and youth work ensure that the projects are practical and have a scientific or academic base.

The BMW Group does not see itself as a sponsor, but rather as the initiator of these as well as its own projects. Help for self-help creates both long-term benefits for the people at these locations and stable social conditions, which provide the basis for our successful activities as a company.

Increased road safety. The BMW Group feels responsible not only for its products, but also for road safety. In 1977, the company was the first automobile manufacturer to offer driver training courses. In 2002, more than 15,000 people attended them in Germany alone. BMW driver training courses are now available in 14 countries.

The BMW Group has also introduced measures for children and young people. For example, it designed a website on road safety for British primary schools which contains information and activities for children from the age of 7 to 12 and for teachers and parents.

In Germany, the annual campaign "Kindertempo" appeals to the common sense of adult road users. "Timmi Tempo", the campaign's mascot, appears in children's events and demonstrates dangerous situations in road traffic in a way that captures their imagination. In cooperation with the German automobile club, ADAC, the sales outlets and dealerships of the BMW Group measure traffic speeds in front of schools and kindergartens.

The BMW Group's yearly campaign "Kindertempo" promotes road safety for children.

In 1995, in cooperation with the traffic safety associations and local authorities in Munich, the BMW Group launched the campaign "School route maps for primary schoolchildren". By now, 120 Munich and 500 Berlin schools take part in this programme. It is to be carried out successively at as many locations as possible. For each individual school, the police, parents' association and teacher responsible for road safety education draw up, among other things, a map of all the roads near the school. Danger spots are marked and explained.

Intercultural learning with LIFE. For the BMW Group, the promotion of understanding among peoples is both a moral and economic concern. The company is represented in more than 130 countries and, in Germany alone, has employees from more than 90 countries. Thus, the BMW Group is committed to increasing understanding in society.

With the LIFE project, the BMW Group gives priority to intercultural learning. The project focuses on unusual cultures, languages, manners and customs. It furthers tolerance and respect and arouses curiosity about different cultures. The LIFE concept offers a wide range of learning materials for different age groups from kindergarten to adult education. LIFE was initiated in 1997 with the Bavarian Institute

for School Education and Educational Research in Munich and has since been developed in cooperation with international experts.

BMW Group Award for Intercultural Learning. Each year, within the framework of LIFE, the BMW Group awards a prize for intercultural learning. An international jury judges entries on criteria such as ideas, innovation, transferability or involvement of the pupils. In 2003, the award was made for the sixth time. It went to the "Archaeology Project Landshut-Novosibirsk 2002". During a school exchange, Russian and German youngsters took part in an archaeological excavation. The second prize was for the integration model "Intercultural Fairytale Didactics." A class of predominantly German children worked with a coaching class from a temporary home for immigrants. Each side was sensitised to the language and culture of the other. The third prize is shared by the Bulgarian project "Zaedno-Together-Zusammen" and the US "Learning Partner Program".

The BMW Group Award for Intercultural Learning has been presented every year since 1998. An international jury assesses the projects submitted.

"School projects on intercultural learning help children and young people from different cultural backgrounds to deal more competently with intercultural differences. This furthers the process of understanding between young people. With its projects, the BMW Group contributes significantly to team ability and peaceful coexistence at work and during leisure time."
Dr. Peter Meinel, Director of the Bavarian Institute for School Education and Educational Research (ISB), Munich

The BMW Group Award is also presented for the best research in the field of intercultural learning. In 2003 this went to Poland. The research on "New aspects of openness in intercultural contacts" shows practical approaches to intercultural learning for children.

Help in violent situations. Young people often do not know how to react when confronted with violence and racism. The project "Leave me alone!" provides an insight into the subject. How can violence be avoided, what are the causes and where do I find help? The internet portal and CD-ROM on this project in German and English give young people an opportunity to consider and discuss violence. "Leave me alone!" was developed by the BMW Group in cooperation with the Peace Studies working group (AGFP) and the Munich city youth office.

School in society. The BMW Group's educational programme includes "School in Society", a comprehensive project that involves outside experts in the school day. For example, some classes are held in the training halls at BMW plants. These practical

classes aim to familiarise pupils, at an early stage, with the working-day situations they will encounter after school. One secondary school each is taking part in this project at the Regensburg, Dingolfing, Landshut, Munich and Berlin production plants.

"School in society" was commissioned by the BMW Group in cooperation with the Free University (FU) Berlin and the Bavarian Ministry of Education and Religious Affairs, and has been running since 1999. It is a continuation of "KidS – creativity in school", which was launched at a Berlin school in 1990. This new form of cooperation between industry and school is being assessed scientifically at all locations. FU Berlin is evaluating the success and the transferability of the new teaching and learning concept to other schools or federal states.

In 2001, the "School in society" project won the Freedom and Responsibility Prize, which is awarded by leading German business associations and the weekly "Wirtschaftswoche". This distinction under the auspices of the German Federal President aims to promote the sustained socio-political involvement of companies.

In addition, the BMW Group cooperates with a large number of schools and other educational institutions worldwide in order to develop key social skills, such as team and communication ability, and conceptual work. Activities include school partnerships, the compilation of teaching and learning materials or teaching projects. Educational projects are also devoted to the promotion of highly gifted children and young people. If their unusual talents are not recognised, these children often fail both in school and in their private lives. With events, films and publications, the BMW Group helps to recognise and promote the potentials of highly gifted children. They are to be put in a position to develop their individual talents.

SEED: Project in South Africa. The Schools Environmental Education Development Project (SEED) in South Africa is one of the BMW Group's most successful education projects and is typical of the company's social commitment worldwide. More than 60 schools with around 30,000 pupils have taken part in the programme since it was first initiated near the Rosslyn plant in 1996.

SEED arouses environmental awareness among children aged 7 to 13 and encourages involvement in the community. Children from disadvantaged sec-

"The education system should be geared more to working life. Companies are called upon to formulate more clearly what they expect. The project "School in society" is an outstanding example of a successful strategic partnership between school and industry – a real win-win situation. Young people are trained in realistic working conditions. At the same time, the BMW Group can influence the contents of what is taught and make suggestions for the training of skilled workers in keeping with present-day needs."
Prof. Dr. Dieter Lenzen, President of Free University Berlin

tors of the population are particularly involved in this project. For example, pupils grow their own vegetables on the school grounds. In addition, each school takes on responsibility each year for a long-term environmental project. The three best schools in the competition receive a money prize.

The schools and surrounding communities benefit from SEED. Vandalism has decreased at the schools involved in the project and attitudes to the environment have generally improved in the communities concerned.

"I never expected such a spontaneous response from the business people (…). You can see the transformation that has taken place in this country. And BMW is one of those firms who are in the front line to improve the living standards of our people and to encourage education."
Nelson Mandela, Nobel Laureate for Peace

Free medical advice and attention for all associates – also in the fight against HIV/AIDS

Comprehensive anti-HIV/AIDS programme. In southern Africa, HIV/AIDS poses one of the most serious threats both to society and to the economy. The BMW Group's anti-HIV/AIDS programme includes education, prevention and treatment. The company not only provides free advice and medical attention for its employees and their families, but is also extending its anti-HIV/AIDS programme by constructing a multi-functional community centre in the vicinity of the Rosslyn plant. In addition to the health service with a testing and advice unit, the new centre will house, for example, mother-and-child facilities. The centre is being built in cooperation with the Foundation for Economic Development and Vocational Training, an organisation of the German Federal Ministry of Economic Cooperation and Development. Around 500,000 people will have access to the facilities.

Social responsibility: example of Munich. The BMW Group assumes social responsibility particularly in the neighbourhoods of its plants. In Munich, for example, the company supports the "ghetto kids – Soziale Projekte e.V." and its many activities. The association is committed to giving socially disadvantaged children and young people the strength to face life. The successful project "Lichttaler" (dollars of light) by the "ghetto kids" association is based on the principle of self-help. The children and young people earn "Lichttaler" for certain activities, such as homework tutoring. The imaginary currency can then be spent, for example, on participation in a

computer course. “SchlagZeilenLife” (HeadLineLife), a CD and video, draws attention to the association’s work and encourages similar projects in other socially disadvantaged areas worldwide.

Together with the Milbertshofen community centre, the BMW Group is to create a multinational meeting place for young and old in Munich’s Petuelpark. The so-called park of generations is being developed in an area with a high volume of traffic, cramped living conditions and very few green open spaces. The project includes a garden that can be planted and maintained by local residents and school classes. A pavilion will provide a venue for various meetings and informative events. The park of generations enhances the nearby sports and recreation facilities known as the “Spielmeile” and underlines Petuelpark’s character as a meeting place.

Spontaneous help in emergencies. The BMW Group also provides help for self-help in emergencies. After the catastrophic flooding in Central and Eastern Europe in the summer of 2002, the company donated a total of euro 1.25 million. The regions of Bavaria, Saxony and Austria with company locations benefited most.

The BMW Group reacted immediately to the tragic terrorist attack on the World Trade Center in New York by donating one million US dollars and ten new BMW X5 sports activity vehicles to the Catastrophe Relief Fund of the American Red Cross. The BMW Group also pledged to provide the states of New York, New Jersey and Connecticut as well as the Pentagon in Washington D.C. with a total of 130 motorcycles by the end of 2003.

On the BMW Group's social commitment
www.bmwgroup.com/socialcommitment

The BMW Group's British website on road safety
www.bmweducation.co.uk

On the BMW Group's project "Leave me alone!"
www.fassmichnichtan.de

Selection of international social projects by the BMW Group

- Italy. BMW Italia supports the biotechnological university institute San Raffaele, one of the most important research facilities in Europe. Research focuses on the use of adult stem cells from the central nervous system for the treatment of patients with Alzheimer's or Parkinson's disease.
- Austria. The Steyr plant supports the development of new types of training as part of the project "Cooperative Open Learning (COOL)" of Handelsschule und Handelsakademie Steyr. The project primarily promotes open learning on one's own responsibility and social skills. COOL is an exemplary project in the field of occupational training in Austria.
- Russia. BMW Russia supports various nature reserves, particularly in their efforts to protect the Siberian tiger, which is in danger of extinction.
- South Africa. BMW Nelson Mandela Ndonga School and Clinic Project: By establishing a secondary school and a hospital, BMW South Africa has created the basic structures for adequate education and health care in the remote village of Ndonga in East Cape Province.
- South Korea. To mark the delivery of the 10,000th BMW automobile, BMW Korea gave the South Korean Ministry of Education and Technology 10,000 scientific textbooks for schoolchildren in isolated regions of the country.
- Thailand. BMW Thailand has provided a home for AIDS patients with medicines, clothes and food since 2002.
- United States. The Spartanburg plant has partnerships with local hospitals. This project focuses on medical care for children, research on diseases and information campaigns.

2.3 Learning for the future. The BMW Group introduces coming generations to the future questions of mobility, with which the company is most concerned. One example of this is CleanEnergy. For more than two decades, the BMW Group has promoted on all levels awareness of hydrogen, generated from renewable energy sources, as the fuel of the future.

How much energy does each person consume, and how is the climate affected? What are the prospects for the energy supply of the future? And what role could hydrogen technology play? These were all questions of special interest to 13 pupils from grades 9 to 12 at Puchheim High School near Munich. Outside normal school hours, they sought practical answers in a "Renewable energy" course. The BMW Group helped them in their quest.

Hydrogen technology tested successfully. Pupils in working groups focussed on how to supply a car's on-board network with energy using hydrogen technology. Their timetable included a lot of fiddly work and handicraft skills, measuring and programming. Within a year the pupils constructed a model car, measuring around 60 centimetres, with fully functional lighting and air-conditioning. The energy for the car's on-board network came from an APU fuel cell developed by the BMW Group. This was fitted into the model along with a hydrogen storage tank designed by the pupils. The young research engineers used solar energy to produce the hydrogen.

Together, the pupils applied the physical, technical and chemical bases of hydrogen technology and developed methods to collect and evaluate data. Through cooperation with companies they also gained insights into conditions in the real working world. The efforts of these young researchers did not go unrewarded. The hydrogen project was ranked among the top ten in the competition "School for the future", organised by the German news weekly "Focus" in 2002.

Use of teaching materials "H_2 – mobility of the future"

[above] Pupils work on their model car with hydrogen propulsion.
[below] Participants in the “Renewable energy” course at Puchheim High School

BMW CleanEnergy
www.bmw.com/
cleanenergy

Website on "Renewable energy" Puchheim High School
www.wasserstoff.look2.de

Teaching materials "H_2 – mobility of the future". Another education project devoted to BMW CleanEnergy is the folder of teaching materials "H_2 – mobility of the future". It was developed by the BMW Group together with education experts. The materials and themes can be used independently of one another for teaching chemistry, physics and technology. Some of the modules can also be used for teaching geography, social studies and economics. Work sheets, transparency sheets and a CD-ROM contain information, job orders and solutions. Thus, the subject of hydrogen, the fuel of the future, is examined from different points of view.

The BMW Group has sent out more than 25,000 folders of teaching materials in German since 2001. More than 1,000 copies of the new English version have been ordered so far. A folder of materials in Mandarin Chinese is currently being prepared.

Hydrogen as fuel for daily use. The teaching materials "H_2 – mobility of the future" contribute, through school education, to the development of a society that is sustainability-minded. The worldwide introduction of hydrogen as a fuel will be a challenge for a whole generation, a challenge for politicians, industry and society. With the BMW CleanEnergy World Tour, the BMW Group presented its concept of liquid hydrogen as the fuel of the future to the public.

The long-term objective of the BMW Group: the development of a hydrogen infrastructure through global partnerships, so that the propulsion technology for hydrogen can achieve a breakthrough. In Montreal in 2002, the BMW Group received awards from the USA's National Hydrogen Association and the International Association for Hydrogen for its efforts in this field.

Interdisciplinary thinking is essential in order to maintain mobility as the engine of economic growth in an environmentally responsible way.

In the field of international research, the BMW Group's interdisciplinary teams cooperate with outside partners on solutions for more sustainability in the transport sector. The main objective is the permanent optimisation of the entire transportation system. Research and development also focuses on the environmentally compatible enhancement of products in the premium segment of the automobile markets and, in the long term, the realisation of completely new propulsion concepts.

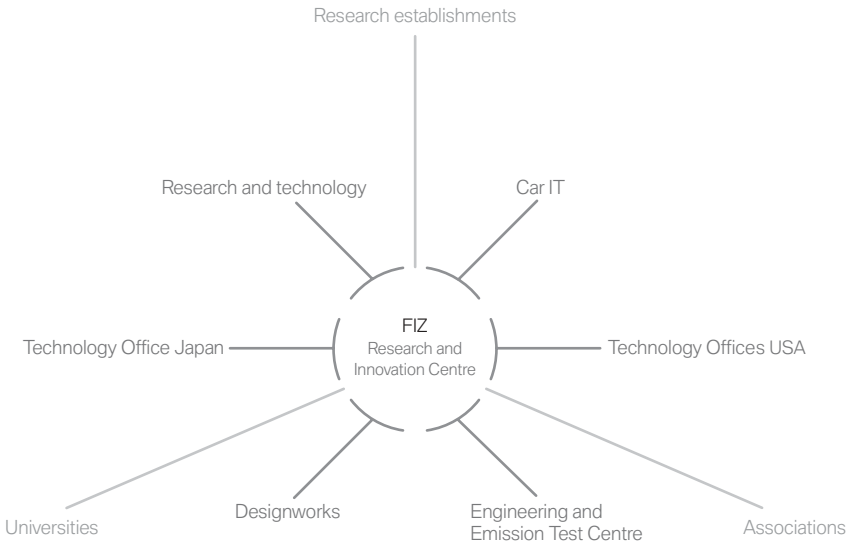
3.0 Connected ideas.

3.1 Life in motion. The BMW Group's research and development network employs more than 8,500 people worldwide. Their work is devoted to the development and enhancement of automobiles of the BMW, MINI and Rolls-Royce brands as well as of BMW motorcycles, and to the intelligent networking of different means of transport.

Individual mobility can be optimised by using modern traffic and car technologies.

The mobile society faces huge challenges. The consumption of resources is increasing, as are environmental impacts and demands on the infrastructure. Traffic researchers of the BMW Group have found that, in Germany alone, traffic congestion causes economic damage to the tune of around euro 100 billion a year. The BMW Group assumes its responsibility as an international automobile manufacturer by enhancing its products and carrying out research on a more effective design of the entire transport system.

The BMW Group's research and development network



The Munich-Freimann traffic guidance centre is part of the MOBINET project, in which the BMW Group is involved. The project is designed to control and improve traffic management in built-up areas.

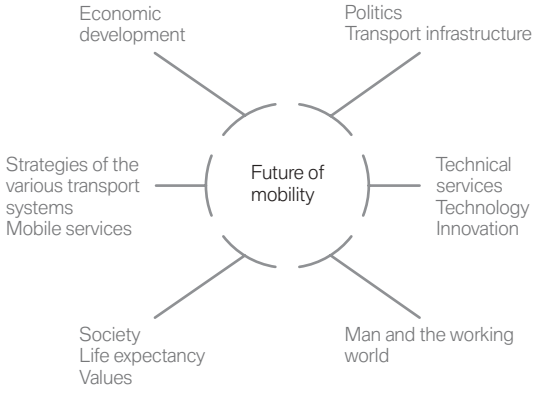
Research for mobility. For around twenty years the BMW Group has carried out research on mobility-related subjects in order to increase the efficiency of the road network, test new forms of mobility and avoid unnecessary traffic. The employees of the Berlin Institute for Mobility Research (ifmo), a research establishment of the BMW Group, have conducted interdisciplinary studies of these subjects since 1998.

Until 2004, the Berlin scientists will be involved in the scenario project "Future of mobility", together with Deutsche Bahn, Deutsche Lufthansa and some 50 experts from various institutions. This research project is concerned with pivotal issues: How will mobility develop in the next twenty years? What resources do we need? What problems could ensue? So far, the experts have developed two fundamental scenarios with variants, which were presented at a congress in December 2002. All the options for action are discussed with representatives from politics, industry, science and society.

Transport projects in practice. In order to develop concrete solutions for sustainable mobility, the BMW Group takes part in various traffic projects, for example in Berlin, Cologne and Munich. One of these projects is on "Intelligent traffic and user-friendly technology" (in German, INVENT for short). This research programme involves not only the BMW Group, but also 22 companies from the supplier, electronics and IT sectors. The initiative, which runs until 2005, aims to avoid traffic congestion and accidents. INVENT comprises three large projects: "Driving assistance, active safety", "Traffic management in transport and logistics" and "Traffic management 2010".

Enhancing telematics. Today, telematics applications for traffic optimisation and control are a firm component of modern traffic management. Technical solutions, such as are developed by the BMW Group, increasingly include drivers' wishes and vehicle data and are thus becoming even more flexible.

Factors influencing mobility



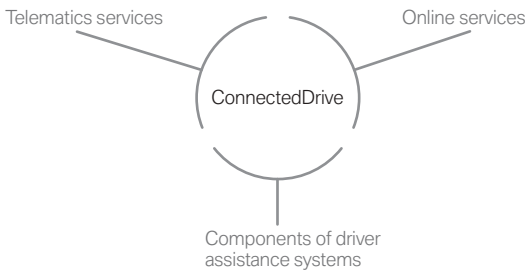
BMW pixel headlight: more information and safety for drivers

Today, customers in Germany can already call up en route numerous services of BMW Assist and MINI Assist in order to make their journey safer and more pleasant. BMW Assist includes, for example, an emergency call, constantly updated traffic information thanks to 4,000 stationary sensors throughout the Federal Republic, parking information for 84 cities and a standby service in case of a breakdown.

