

# Environmental, health and safety

## Striving for continuous improvement

# What we do

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**Morgan Crucible is a world leader in advanced materials.**

**Our highly skilled, dynamic people provide high technology solutions for specialised applications in diverse markets around the world.**

**Over the following pages we look at how our EHS programmes support our strategy.**

## Group strategy...

### Our vision

- Our vision is to be one of the world's very best advanced materials companies

### Our aim

- Our aim is to create long-term superior shareholder value

### Our strategic priorities

- Focus on higher growth, higher margin, non-economically cyclical markets
- Be high value-added to our customers
- Be number one or number two in our chosen market segments
- Have a culture of operational excellence and cost efficiency
- Find, keep and develop the right people

# ...and structure

## The Morgan Crucible Company plc

### Insulating Ceramics Division

Divisional revenue  
£

**382.9m**

The Insulating Ceramics Division designs, manufactures and installs a wide variety of engineered solutions from its range of world renowned advanced insulation and thermal management products. These solutions help customers to protect equipment and personnel and also to reduce dramatically energy consumption in their processes and, in many applications, also help reduce emissions to the environment.

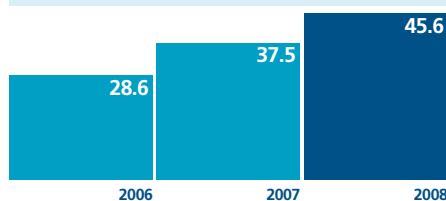
**Core products/applications:**

- Thermal management solutions
- Insulating fibres
- Insulating fire bricks
- Crucibles and furnaces

**Markets:**

- Petrochemical
- Power generation
- Ceramics and glass
- Metals
- Transportation

Divisional EBITA\*  
Continuing businesses £m



### Technical Ceramics Division

Divisional revenue  
£

**212.2m**

The Technical Ceramics Division utilises advanced ceramic, glass, precious metals, piezoelectric and dielectric materials combined with innovative design and applications engineering to provide an extensive range of ceramic components, assemblies and related products for niche technological applications in selected markets. In many applications, the technology provided by Technical Ceramics defines the performance of the customer's end product.

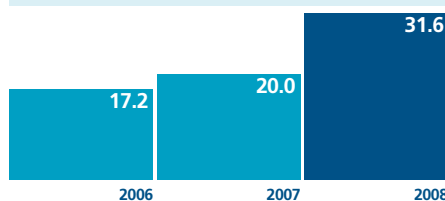
**Core products/applications:**

- Electron tube components and assemblies
- Ceramic cores for turbine blades
- Piezoelectric ceramic actuators
- Laser components

**Markets:**

- Aerospace
- Electronics
- Medical
- Power generation and distribution
- Security and defence

Divisional EBITA\*  
Continuing businesses £m



### Carbon Division

Divisional revenue  
£

**239.9m**

The Carbon Division is a global provider of advanced materials technology with extensive expertise in the processing and applications of carbon, graphite, silicon carbide, oxide ceramics and other related materials. Working at the forefront of materials technology, Carbon develops value-added customer solutions through engineering innovation and an understanding of industry-specific needs, opportunities and challenges.

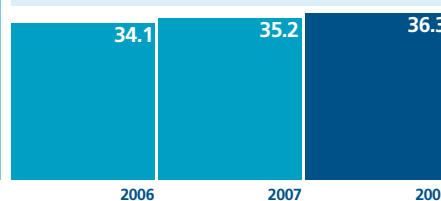
**Core products/applications:**

- Electrical brushes
- Seals and bearings
- Protective ballistic armour
- Ultra high temperature insulation

**Markets:**

- Transportation
- Industrial equipment
- Fluid handling
- Defence and aerospace
- Renewable energy

Divisional EBITA\*  
Continuing businesses £m



\* Divisional EBITA is defined as segment operating profit before restructuring costs, other one-off items and amortisation of intangible assets.

# Introduction



Morgan Crucible is a world leader in advanced materials with the aim of creating long-term superior shareholder value. Our environmental and health and safety programmes are integral to our business, aligned with our Core Values Statement and our strategic priorities. In addition to the sustainability-related performance of our operations, we are mindful of the impact of our products. A significant proportion of our profits are generated by products and services which benefit the environment and enhance sustainability.

Excellence in environmental, health and safety (EHS) through ongoing and continuous performance improvement makes sound business sense and is in the interests of all our stakeholders. This report helps illustrate our approach and some of the key developments across the Group, including our progress against our targets and objectives.

One of the key challenges of 2008 was the integration of the technical ceramics businesses acquired from the Carpenter Technology Corporation. The integration into our EHS reporting processes was achieved ahead of plan. Over the coming year we will be accelerating the implementation of ISO14001 and other management systems to help address performance opportunities at the nine former Carpenter sites across three continents.