Automobiles as "mobile sensors". Wide-scale data collection via sensors is essential for traffic management with telematics. The BMW Group is developing this network by turning the vehicles into "mobile sensors". Extended Floating Car Data (XFCD) is the name of the concept with which data – with the owner's consent – can be called up anonymously from every car. Sensors record the location, traffic flow, weather and driving conditions, and various vehicle data. These data are made available to other drivers in order to warn them, for example, of potential dangers.

ConnectedDrive: vision of a congestion-free future. The BMW Group unites telematics and online services as well as assistance systems connecting driver, environment and vehicle in its ConnectedDrive concept. ConnectedDrive makes driving safer, as well as more efficient and pleasant. The aim is to collect as much information as the driver needs and wants – as individually as possible. While assistance systems offer help and recommend action, the driver still has to make the decisions.

ConnectedDrive



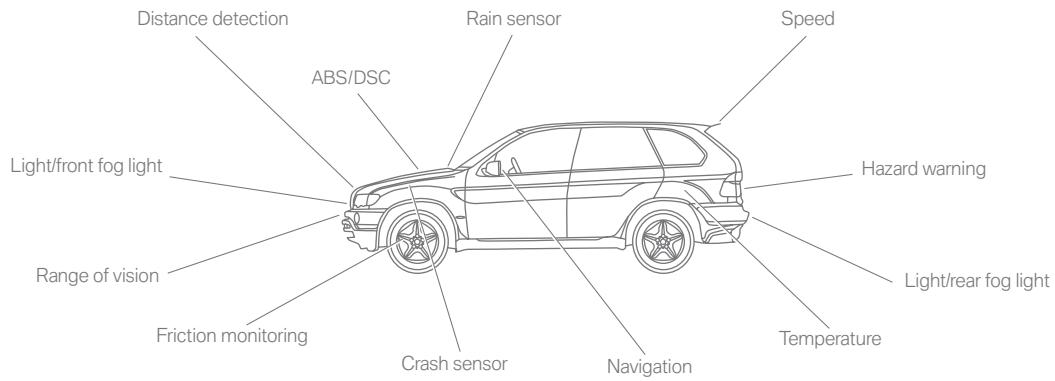
ConnectedDrive is an open concept, which is enhanced with each technical innovation. Various new assistance systems are currently being developed. They include pixel headlights that permit ultra-precise light distribution and thus permanent dazzle-free high beam, or an "electronic rear mirror": optical and radar sensors monitor the side of the car and warn the driver as soon as an obstacle is identified when turning or changing lanes. This helps drivers to avoid endangering other road users.

Excellent innovation management. Basically, technical innovations for the BMW Group vehicles are developed according to a clearly defined process, comprising three stages:

- innovation research – identification and assessment of innovations.

Adaptive Light Control: adaptive headlights illuminate the road ahead more effectively.

Basis for Extended Floating Car Data (XFCD)
Intelligent event and situation detection



- innovation management – evaluation and selection, as well as monitoring and reporting on subjects of future relevance.
- innovation transfer – compilation and placement of an innovation concept for each new vehicle.

In 2002, the BMW Group was the first non-American company to receive, for its innovative strength and permanent growth, the Outstanding Corporate Innovator (OCI) Award. In expert circles, this prize, which has been presented by the US Product Development & Management Association (PDMA) for 15 years, is considered the highest distinction for innovation management.

Series development for a hydrogen-powered car is under way. In addition to optimising conventional drive technology, the BMW Group has for more than two decades devoted great efforts to the development of new propulsion technology. The BMW CleanEnergy concept focuses on liquid hydrogen as fuel, which is generated from renewable energy sources. Thus, CO_2 emissions can practically be eliminated and natural resources conserved. In October 2002, the BMW Group confirmed the beginning of series development of hydrogen-powered drive for the BMW 7 Series. The first contracts have been concluded: Magna Steyr, for example, is

BMW CleanEnergy: the series development of hydrogen drive for the BMW 7 Series is under way.

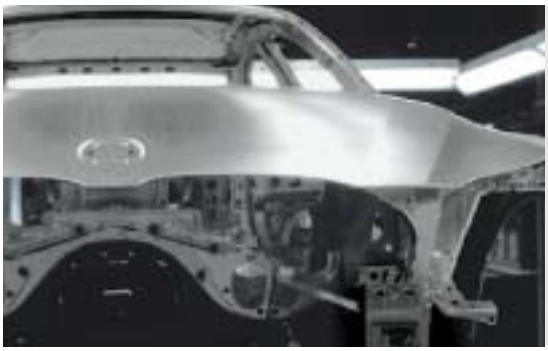
Drive management contributes to safe driving. The driver's potential for saving fuel can be as much as 20 per cent. A cautious, adapted style of driving is safe and environmentally responsible. That is why the BMW Group research engineers have developed SAM, a drive management system that adapts to the situation. SAM constantly collects data on the route and state of the car and then recommends a driving style with the most favourable fuel consumption. In order to recommend deceleration, the control unit gently applies counterpressure on the accelerator pedal. The optimum pedal position is also calculated and proposed.

developing the tank for the liquid hydrogen. It will be double-walled and have so-called super-insulation to prevent the extremely low temperature of the hydrogen from rising.

Technical development potentials from the first stage of series development are being pursued in another project. The aim of this second stage of development is to design an automobile with the typical handling and performance of the BMW Group products, which takes account of hydrogen's specific characteristics from the start and indicates optimised solutions and concepts.

Promising future hydrogen engine concepts are also being advanced as regards increased efficiency and optimised fuel consumption. For example, direct hydrogen injection achieves an optimum combination of the combustion processes of petrol and diesel engines, thereby increasing the efficiency of the entire propulsion concept by as much as 50 per cent.

Technical cooperation for BMW CleanEnergy. The BMW Group cooperates closely with a network of partners both in the technical development and socio-political advancement of BMW CleanEnergy. The BMW Group supports the Transport Energy Strategy and its project Clean Energy Partnership (CEP) in Berlin, which is part of the Federal Government's sustainability strategy. From 2004 to 2006, the project partners will test the infrastructure required to generate hydrogen and tank at a public filling station. The vehicles of various automobile manufacturers will continue to be developed under routine driving conditions. At the same time, the harmonisation of statutory regulations on the use of hydrogen in the transport sector will be advanced at a European level.



The weight-reduced aluminium front section of the BMW 5 Series represents a contribution to saving fuel.

Finding the future. Three employees. Three months. That is the principle of the Technology Office USA of the BMW Group in Palo Alto, in California's Silicon Valley. There, 16 engineers are in search of innovations. "We want to track down, re-interpret and test the suitability of technologies from as many fields as possible", says team manager Dr. Joachim Stilla. If a new technical idea is discovered, a team of three associates has three months to evaluate it: could the innovation be of relevance to the company? If the idea is significant, it is introduced to the Research and Innovation Centre in Munich, where it is developed and, ideally, made available to customers at a later date.

Optimising products for the environment – solving conflicts of objectives. The search for solutions for environmentally optimised automobile design is an important aspect of research and development in the BMW Group. However, the objectives set for a new component may conflict with other desirable and necessary characteristics. For example, the BMW Group is committed to "intelligent lightweight construction" in order to reduce the weight of its automobiles, for less weight means lower fuel consumption. Lightweight fibre composites help to optimise weight, but they may not be best choice in terms of recycling.

An eco-balance helps to make a recommendation for development. The aim is to achieve an optimum for environment throughout the product's entire life cycle. That is why every phase of the product's life is analysed and evaluated – from development and production to use in the vehicle and recycling.

Choosing suitable materials. Renewable raw materials conserve resources. Renewable raw materials, such as leather or natural fibres, including flax, sisal and cotton fibres, are used in automobiles to a high degree. These materials help, for example, to conserve resources and have a more favourable CO_2 and energy balance than other materials. Many natural fibres are extremely durable and robust, are easy to process and lighter in weight than conventional glass fibres – although some properties are reduced. Natural fibres develop their positive properties particularly well in composites. For example, they often increase the composite's tensile strength. BMW 7 Series cars contain around 24 kilograms of renewable raw materials, including more than 13 kilograms of natural fibres.

The proportion of renewable raw materials in the BMW Group models is growing.

Innovative diesel particle filter. Following intensive development work, the BMW Group will introduce an innovative diesel particle filter in the course of 2004. The filter almost completely eliminates particle emissions without involving extra maintenance, increasing fuel consumption or reducing engine performance. This differentiates it from typical previous solutions. In addition to the new BMW particle filter, engine modifications are being made to stop particles forming in the first place. In smaller BMW diesel models, these engine modifications will suffice to meet the strict EU4 emission standard that comes into force in 2005. In larger models, the new filter will ensure that the EU4 standard is met.

Eco-balances in the development process. Life Cycle Assessment, such as the BMW Group makes, aims to examine and evaluate all environmental impacts. For example, the development of the aluminium components for the front section of the chassis of the BMW 5 Series included an eco-balance as environmental management tool at a very early stage. The findings and understanding of important environmental aspects of aluminium, gained during the eco-balance, led to the appropriate design of the aluminium components for the product's entire life cycle.

Designing cars for recycling. When developing new components and vehicles, the BMW Group takes account of recycling from the very start.

To do so, the BMW Group has developed a comprehensive concept. Its core elements are

- the consistent integration of recycling requirements into the product development process. This results in products designed on the basis of the company's own environmental and recycling standards;
- an eco-balance to evaluate environmental impacts, as well as
- the development of material cycles and the use of recycled, quality-assured materials.

As a platform for know-how, the BMW Group Recycling and Dismantling Centre ensures interdisciplinary cooperation between development engineers, suppliers and specialists in recycling-optimised product design.

Recyclability is one of the objectives of research and development work for new components and products.

Research and development
www.bmwgroup.com/science
www.bmwgroup.com/innovation

ConnectedDrive
www.bmwgroup.com/connecteddrive

BMW CleanEnergy
www.bmw.com/cleanenergy

Institute for Mobility Research
www.ifmo.de

Telematics
www.bmw-telematik.de

The BMW Group's ScienceClub
www.bmwgroup.com/scienceclub

As a result of these efforts, all BMW Group cars can be almost completely recycled. Moreover, the company is increasing the proportion of recyclates in new vehicles, wherever this is environmentally and economically feasible. This applies to plastics in particular.

Examples of recycling-optimised components can be found in all BMW Group automobiles. The associates at the BMW Group Recycling and Dismantling Centre are responsible for developing new solutions for dismantling end-of-life vehicles in an environmentally compatible way. Around 2,000 vehicles are recycled there each year. The BMW Group Recycling and Dismantling Centre serves as a laboratory for research and development in recycling-optimised product design and end-of-life vehicle recycling. There, for example, the "Dismantling Analysis Information System" was created as the knowledge base for the development of new cars. It includes information on materials used, joining technologies, dismantling times and tool use from recycling viewpoints.

Increasing the environmental performance of aluminium components by means of eco-balance case studies.

- Development. Use of the full potential of lightweight construction with appropriate design for aluminium, taking account of structural requirements (e.g. safety)
- Basic materials. Development of aluminium alloys and environmentally more efficient production by enhancing material production processes
- Production. Increasing the efficient use of materials in the press plant and body shop by optimising production sequences and reducing the quantities of operating materials required
- Use. Reduced fuel consumption and more dynamic performance as a result of lightweight construction in the right place
- Recycling. Pure-grade collection and treatment of aluminium alloys from end-of-life vehicles and recycling for use in new components as a result of optimised recovery technologies

3.2 Cooperation: using external know-how. Interdisciplinary cooperation is an integral part of the BMW Group's innovation management. Partnerships and various forms of cooperation exist with representatives of politics, associations, research institutions and innovative companies worldwide. Thus, the BMW Group successfully taps external knowledge.

Diesel for the MINI One: the basic engine was developed in cooperation with Toyota Motor Corporation.

The BMW Group involves outside partners in its search for ideas, which will benefit the customer. In doing so, it attributes great importance to project-related cooperation. This goes way beyond the usual supplier relations, as successful examples from company practice show.

Innovative engine development and production. In 2003, the BMW Group launched the MINI One D, which is currently the most economical automobile in its fleet. The diesel engine with direct diesel injection and second-generation common rail technology was developed in cooperation with Toyota Motor Corporation (TMC). The diesel engine was modified for use in a MINI in two years. The basic engine is produced in the TMC plant in Kamigo, Japan, and is then completed, in the BMW Group's Oxford plant, with all the special MINI components and ancillary components before being fitted.

In 2002, the company also agreed on project-related cooperation with PSA Peugeot Citroën. The aim of this cooperation is the development and production of a new series of small petrol engines for use in future versions of MINI cars. In this project, the research and development division of the BMW Group is mainly responsible for designing the engines and applying its technological know-how, while PSA Peugeot Citroën contributes its experience of large-series production. This cooperation offers cost advantages and meets the requirements of both partners in their respective segments.

Vehicle development and production: the BMW X3. The BMW Group has concluded cooperation agreements with Magna Steyr Fahrzeugtechnik in Graz, Austria, on the series development and production of the new BMW X3. Series production is scheduled to start in 2004. With this project the BMW Group is optimising its resources and stepping

Oil removal from shock absorbers: all the residual oil can be drained out with this innovative method.

The BMW Group's Recycling and Dismantling Centre
www.bmwgroup.com
–– Home
–– Current Factbook

The BMW Group's innovation network
www.bmwgroup.com/innovation

up its product offensive. The BMW Group continues to have sole responsibility for core competence fields, such as design, engine construction, purchasing, customer service and recycling.

BMW CleanEnergy: uniform tank-filling system for hydrogen. Within the framework of BMW CleanEnergy, the development of hydrogen technology ready for series production demands a high degree of cooperation with other companies. In order to develop a standard tank-filling system for liquid hydrogen, General Motors/Opel and the BMW Group have established an open consortium. This, together with other automobile manufacturers, is to set global standards. It also aims to find the best technical and most economical solution and to draw up specifications for suppliers.

Recycling: oil removal from shock absorbers improved. Together with a medium-sized partner, the Recycling and Dismantling Centre of the BMW Group has developed a device which removes oil from shock absorbers swiftly, conveniently and efficiently. With the new method, used oil can be drained from the assembled shock absorbers through a special hollow mandrel. This saves around half an hour of work per vehicle: up to 1.6 litres of residual oil can be removed from a car in less than five minutes. In 2002, the Bavarian Government awarded the Bavarian Prize for Special Technical Achievements for this innovation.

3.3 Developing ideas. BMW Group Designworks is the first design studio worldwide with a certified Sustainability Management System.

Newbury Park, northwest of Los Angeles. California's Ventura County has been home to BMW Group Designworks since 1972. More than 110 associates from 18 different countries develop ideas for the product and communications design of the future. The company has belonged to the BMW Group since 1995. This is where the first ideas originated for the current BMW 3 Series and the BMW Z4, along with several studies for sports cars.

BMW Group Designworks has numerous other customers, for example from the transport, telecommunications and IT sectors. The range of developments extends from mobile phones and sunglasses to medical equipment and electric kitchen appliances.

BMW Group Designworks
- □ established in 1972
- □ Headquarters Newbury Park, California
- □ European office in Munich
- □ Since 1995 part of the BMW Group's research and innovation network
- □ 116 associates
- □ 1999: decision to develop the Sustainability Management Systems (SMS)
- □ November 2001: certification of the environmental management system to ISO 14001
- □ February 2002: certification of SMS

Decision for sustainability management. The Californian design specialists are utterly convinced: if you want to create a successful product design, you have to consider the interaction of man, environment and product. This is a linked approach, such as forms the basis of sustainable thinking. That is why the BMW Group decided in 1999 to have the first Sustainability Management System (SMS) worldwide developed and certified at BMW Group Designworks.

BMW Group Designworks: associates involved in project work

SMS is the consistent advancement of the BMW Group's existing environmental and quality management systems. After selecting Designworks as location for the pilot project, the BMW Group's environmental managers posed two questions: How can the environmental management system in accordance with the standard DIN EN ISO 14001 be turned into sustainability management? And under what conditions can the new system be adapted for the BMW Group worldwide?

In order to answer the first question comprehensively, the experts cooperated with the international consultancy WSP Environmental. Analogue to the standard DIN EN ISO 14001, they drew up guidelines for the development of a sustainability management system, prescribing the following steps:

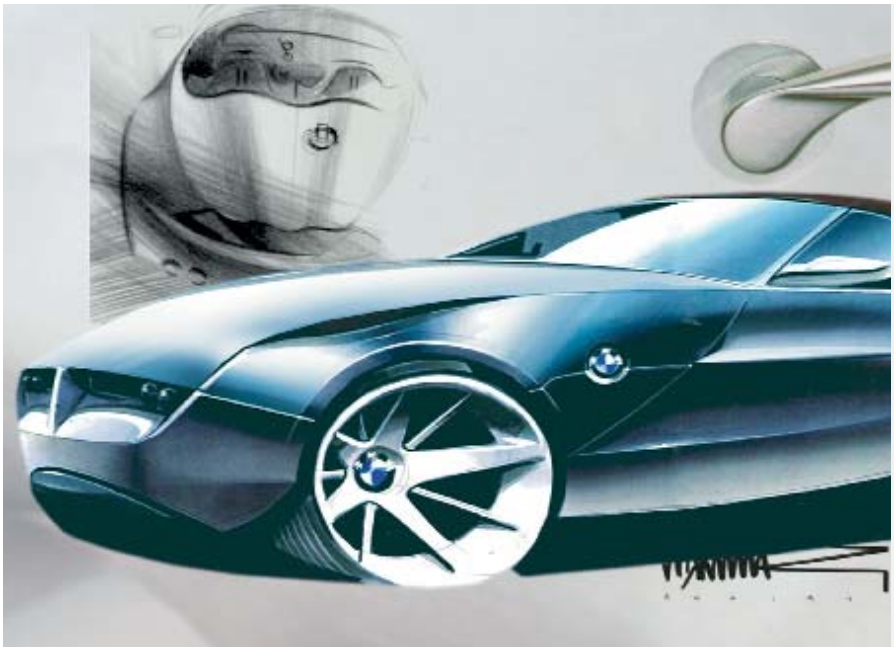
- formulation of the sustainability policy,
- analysis and evaluation of aspects of sustainability,
- determination of objectives,
- development of measures to achieve objectives,
- regular internal evaluation of progress.

Pioneering work. In early 2001 an internal working group began to put the project into practice. First of all, a detailed analysis was made in order to determine ecological, economic and social priorities. Then, a catalogue of targets and measures with responsibilities and time frames was compiled. These include, for example, the saving of energy through the training of associates, the reduction of volatile organic compounds in paint shops, establishing whether major suppliers observe sustainability criteria, the use of SMS as a competitive advantage or cooperation with design schools in discussions about sustainable thinking in the sector. Audit teams in the company's design development, marketing and communications divisions, as well as in finance and human resources, check that these measures are implemented.

BMW Group Designworks
www.designworksusa.com

Approximately two years after the decision to develop the new management system, the first goals were achieved. In December 2001, TUV Rheinland of North America certified an environmental management system at BMW Group Designworks to DIN EN ISO 14001 standard; the new sustainability management system followed in February 2002. Since then, the management systems have been implemented and developed in daily work processes. Suppliers, customers and other stakeholders are actively integrated into the implementation of the new sustainability policy.

Designworks has become a model for the introduction of sustainability management in the BMW Group. Therefore, those responsible for the project in the company can now turn to the next question that has been raised since 2002: Under what conditions can the new system be adapted for the BMW Group worldwide?



Early study of the BMW Z4 by BMW Group Designworks

Automobile production is characterised by ever shorter development cycles, increasingly complex technical components and continuing internationalisation. With its worldwide development and production network, the BMW Group can react swiftly, flexibly and thus efficiently to market requirements. The BMW Group has established uniform management systems in order to ensure high quality and environmental standards for all its brands worldwide. Comprehensive guidelines for quality, the environment and social affairs also apply to suppliers. Their integration into the development and production process contributes significantly to the success of the BMW Group and its brands.

4.0 Organising production efficiently.

4.1 Focussing on suppliers. For the BMW Group, the integration of suppliers into vehicle development and production is a decisive factor in competition. Suppliers are selected not only for their technical know-how and innovative strength, but also according to ecological and social criteria.

The BMW Group formulates its far-reaching requirements of suppliers in its international purchasing conditions. These contain ecological and social standards and are applied in the spirit of cooperation.

Uniform standards for the selection of suppliers. Within the BMW Group, uniform standards determine the selection of suppliers and ensure the required quality. At the head office in Munich and all locations worldwide, associates regularly conduct purchasing market research. The company collects data on the state of the art in automotive technology, compares this with its own requirements and then determines the best partners worldwide. This global analysis of competition enables the company to develop new purchasing markets and its cooperation with international suppliers.

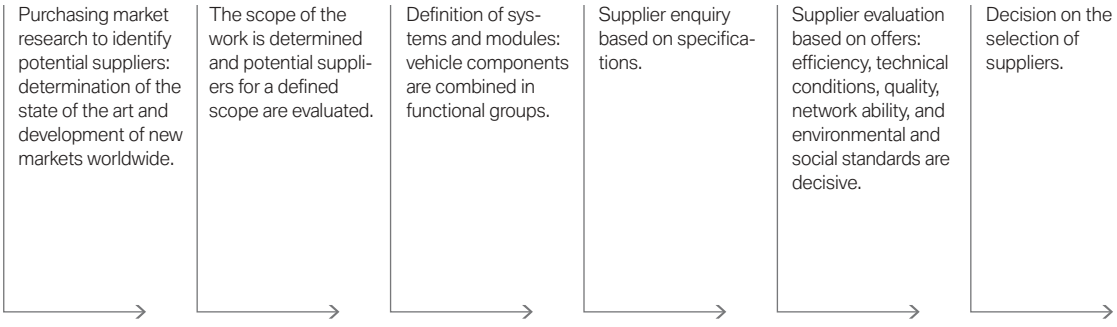
Simultaneous engineering uses synergies. Since premium automobiles are becoming increasingly complex, components are broken down into assembly or functional groups (modules). Within these modules, interdisciplinary project teams develop the product and the production facilities (simultaneous engineering). The teams comprise associates of the BMW Group and the suppliers concerned. Simultaneous engineering benefits from synergies and permits the optimum use of internal and external resources. This shortens the time from the idea to the finished product and reduces costs while ensuring a higher quality.

On average, a BMW Group car consists of up to 20,000 component parts. The range of purchased components is so diverse that suppliers have to be categorised. The scope of development of the planned module is decisive. The BMW Group seeks outstanding suppliers for the design and construction of innovative modules:

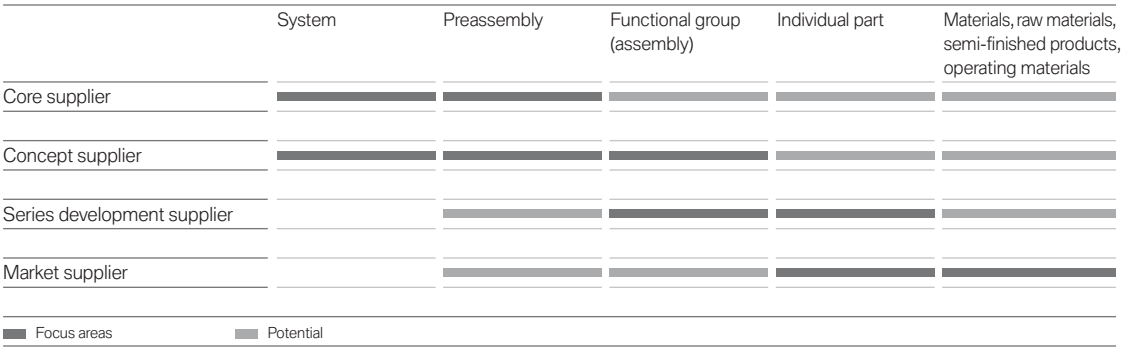
- Core suppliers are “best practice suppliers” as regards innovative products, qualified development and reliable production. Their selection is based primarily on knowledge of the market and experience.
- Potential concept suppliers of the BMW Group must demonstrate the quality, feasibility and costs of their product and process innovations in a concept competition.
- Suppliers of series developments are mainly responsible for the successful realisation of existing concepts.
- Market suppliers are generally responsible for standard components that have already been determined by the BMW Group.

Sophisticated quality management. During a module’s entire development – from the earliest phase of design to series production – interdisciplinary project teams monitor each stage with a comprehensive quality management system. Thus, the causes of defects and risks can be eliminated in good time through systematic analysis of product and process. The results of analysis and experience gained are made available to other teams working

Supplier selection process at the BMW Group



Categories of suppliers



on various projects throughout the BMW Group. The early identification of defects through the constant exchange of information improves the quality of the cars and reduces costs.

The BMW Group uses a system audit to check whether the supplier has all the required quality elements and puts them into practice. The audit is based, for example, on the requirements of ISO/TS 16949 2002.

Management of partner networks. The enhancement of suppliers' competencies is an important component in the management of the company's partner networks. Process consulting is the method used for analysis and consulting – for the mutual benefit of the BMW Group and its suppliers. The objective: to make work sequences at the supplier and at the interfaces with the BMW Group even more efficient. During a module's early design phase, for example, working groups identify and solve problems together. In the subsequent series development phase, suppliers put the proposed improvements into practice.

The BMW Group also promotes dialogue and the exchange of experience with suppliers outside specific projects. Each year, the BMW Group employees visit around 100 selected partners within the framework of supplier-performance-talks. These focus, for example, on the evaluation of current performance or arrangements for future projects. In addition, the BMW Group's Research and Innovation Centre in Munich hosted 24 supplier presentations and product shows in 2002. At international level, the company organised "supplier days" in France,

More responsibility for suppliers. For the first time, a supplier took over team management for the development, following the concept phase, of a complex door module for the BMW 7 Series. The supplier's responsibilities included the management of construction space, costs, quality, logistics and scheduling. The module comprises, e.g., the inside door panel, electric elements, such as the window-lift, as well as airbag, sound insulation and seals. The company also attended to the simultaneous development of the production equipment required for the door module. This has been series-produced since 2001. Thanks to close cooperation, efficiency potentials have been exhausted.

the United States and Austria. Specialists at the BMW Group and suppliers develop concepts together to improve the recycling of components. In-depth workshops are held regularly with suppliers at the BMW Group's Recycling and Dismantling Centre.

International purchasing guidelines extended. When selecting suppliers, innovation, quality, expertise as well as environmental and social factors all play a decisive role. The appendix on the "Environmental compatibility of BMW Group products" has been part of the company's purchasing conditions since 2001. In the spring of 2003, the BMW Group added the company's social standards to its international purchasing conditions. In doing so, the BMW Group has adopted the principles of the Global Compact regarding human rights and labour standards for its suppliers. The BMW Group also demands that its suppliers observe the provisions of the International Labour Organisation (ILO).

Purchasing policy with social elements. Cooperation with small and medium-sized suppliers and their promotion is an important component of the BMW Group's purchasing policy. In this respect, the company takes part in various initiatives all over Germany, for example the "Association automobile initiative North Rhine-Westphalia (VIA-NRW)" or the "Bavarian initiative for innovation and cooperation in the automobile supplier industry (Baika)".

At its international locations, the BMW Group supports minorities with its purchasing policy. In the United States, for example, the company maintains supplier relations with the "Diversity Program". In South Africa, the BMW Group purchases components from various initiatives that pursue social concerns, including "Black Economic Empowerment", "Previous Disadvantaged Communities" and "Small, Medium and Micro Enterprises".

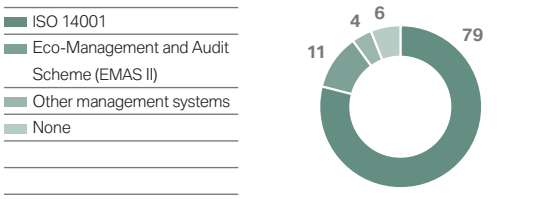
Another social aspect of purchasing policy is the awarding of contracts to workshops for the disabled. The Dingolfing plant, for example, has co-operated with the Landshut workshops since 1973. Its range of work extends from plastics and metal processing to sewing shop and commercial kitchen. All BMW Group automobiles contain components from workshops for the disabled.

International survey of suppliers. At the BMW Group, the selection of suppliers takes account of social standards. The company points these out in its purchasing conditions. In the spring of 2003, the BMW Group launched, as pilot project, its first international survey of series suppliers in order to monitor quality guidelines and check whether social and environmental standards are observed. The most important results (in June 2003), in terms of the BMW Group's purchasing volume, were as follows:

- Almost three-quarters of purchasing turnover were achieved with series suppliers who emphasise their social responsibility with explicitly stated social standards.
- More than 90 per cent of the purchasing volume came from suppliers with an environmental management system.
- The standards for "Design for Recycling and Environment" for new vehicles are taken into account in around 90 per cent of the purchasing volume.
- 90 per cent of the turnover is achieved with suppliers with a quality management system.

Modern communications create advantages. With the increasing integration of suppliers into the development and production process and the expansion of the international supply network, innovative communications based on an efficient IT structure are absolutely essential. They increase efficiency, speed and flexibility along the entire value-added chain.

Environmental management systems at series suppliers of the BMW Group* in per cent



*in terms of purchasing volume; as of June 2003

On the BMW Group's supplier platform
https://b2b.bmw.com

The BMW Group undertook this task at an early stage under the umbrella of an integrated e-business strategy. 28 programs are currently grouped together and developed further in four central platforms. They form the basis for cooperation with partners and suppliers, as well as with customers, dealers and associates.

The development of electronic communications creates improvement potentials for the BMW Group and its suppliers:

- fewer business trips due to better electronic communications,
- fewer resident engineers (usually commuters) because they can work online from the development partner's facilities, on BMW computer-assisted (CA) systems,
- less scrapping of purchased parts that are out-of-date due to more rapid communication of technical modifications,
- better utilisation of transport capacities and avoidance of courier and special trips due to the timely communication of component requirements,
- reduction of paper consumption and post due to the electronic communication of enquiries, offers, orders and other information.

Uniform supplier relations management. With its Global Purchasing System, the BMW Group already uses a uniform IT application that collects its suppliers' key data. Supplier relationship management (SRM), a component of the integrated e-business strategy, optimises electronic applications, for example for the selection of suppliers or cost and quality management. Its aim is the optimum use of existing resources and standardisation of routine processes. This saves costs and time.

SRM includes:

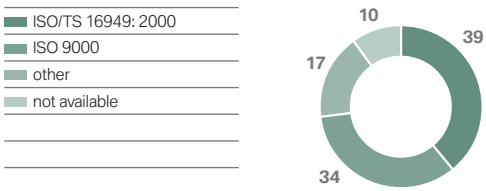
- electronic purchasing (e-sourcing, e-procurement),
- collaborative engineering (digitally linked development with suppliers),
- supply chain management.

In future, SRM will make the electronic processing of purchasing data both quicker and more transparent. Uniform interfaces with suppliers and development partners will contribute to this. New electronic tools for the development of parts, components and systems will be developed jointly with suppliers (collaborative engineering). Supply chain management leads to improved electronic interfaces between purchasing, logistics, development and suppliers. Stocks of materials and thus storage space can be reduced along the entire process chain. Just-in-time deliveries by logistics partners save resources and help to ensure that deadlines are met. In addition, suppliers can plan their capacities flexibly and react reliably to short-term production peaks at the BMW Group. All this promotes both economic efficiency and business success.

Application of standards for "Design for Recycling and Environment"* at series suppliers of the BMW Group** in per cent

*includes: EU Directive 70/156, ISO 22628, ISO 14062, ISO 11649, ISO 1043, VDI (Association of German Engineers) Guideline 2243, VDA (Association of the German Automotive Industry) material specifications 232-101/231-106/260 and others
**in terms of purchasing volume; as of June 2003

Quality management at series suppliers of the BMW Group* in per cent



*in terms of purchasing volume; as of June 2003

4.2 Flexible network. To ensure quality, safety, environmental protection and productivity at a uniformly high level and react swiftly to market developments: these are the objectives of the BMW Group's worldwide production network.

In 2002, the BMW Group for the first time produced and delivered more than one million automobiles of the brands BMW and MINI. This increase in production of 15.2 per cent over the previous year was due in part to the successful launch of the MINI brand. Sales of 92,600 BMW motorcycles (without C1) also set a new record. From 2003 to 2008, the BMW Group will invest, as part of its market and product offensive, euro 16 billion in the expansion of its production network, the development of new models and marketing structures. In 2003, the BMW Group will present more new products than ever before in its history.

BMW 7 Series assembly in the Dingolfing plant

"Breathing" structures. So-called "breathing" structures increase the flexibility of the BMW Group's production network for

- continuing internationalisation,
- increasingly short development times for new models and
- strong "individualisation" of the model range with an increasing diversity of optional fittings and equipment.

Close cooperation in the production network of the BMW Group with its 68,000 employees as well as new work time models at individual locations enable the company to react quickly and flexibly to fluctuations in demand. Three examples illustrate these "breathing" structures. The Dingolfing plant normally produces BMW 5 and 7 Series cars. However, it is designed so flexibly that the BMW 3 Series can be produced there at all times. In 2002, the Dingolfing plant created extra capacity for the BMW 3 Series within six months and was thus able to meet continuing strong demand for these successful cars. In Oxford in 2002, operating times were increased to 116 hours per week in order to satisfy demand for the MINI. This was achieved by reorganising work times – without additional work for the individual employee. The Spartanburg plant in the United States followed similar procedures in order to increase production capacity for the BMW X5.

Flexible forms of organisation and work, as well as a high degree of responsibility on the part of employees, are necessary in order to increase agility in the production network. In addition, the architecture of new plants is designed to facilitate possible extensions and changes. This can be seen in the plans for the new Leipzig plant, a progressive model of a "breathing factory".

Uniform management systems safeguard flexibility. At the end of 2003, the BMW Group will produce at 24 locations in 15 countries worldwide. With the exception of the MINI plant in Oxford and the Rolls-Royce Motor Cars facilities in Goodwood, all the plants are designed for the flexible production of different models. The network of plants – and the integration of suppliers into the design of the production process – enables the BMW Group to swiftly adapt capacities and ensure smooth-running production start-ups and optimisation at a uniform level. In 2003, the model revision of the current BMW 3 Series took place almost simultaneously at the three plants in Rosslyn (South Africa), Munich and Regensburg (Germany).

Flexible capacities in a close production network can only be adjusted reliably if uniform management systems are applied. All BMW Group production locations – including the new facilities for Rolls-Royce Automobiles in Goodwood – have uniformly high standards: quality and environmental management systems independently certified to DIN EN ISO 9001 and 14001 as well as European environmental

Example of Regensburg. Endangered species find a habitat on the grounds of an automobile plant? However obscure this may seem, it is true. As part of its international environmental management, the BMW Group has made an inventory of flora and fauna at various international locations. The aim of the documentation is to elaborate proposals for the further improvement of the entire ecological situation for animals and plants. The result showed that the grounds of the Regensburg plant, for example, are the habitat of 40 species of bird, some of which are included in the Bavarian Red Data Book. Other species studied were reptiles, bats, butterflies and grasshoppers. In future, changes in the care of open spaces could help to further enhance the animals' habitat.

standard EMAS II and strict regulations on labour protection. Thus, the BMW Group has already met the requirements of the Charter for Sustainable Development of the International Chamber of Commerce (ICC) and the OECD guidelines for multinational enterprises by applying uniform environmental standards at all production locations worldwide since 1999.

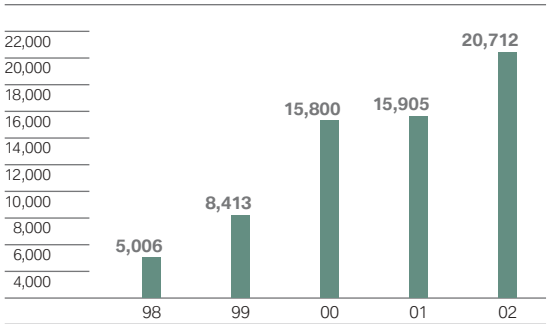
The studies by J. D. Power and Associates show that the application of such standards is successful. Since 1996 various BMW Group production locations have received awards for outstanding quality from the prestigious US market research institute.

MINI production in Oxford: paint quality control

In 2002, the award for the best automobile plant in Europe/Africa, the Plant Award in Gold, went to the BMW plant in Rosslyn, South Africa. In 2003, the Munich plant received the Plant Award in Gold for the best automobile plant in Europe, following on from the Plant Award in Silver it had already won in 2002.

International environmental guidelines. In 1999, the BMW Group committed itself to a preventive environmental management strategy by introducing the international environmental guidelines. In 2001, the company reinforced its strategic decision by signing voluntarily the Cleaner Production Declaration

Investment in environmental protection
in euro thousand



Data excluding large-scale investment only for BMW Group production locations in Germany

Example of Spartanburg. In June 2002, the opening shot was fired at the US plant in Spartanburg for an unusual example of environmental protection in production: the "Landfill Project". Together with a regional energy supplier and a waste disposal service, the plant built a pipeline of almost ten miles in length to supply a turbine for power generation with methane gas from a landfill. Around 25 per cent of the plant's energy requirements will be met this way. This project was possible thanks to a decision taken ten years ago when the plant was established, to use environmentally friendly natural gas as energy source. The "Project to avoid climate-relevant emissions and conserve fossil fuels" is part of a programme by the US Environmental Protection Agency (EPA).

of the United Nations Environment Programme. Thus, the company is committed to making preventive environmental management the guiding principle of its production processes.

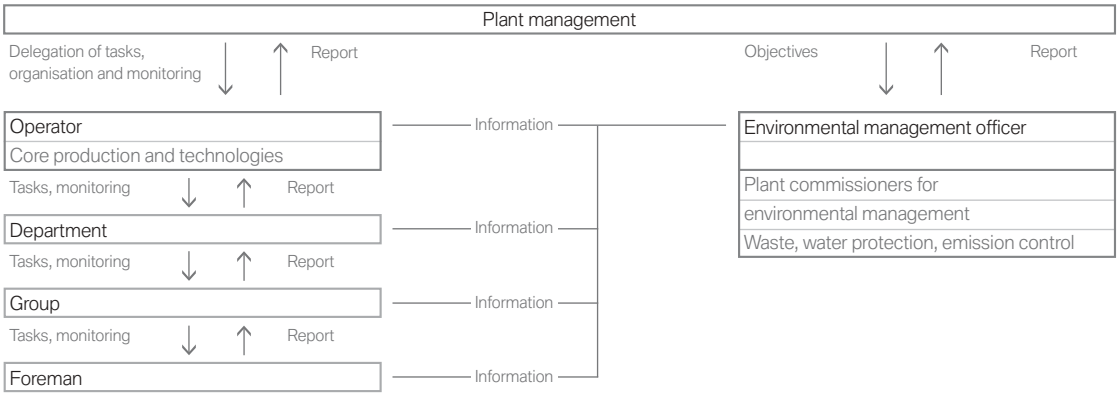
Environmental protection in the company's central divisions. The introduction in 1999 of environmental and quality management systems in all production plants was followed in 2002 by the certification of environmental management systems in all the company's central divisions. An example shows how important environmental protection in the central divisions can be: two-thirds of wastewater occurs in the company's central divisions and not in production. Thus, specific measures and investment are not limited to production. In future, sensitive parts of buildings will be cooled with subsurface water. The use of groundwater of approximately 11 degrees centigrade helps to reduce energy consumption and CO_2 emissions. A similar system in the light metal foundry at the Landshut plant significantly improves environmental protection.