Another key challenge is climate change. For us this has both an internal and an external focus. Internally we continue to work on a number of programmes and initiatives to conserve energy and reduce our carbon footprint in absolute and relative terms. As a result our CO<sub>2</sub> emissions intensity is down by 17% over the past two years (9% excluding Carpenter). This was ahead of our 5% target and we will be targeting further reductions in the coming years.

Externally we are also addressing related business opportunities. These include our bio-soluble Superwool™ insulating fibre and our work in the solar and wind power markets. Further examples of the Group's products which make a positive contribution to sustainability are included on page 12.

Our lost time accident frequency was marginally lower in 2008 than that reported in 2006. However, this was above the frequency level in 2007. Lost time was up in the year with the health and safety-related performance of the former Carpenter businesses behind that of the existing Group. We will be paying extra attention to this area in the coming year and will work to bring the health and safety performance of the former Carpenter businesses into line with that of the rest of the Group.

Our major EHS assessment and training programme in China continued during the year and we are seeing the benefits in terms of improved reporting and an increasing focus on performance opportunities.

We will be building on our EHS programme and achievements in 2009 and will continue our on-going dialogue with our employees, customers, investors and regulators as we find this a valuable source of information and feedback to help us identify and respond to specific issues and evolving requirements.

I look forward to reporting on our further progress next year, but in the meantime, if you have any comments or suggestions, please let me know.

**Kevin Dangerfield**  
Chief Financial Officer  
April 2009



FTSE4Good

# Overview

## About this report

This is our fifth annual EHS Report. It summarises Morgan Crucible's environmental, health and safety performance in the year to 4 January 2009 covering the available data for the whole Group. It also details our policies and management systems.

Our EHS policies and programmes support our five strategic priorities and our Core Values Statement which commits us to incorporating environmental sustainability in our product development programmes and to strive to minimise the impact of our operations on the environment. We are also committed to ensuring that the working environment is safe and that all individuals take responsibility for achieving this. Our Core Values Statement can be downloaded from the 'Our responsibilities' section of our website.

The health and safety data in this report covers 100% of our employees and the environmental data covers 100% of our production site sales capacity, up from 99% and 98% respectively in 2007. On 31 March 2008 we completed the acquisition of the technical ceramics businesses of the Carpenter Technology Corporation. These businesses are included in this report during their nine months of ownership. On 6 January 2009 we announced that we increased our stake in NP Aerospace to 60% and we plan to include NP Aerospace in future EHS reports.

Many of Morgan Crucible's products and services help to improve the sustainability performance of our customer's products. Although we have not sought to quantify this benefit, a key part of our contribution to sustainability is the development and supply of new and improved products.

## About Morgan Crucible

Morgan Crucible is a world leader in advanced materials. We have a wide portfolio of products serving the needs of customers in selected markets such as electronics, petrochemical, transportation, medical, power generation and distribution and alternative energy.

Morgan Crucible was founded in 1856 and on average during 2008 employed 10,621 people in 40 countries around the globe. Listed on the London Stock Exchange, and a member of the FTSE4Good index, our 2008 turnover was £835 million.

Morgan Crucible's strengths in applications engineering and superior materials technology, coupled with global process and management capabilities put us at the forefront of materials science. This breadth enables Morgan Crucible to respond quickly to market changes and provide customers with high value added tailored solutions. By understanding the global demands for a variety of advanced technology markets, Morgan Crucible has established an outstanding reputation for providing value-added solutions through world-class research and development and innovative design.

|                              | 2008         | 2007  | 2006  |
|------------------------------|--------------|-------|-------|
| Sales (£m)                   | <b>835.0</b> | 693.2 | 677.8 |
| Operating profit margin# (%) | <b>11.8%</b> | 11.4% | 7.0%  |
| R&D spend*- (£m)             | <b>11.4</b>  | 8.7   | 8.2   |
| Dividends (£m)               | <b>18.8</b>  | 18.8  | 13.2  |
| Charitable donations (£k)    | <b>115</b>   | 193   | 146   |

# Underlying operating profit margin before amortisation of intangible assets.

\* Excludes the amount working with customers by way of product enhancement and application engineering.

~ 2008 includes £1.6 million of capitalised development costs (2007: £nil).

**Further information about Morgan Crucible is available on our website at [www.morgancrucible.com](http://www.morgancrucible.com)**

# EHS policy and risk management

## EHS policy

Morgan Crucible's EHS policy applies Group-wide and requires high standards at all sites with the objective of continuous improvement in environmental and health and safety performance. Its purpose is to:

- Govern the environmental and health and safety performance of the Group worldwide
- Maintain open communication on environmental and health and safety performance with all Morgan Crucible's stakeholders
- Integrate environmental, health and safety management into Morgan Crucible's business strategies to enhance competitive advantage.

The key features of the Group's EHS policy are to:

- Comply with environmental and health and safety legislation, regulations and other applicable requirements
- Minimise the environmental impact of historic, current and future operations
- Conduct operations in such a manner as to avoid unacceptable risk to human health and safety
- Supply products that will not present an unacceptable risk to human health and safety when used in compliance with product safety communications and common safety practices
- Establish measurement tools for, and continuously monitor environmental and health and safety performance
- Set objectives for the continuous improvement of environmental and health and safety performance
- Train our people in relevant environmental and health and safety matters
- Encourage our business partners to adopt this same accountability.

In addition to Morgan Crucible's Group-wide EHS policy, our operations have supplementary environmental and health and safety policies, key performance indicators and targets where necessary according to the risks, opportunities and needs of each particular business.

In the coming year we plan to review and externally benchmark our environmental and health and safety policies. Any revisions will be agreed by the Executive Committee and approved by the Board.

## Risk management

Our operations involve the normal environmental and health and safety risks associated with manufacturing and other activities in the countries in which we operate. Our EHS management processes are based on risk assessment and the management and mitigation of risks which could impact the Group's long and short term performance and value. The risk management process also helps to identify business and performance opportunities.

# EHS policy implementation

Our EHS policy and risk management processes form the basis of our environmental and health and safety management systems and processes. The management of EHS is aligned with the operation of our day-to-day business. The Chief Executive Officer, Mark Robertshaw, has overall accountability for corporate responsibility matters, supported by the Chief Financial Officer, Kevin Dangerfield, who has specific responsibility for EHS policy and performance. Operational responsibility is delegated to the Chief Executive of each Division and to the manager of each operation. This structure is supplemented by EHS professionals within each business and in practice, all employees are responsible for ensuring that our EHS policies are implemented and for identifying opportunities for development and improvement.

Morgan Crucible's EHS management processes include the EHS Compliance Audit Programme. This programme provides assurance and helps ensure compliance with national and other regulatory requirements and with good management practice as set out in the *Morgan Crucible Environmental, Health and Safety Good Management Practice Manual* which is issued to all sites world-wide. The audits help to identify how sites can anticipate and respond to developing and impending regulations.

In Europe and Asia-Pacific, the programme is conducted by external auditors, whilst in the Americas it is conducted by internal experts and reviewed by external consultants. Where necessary, sites are required to develop a corrective action plan following the audit, and these actions are regularly tracked by the audit teams.

All of the Group's manufacturing sites are audited on a three year rolling cycle. During 2008 23 sites were audited, including the nine sites acquired from the Carpenter Technology Corporation. The scheduled audits of the Group's Chinese facilities were deferred, pending completion of the EHS assessment and training programme in China. Our target for 2009 is for a 36 sites to be audited including the audits deferred during 2008.

## EHS management and training in China

Morgan Crucible has over 1,500 employees in China at eight main manufacturing sites, including the new MMS manufacturing site in Suzhou. During 2008, we progressed our programme to implement and embed our EHS policies and systems across our Chinese businesses.

An EHS management system, based on the Group's EHS Good Management Practice Manual and tailored to the needs of the Chinese manufacturing environment, has been developed. Working with the Shanghai office of the international consultants, Environmental Resources Management (ERM), a detailed review of the current status of EHS management at each site was undertaken. This was followed up by detailed training and an EHS systems implementation programme to ensure all facilities are up to the same standard.

In addition, two EHS training courses were conducted in Shanghai involving staff from all our facilities in China. The first covered Chinese EHS laws and regulations for senior management staff and second was on detailed EHS management issues for operational staff.

During 2009 all the manufacturing sites will be audited under the Group's EHS Compliance Audit Programme. These audits will review the effectiveness of each site's EHS management systems and identify where follow up work or training is required.





# Environment

Wherever possible we work to minimise the impact of our business on the environment and to maximise the positive environmental impact of our products. The Group monitors the effectiveness of its environmental policy through a series of environmental key performance indicators (KPIs). These are reported by all sites on a monthly basis and EHS is a standing agenda item at the meetings of the Executive Committee and the Board.

## Environmental Management Systems

Morgan Crucible's environmental policies form the basis of our environmental management systems and processes.

The core objectives of our systems across the Group are to identify legal and other requirements and to monitor and continuously improve performance.

Environmental management systems are in place at 84 sites worldwide (2007: 61), representing over 90% of production output (2007: 84%), including 28 sites (2007: 27) covering 41% of output which is certified to ISO14001 (2007: 48%). The proportion of production output covered by ISO14001 declined in the year due to the closure of two ISO14001 certified sites and the inclusion of the nine uncertified sites acquired from the Carpenter Technology Corporation.

Plans are in place for a further eight sites to achieve ISO14001 certification in the two years 2009-10. These new certifications are in addition to the rolling programme of re-certifications.

## Key environmental impacts

Morgan Crucible's key environmental impacts include the emissions due to the use of energy in our processes and facilities, raw materials usage, water consumption and discharge, the re-use, recycling, discharge and disposal of waste and the impact of our products on our customers' environmental performance.

In a number of areas, Morgan Crucible has direct control of its environmental impacts, whilst in others although we have influence, our suppliers have direct control. Where possible we report on both of these.