Environmental declarations by the plants. The wide range of measures for preventive environmental protection applies to all the production plants. The measures are coordinated worldwide by the project group "Production-related environmental protection", in which all those responsible for the environment at the German and Austrian plants cooperate with the Group Officer for Environmental Protection. In 2002, the EMAS-certified plants of the BMW Group in Germany and Austria issued detailed environmental declarations on their achievements in the field of environmental protection.

Example of Steyr. In 2001 and 2002, the Steyr engine plant developed a new method to test diesel engines. Cold-testing used to be impossible. Thus, testing involved both fuel consumption and environmental impacts. The new method of cold-testing diesel engines reduces fuel consumption and emissions and results in better quality. Test procedures have been shortened from around 15 to less than three minutes. The new test method helps to save around 300,000 litres of diesel fuel during testing each year.

Example of Munich. Since 2002, all automobiles from the Munich plant that are destined for the British market leave the grounds by rail. Around 34,000 cars a year set off on their journey from a new siding track in Munich to the Belgian port of Zeebrugge. From there, the journey continues by sea. Rail transport means 4,250 fewer truck journeys and saves around euro 330,000 a year in costs.

Organisation of environmental protection at the production locations



Key environmental data document progress. These reports, along with the compilation of key data, document the progress made in environmental protection. The volume of waste per unit produced has been reduced slightly; process wastewater has decreased significantly. In 2002, energy consumption increased in the short term. This was the result of the MINI production start-up at the Oxford plant and the changeover to more environmentally equitable water- and powder-based paint technologies.

A corresponding impact on CO_2 emissions per unit produced was largely avoided due to an improved energy mix based on environmentally compatible energy sources. The slight increase in other production emissions and far higher natural gas consumption are due to the MINI production start-up. Volatile organic compounds (VOC) per unit produced increased for structural reasons; a new method of calculation was applied in accordance with the VOC regulation.

BMW Group figures[1]		1998	1999	2000	2001	2002
Vehicle production						
Automobiles[2]	units	706,426	755,547	834,519	904,335	1,090,258
Personnel in production	number	47,137	48,543	50,300	57,373	61,895[3]
Accident frequency[4]	number	15	14	17	15	17
Complaints from local residents[5]	number	47	86	74	159	146
Land development[6]	%	–	24.6	–	20.4	–
Property area	m^2	–	12,491,329	–	15,301,975	–
Energy consumption						
Energy consumption, total	MWh	2,517,528	2,518,423	2,636,565	2,788,126	3,503,102
Energy consumption, per unit produced	MWh/unit	3.56	3.42	3.16	3.08	3.21
Electricity (outside source)	MWh	1,043,051	1,086,358	1,163,233	1,262,232	1,180,217
Electricity (produced internally)	MWh	120,908	117,168	94,757	83,331	95,057
Heating oil	MWh	8,948	45,119	23,729	21,727	27,536
Coal	MWh	0	0	0	0	0
Community heating	MWh	189,773	192,559	117,896	297,025	166,159
Mineral oil	MWh	0	0	0	0	0
Natural gas	MWh	1,154,848	1,140,219	1,236,950	1,207,142	2,129,190

1] BMW Group figures include the following automobile and engine production plants worldwide: car production, Dingolfing; component assembly, Landshut; car and engine production, Munich; car production, Regensburg; car production, Rosslyn, South Africa; car production, Spartanburg, USA; engine production, Steyr, Austria, and MINI production, Oxford, Great Britain, from 2002 2] adjusted for Rover/Land Rover 3] including Oxford 4] number of reportable industrial accidents per one million man-hours 5] increase since 1998 due to outdated CDP dryer in Munich paint shop/completion of new building for pre-treatment by 2002 6] proportion of developed to undeveloped area. Survey conducted every two years

Production network and plants of the BMW Group
www.bmwgroup.com/production

Clean Production at the BMW Group
www.bmwgroup.com/production
–– Clean Production

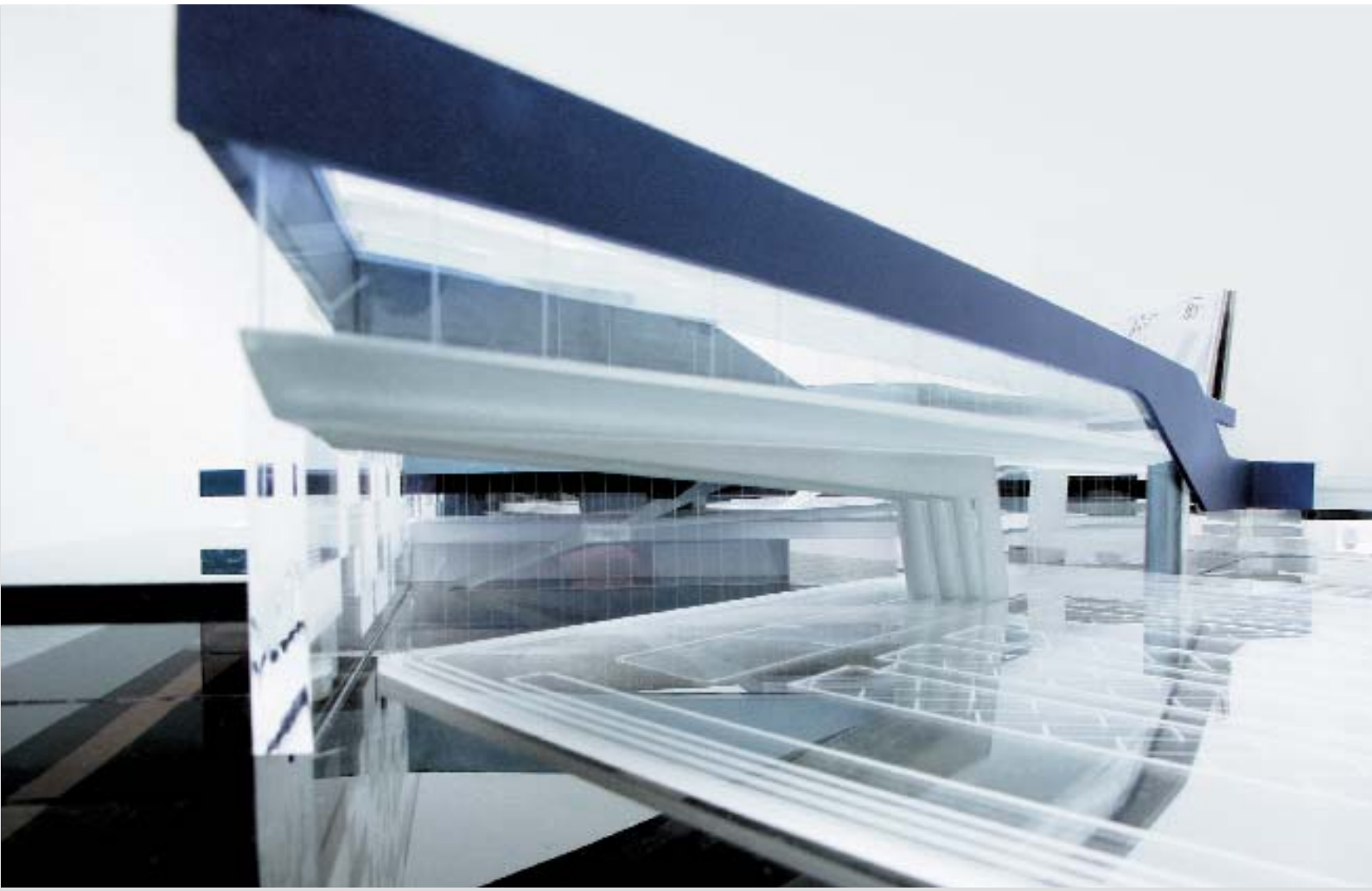
BMW Group figures[1]		1998	1999	2000	2001	2002
Expenditures[2]						
Investment in environmental protection (excl. large-scale investment)	euro million	5.0	8.4	15.8	15.9	20.7
Ongoing expenditures on the environment	euro million	26.7	29.8	31.5	32.1	33.2
Emissions						
Carbon dioxide (CO_2)[3]	t	803,386	833,232	870,862	897,507	1,068,690
CO_2, per unit produced	t/unit	1.14	1.10	1.04	0.99	0.98
Nitrogen oxide (NO_x)	t	987	875	476	404	481
SO_2	t	4	5	6	6	7
Carbon monoxide (CO)	t	279	275	244	277	283
Volatile organic compounds (VOC)	t	2,636	2,870	2,679	2,780	3,521
VOC, per unit produced	kg/unit	3.73	3.80	3.21	3.07	3.23[4]
Particles, dust	t	33	35	37	34	28
Water						
Wastewater, total	m^3	2,340,409	2,131,837	2,206,733	2,085,809	2,324,655
Water consumption/Water input	m^3	3,423,820	3,403,209	3,344,939	3,391,628	3,618,995
Process water input	m^3	2,737,398	2,650,677	2,481,127	2,277,757	2,293,257
Process wastewater	m^3	870,815	868,044	882,286	971,938	998,917
Process wastewater, per unit produced[5]	m^3/unit	1.23	1.15	1.06	1.07	0.92
Total heavy metals and heavy metal compounds	kg	400	383	318	318	347
Waste						
Waste, total	t	259,000	278,232	291,082	305,634	317,129
Waste, total per unit produced	kg/unit	367	368	349	354	291
Materials for recycling	t	236,532	257,817	268,998	279,492	295,275
Waste for removal	t	22,468	20,415	22,084	26,141	21,854
Scrap	t	268,334	284,567	297,838	317,920	326,364

1] BMW Group figures include the following automobile and engine production plants worldwide: car production, Dingolfing; component assembly, Landshut; car and engine production, Munich; car production, Regensburg; car production, Rosslyn, South Africa; car production, Spartanburg, USA; engine production, Steyr, Austria, and MINI production, Oxford, Great Britain, from 2002 2] figures for the German production plants 3] including CO_2 emissions from external power generation
4] structural increase in 2002 due to new method of calculation in accordance with the VOC regulation (31st Regulation, Federal Emission Protection)
5] from 1998 to 2000 only BMW (excl. Rover); 2001 only BMW; 2002 BMW and MINI

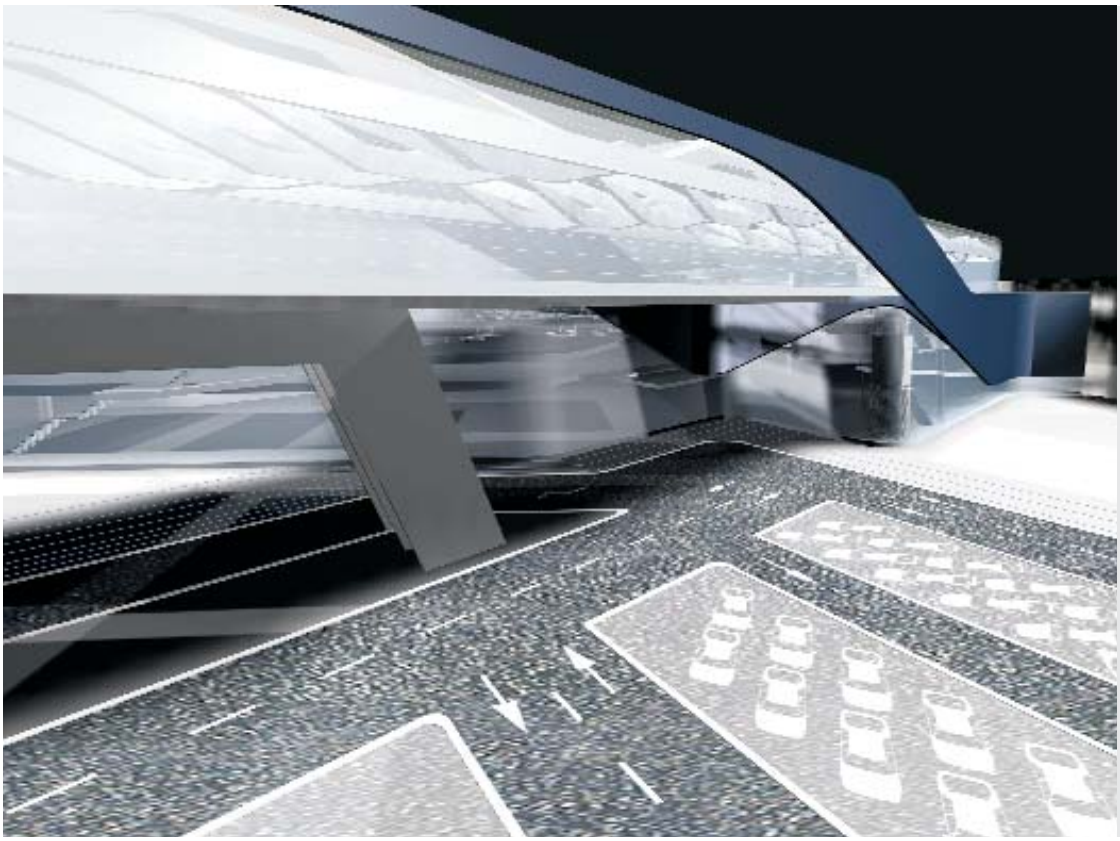
4.3 Automobile production of the future. Ultra-modern car production has many different facets. Three examples from the BMW Group.

High standards of automobile production apply for all the brands of the BMW Group worldwide. BMW, MINI and Rolls-Royce all follow the same principles and uniform management systems in order to ensure quality, efficiency, safety and environmental protection in production.

Leipzig: the “breathing” factory. The project currently under way in Industriepark Nord in Leipzig-Plaussig is unmatched in the world of car-making. The new BMW Group plant is scheduled to open in Leipzig in 2005 and will employ, in the medium term, some 5,500 people to produce around 650 cars a day. The new plant will be unique in putting into practice more consistently than hitherto the principle of the “breathing factory” that can adapt its capacities very flexibly. The “BMW formula for work” plays a key role, for operating times and individual work time are no longer linked. Thus, operating times can vary with flexible shifts from between 60 and 140 hours a week. The individual associate’s total work time does not increase. The “BMW formula for work” could be developed only in close cooperation with employees’ representatives, trade unions and company management.

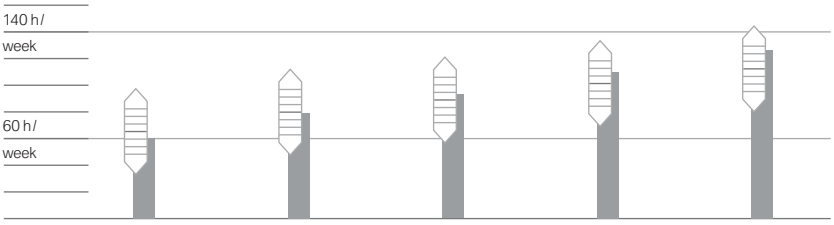


BMW Plant Leipzig, central building: model by the London architect Zaha Hadid

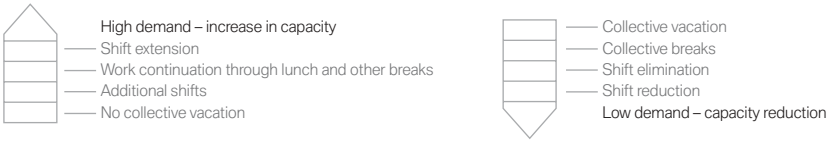


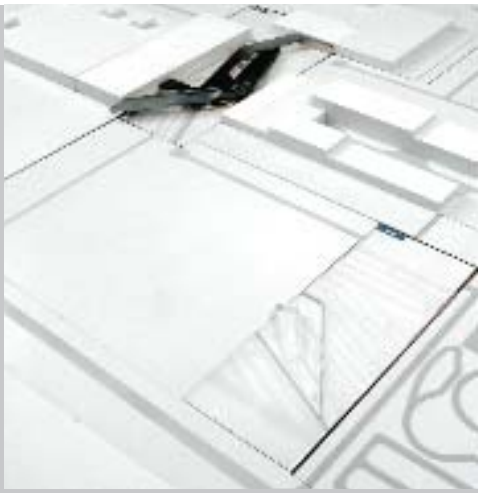
Design for the central building of the BMW Plant Leipzig

BMW formula for work
Freely selectable operating times



Modular capacity components for the flexible adjustment of production and work time





Planning the grounds in the Leipzig production plant

Leipzig – automobile production of the future	
Beginning of series production	Spring 2005
Number of employees	5,500 (in the medium term)
Products	BMW 3 Series
Annual production	around 160,000 units
Capital expenditure	euro 1.3 billion

all data planned

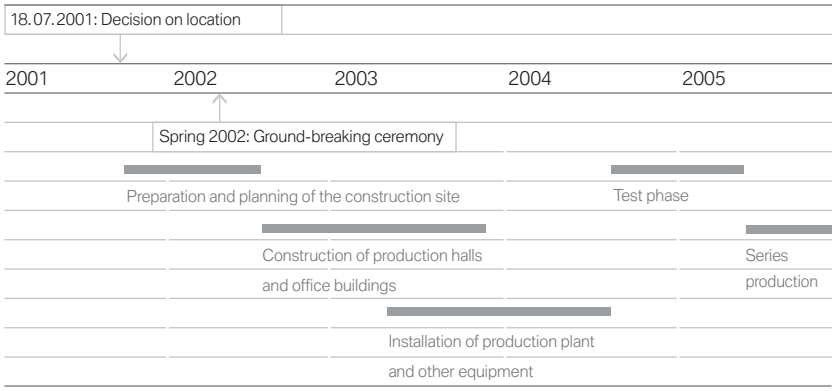
Architecture of the future. A second feature of the "breathing" factory in Leipzig is the architecture of the famous London architect, Zaha Hadid, whose work has caused a sensation since the mid-1980s. The design's highlight is a central building around which other buildings for body shop, paint shop and assembly are grouped.The central building serves as a communications interface between the different production areas. A visitor and events centre is also located here in order to make car production transparent for interested members of the public. As a result of its basic structure, the factory can be extended to cope with increased demand, whenever necessary.

From 2005, the Leipzig plant is scheduled to produce some 160,000 BMW 3 Series cars each year. Like all the other BMW Group plants, Leipzig will also be able to produce other models in future.

Production planning on the computer. Planning for the Leipzig plant has been in full swing since the summer of 2001. Production sequences and the ergonomic design of workplaces are planned in detail with computer simulation programs. Some 1,200 employees will already have been recruited for the plant by the end of 2003. The new employees prepare for their new tasks in Leipzig "on the job" in the Bavarian plants.

Construction of the plant began in May 2002.

Leipzig plant schedule



Top-level production technologies. The entire planning process is guided by the principle of Clean Production. In addition to sophisticated waste management, the plant will have heat recovery systems. Modern, environmentally compatible technologies will be used in the paint shop. These include the powder-based paint technology already used for the top coat in the Regensburg and Dingolfing plants. While conventional clear paints contain up to 55 per cent solvents, the use of solvents can be reduced to zero with this technology. Other advantages: no water consumption, therefore no generation of wastewater; no need for chemical cleaning agents, and more efficient use of materials (over 97 per cent).