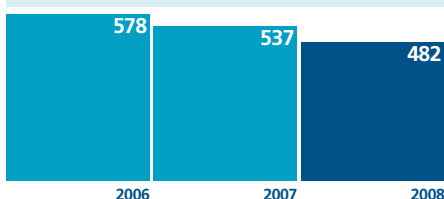
During 2008 we extended our environmental reporting to cover the nine production sites acquired from the Carpenter Technology Corporation. This was achieved ahead of plan and the data in this report includes the environmental impacts of these businesses during their nine months of ownership.

Where necessary, historic data has been restated to reflect changes to the business and changes to coverage. KPIs are reported at constant currency to present performance in real terms. The data covers 100% of production site sales.

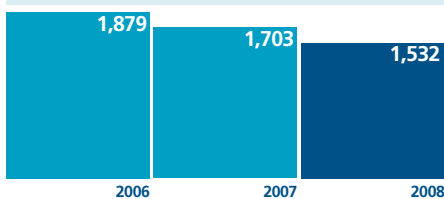
Much of the Group's production involves the use of high temperature processes. We report the environmental impact of the energy used in these process and elsewhere in our facilities as equivalent CO<sub>2</sub> emissions, indexed to turnover. This takes into account the use of all sources of energy. We assess site, Divisional and Group performance on the basis of energy and emissions 'intensity' i.e. energy use indexed to turnover.

# Environment continued

**CO<sub>2</sub> intensity\***  
Tonnes CO<sub>2</sub> per £m revenue<sup>#</sup>



**Energy intensity\*\***  
kWh energy per £k revenue<sup>#</sup>



\* CO<sub>2</sub> equivalent from all sources, including country specific electricity.

\*\* Energy from all sources including electricity, natural gas, fuel oil, LPG etc.

# Constant currency basis, including inter-company sales.

**Energy use and emissions intensity**

Our target for the two years 2007-8 was to reduce the intensity of our CO<sub>2</sub> emissions by 5% in real terms. Including the businesses acquired from the Carpenter Technology Corporation, CO<sub>2</sub> intensity was reduced by 17% over the two year period. The CO<sub>2</sub> intensity of the former Carpenter businesses is lower than the average for the Group and excluding them CO<sub>2</sub> intensity was down by 9%. Energy intensity was down by 18% over the two years (12% down excluding the former Carpenter businesses). The full impact of this reduction did not flow through to reduced emissions intensity due to changes in the mix of energy sources. Our objective was to increase the proportion of our electricity from 100% renewable sources to 4% over two years. Due to uneconomic pricing in the market for renewable electricity 2.9% of our 2008 electricity consumption was from 100% renewable sources (2.8% excluding the former Carpenter businesses).

We will continue to seek to increase our use of renewable energy where this is economically viable.

Total CO<sub>2</sub> emissions due to energy use increased at a slower rate than the growth in sales, reflecting the greater efficiency. 453,000 tonnes of CO<sub>2</sub> were emitted in 2008 (437,000 tonnes excluding Carpenter) against 437,000 tonnes in 2007 and 422,000 tonnes in 2006.

In addition to improving energy use and emissions performance through increased efficiency, changes in our business and product mix influence our energy and emissions when indexed to turnover. Emissions are also affected by changes in national electricity-CO<sub>2</sub> conversion factors.

Our objective for the two years 2009-10 is to reduce our CO<sub>2</sub> emissions intensity due to the use of energy by a further 5%.

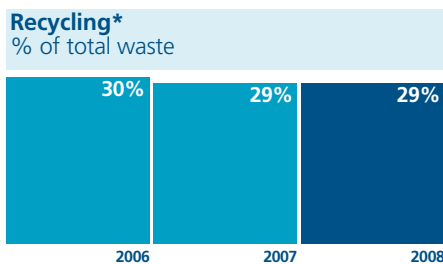
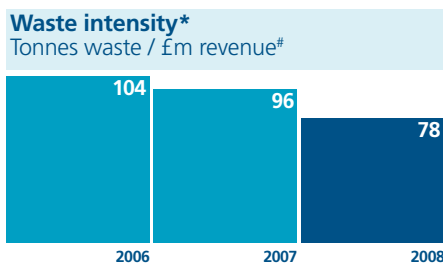
## Reducing CO<sub>2</sub> emissions through energy efficiency

Across the Group many sites improved their energy efficiency to help reduce Morgan Crucible's emissions intensity in 2008. Example initiatives include:

- The efficiency programme at the Technical Ceramics site at New Bedford, OH, USA resulted in the replacement of two old air compressors with one oil free variable speed drive compressor. This saved 69,000 kWh of electricity, cutting related CO<sub>2</sub> emissions by some 40 tonnes.
- The new automated Thermal Ceramics insulating firebrick plant in Yixing, China incorporates best manufacturing practice from Thermal plants around the world. The new plant uses 20% less energy per unit of output relative to the existing Yixing plant.
- The roll-out of the energy management programme at Technical Ceramics' Rugby, UK continued with improvements to kiln insulation, new reduced mass kiln saggars and the redirection of air compressor exhausts. As a result sales were up and energy use down in the year and the site achieved a reduction in energy intensity of 8.7%.