The Leipzig paint shop will also introduce the new Vario-Shuttle for painting car bodies. It was first used at the BMW plant in Rosslyn, South Africa. This dip method increases the quality of the body preparation process, while at the same time reducing chemical requirements by one-quarter and the quantity of wastewater by half.

The region's partner. The BMW Group's initial financial expenditure on the new plant in eastern Germany will amount to around euro 1.3 billion. In addition to employment in the Leipzig plant, approximately 5,000 jobs are expected to be

created in the supply and service sectors. Many of these jobs will be in the region. Since deciding on this location, the company has attributed great importance to informing the public and its new neighbours about ongoing construction work and investment. A public "Information centre" on the grounds of the future plant provides visitors with information on work in progress.

"We make it our business to live up to our responsibility as neighbour in the region and as employer on a long-term basis. Viability for the future and sustainability are both our vision and our objective."
Peter Claussen, Plant Manager, BMW Plant Leipzig

Potential applicants can gather information on the internet. The website also includes pointers on tender procedures and other useful information for suppliers. With these measures, the team of the BMW Plant Leipzig is living up to its claim of shaping the future of car production in the BMW Group as the region's partner.

BMW automobile production starts in China. In 2003, the BMW Group and Brilliance China Automotive Holdings Limited signed a joint venture agreement on production and marketing in China. Thus, the way has been paved for the scheduled production of BMW 3 and 5 Series cars in Shenyang in the northeast of the People's Republic of China. Production begins at the end of 2003. The project includes not only production, but also marketing and after-sales service for BMW Group cars. Brilliance Automotive is contributing to the joint venture essential parts of the new plant that was built in Shenyang in 1999. This will be extended into a fully equipped production plant and adapted to meet the BMW Group's high standards worldwide. BMW Group and its Chinese partner each have a 50 per cent interest in the joint venture. Capital expenditure totalling euro 450 million is planned up to 2005.

[above] Plant in Oxford
[below] Employees with visitors in the Quality and Engineering Centre Oxford

Oxford: the MINI tradition. In 2001, the MINI was introduced on the market as the second premium brand of the BMW Group. The launch had been preceded by the complete modernisation of the Oxford plant. The Oxford location is a prime example of how the reorganisation of work times and structures enables a plant to react in the short and medium term to market fluctuations. In 2002, more than 144,000 MINI brand cars were sold worldwide. This success has led to the creation of almost 2,000 additional jobs in Oxford since production began in April 2001. The plant also met strong demand with flexible shift extensions. As a result, operating times increased, for a short while, to 125 hours a week in order to cope with the start-up.

Oxford is the only BMW Group plant that produces the MINI One, MINI One D, MINI Cooper and MINI Cooper S for the world market. The production start-up was planned and organised with the support of the sister plant in Regensburg. Capital expenditure in Oxford continues. For example, the new training centre "Point" was opened in 2002. Up to 100 employees can be trained here simultaneously. The BMW Group invested a further euro 16 million in the Quality and Engineering Centre (QEC) Oxford. There, 250 engineers as well as technical staff from supplier firms work on the testing and optimisation of all production sequences in order to increase quality and efficiency.

Production in Oxford – as at all BMW Group plants – is organised on the basis of uniform environmental management systems. The plant was environment-certified as early as 1995, and re-certified in 2002. The largest investment in the environmental sector is currently the reconstruction of

Oxford – The MINI's production plant	
Beginning of series production	2001
Number of employees	4,500
Products	MINI One, MINI One D, MINI Cooper, MINI Cooper S
Annual production	around 160,000 units
Capital expenditure	euro 253 million

the around 8-kilometre wastewater system in the plant. By 2006, euro 1.35 million will be spent on overhauling the pipe systems.

Further efforts were made to protect the environment in 2002. The plant to treat wastewater from the paint shop was extended for around euro 580,000. Since then, pollutants are significantly below permitted maximum levels. 2002 also saw the development of a new waste collection centre for euro 1.5 million; it is one of the largest and most modern in Great Britain. A new chemicals store for euro 1,000,000 ensures that all hazardous substances can be stored safely without posing a danger to the environment. Finally, water consumption was more than halved as a result of investment in the paint shop, amounting to around euro 220,000. In 2003, a further euro 550,000 are earmarked for various water protection measures and the construction of a new filling station.

[above] Finish at Rolls-Royce Motor Cars
[below] Assembly of the Rolls-Royce Phantom in Goodwood

Goodwood, West Sussex: the home of Rolls-Royce Motor Cars Limited. Goodwood, approximately 170 kilometres away from Oxford, shows how consistently environmental protection can be taken into account when planning a new automobile production plant. Located on the south coast of England with its pleasant climate, this is the new home of Rolls-Royce Motor Cars Limited. The manufacturing plant and company headquarters, constructed within two years on 150 hectares of land on the estate of the Earl of March and Kinrara, were opened on 1 January 2003.

The Rolls-Royce manufacturing plant: hand-crafting and ultramodern technology. Anyone who enters the manufacturing plant of Rolls-Royce Motor Cars witnesses a unique combination of traditional hand-crafting and the most modern tool and processing technology. This plant has only four robots for surface treatment of the body shells. In future, the highly skilled workers and craftspeople will produce up to five Rolls-Royce Phantoms a day.

Even on first impression, Goodwood is an unusual car production plant: only one-quarter of the grounds are developed. Partly sunk into the ground, the buildings with their gently curved roof surfaces fit harmoniously into the surrounding parkland. With 35,000 m^2, they form the largest "green" roof in Europe. The grounds were laid out with around 400,000 plants. The fact that visitors to the new headquarters of Rolls-Royce Motor Cars find a lake in front of the entrance is more than the architect's tribute to the landscape. The lake is part of the plant's water management. The water is used for the buildings' air conditioning system – a truly outstanding contribution to energy conservation and climate protection.

"The intention was to create a finely crafted contemporary building that works in harmony with its natural setting."
Nicholas Grimshaw, Architect

Oxford
www.mini.com
–– The MINI
–– MINI Manufacturing

Goodwood
www.rolls-roycemotorcars.com
–– Boldly Engineered

Leipzig
www.bmw-werk-leipzig.de

Clean Production at the BMW Group
www.bmwgroup.com/production
–– Clean Production

Goodwood – the home of Rolls-Royce Motor Cars Limited	
Beginning of series production	1 January 2003
Number of employees	390
Product	Rolls-Royce Phantom
Annual production capacity	1,000 units
Capital expenditure	euro 140 million

Since 2001 the BMW Group has invested around euro 140 million in the infrastructure of Goodwood in order to create an architecturally unique location for Rolls-Royce Motor Cars Limited that lives up to all the company's claims of exclusivity and sustainability. The design by the British architects Nicholas Grimshaw and Partners takes full account of the natural surroundings of West Sussex. Like the lake, the "green" roof of the buildings fulfils an ecological function: the plants provide additional insulation for the buildings, which meet modern low-energy standards. Thus, heating requirements are around 25 per cent lower than those of conventional industrial buildings.

"Take the best that exists and make it better. When it does not exist, design it."
Sir Henry Royce (1863 to 1933)

Fast-closing gates to the manufacturing hall significantly reduce heat loss when the doors are opened in winter. In addition, extensive glazing makes the use of artificial light largely superfluous and reduces electricity consumption. The plant also separates waste and has its own recycling centre where reusable production waste is collected. Waste leather, for example, goes to the clothing industry for further processing. Considering all these measures in keeping with Clean Production, it is only logical that the BMW Group's youngest plant at Goodwood has an environmental management system certified to DIN EN ISO 14001.

The BMW Group sets high standards for the vehicles it produces – in terms of quality, performance, comfort, safety and impact on the environment. Therefore, when designing automobiles, the BMW Group takes an integrated approach. This contributes decisively to customer satisfaction and continued business success.

5.0 In the service of customer and environment.

5.1 Safeguarding individual mobility. With intelligent technological solutions, the BMW Group constantly reduces the impact of its automobiles on man and the environment. The goal is to lower exhaust emissions and increase vehicle safety.

Individual mobility is indispensable for economic growth and prosperity worldwide. Therefore, as the volume of traffic increases, it is important to find solutions that are sustainable for man and the environment. During product development, BMW Group pays special attention to the steady reduction of fuel consumption and thus of carbon dioxide (CO_2). Within the framework of a voluntary commitment by the Association of the German Automotive Industry (VDA), the company undertook to reduce the fuel consumption of its fleet by 25 per cent between 1990 and 2005. This objective was already achieved in 2002. The BMW Group continues to work on advanced technologies in order to fulfil its share of the commitment by ACEA (European Automobile Manufacturers Association). ACEA and the EU Commission agreed on a reduction of CO_2 emissions in the fleets of all European manufacturers to an average of 140 grams per kilometre in the period from 1995 to 2008.

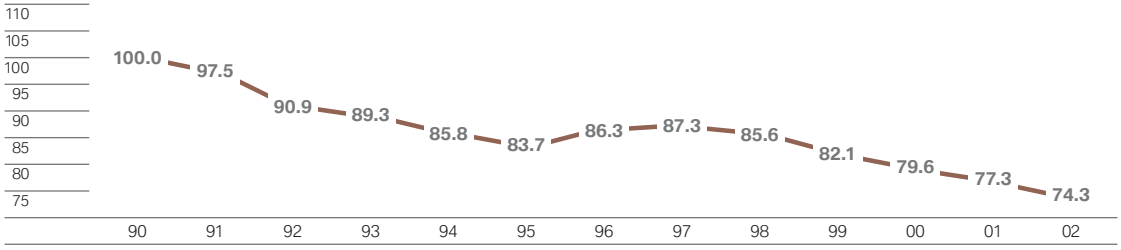
Distinction as the most environmentally responsible manufacturer. The BMW Group is committed, in all market segments, to making ecologically exemplary automobiles. In 2002, the Automobile Environment Ranking, carried out each year by the Wuppertal research institute ÖKO-TREND, showed that the BMW Group offers the most environmentally compatible cars in the mid-size and large, luxury segments, and in the Cabrio and Coupé categories, which were ranked separately. Three BMW Group automobiles were among the top ten in an overall ranking of 1,160 models. At the same time, the company was rated the most environmentally responsible of the 32 manufacturers in the survey. Four categories – purchasing/logistics, production, recycling and environmental management – were rated.

The concept of sustainable mobility.

- Mobility research for the intelligent networking of various means of transport.
- Advances in networking the automobile.
- Continuous reduction of fleet consumption with the aim of offering the most efficient product in every market segment.
- Development of new drive concepts and sustainable fuels, particularly hydrogen.
- Recycling-optimised product concepts and recycling of end-of-life vehicles.

Integrated approach to vehicle development. Reductions in fuel consumption and exhaust emissions are not always compatible with increases in active and passive safety. For example, unless offset elsewhere, the rising number of safety modules increases a car's weight and thus leads to higher fuel consumption.

Fuel consumption of the BMW Group fleet in per cent
(Index: 1990 = 100; basis Germany: DIN 1/3 mix fleet consumption VDA (Association of the German Automotive Industry), calculated from the new European driving cycle, adjusted for Rover Group)



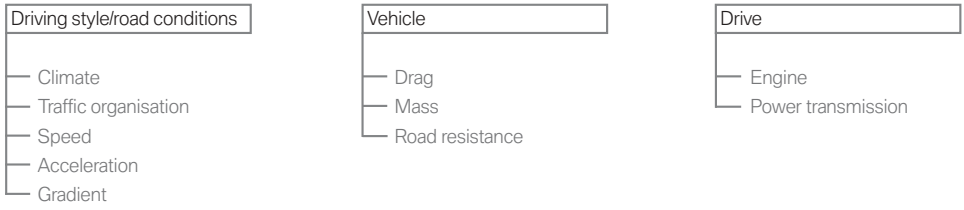
On BMW Driver Training
www.bmw.de/fahrertraining

On the "Greener Driving" campaign of the United Nations Environment Programme
www.greener-driving.net

On active and passive safety in BMW cars
www.bmwgroup.com/science
–– Mobility and traffic

On the Automobile Environment Ranking
www.oeko-trend.de

Factors affecting a vehicle's fuel consumption



Bearing this in mind, the BMW Group takes an integrated approach to the development of its automobiles. Important aspects include:
□ improvement of the drive shaft,
□ modifications to the car to reduce fuel consumption,
□ determination of other influences on fuel consumption for different driving profiles, and
□ targeted "intelligent lightweight construction".
Standard test cycles are used to compare the fuel consumption of different car models. The BMW Group also evaluates the effect on consumption of its own driving profiles and uses the results to develop trailblazing, environmentally compatible vehicle technologies.

VALVETRONIC reduces emissions. Considerable savings potentials are attained with VALVETRONIC, the fully variable electromechanical control of the engine's intake valves. This applies, in particular, in heavy traffic in cities and on motorways. CO_2 emissions are around 10 per cent lower than in conventional engines. Lightweight components and wheels, enhanced aerodynamics and the increased efficiency of auxiliary units also help to reduce the CO_2 emissions of BMW Group cars.

Promoting environmentally compatible road behaviour. All drivers can reduce fuel consumption by up to 20 per cent, and thus CO_2 emissions, simply by adapting their style of driving. As co-initiator and sponsor, the BMW Group supports "Greener Driving", a campaign by the United Nations Environment Programme. The campaign's website provides information and pointers on how to drive in an environmentally responsible way.

In addition, the BMW Group helps drivers to develop their individual potential for improvement in BMW Economy Training. Participants learn that by driving with foresight they can reduce fuel consumption, and thus operating costs, without their journey times or driving pleasure being affected. BMW Economy Training is part of the BMW Driver Training programme that has been available since 1977.

Increasing road traffic safety. BMW Driver Training also concentrates on road traffic safety. Each year, more than 15,000 drivers take part in over 1,100 BMW Group events in Europe in order to improve their driving skills.

BMW Group automobiles include innovative active and passive safety features for greater safety in road traffic. Driver assistance systems permit the optimum interaction of man, machine and the environment. The driver continues to be responsible for all manoeuvres. Two examples: swivelling headlights with Adaptive Light Control (ALC) illuminate the road ahead, including bends, up to 90 per cent more effectively. From 2003 the 3 Series Coupé and Cabrio will be the first BMW models to feature adaptive headlights. Park Distance Control (PDC) supports the driver and helps to avoid accidents. Ultrasonic sensors on the front and back bumpers register, for example, children who are outside the driver's field of vision. The driver is warned by a clearly audible sound.

5.2 Coming full circle. For the BMW Group, this includes the environmentally equitable recycling of end-of-life vehicles.

The BMW Group developed exemplary processes and methods for the economically and environmentally equitable recycling of automobiles long before regulatory measures were introduced by law. Today, this lead is safeguarded by facilities such as the BMW Group Recycling and Dismantling Centre, which has focussed on recycling-optimised product design and innovative recycling technologies since 1990. The legal basis for recycling end-of-life vehicles did not exist until the European Union (EU) issued a corresponding directive Europe-wide in 2000. EU Directive on End-of-Life Vehicle lays down regulations on the development of automobiles and on the environmentally equitable recycling of end-of-life vehicles. In future, for example, manufacturers must prove during a new vehicle's development that it is recyclable. By firmly establishing recycling-optimised design in the product development process, the BMW Group has long ensured that all end-of-life vehicles can be economically and almost completely recycled.

Optimised recycling of components. Specialists define a car's recycling requirements, such as the choice of materials, joining technologies or the use of recycled materials that meet the BMW Group's quality standards, in the early design phase. The tools used for the recycling-optimised design of components are the recycling manual, dismantling analyses and Life Cycle Assessment. The BMW Group Recycling and Dismantling Centre forms an interface between ongoing product development and future, environmentally equitable recycling. The centre's interdisciplinary team monitors the development of new vehicles for their suitability for recycling by means of virtual and real dismantling analyses.

Recycling requirements fulfilled. According to the EU Directive, at least 85 per cent of the end-of-life vehicle (ELV) weight must be reused or recycled from 2006. Only 5 per cent of the residual weight may be brought to landfill from 2015. All BMW Group vehicles already fulfil the EU Directive's recycling

Plastics reduce the weight of the automobile and thus lower fuel consumption. Pure-grade large components facilitate recycling at a later date.

On innovative recycling concepts in the BMW Group
www.bmwgroup.com/responsibility
–– Spheres of responsibility
–– Environment

Information on end-of-life vehicle recycling, recycling-optimised product design and environmentally compatible vehicle recycling by the BMW Group
www.bmw.de
–– Services
–– BMW Recycling

Summary of the EU End-of-Life Vehicle Directive
http://europa.eu.int
–– Activities
–– Environment

quotas. Metals have long been recycled. Today, glass and many large pure-grade plastic components are recovered. The BMW Group reconditions engines, which have been stripped down expertly, for reuse with no loss of quality, for example, in BMW's remanufactured engine production at the Landshut plant.

Reusable plastics. Intelligent lightweight construction will result in an increasing share of plastics in automobiles, since the use of plastics reduces vehicle weight and thus fuel consumption. Wherever it is economically and, in particular, environmentally expedient, the BMW Group pioneers the development of material cycles, for example by introducing materials flow management. The company already has well-established cycles for major pure-grade plastics and polyurethane foam. Together with partners, the BMW Group has developed the necessary separating techniques, such as paint removal and regranulation for bumpers from service workshops and recycling partners. Databases, such as the "International Dismantling Information System" (IDIS), support the recycling of end-of-life vehicles. IDIS is operated by 24 automobile manufacturers and contains information on the preparatory treatment of components as well as their materials and fitting position.

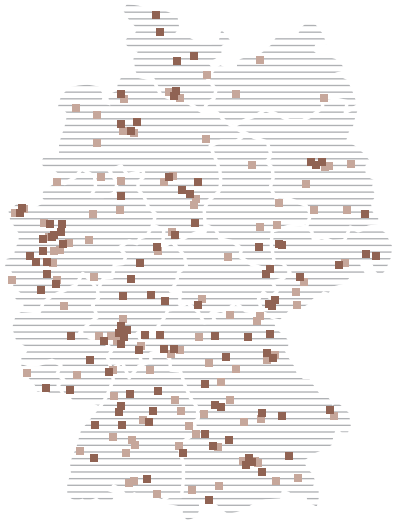
The BMW Group also comes full circle by using recycled materials. The average share of recycled plastics in current BMW models can be up to 15 per cent.

Widespread recycling network. The EU Directive requires that manufacturers establish a network of take-back points for end-of-life vehicles. Together with carefully selected partners, the BMW Group operates a vehicle take-back and recycling network throughout Germany. The recycling partners meet all the BMW Group's quality and environmental standards. In other European countries, recycling networks are being set up and developed. In Japan, the BMW Group was the first car manufacturer to establish voluntarily its own vehicle take-back and recycling infrastructure in cooperation with three dismantling businesses. Thus, once again, the BMW Group demonstrates that environmental thinking and action involve more than compliance with legal regulations.

The bases of recycling-optimised product development.

- Use of recyclable plastics and/or composite materials
- Reduction of the variety of materials
- Selection of suitable joining technologies
- Use of quality assured recycled materials
- Marking of components for separation into pure-grade materials during dismantling

The BMW Group's vehicle take-back and recycling infrastructure in Germany



5.3 Products: continuing innovative strength. When developing new automobiles and motorcycles, the BMW Group aims at achieving the highest possible standards. Regardless of brand and model, these standards apply to performance, quality, comfort, environmental aspects and product safety. And regardless of the high standards already achieved, the company continues to demonstrate its innovative strength in every new model.