# Environment continued



\* Hazardous and non hazardous waste, including recycled material.  
 # Constant currency basis, including inter-company sales.

### Waste and recycling

Waste management is a key area of focus for the Group with opportunities to reduce our use of raw materials, packaging and other consumables. We monitor hazardous and non-hazardous waste at a site, Divisional and Group level according to waste stream and disposal route. We assess performance on the basis of waste intensity (i.e. waste quantities indexed to turnover) and the proportion of total waste which is recycled.

Our target was to cut waste intensity by 5% over the two years 2007-8. Actual waste intensity was down by 25% (18% reduction excluding the Carpenter businesses) Total waste was some 73,000 tonnes during the year (71,000 tonnes excluding Carpenter) down from 78,000 tonnes in 2007 and 76,000 tonnes in 2006.

Consistent global attention to waste management has brought increased site-level awareness of re-use, waste minimisation and recycling opportunities. As a result a number of major sites recycled over 80% of their waste during the year and reduced their total waste intensity. However, the demand for recycled materials softened in the latter part of 2008 and, as a result, some waste intended for recycling was diverted to disposal.

Some 19,000 tonnes of waste material was recycled during the year. This included 947 tonnes of paper and cardboard, 100 tonnes of plastic, 403 tonnes of wood and 545 tonnes of metal. The remainder of the recycled material included scrap, dust, slag and other process by-products which were used by others as raw materials for their processes and for other uses.

The proportion of total waste which was recycled during the year was 29%. This was unchanged from 2007. Recycling is relatively less developed at the former Carpenter businesses which recycled 8% of their waste. Excluding them, the proportion of total waste recycled was up by 1% to 30%, the same level as in 2006. However, we did not achieve our target to increase the proportion of our total waste which is recycled to 35%.

Our objectives for the two years 2009-10 are to reduce our waste intensity by a further 5% and to increase the proportion of total waste which is recycled to 35%.

## Waste reduction: a culture of operational excellence and cost efficiency

One of Morgan Crucible's strategic priorities is to have a culture of operational excellence and cost efficiency. Site based waste reduction, reuse and recycling programmes are a key part of this and waste management performance was ahead of target at many sites across the Group.

- The Technical Ceramics, Stourport, UK site set up a waste segregation scheme during the year. As a result, fired ceramic scrap which would have gone to landfill is now sold to a third party contractor. The increase waste-awareness has helped the site to cut its waste intensity by 7% and to increase the proportion of its waste which is recycled by 65%.
- The MMS team in Brazil have used waste management to help drive behavioral change as part of their operational excellence and cost efficiency strategy. By changing from a 26m<sup>3</sup> roll-off container for all non-hazardous waste to small containers and segregated bins for each waste stream, waste intensity is down 11.6% and the recycling rate is up by 50%.



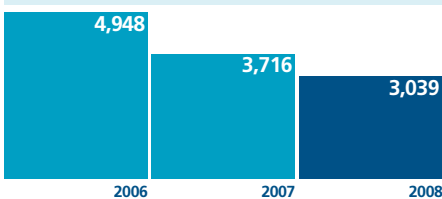
- Thermal Ceramics in Ontario, Canada have cut the amount of hazardous waste from their process from 262 tonnes in 2006 down to close to zero in 2008. The plant manufactures engineered vacuum formed shaped insulation and historically the main form of hazardous waste was ammonia stabilised silica. Reductions were achieved through process improvements and what little waste that is still generated is treated and re-fed into the batching process via a system commissioned in mid 2007.

# Environment

## continued

### Water intensity

m<sup>3</sup> water use per £m revenue<sup>#</sup>



# Constant currency basis, including inter-company sales.

### Water use and intensity

We include information on all water used for potable, sanitary and process purposes from both on-site extraction and from local authority and similar sources. A significant proportion of the Group's water usage is in production processes, approximately 60% of which is subsequently discharged. We monitor use of water from all sources and assess performance on the basis of water intensity.

Our water intensity was down 39% over the two years 2007-8 (31% down excluding the former Carpenter businesses). This exceeded our target for a 10% reduction, reflecting increased awareness of the use of water and a variety of reduction initiatives at sites around the world. Total water use in 2008 was 2.86 million m<sup>3</sup>, down from 3.03 million m<sup>3</sup> in 2007 and 3.61 million m<sup>3</sup> in 2006. Our 2006 water use included the impact of a leak at one of our major US facilities.

Our objective for the two years 2009-10 is to reduce our water intensity by a further 5%.

### Environmental Regulatory Compliance

One of our facilities in Australia received an environmental enforcement notice during the year. This related to the removal of an exemption in relation to the protection of sewer entry points. Plans to resolve this are awaiting approval from the local authorities. An environmental enforcement notice was received by a site in USA and related to a change in permit resulting in a negotiated fine of \$2,800. Manufacturing activity has ceased at the UK site which had been working with the environmental authorities with regard to water sampling. The Company has not been notified of any further issues.

The Group also has a small number of ongoing remediation programmes to address historical soil and groundwater contamination issues.

### Product impact

Many of the Group's products make a positive contribution to the environment. Selected case study examples are shown on the following two pages.

## Saving water world-wide

Morgan Crucible has been working to reduce its use of this finite and increasingly scarce resource and has been cutting water use worldwide.

- The Technical Ceramics site in Rugby, UK uses waste de-ionised water from its processes to service the site toilets. This was previously discharged to the sewer. Combined with other reduction initiatives this helped reduce site water use by 19% and by 25% relative to sales.
- MMS in Brazil has been working to maximise water recycling in their production processes. This site's annual water use is down by 1,500m<sup>3</sup> since 2006, a 40% reduction in water use intensity over two years.



# Our products: Enhancing global sustainability



Carbon: Helping make a difference

## Getting the power from the wind into the grid

Demand for clean, sustainable, CO<sub>2</sub> free energy has never been greater and Carbon is well placed to help original equipment makers to develop this growth market. The Division supplies the key enabling technologies for wind power generation – for both turbines and the generators within. Long life and reliability are essential for all the key components in a wind turbine. Many are installed in harsh and corrosive marine and high altitude environments where access is difficult and repeated maintenance is not an easy option.



# Our products: Enhancing global sustainability continued



Group-wide: Co-operating to add value

## A bright future for solar energy

The Earth receives an impressive 10,000 times more energy from the sun than mankind consumes every year. The three Divisions of Morgan Crucible are involved in the challenge to harness this solar energy for our everyday use.

Technical Ceramics is working with leading companies who are developing photovoltaic (PV-Cell) power. Utilising materials science and applications engineering their contribution takes the form of optimised products for both the PV-cell manufacturing process and the finished panels.

The Carbon Division is leveraging its world leading capability in high temperature insulation for solar silicon manufacturers around the globe, helping to increase efficiency and making solar energy a more viable source of long-term, sustainable electrical power.

Thermal Ceramics' advanced insulation systems are used in the emerging 'concentrated solar power' sector where arrays of tracking reflectors are used to focus solar energy to create a high temperature in a defined space. This includes 'power tower' applications where the concentrated sunlight melts salt and the heat energy is then used to generate electricity and also 'Sterling engine' applications whereby heat energy is directly converted into mechanical power which is used to generate electricity.

The solar energy market is set for a bright future and Morgan is well positioned to support its ongoing growth and success.



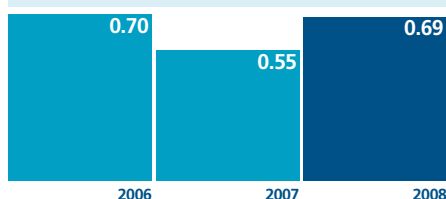
Thermal Ceramics: Reducing CO<sub>2</sub> emissions per unit of electricity

## Heat recovery steam generators boost efficiency

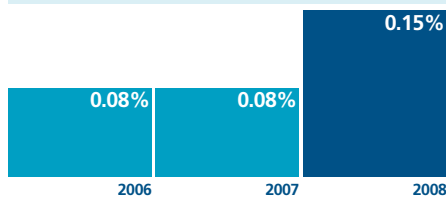
The most efficient way of converting fossil fuel into electricity is in a combined cycle power station which combines a gas turbine with a heat recovery steam generator (HRSG) which recovers exhaust heat from the gas turbine to make steam to power a second generator. The HRSG boosts efficiency and thermal efficiency is key to achieving this. Thermal Ceramics has a leading position in supplying the advanced insulation solutions required. The market is set to see further growth as gasification technology is used to convert coal and heavy crude oil into 'syngas' which can then be used in a gas turbine rather than being limited to use in a traditional coal or oil fired power station.

# Health and safety

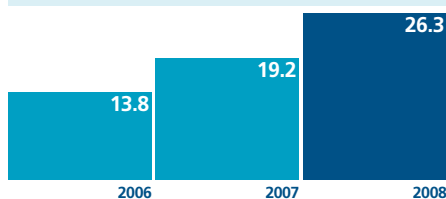
**Lost time accident frequency\***  
LTAs/100,000 hours worked



**Lost time**  
% of total working time



**Lost time per LTA\***  
Days per LTA



\* Lost time accident (LTA): accidents resulting in one or more days lost time.

In accordance with our EHS policy outlined on page 6 we are committed to conducting our activities in a manner which achieves the highest standards of health and safety for all those affected by our operations. The commitment is aligned with our strategic objectives and our Core Values Statement.

The Group monitors the effectiveness of its health and safety policy through a set of key performance indicators which are reported monthly by all sites. Health and Safety is a standing agenda item at meetings of the Executive Committee and the Board.