Spec Sheet: MINI One D

Engine and performance data	
Engine	4-cylinder inline diesel
Displacement	1,363 cc
Power	55 kw/75 bhp
Max. torque	180 Nm at 2,000 rpm
Top speed	165 km/h
Weight	
Unladen (EU)	1,175 kg
Max. permissible	1,530 kg
Fuel consumption according to 99/100/EC	
City	5.8 l/100 km
Highway	4.3 l/100 km
Combined	4.8 l/100 km
CO_2 emissions	129 g/km
Emission ratings according to 99/102/EC	
EU3	
Noise emissions according to 99/101/EC	
Accelerated pass-by	70 dB (A)
As of 8/2003	

MINI One D: a thrifty Brit.

1,000 kilometres on a single tankful – this is one way to describe the decisive technological advance in the new diesel version of the MINI. The MINI One D was added to the product range in the spring of 2003. With fuel consumption of only 4.8 litres in the EU driving cycle, you can drive the MINI One D from Oxford to Geneva without stopping to tank. The new direct injection diesel engine has turbocharger, intercooler and second-generation common rail technology. Combined with an oxidation catalytic converter, its exhaust emissions are already below the maximum permitted by the EU3 exhaust emission standard.

Use of recyclates increased. MINI brand vehicles are developed with their entire life cycle in mind. This results, for example, in recycling-optimised joining technology, the choice of material and the increased use of recyclates. Up to 10 per cent in weight of the plastic components in the MINI are made from high-quality recycled plastics. For example, the recyclate used in the wheel arch liners meets the BMW Group's high quality requirements for recycled materials and at the same time conserves valuable resources.

Outstanding safety features. Since its introduction as the BMW Group's second premium brand, MINI has already been awarded numerous prizes and done extremely well in tests. The safety concept was also subjected to close scrutiny. The MINI Cooper received the highest accolade for the crash test of the US National Highway Traffic Safety Administration. Testing, which is known to be exacting, includes front and side impact tests. The MINI is not only equipped with up to six airbags, stability and traction control ASC+T, anti-lock braking and run-flat indicator, but also has numerous features to increase active and passive safety, which make it unique in its class.

Spec Sheet: BMW 316i

Engine and performance data	
Engine	4-cylinder inline petrol
Displacement	1,796 cc
Power	85 kw/115 bhp
Max. torque	175 Nm at 3,750 rpm
Top speed	206 km/h
Weight	
Unladen (EU)	1,385 kg
Max. permissible	1,810 kg
Fuel consumption according to 99/100/EC	
City	9.9 l/100 km
Higway	5.5 l/100 km
Combined	7.1 l/100 km
CO_2 emissions	172 g/km
Emission ratings according to 99/102/EC	
EU4	
Noise emissions according to 99/101/EC	
Accelerated pass-by	72 dB (A)
As of 8/2003	

BMW 316i: valve control for the environment.

As far as the environment is concerned, it is unrivalled in its market segment. This is the conclusion reached by the Wuppertal research institute ÖKO-TREND in October 2002. Thus, the BMW 316i has asserted itself in the volume segment of the mid-size car market. Two other representatives of the BMW 3 Series, the 318Ci and 318Ci Cabrio, were also ranked as the most environmentally equitable cars in their respective category.

Innovative engine technology. The car's success is largely due to the innovative technology of its 4-cylinder inline engine with fully variable valve control, VALVETRONIC. This was first fitted in the BMW 3 Series in 2001 and is now standard in all BMW 4-, 8-, and 12-cylinder petrol engines. VALVETRONIC ensures significantly lower fuel consumption when operating at part load, namely around 10 per cent in the EU driving cycle. In normal driving practice, the savings potential is between 8 and 12 per cent. The 316i needs only 7.1 litres per 100 kilometres in the EU driving cycle. It has CO_2 emissions of 172 grams per kilometre and meets the particularly strict EU4 exhaust standard.

Improving recyclability. In order to comply with the EU Directive on End-of-Life Vehicle, the BMW Group is constantly required to optimise the recyclability of its products from environmental and economic viewpoints. The current BMW 3 Series includes numerous examples of progress, such as bumpers or seating foam that can be broken down into pure-grade materials and recycled. At the same time, the company is increasing its use of recycled plastics without quality loss. Recycled plastics account for 14 per cent in weight of BMW 3 Series cars.

Spec Sheet: BMW X3 3.0i

Engine and performance data	
Engine	6-cylinder inline petrol
Displacement	2,979 cc
Power	170 kw/231 bhp
Max. torque	300 Nm at 3,500 rpm
Top speed	210 km/h*
Weight	
Unladen (EU)	1,835 kg
Max. permissible	2,260 kg
Fuel consumption according to 99/100/EC	
City	16.0 l/100 km
Highway	8.7 l/100 km
Combined	11.4 l/100 km
CO_2 emissions	276 g/km
Emission ratings according to 99/102/EC	
EU4	
Noise emissions according to 99/101/EC	
Accelerated pass-by	76 dB (A)
*Sport version 224 km/h	
As of 8/2003	

BMW X3 3.0i: greater safety with xDrive.

With the new BMW X3, the BMW Group is, for the first time, adding a Sports Activity Vehicle (SAV) to the X family in the premium segment below the BMW X5. The BMW X3 combines the proportions of a typical SAV with the classic design characteristics of BMW. It is available with a 3.0-litre 6-cylinder in-line diesel or petrol engine. The BMW X3 3.0i sets new standards in the SAV segment in terms of dynamic performance, fuel consumption and agility. Axle transmission has been enhanced to ensure both optimum performance and low fuel consumption. Drag coefficient of 0.35, which is low compared with its competitors, also contributes to lower fuel consumption and emissions. Calculations on aerodynamics were carried out in the early stages of development in order to achieve this value for the BMW X3.

Intelligent system for all-wheel drive. A special highlight of the new SAV is the intelligent xDrive system for permanent all-wheel drive, which permits infinitely adjustable and fully variable distribution of torque front-to-rear. xDrive immediately recognises any need for a change in power distribution and responds extremely quickly.

On the road, xDrive offers a noticeable increase in safety and agility. Other control systems, such as Dynamic Stability Control DSC, do not have to intervene as early as in conventional all-wheel drive systems. The xDrive system also ensures better traction on rough or slippery terrain as the drive power is shifted continuously to the wheels with the best grip. In addition to the high seating position – the “command position” with a clear perspective – extremely rigid bodywork, eight airbags, special stability control for trailers and Adaptive Light Control (ALC) contribute to greater active and passive safety.

Spec Sheet: BMW 530d

Engine and performance data	
Engine	6-cylinder inline diesel
Displacement	2,993 cc
Power	160 kw/218 bhp
Max. torque	500 Nm at 2,000 rpm
Top speed	245 km/h
Weight	
Unladen (EU)	1,670 kg
Max. permissible	2,155 kg
Fuel consumption according to 99/100/EC	
City	9.5 l/100 km
Highway	5.5 l/100 km
Combined	6.9 l/100 km
CO_2 emissions	184 g/km
Emission ratings according to 99/102/EC	
EU3	
Noise emissions according to 99/101/EC	
Accelerated pass-by	74 dB (A)
As of 8/2003	

BMW 530d: intelligent lightweight construction of unmatched sophistication.

With the new BMW 5 Series, the BMW Group has realised a technical concept that combines comfort with less weight, lower fuel consumption and higher performance. The car with its all-aluminium chassis and aluminium front section in a composite structure with the rest of the steel bodywork weighs up to 75 kilograms less than the previous model. Although the new limousine is more spacious, fuel consumption has been reduced. The BMW 530d with diesel engine, second-generation common rail technology and six-speed transmission as standard requires only 6.9 litres per 100 kilometres in the EU driving cycle.

Recycling-optimised components. The new 5 Series is the first model of the BMW brand to go into production since the EU Directive on End-of-Life Vehicle came into force. Recycling requirements played an important role during development, as had already been the case for the BMW 7 Series. Details were enhanced. Recycling-optimised components include, for example, the seats as well as underbody and bumper panelling. Material cycles that were already introduced with partners for the previous model ensure the use of recovered raw materials for new vehicle components, such as wheel arch liners.

Systems for greater safety. The BMW 5 Series Limousine incorporates various innovations that increase active safety. These include Active Steering, Adaptive Light Control (ALC), run-flat tyres and the adaptive Brake Force Display that is already licensed in the United States: with this system, the brake light area enlarges when the driver brakes sharply.

Spec Sheet: BMW 735i

Engine and performance data	
Engine	8-cylinder V
Displacement	3,600 cc
Power	200 kw/272 bhp
Max. torque	360 Nm at 3,700 rpm
Top speed	250 km/h
Weight	
Unladen (EU)	1,935 kg
Max. permissible	2,440 kg
Fuel consumption according to 99/100/EC	
City	15.0 l/100 km
Highway	8.2 l/100 km
Combined	10.7 l/100 km
CO_2 emissions	259 g/km
Emission ratings according to 99/102/EC	
EU4	
Noise emissions according to 99/101/EC	
Accelerated pass-by	71 dB (A)
As of 8/2003	

BMW 735i: performance pays off.

The BMW 7 Series combines maximum comfort and sporting performance with optimum active and passive safety. At the same time, numerous technical innovations contribute to moderate fuel consumption. The heart of the BMW 735i is an 8-cylinder V-engine with double VANOS and VALVETRONIC for fully variable valve timing. This engine concept with VALVETRONIC offers the prospect of noticeably lower fuel consumption when operating at part load.

The six-speed automatic transmission in the BMW 7 Series also contributes to a reduction in CO_2 emissions and fuel consumption of around 3 per cent. The 735i meets the strict EU4 emission standards worldwide. Intelligent lightweight construction and enhanced aerodynamics (by around 35 per cent compared with the first BMW 7 Series in 1977) also help to reduce fuel consumption and CO_2 emissions.

The concept has received accolades from customers and environmental experts alike. In 2002, the BMW 735i ranked first in its market segment in the Automobile Environment Ranking by the Wuppertal research institute, ÖKO-TREND. The experts emphasise VALVETRONIC's positive influence on fuel consumption and the model's compliance with the EU4 exhaust emission standard.

Reduced environmental impacts due to Condition Based Service. The unique service and maintenance concept of the BMW 7 Series contributes both to a significant reduction of environmental impacts and to increased safety. With the Condition Based Service (CBS), the on-board computer constantly monitors wear on various components and alerts the driver when action is needed. The new system extends intervals between oil changes by up to one-third, depending on driving style.

Spec Sheet: BMW F 650 CS

Engine and performance data	
Engine	Single-cylinder 4-stroke
Displacement	652 cc
Power	37 kw/50 bhp
Max. torque	62 Nm at 5,500 rpm
Top speed	approx. 175 km/h
Weight	
Unladen (EU)	187 kg
Max. permissible	370 kg
Fuel consumption	
at a steady 90 km/h	3.0 l/100 km
CO_2 emissions	72 g/km
Noise level	
	79 dB (A)
As of 8/2003	

BMW F 650 CS: sparking ideas.

In 2002, with sales of 62,600 units, BMW Motorcycles outperformed the previous year's record for the tenth year in succession. The F 650 CS, introduced in the spring of 2002, immediately gained a place among the top ten on the German motorcycle market. Not only the development of new motorcycle concepts, such as the "Scarver", but also the company's technological lead has contributed decisively to this positive trend. The BMW Group intends to maintain this lead in future. For example, anti-lock braking: the company pioneered the introduction of this technology for motorcycles in 1988; the safety system is now available in the entire range of models.

Engine technology reduces emissions. A controlled catalytic converter to purify exhaust emissions is standard in the F 650 CS, as in all BMW motorcycles. The latest measure to further reduce exhaust emissions for large BMW boxer engines is the introduction of dual ignition, completed at the beginning of 2003. A dual ignition system improves the uniformity of combustion throughout the engine's operating range as a result of a well-placed second spark plug in the combustion chamber. This, in turn, improves exhaust emission quality without affecting the machine's high performance and smooth running.

Optimising environmental responsibility beyond the product. For BMW Motorcycles, environmental responsibility extends far beyond product development. For example, the BMW Group associates have drawn up a comparative eco-balance for alternative concepts of transport packaging for the distribution of BMW motorcycles. Here, the wooden packaging used hitherto is compared with alternative materials from environmental viewpoints, such as energy consumption or greenhouse and acidification potential. The BMW Group is currently examining, in a pilot phase, whether a change in the packaging system would be both ecologically and economically expedient.

Spec Sheet: Rolls-Royce Phantom

Engine and performance data	
Engine	12-cylinder V
Displacement	6,749 cc
Power	338 kw/460 bhp
Max. torque	720 Nm at 3,500 rpm
Top speed	240 km/h
Weight	
Unladen (EU)	2,570 kg
Max. permissible	3,050 kg
Fuel consumption according to 99/100/EC	
City	24.6 l/100 km
Highway	11.0 l/100 km
Combined	15.9 l/100 km
CO_2 emissions	385 g/km
Emission ratings according to 99/102/EC	
EU4	
Noise emissions according to 99/101/EC	
Accelerated pass-by	72 dB (A)
As of 8/2003	

Rolls-Royce Phantom: a masterpiece.

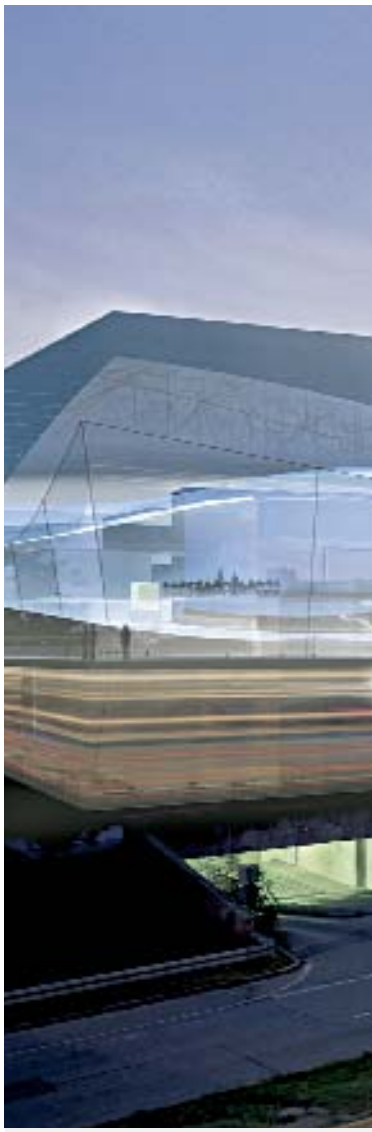
The first Rolls-Royce Phantom was delivered at the beginning of 2003, thus continuing a tradition that began 99 years ago. The Phantom is an utterly modern interpretation of what is arguably the most famous brand name in the automobile world. It embodies excellence in all fields of automotive engineering. It is only logical that this motor car is handcrafted, using nothing but the finest of materials.

State-of-the-art technology in traditional attire. The engineers spent four-and-a-half years creating an automobile that combines quality with cutting edge technology. The Phantom with its air-sprung chassis offers maximum ride comfort and safety, partly as a result of its aluminium body. The space frame structure is very rigid, providing exceptional protection for occupants, and makes the Phantom relatively light, compared with other cars in the luxury segment. The naturally aspirated 12-cylinder engine with fully variable valve stroke, variable valve timing and direct fuel injection operates almost without a sound.

The Phantom also features a variety of technical solutions that make travelling safer. These include the new PAX run-flat tyre system, which enables the Phantom to travel up to 100 kilometres after a puncture. Six airbags protect the occupants. Passengers in the rear do not need side airbags for protection because they do not sit near the doors. In the event of side impact, they are protected by the body structure.

5.4 Attractive service for customer and automobile. Customer- and environmentally friendly sales and service are distinguished by a high degree of professionalism and absolute reliability in meeting deadlines. That is why the BMW Group depends upon modern technology and competent staff for its first contact with customers.

Saturday, 10.00 a.m., at a BMW Group authorised dealership in Europe or Japan: During sales talks, a customer, advised by the dealer, selects on the computer screen the equipment, colour and power unit of the desired car. The number of possible choices is impressive: theoretically, 10^{17} different combinations are possible in the BMW 7 Series alone. Saturday, 11.30 a.m.: The choice has been completed, tailor-made financing agreed and the delivery date fixed. The order is placed online. Five seconds later, the customer receives confirmation with an exact delivery date. At the same time, a place in the production process is immediately reserved at one of the plants and the manufacturing logistics department is informed.



Fulfilling customer wishes flexibly. In addition to convenient online ordering at authorised dealerships, the BMW Group offers customers the option to make changes to their ordered vehicle at relatively short notice. In the BMW 7 Series, changes of colour, equipment or engine capacity can be accommodated up to six working days before assembly begins – without affecting the agreed delivery date. Each month, the BMW Group processes up to 120,000 of these customer changes for the BMW brand alone.

"Change flexibility" during production is of benefit not only to customers, but also to the environment, for the time- and cost-intensive exchange of finished vehicles between dealerships is significantly reduced.

Customer-oriented sales and production process. The secret to flexibility in order processing lies in order-related car manufacture. This is based on the BMW Group's customer-oriented sales and production process: the customer order is not assigned to the individual vehicle until assembly begins. For example, in the course of the customer-oriented sales and production process, the painted body is called up from the rack, ready for assembly, and is then given the appropriate vehicle identification number. The same procedure had already been followed in the body shop.

Photomontage of the planned theme and delivery centre “BMW Welt” in Munich

Consultation at the dealership

Satisfied customers and authorised dealers. All future models of the BMW and MINI brands will be integrated into the customer-oriented sales and production process. By 2002, throughput time – from receipt of an order to delivery – for a BMW 7 Series car had decreased from 28 to 12 working days as a result of the customer-oriented sales and production process. The long-term goal is 10 working days. Since introducing the customer-oriented sales and production process, the BMW Group is, on average, on target with its weekly throughput in 95 per cent of all cases in its German plants. Both customers and dealers benefit from this. In a survey conducted by the research institute Bamberger Forschungsstelle Automobilwirtschaft in 2002, dealers gave the BMW Group top marks for "Adherence to agreed delivery dates".

Enhanced customer relationship management. Optimum Customer Relationship Management (CRM) is essential for increasing customer satisfaction. With Top Drive, integrated CRM has been established in all key markets worldwide in order to promote customer loyalty and thus safeguard the company's long-term success. In 2002, there were almost 110,000 direct contacts with potential and regular customers by phone, almost 85,000 enquiries by fax and letter, and around 80,000 contacts by e-mail in Germany alone. Thanks to CRM, the increasing number of enquiries can be processed more efficiently.

The BMW Group's new sales and production system
Reduction of throughput time

	Order/scheduling	Production/distribution	Minimum throughput time
So far	13–17 days	15 days	28–32 working days
	Increase in change flexibility		
In future	1 day	9 days	10 working days

Reduction of throughput time with the help of:
– IT infrastructure with a high degree of networking
– re-engineering of the production sequence

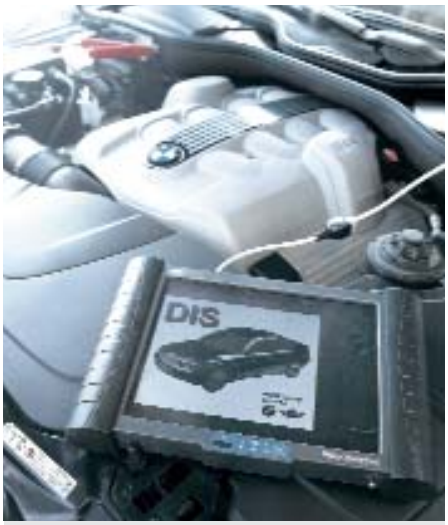
The BMW Group's Customer Relationship Management.
CRM includes
- the integration of various communications channels (e. g. fax, telephone, internet) in a single system in conjunction with
- the management of customer relations from the first contact to the ordering and financing of a vehicle and maintenance (e. g. enquiries, complaints or surveys on customer satisfaction) as well as
- the processing and exchange of customer and vehicle data (e. g. with dealerships).

The CRM approach includes all brands and all groups of customers in order to ensure uniform and customer-oriented services company-wide.

New service concept introduced. Change of scene from sales to service: the BMW Group has developed a service concept for the BMW 7 and new 5 Series, which sets standards for future models. On-board systems and workshop are linked so as to allow for a new kind of communication between automobile, service centre and head office. Mobile wireless diagnostics equipment communicates in the workshop with the on-board computers of all vehicle types. These links make it possible to record functional problems, which can then be processed in vehicle development. Thus, the latest findings are integrated into development.

Innovative training and further education in customer service. The development of new vehicle technologies for the BMW and MINI brands goes hand in hand with progressive training and further education for customer service staff. A new technical profession that requires special training has been created in order to guarantee first-class quality when servicing automobiles with increasingly sophisticated technologies: the BMW communications-electronics technician.

Knowledge transfer takes place largely through interactive media. For example through training and information programs: with the help of CD-ROMs, service staff acquire a theoretical knowledge of new models, model ranges and



[above] Mobile diagnostics equipment in use
[below] Vehicle data can be transmitted electronically with the ignition key.

engines. The BMW Group is also developing an internet-based learning platform, which in future will provide technical know-how worldwide.

The further education goal in customer service is to double the practical share of technical training for service staff from the current 40 per cent by the end of 2005. Practical seminars in the BMW Group's international training centres focus on problem detection, diagnosis and repair.

A new BMW Group training academy is being built in Unterschleissheim near Munich for approximately euro 30 million. From mid-2004, 40 instructors will provide on-vehicle training for 450 participants at a time. The new Sales and Aftersales Academy is a future-oriented training centre where small groups of participants learn very effectively from practical situations.

Condition Based Service. In future, BMW cars with Condition Based Service (CBS) will tell drivers when they need maintenance. CBS is already available in BMW 7 and 5 Series Limousines. Micro-electronics controlled by sensors monitor components such as brake linings, engine oil and micro-filter. If direct measurement is not possible, for example for brake fluid and spark plugs, the time or number of kilometres driven serves as criterion. The system also checks whether the car has been taken for its MOT or emission test. A display shows the driver the results. Thus, he is alerted well in advance of forthcoming tests and possible maintenance work.

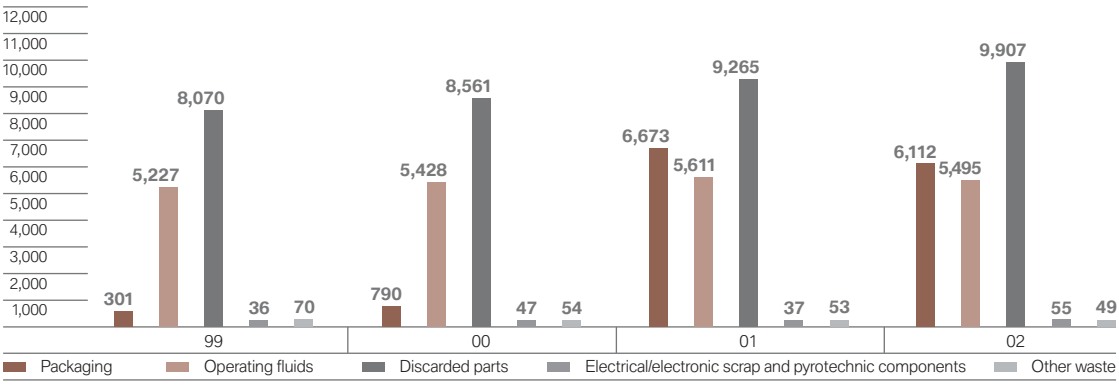
Today, the ignition key already stores relevant vehicle and some maintenance data which service partners call up with a KeyReader. In the near future, it will be possible to transmit the key data directly from the vehicle by Teleservice.

Maintenance intervals extended. Linking engine electronics with sensors and efficient computers makes vehicles safer, more economical and more environmentally friendly. For customers, longer maintenance intervals and optimum use of replacement parts as a result of the intelligent functions of CBS mean that their cars spend less time in the service workshop.

The BMW Group cooperates with reliable partners worldwide to recycle and dispose of parts that are discarded during repairs. In Germany, for example, more than 800 service workshops of the dealership organisation use a uniform and sophisticated system to recycle and dispose of the different types of waste.

In future, the BMW Group will continue to develop its high quality, safety and environmental standards. Based on the EU Commission's Block Exemption Regulation, the BMW Group has drawn up new agreements for dealerships and started to restructure its car sales networks. Thus, despite considerable legal and structural changes due to the regulation, the uniform standards of the premium brands BMW and MINI are guaranteed at dealerships throughout Europe.

Waste material fractions from the 800 dealer workshops in Germany*
in tons



*a four-year comparison of total tonnage

Objectives continued from the 2001/2002 reporting period

Economic goals

Goal	Action	Status
Principal BMW Group goal		
To be the most successful premium manufacturer due to		
– premium brand strategy	Development of the BMW, MINI, Rolls-Royce brands.	ongoing
– above-average profitability		ongoing
– above-average growth	Product and market offensive	ongoing
	MINI	from 2001
	Rolls-Royce	from 2003
	New BMW 1 Series	from 2004
	New BMW 6 Series	from 2003
	Development of BMW X family	from 2003
	New production capacities:	
	BMW 3 and 5 Series production in Shenyang/China	from 2003
	New Leipzig plant	from 2005
	Strengthening of worldwide presence by developing global networks with new partners and locations (production/CKD/sales/purchasing).	ongoing
Sustainable corporate management		
Long-term increase in value in sustainability (DJSGI, FTSE4Good)	Implementation of sustainability management.	ongoing
Develop leading position of plants (J.D. Power and Associates)	Implementation of quality strategy.	ongoing
Consolidate leading position as build-to-order manufacturer	Shortening of internal throughput time from 30 to 10 days.	ongoing
	Implementation of purchasing strategy.	ongoing
Safeguard leading position in supplier satisfaction index (SSI)	Implementation of purchasing guidelines.	ongoing
Involvement in global and national sustainability initiatives and Rio+10 process	UN: Global Compact. UNEP: Mobility Forum. ECONSENSE: Forum for Sustainable Development.	ongoing
High-quality reporting	Expand stakeholder dialogue: employees, customers, suppliers, social groups, government policy-makers, industrial and trade associations.	ongoing

Social goals

Goal	Action	Status
High level of employee satisfaction	Conduct regular full-scale employee surveys in the BMW Group, followed up by improvement process.	achieved
e-HR (Excellence in Human Resources)		
Increase process efficiency in human resources by reducing administrative expenditure		ongoing
Increase employee satisfaction with human resources management through automated workflows	Migration of existing human resource systems; development and integration of new applications in a web-based system within the BMW Group.	ongoing by approx. 2006
Increase employee satisfaction through "Employee Self-Service" offers		ongoing
Human resources planning oriented to medium- and long-term goals		
Recognition of medium- and long-term qualitative/quantitative human resources and/or skill requirements in cooperation with the specialised departments	Continued development of qualitative/quantitative human resources planning, concept and implementation.	ongoing
	Corresponding internal qualification of employees and/or influence on outside training institutes, timely human resources recruitment, and employee commitment.	ongoing

Goal	Action	Status
Improvement of BMW AG recruiting activities		
One to three suitable candidates per vacant job for bottleneck qualifications		achieved
Selection process complete within 15 to 22 days with total transparency across all plants		achieved
Implementation of programme management (multi-project control) for the BMW Group human resources departments		
Group-wide transparency in strategic projects, optimum resource and interface control, establishment of clear decision-making processes and creation of uniform project standards	Development of group-wide programme management throughout the company.	achieved
Create a balanced work situation and high quality of life in a performance-oriented culture, while taking account of future company requirements and changing interests of employees		
Intensified implementation of key elements of the long-term human resources policy worldwide	Creation of conditions for age-specific and individual perception of employees' professional and private commitments and interests as part of long-term human resources policy. Maintenance of conditions that support employee performance on a long-term basis. Regular monitoring of the tools in keeping with constant changes in internal and external conditions.	ongoing
	Further development of the systems based on the human resources policy worldwide.	achieved
Support of the further development of a knowledge culture	Pilot implementation of employee homepages (voluntary homepages focussing on individual skills).	achieved
	Creation of new and development of existing tools to promote knowledge transfer within the company, e. g. – lessons learned (experience as the basis for improvement), – passing on knowledge when changing jobs, – guidelines for Communities of Practice (groups designed to share experience).	achieved

Environmental goals

Goal	Action	Status
Emissions		
Meet the BMW Group's share of the commitment to reduce average CO_2 emissions in the ACEA fleet to 140 g per km by 2008, a reduction of 25 % compared with 1995	VALVETRONIC for all 8- and 12-cylinder petrol engines.	achieved
	Intensification of development and use of lightweight components.	ongoing
	Additions to the range of models in the compact category (BMW 1 Series, MINI).	ongoing
Establish and implement potentials for reducing CO_2 emissions in the long term	Participation in the Transport Energy Strategy (TES) to develop a strategy for the full-scale market introduction of hydrogen as the most promising fuel in the long term.	ongoing
	Involvement in the development of uniform technical standards in Europe for introducing hydrogen as alternative fuel as part of the European Integrated Hydrogen Project (EIHP).	ongoing

Goal	Action	Status
Recycling		
Environmentally compatible recycling of the BMW Group vehicles and components	Implementation of EU Directive on End-of-Life Vehicle: – Take-back and recycling system in all EU member states,	achieved (corres. with national regulations)
	– Substitution of components containing heavy metal (lead, cadmium, mercury and hexavalent chrome),	achieved (continuous process)
	– Take-back systems for old parts discarded during maintenance and repairs at service workshops.	achieved
	Implementation of a worldwide BMW Group recycling strategy: The BMW Group will implement the strategy, which it has developed and applied successfully in Europe, in all core sales markets.	ongoing
	Development of new recycling concepts for innovative components and materials, e. g. for alternative drive systems.	achieved
	Development of a simulation tool for the long-term design and maintenance of an environmentally safe end-of-life vehicle recycling system.	achieved
	Development of new recycling techniques in order to increase process quality for BMW Group end-of-life vehicle recycling partners: – Innovative shock absorber oil removal system, – First recycling facilities for the complete disposal of pyrotechnic components (airbags, belt tensioners).	achieved
Environmentally compatible new car design	Contribute to the development and implementation of an assessment method for evaluating the recyclability of vehicles within the framework of model testing certification and creation of an appropriate ISO standard.	achieved
	Comparative environmental evaluation of concepts for body shells and electrical system supplies.	achieved
	Gradual increase in the share of recyclates in plastic components for future models.	achieved
Cooperation with suppliers	Common environmental homepage on intranet.	achieved
	Joint supplier workshops list of recycling-relevant components in purchasing conditions.	achieved
	Suppliers' portal with assessment of environmental and social aspects.	achieved
Customer satisfaction		
Increase customer satisfaction through added safety and convenience	More efficient electrical systems to meet increased safety and convenience requirements by developing SOFC fuel cell technology for series production.	ongoing
	"ConnectedDrive": advancement of driver assistance systems to support drivers with routine tasks.	ongoing
Environmental management		
Advancement and integration of management systems	Introduction of an environmental management system in all central BMW Group production departments.	achieved
	Integration of environmental, quality and safety systems.	achieved
	Implementation of a group-wide environmental information system.	ongoing
	Introduction of environmental and social components to the BMW Group's purchasing policy.	ongoing
	Extension of the environmental management system to the CKD production plants.	ongoing
	Implementation of a "Sustainability Management" pilot project in the field of design.	achieved
Paint shops		
Low-emission paint operations	Introduction of powder-based clear paint technology in new Leipzig plant.	achieved
	New pre-treatment areas and introduction of water-soluble paints at Munich and Dingolfing plants.	achieved

New objectives for the 2003/2004 report

Economic goals

Goal	Action	Status
Sustainable value and values management		
Continued development of BMW Group sustainability management	Efficient resource management: finance, human resources, environment.	ongoing
	Reputation management based on responsibility.	ongoing
	Minimisation of risks of relevance to sustainability.	ongoing

Social goals

Goal	Action	Status
High level of employee satisfaction		
Continued development of themes	Linking of results of group-wide surveys of locations with other data or processes, deduction of recommendations.	ongoing
	Second round of surveys.	from 2004
e-HR (Excellence in Human Resources)		
Increase employee satisfaction by standardising human resources processes and reducing administration Increase efficiency of processes	New recruiting processes.	from 2003 in stages
	Introduction of portals for employees (B2E application).	Roll-out: 07/2003
Validation project to prepare global harmonisation	Check the international validity of processes and systems.	2004
Social standards (sustainability standards for suppliers)		
Anchor social standards in various processes between purchasing and supplier/partners	Integration of the standards – into purchasing conditions, – into the survey of suppliers, – into the selection of suppliers.	2003
Company health management		
Focus on overall, prospective health management, integrating health protection, safety, prevention and health promotion exercise, psycho-social issues, nutrition, substance abuse prevention.	Implementation of measures to promote health connected with the employee and the work environment. Fields of action include movement/physical International: e. g. HIV/AIDS Community Centre (South Africa).	ongoing
Strengthen health-promoting corporate culture, human resource management and work organisation by qualifying managers and employees	Addition of health themes to training and further education programmes.	ongoing
Optimise health-promotingintervention, using existing structures and processes		ongoing
Training		
Increase international orientation of the European apprentice programme	Development of locations for assignments in UK; start of British apprentices group in the EURO apprentice programme.	achieved from 07/2003
Promote responsibility on the part of apprentices with new work structures	Set up junior company. e-learning	achieved starts 2003
Increase the share of women in training for technical professions	Events for the target group.	ongoing

Environmental goals

Goal	Action	Status
Emissions		
Participate in demonstration projects to show that hydrogen can be used safely in road traffic and that it can be generated from renewable energy sources	Participation in CEP Clean Energy Partnership Berlin.	2004 to 2007
	Participation in international initiatives and research projects.	ongoing
Recycling		
Reduce environmental impacts of products in each stage of their life cycle	Integration of recycling requirements into new BMW product data management systems.	2004
	Implementation of the technical requirements of end-of-life vehicle legislation in the BMW Group specifications for vehicle recycling.	2003
	Overall appraisal of environmental impacts of servicing, maintenance and repairs during the use phase.	2003
	Comparative eco-balance of alternative concepts for innovative electrical and electronic components, taking account of the entire life cycle.	2004
	Promotion of the use of recyclates and renewable raw materials.	ongoing
	Establishment and continued development of take-back systems for old parts discarded during maintenance and repairs at service workshops in Western Europe, and optimisation of recycling.	2004
	Development of new recycling techniques – Development of an ignition tool for products of different manufacturers for the efficient neutralisation of pyrotechnic components for use at recycling partners. – Testing of new, automatic sorting techniques for plastics, metals and shredder residues.	2003 2004
	Development of suitable recycling concepts for new components and materials, e. g. treatment of hydrogen-powered vehicles, recycling of the hydrogen tank.	2004
	Development of a practical tool for the qualitative and quantitative evaluation of material flows.	2004
	Promotion of sustainable treatment techniques for shredder residues.	2004
Take-back of used products	Purposeful pursuit of the BMW Group recycling strategy in EU member states and accession candidates. – To optimise the take-back and recycling infrastructure and develop corresponding systems in the EU accession countries. – Development of national homepages with customer and product information.	ongoing
Supplier Relationship Management	Integration of environmental requirements into Supplier Relationship Management.	2004
	Promotion of the concept of sustainable development for suppliers.	ongoing

Goal	Action	Status
Service		
Constant further training for employees in BMW Group service workshops	Creation of new technical professions requiring special training due to the increasing sophistication of the vehicles (e.g. BMW communications-electronics technician for 7 Series cars).	ongoing
	Intelligent combination of personal training and the use of ultramodern online training methods as well as innovative, user-friendly e-learning and training management systems at BMW partners.	ongoing
	Introduction of innovative e-learning methods to qualify employees in the dealership organisation (learning independently of time and place).	ongoing
	New BMW Group Sales and Aftersales Training Academy ensures progressive training and further education of highly-qualified employees worldwide.	from 2004
Reduce environmental impacts of products in each phase of their life cycle	Development of lifetime oil for 6-speed transmission improves performance, reduces consumption and conserves resources.	ongoing
Customer satisfaction		
Maintain good relations with neighbours	Immediate effective processing of complaints.	ongoing
Increase customer satisfaction	Development of intelligent workshop systems and processes to support the dealership organisation as vehicles become increasingly sophisticated.	ongoing
	All-encompassing introduction of service and maintenance packages. Already available in individual markets (for example USA and South Africa).	2003
	More detailed and more individual customer service through the transmission of service-related data stored in the ignition key and their selection in the KeyReader.	ongoing
Environmental management		
Continued development and integration of management systems	Introduction of environmental management systems in central BMW Group departments.	ongoing
	Extension of the environmental management system to the CKD production plants; first certifications.	2005/2006
	Development of environmental figures to produce sustainability figures.	2004
Resources		
Conservation of non-renewable energy sources	Use of water close to the surface to cool computing centres.	2004/2005

Glossary

A

ACEA European Automobile Manufacturers Association (Association des Constructeurs Européens d'Automobiles).

APU Auxiliary Power Unit, supplies vehicle's electrical power. The BMW Group is working to replace the conventional car battery with petrol- or hydrogen-powered fuel cell technology.

Audit Assessment of a company's environmental management system.

Auto Shredder Residue Residual waste after the recovery of metals from end-of-life vehicles. They include plastics, rubber, glass, fabrics, paints and residual metals.

B

BMW CleanEnergy The BMW Group's initiative for a sustainable energy strategy that aims to develop products that are in keeping with the idea of sustainability and meet responsibility for the future. The BMW Group therefore supports the hydrogen economy based on renewable sources of energy, such as hydropower, wind power and solar energy. The BMW Group favours the hydrogen-powered combustion engine because it best meets its customers' requirements in terms of power, dynamic performance, costs and sophistication.

C

Carbon dioxide (CO_2) Results mainly from burning fossil fuels, such as coal, oil and natural gas. CO_2 is a primary contributor to the greenhouse effect.

Clean Energy Partnership CEP is part of the German Federal Government's sustainability strategy that aims to develop the infrastructure required to generate, and fill up with, hydrogen as well as to test corresponding vehicles under routine driving conditions. The BMW Group is participating in the four-year project in cooperation with three federal ministries and various other companies.

Cleaner Production Declaration of the United Nations Environment Programme (UNEP) In September 2001, the BMW Group signed the declaration, thereby reinforcing its commitment to environmentally responsible production.

ConnectedDrive The BMW Group uses this term to describe the interaction of driver, vehicle and other traffic and conditions on the road. The aim is to collect as much information as the driver needs and wants as individually and as ergonomically as possible. The three elements of ConnectedDrive – telematics, online services and driver assistance systems – make driving safer, more efficient and pleasanter.

Customer-oriented Sales and Production Process The overriding objective of the customer-oriented sales and production process is to give customers their individual car on the agreed date.

Customer Relationship Management All BMW Group's activities and responsibilities in the field of customer relations are integrated into CRM. This includes the overriding customer service strategy, as well as fundamental processes, organisational structures and systems.