**Health and Safety Management Systems**  
Morgan Crucible's health and safety policies form the basis of our health and safety management systems and processes which are integrated with the Group's risk management processes and aligned with the overall operation of the businesses.

All of our major sites worldwide have health and safety management systems in place and a number of sites are certified or working to OHSAS18001. Health and safety is included in the EHS Compliance Audit Programme, as is further described on page 7.

**Health and Safety performance**

Morgan Crucible's health and safety-related key performance indicators include lost time accident frequencies, non-lost time accident frequencies, accident causes and lost time arising from work-related injuries and ill-health.

During the year, reporting was extended to cover the businesses acquired from the Carpenter Technology Corporation at the end of March 2008. The health and safety KPIs in this report cover 100% of employees (2007: 99%).

Our long term objective is to have no accidents and we are working to increase awareness of our training and accident preventative programmes, for example in China. One impact of this has been the increase in accident reporting rates, which, when combined with the impact of the former Carpenter businesses acquired at the end of March 2008 saw the reported frequency of lost time accidents (LTAs) increase from 0.55 per 100,000 hours worked in 2007 to 0.69 per 100,000 hours in 2008. This is a marginal reduction on the 2006 reported LTA frequency of 0.70.

## Targeting continuous improvement through H&S management systems

The Technical Ceramics sites at Ruabon, UK and Haldenwanger, Germany were the first two in the Division to be certified to OHSAS18001. This reflects their strong track record in health and safety management and performance improvement. Their combined lost time accident frequency rate was down 49% in 2008 and lost time as a percentage of time worked was down 77%. This followed reductions of 46% and 32% in 2007.

The Technical Ceramics Division is planning four more OHSAS18001 certifications in the coming year. This will include two of the sites acquired from the Carpenter Technology Corporation during 2008 and is inline with the Divisional objective to achieve OHSAS18001 at all its European sites.



# Health and safety continued

## Health and Safety performance continued

Including the former Carpenter businesses, lost time as a percentage of total time worked was up at 0.15%. This was driven by the increased accident frequencies and a reported increase in the average time lost per lost time accident. This was due to a small number of longer term cases and improved reporting of lost time due to accidents which may have been categorised as general sickness in prior years with long term cases which were not consistently covered by the 2006 data.

The most common cause of accidents across the Group was manual handling related cuts and abrasions.

## Health and Safety Regulatory Compliance

Four sites across the Group received health and safety related enforcement or improvement notices during the year. These related to machine guarding, personal protective equipment, warning signs and lift rating at a site in Canada, to training records at a site in Mexico and to machine guarding and related issues at two sites in the USA. Corrective actions have been completed to comply with these notices at the relevant facilities.

## Carbon Swansea leads with proactive H&S management

In 2008 the Carbon Division achieved the lowest lost time accident frequency across the Group. The site in Swansea, UK is leading the way with a series of health and safety related programmes which support the Group's longer term objective of zero accidents. These include:

- Professionalism in health and safety – six NEBOSH (National Examination Board in Occupational Safety and Health) and IOSH (Institute of Safety and Health) diplomas and certificates were awarded during 2008, two with distinction.
- Health and safety training – H&S and related training at Swansea takes a number of forms. The focus is on helping to reduce and avoid unsafe occurrences, and minimising the impact of those which do occur. Training courses include risk awareness and control, job skills refreshers (e.g. manual handling and fork-lift truck driving), first aid and tool box training on general risks and personal protective equipment. The learning experience is reinforced by a safety quiz.

As a result of these proactive measures, accident frequencies at the Swansea site are down by 25% since 2006 and lost time accident frequencies are down 35%.





## Group EHS targets

In addition to Group targets, our businesses set targets and undertake initiatives appropriate to their specific opportunities for improvement, as is highlighted in a number of the case studies in this report.