D

DIN EN ISO 14001 A series of standards for environmental management systems for use in all types of companies worldwide. Includes guidelines for environmental audits, which in contrast to the EU Eco Audit do not have to be published. Since April 1997 it has been possible to link the ISO 14000 standards with the EU Eco Audit.

DIN 1/3 mix A fuel consumption standard valid in Germany from 1978 to 1995. The DIN 1/3 mix combined the average amount of fuel consumed at constant speeds of 90 km/h, 120 km/h and the European driving cycle. Replaced since 1 January 1996 by "EC combined" fuel consumption in the EU norm cycle.

DJSI World Dow Jones Sustainability World Index, index family created by Dow Jones and the Swiss agency SAM Sustainable Asset Management for companies with strategies based on a sustainability concept. The BMW Group has been one of the leading companies in the Dow Jones Sustainability indices since 1999.

E

E-business The BMW Group sees e-business as both a challenge and an opportunity for the entire company. Its strategic importance lies in greater process orientation and thus networking of current structures and sequences, focussing clearly on the customer. Therefore, e-business supports the BMW Group's objective of profitable growth. It is not simply about reducing costs, but rather about benefits, flexibility, quality and customer satisfaction. The aspect of speed is of particular significance.

Econsense Forum for Sustainable Development, initiated by the Federation of German Industries (BDI), but with its own legal personality. The BMW Group is one of the founder members of this organisation, which was established in summer 2000.

EMAS Eco-Management and Audit Scheme, a management tool that allows companies and organisations to evaluate, report on and improve their environmental performance.

Environmental information system Computer-assisted system for the collection and management of environmental data with the aim of enhancing data transparency and the possibility of benchmarking.

EPA US Environmental Protection Agency.

EU norm cycle Fuel consumption standard to 93/116/EC, valid since 1996. The EU norm cycle, which replaced the DIN 1/3 mix, contains not only the old city-driving cycle, but also a new highway-driving cycle. Fuel consumption in the urban cycle includes the cold start.

F

FIZ The German acronym for the BMW Group's Research and Innovation Centre in Munich. Serves as a link between research and series production. 6,000 engineers and technical staff work here.

Fleet consumption Weighted average fuel consumption of the new vehicles of a single manufacturer or of the entire automobile industry registered in the reporting period.

FTSE4Good Index Share index of Financial Times and London Stock Exchange, in which the BMW Group has been included. FTSE4Good listings depend on adherence to ecological and ethical criteria (environmental compatibility, stakeholder relations, observance and promotion of human rights).

Fuel cell An electro-chemical energy converter that combines hydrogen and oxygen to produce water ("cold combustion"), thereby generating electrical power with a high efficiency factor.

I

IAS International Accounting Standards, intended to ensure global comparability of accounting practices and financial reporting. They are issued by the International Accounting Standards Board (IASB).

IFMO Institute for Mobility Research, a research establishment of the BMW Group, which works on interdisciplinary aspects of mobility in order to contribute more transparency and objectivity to discussions on the subject.

ILO International Labour Organisation. Special UN organisation to improve labour conditions and develop new fields of employment.

International Dismantling Information System IDIS, an electronic dismantling database for end-of-life vehicles. The BMW Group coordinated development of the dismantling manual, which is now used by around 5,000 end-of-life vehicle recycling plants throughout Europe.

L

Lifetime lubricants Fluids, such as transmission oil, are filled into systems during manufacture and do not need to be changed during the product's entire life. This conserves resources and reduces operating costs.

Lightweight construction A key technology for reducing fuel consumption. Lowering vehicle weight by 100 kg can save up to 0.3 litres per 100 km.

M

Methane (CH_4) Gaseous hydrocarbon; main component of natural gas. Forms, for example, when fossil fuels are not completely burned or as a result of fermentation processes (biogas). Not toxic to humans, but a contributor to the greenhouse effect.

N

Noise Noise emissions measured in dB (A).

O

Online ordering Online ordering helps to significantly increase flexibility in modifying individual customer orders, speeds up order processing and permits, at the time of ordering, confirmation that the vehicle can be completed as required and delivered on the agreed date. An important part of the customer-oriented sales and production process.

P

Powder-based clear paint Clear paint is the top coat to be applied to the car body. The BMW Group was the first car manufacturer worldwide to use powder-based clear paint in series production. Powder-based clear paint is emission-free and up to 99 per cent recyclable.

Production network The BMW Group production network comprises 16 plants and eight assembly plants worldwide. The network is characterised by the mutual supply of systems and components as well as productivity and flexibility.

R

Recycling and Dismantling Centre In 1991, BMW was the first car manufacturer to establish its own dismantling facilities, as a pilot project, at its Landshut plant. The facilities were developed and then re-opened as the Recycling and Dismantling Centre in Unterschleissheim near Munich in 1994. The recycling centre has been certified in compliance with the German "Altauto Verordnung" since 1998.

Renewable resources Organic substances of vegetable or animal origin used as raw materials for industry or as energy sources. In contrast to fossil raw materials (e. g. petroleum), these resources are renewed annually or over a reasonable period of time. Applications in the automobile industry include seat upholstery, textiles, rear shelves and insulating materials in doors.

Resources The goals of sustainable resource management include, in particular, the conservation of resources which are not renewable. These resources are primarily fossil organic substances (e. g. petroleum and natural gas) and inorganic substances (e. g. metals, metal ores and rare minerals).

Risk management An integral component of all business processes. Following enactment of the Law on Control and Transparency within Businesses (KonTraG), all companies listed on a stock exchange in Germany are required to set up a risk management system. The purpose of this system is to identify risks at an early stage, which could significantly affect the assets, liabilities, financial position and results of operations and endanger the continued existence of the company. The Board of Management is required to set up such a system, to document it and monitor it regularly with the aid of the internal audit department.

S

Solid Oxide Fuel Cell (SOFC) Petrol-powered fuel cell, which the BMW Group plans to use as fuel-saving energy source for car electrical systems (see APU and fuel cell).

Stakeholders Groups with a vested interest in an enterprise. For BMW Group, these are primarily customers, employees, shareholders and special interest groups, as well as municipalities worldwide where the BMW Group operates.

Supplier Relationship Management SRM uses focussed purchasing strategies to organise networked supplier relationships, optimise processes for supplier qualification and selection, ensure the application of uniform standards throughout the company and create efficient sourcing and purchasing processes along the whole value-added chain.

Sustainability Sustainability or sustainable development takes equal account of ecological, social and economic development. In 1987, the "UN Commission on Environment and Development" defined sustainability as a development that satisfies the needs of the present generation without endangering the bases for life of future generations. For the BMW Group, the economic relevance of sustainable action is seen in three elements: resources, reputation and risks.

T

Telematics Products and services designed to enhance mobility and traffic safety through advanced telecommunications and satellite-based positioning systems (GPS).

Transport Energy Strategy (TES) An initiative of leading car manufacturers and energy suppliers with the Federal Ministry of Transport acting as coordinator. Its aim is to assess the potential of all alternative fuels. Current status: hydrogen is the fuel with the greatest potential.

U

UNEP United Nations Environment Programme, established in 1972.

V

VALVETRONIC Thanks to its operating principle, VALVETRONIC permits fully variable valve stroke. It takes over the task of the throttle valve, which is no longer needed. The result is an engine that can breathe freely and thus offers drivers the prospect of lower fuel consumption.

W

WSSD World Summit on Sustainable Development in Johannesburg from 26 August to 4 September 2002. At the UN's largest World Summit to date, the BMW Group presented its sustainable corporate policy, its model for sustainable mobility and specific economic, social and ecological measures.

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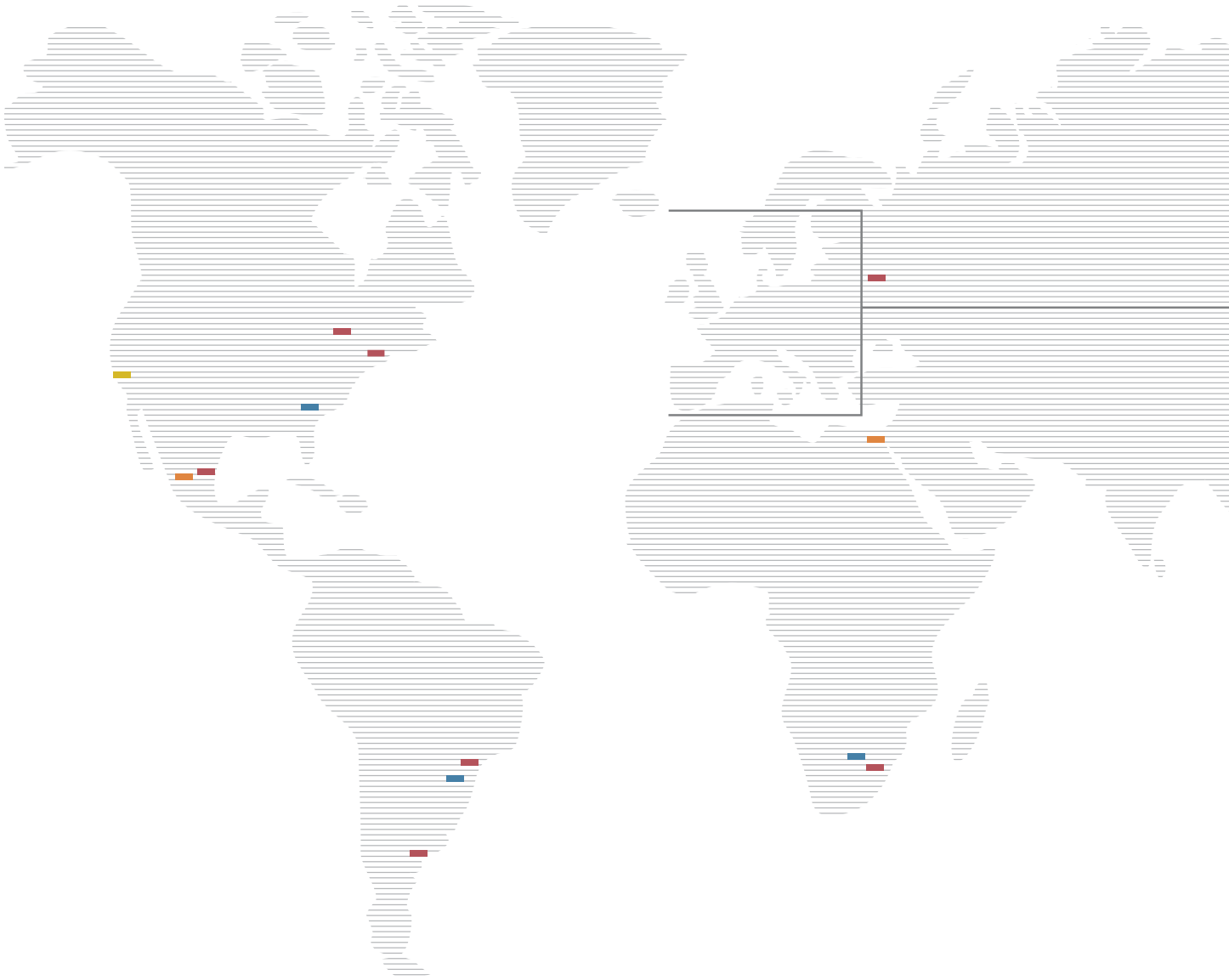
Overview of facts and figures

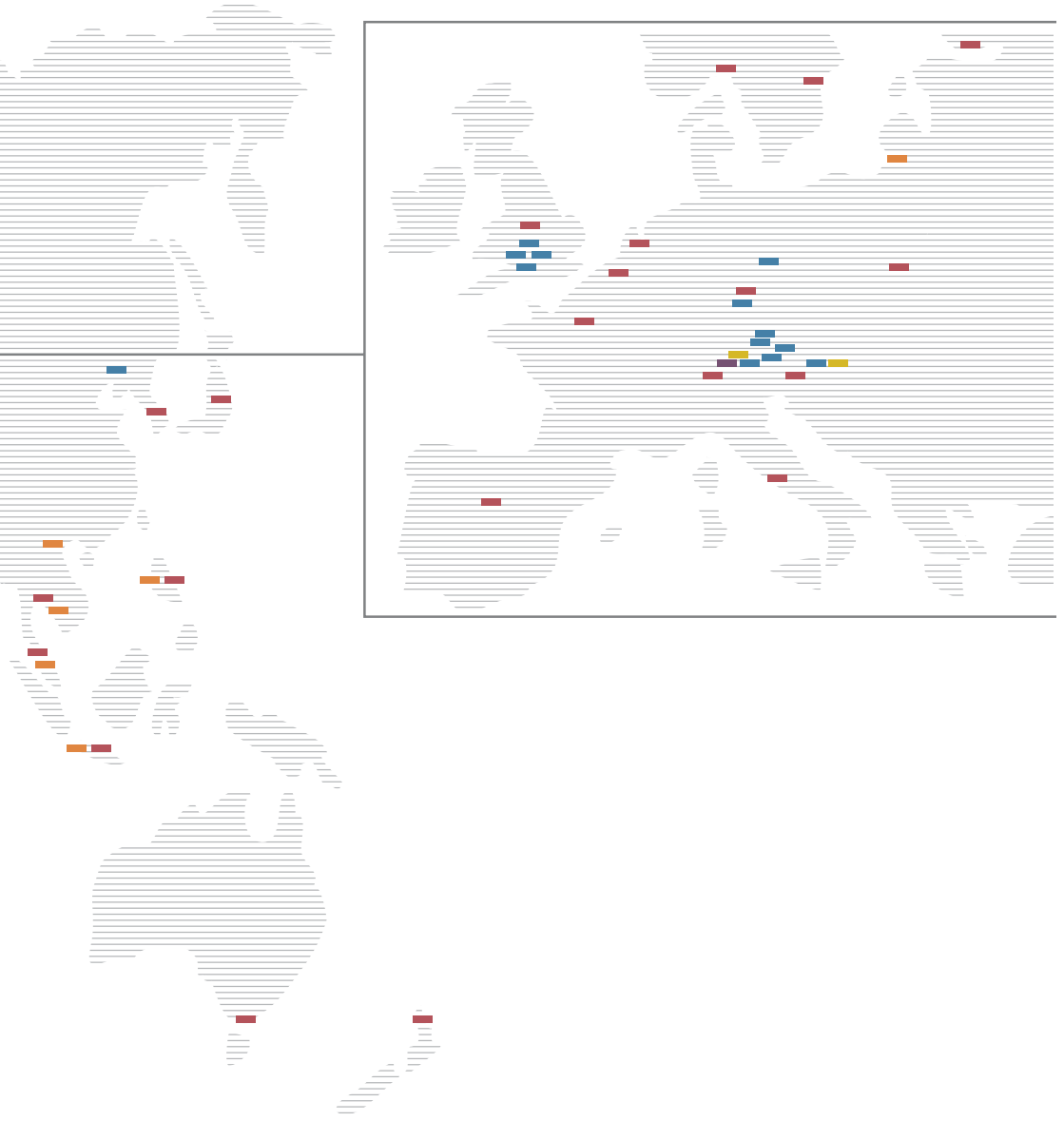
<< BMW Group locations

BMW Group locations



Plant	Environmental certification system	Certifying	Date Certification	authority review*
Berlin, Germany	EMAS/ISO 14001	Gerling Cert	5/1997	5/2001
Munich, Germany	EMAS/ISO 14001	TÜV	3/1997	8/2002
Dingolfing, Germany	EMAS/ISO 14001	TÜV	5/1999	11/2004
Steyr, Austria	EMAS/ISO 14001	TÜV	1/1998	4/2003
Rosslyn, South Africa	ISO 14001/BS 8800	TÜV SA	11/1999	11/2002
Regensburg, Germany	EMAS/ISO 14001	TÜV	9/1997	5/2003
Spartanburg, USA	ISO 14001	TÜV NA	8/1997	2003
Oxford, UK	ISO 14001	VCA, in future TÜV	9/1997	2003
Hams Hall, UK	ISO 14001	TÜV	7/2001	8/2004
Landshut, Germany	EMAS/ISO 14001	TÜV	6/1997	2001
Goodwood, UK	ISO 14001	TÜV	4/2003	10/2006
Eisenach, Germany	EMAS/ISO 14001	TÜV	11/2002	11/2005
Swindon, UK	ISO 14001	VCA, in future TÜV	1996	11/2004

*annual review with internal audits



Headquarters

Research and Development
BMW Group Research and Innovation Centre (FIZ), Munich
BMW Technik, Munich
BMW Group Car IT, Munich
BMW Group Designworks, Newbury Park, USA
BMW Motoren Steyr, Austria

Production
Berlin plant
Dingolfing plant
Eisenach plant
Goodwood plant, UK (headquarters of Rolls-Royce Motor Cars Limited)
Hams Hall plant, UK
Landshut plant
Munich plant
Oxford plant, UK
Regensburg plant
Rosslyn plant, South Africa
BMW Brilliance Automotive Ltd., Shenyang, China (joint venture with Brilliance China Automotive Holdings)
Spartanburg plant, USA
Steyr plant, Austria
Swindon plant, UK
Tritec Motors Ltda., Curitiba, Brazil (joint venture with DaimlerChrysler)
Wackersdorf plant

Assembly plants
CKD production Hanoi, Vietnam
CKD production Jakarta, Indonesia
CKD production Cairo, Egypt
CKD production Kaliningrad, Russia
CKD production Kuala Lumpur, Malaysia
CKD production Manila, Philippines
CKD production Rayong, Thailand
CKD production Toluca, Mexico

Sales subsidiaries
Argentina
Australia
Austria
Belgium
Brazil
Canada
Finland
France
Germany
Great Britain
Indonesia
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Philippines
Poland
Russia
South Africa
South Korea
Spain
Sweden
Switzerland
Thailand
United States

Dialogue with BMW Group recycling experts

Invitation

You are cordially invited to take part in a guided tour and discussion with BMW Group recycling experts. Topics include environmentally compatible end-of-life vehicle recycling and recycling-optimised product design. Duration: approx. 4 hours. The dates are listed below.

Reply
I am interested in taking part in a guided tour of the BMW Group Recycling and Dismantling Centre (RDZ) in Unterschleissheim near Munich. I will be accompanied by _____ person(s).

Dates (please tick your choice):
- ☐ 28 November 2003
- ☐ 04 March 2004
- ☐ 18 June 2004

You will receive confirmation and further information in good time.

Detailed information is available on the following:

- ☐ Recycling
- ☐ BMW hydrogen-powered cars
- ☐ Sustained use of water
- ☐ Renewable raw materials
- ☐ Flexible working hours at the BMW Group
- ☐ Long-term human resources policy
- ☐ TWIST telework within the BMW Group
- ☐ Women's and family policy
- ☐ "We at BMW" – the associate and leadership model of the BMW Group

- ☐ I am interested in receiving your next Sustainable Value Report.

Other publications

- ☐ Environmental declaration of the locations

_____
_____
_____
_____

- ☐ Brochure "Sustainability. It can be done."
- ☐ Corporate Citizenship Projects
- ☐ Annual Report

Further information and publications are available at
www.bmwgroup.com/responsibility

Sender

Surname

First name

Position/Company

Street, no.

Postcode, town

Country

E-mail

Please affix stamp here

Reply

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Sustainability

80788 Munich
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Sender

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Position/Company

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BMW Group on the Internet

www.bmwgroup.com/responsibility
Information on the BMW Group and sustainability

www.bmwgroup.com/ir
Information on investor relations

www.bmwgroup.com/scienceclub
Information on the ScienceClub

www.bmwgroup.com/production
Information on the BMW Group production network

BMW Group brands on the Internet

www.bmw.com
www.bmw-motorrad.com
www.mini.com
www.rolls-roycemotorcars.com

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