| Area  | 2008 Target/Objective   | 2008 Progress   | Future objective  |
|---|---|---|---|
| <b>EHS Compliance Audit Programme</b>                     | Undertake a total of 31 EHS audits, including the nine sites acquired from Carpenter during 2008. | <b>Part achieved:</b> 23 EHS audits were completed during the year, including the nine former Carpenter sites were completed. A number of other audits were deferred, pending completion of the Group's EHS assessment and training programme in China.   | Audit all manufacturing sites on a three-year rolling cycle. Undertake a total of 36 EHS audits in 2009.  |
| <b>Environmental and Health and Safety data reporting</b> | To include 100% of production sites* which have been part of the Group for the full year.         | <b>Achieved:</b> Reporting was extended to include the nine sites acquired during the year and EHS data is now collected through our management information systems from all sites worldwide. Data in this report covers 100% of production sites.  | Extend coverage to include NP Aerospace which is now majority owned and maintain coverage of other sites. |
| <b>Environmental Management Systems</b>                   | Continue to extend EMS coverage. 10 further ISO14001 certifications are planned for 2008.         | <b>Not achieved/ in progress:</b> Over 90% of capacity across 84 sites now covered by an EMS. However, only three further sites were certified to ISO14001, and two certified sites were closed during the year. 28 sites now ISO14001 certified covering 41% of capacity with coverage down due to the nine uncertified sites acquired from Carpenter. | Continue to extend EMS coverage. Eight new ISO14001 certifications are planned for 2009-10.               |
| <b>Reduction in emissions intensity</b>                   | 5% reduction in emissions intensity due to energy use over two years (2007-8).                    | <b>Achieved:</b> Emissions intensity due to energy use improved by 17% over the two years (9% improvement excluding the ex-Carpenter sites).  | A further 5% reduction in emissions intensity due to energy use over two years (2009-10).                 |
| <b>Increase use of electricity from renewable sources</b> | Electricity from renewable sources: >4% by end 2008**.  | <b>Not achieved:</b> The % of electricity from renewable sources increased from 2.7% in 2006 to 2.9% in 2008. This fell short of the target due to uneconomic pricing in the market for renewable electricity.  | Increase our use of renewable energy where economically viable.   |
| <b>Reduction in waste intensity</b>                       | 5% reduction in waste intensity: over two years (2007-8).   | <b>Achieved:</b> Waste intensity improved by 25% over the period 2007-8. (18% improvement excluding the ex-Carpenter sites).  | A further 5% reduction in waste intensity over the two years 2009-10).                                    |
| <b>Increase recycling</b>                                 | Increase % of total waste which is recycled: to 35% over two years (2007-8).                      | <b>Not achieved:</b> The proportion of total waste which is recycled was down by 1% over the period 2007-8 to 29% (30% excluding the ex-Carpenter businesses) This was due to improved reporting of total waste and softness in recycling markets in 2008.  | Increase % of total waste which is recycled: to 35% over two years (2009-10).                             |
| <b>Reduction in water use intensity</b>                   | 10% reduction in water intensity over two years. (2007-8).  | <b>Achieved:</b> Water intensity was reduced by 39% over two years (31% excluding the ex-Carpenter sites). Increased awareness, improved measurement and a number of reduction programmes have driven this ahead of plan.   | A further 5% reduction in water intensity over two years (2009-10).                                       |
| <b>Reduction in lost time accident frequency</b>          | Continue to make progress towards our long term goal of zero accidents.                           | <b>Not achieved:</b> Following a 20% reduction in lost time accident frequencies in 2007, lost time accident frequencies were up from 0.55 per 100,000 hours worked to 0.69.  | Continue to make progress towards our long term goal of zero accidents.                                   |
| <b>Reduction in lost time</b>                             | Reduce the lost time per lost time accident.  | <b>Not achieved:</b> Average lost time per lost time accident increased from 19.2 to 26.3 days.   | Increase focus on longer term cases and on reducing the average time lost per LTA.                        |

\* Smaller non production sites where the utilities are not included in the lease costs are not included in the environmental data.

\*\* In addition to renewables included in the standard generation capacity.

# Notes

- **1. Data gathering and comparisons.** Our EHS reporting processes are focussed on data that is of EHS and commercial value and we have integrated these processes with our financial reporting systems. Our reporting processes are increasingly accurate and improvements in environmental and health and safety performance measurement and reporting may increase some reported figures and require historic data to be restated. Where possible, we ensure meaningful comparisons between annual performance indicators are available.
- **2. Verification.** All Morgan Crucible manufacturing facilities are regularly reviewed under the EHS Group's Compliance Audit Programme. Those sites certified to ISO9001, ISO14001, OHSAS18001 and other standards have regular external audits. In addition, the Director of Risk Assurance works with external independent consultants to review and where appropriate verify our environmental and health and safety related non-financial key performance indicators. The Group also uses external professional advisers in relation to specific health and safety and environmental matters as required.
- **3. Guidelines.** A variety of guidelines, reports, standards and other authorities have been consulted and utilised in the compilation of this report. These include the UK Government's Department for Environment, Food and Rural Affairs environmental reporting guidelines, the Global Reporting Initiative's Sustainability Reporting Guidelines 2006, the International Organization for Standardization's ISO14001 standards, and the FTSE4Good Environmental Criteria.
- **4. External assistance.** Morgan Crucible utilised the assistance of CSR Consulting Ltd. in the compilation and production of this report.
- **5. Feedback.** We welcome your feedback on this EHS report and your comments on ways we could further develop reporting at Morgan Crucible. You can contact us by e-mail at [ehs@morganplc.com](mailto:ehs@morganplc.com) or write to The Morgan Crucible Company plc, Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP, United Kingdom.

The Board considers that these procedures provide a reasonable level of assurance that the Group's EHS disclosures are free from material misstatement whether caused by fraud or other irregularity or error.

Employees who have concerns which cannot be satisfactorily resolved locally may also use the Morgan Crucible Ethics and Compliance Helpline, details of which are on the Morgan Crucible website and on the intranet.

