Morgan Crucible

EHS Report 2010

Extraordinary products from advanced materials

Morgan Crucible

The Advanced Materials Group

Morgan Crucible is a world leader in advanced materials.

Our highly skilled, dynamic people provide high-technology solutions which help make the world safer, healthier and more efficient.

Group strategy

Our vision

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

Our aim

→ Our aim is to create long-term sustainable shareholder value.

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.

Introduction

Kevin Dangerfield
Chief Financial Officer

I am pleased to report that our environmental and health and safety performance improved in the past year and that more of our revenue is generated by products and services which benefit the environment and enhance sustainability.

As a world leader in advanced materials Morgan Crucible takes its' environmental and health and safety related responsibilities very seriously. We see continuous improvement in this area as key to our aim of creating long-term sustainable value.

This is the seventh year in which we have published an Environmental, Health and Safety (EHS) Report. As I have stated in previous reports, our environmental and health and safety programmes are integral to our business, aligned with our Core Values Statement and our strategic priorities. Once again, I am pleased to report that in many areas our environmental, health and safety performance improved during the year and that we met the majority of the EHS performance improvement targets that we set ourselves for the two year period, 2008-10.

Much of the Group's production involves energy intensive high-temperature processes. Therefore climate change related emissions continue to be a key challenge for us. As the global economy recovers, the utilisation efficiency of many of our high temperature processes has improved and when combined with some significant process improvements from the programmes and initiatives that I reported last year, our 2010 CO_2 emissions showed a reduction from 457,862 tonnes in 2008 to 426,330 tonnes in 2010. In addition, the Group's CO_2 intensity was down by 12% from the 2008 level.

During the year we have worked to further increase the robustness of our EHS KPI data and we will be using it to set new environmental targets and objectives through 2012.

Our products help our customers to reduce their energy use and, by lasting longer, reduce waste. They are also key components in many forms of sustainable energy generation. Some examples of the Group's products which make a positive contribution to sustainability are included on pages 14 and 16.

Our initiative to improve EHS management and performance in China has continued during the year, where we have focussed on safety training, an area where we thought that there was room for further improvement. We have also extended and adapted this initiative to our facilities in India, concentrating on the implementation of robust EHS management systems.

During the year the Group's United Kingdom facilities were registered under the UK Government's Carbon Reduction Commitment scheme and have been certified to the Carbon Trust Standard. The Company also participates in the Carbon Disclosure Project.

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

Kevin Dangerfield
Chief Financial Officer
May 2010

Morgan Crucible at a glance

Morgan Crucible is a world leader in advanced materials with 2010 revenue of £1,017.1 million and Group EBITA* of £109.5 million. Listed on the London Stock Exchange, Morgan Crucible's two Divisions employ some 9,800 people around the world with operating sites in 34 countries serving customers in over 100 countries.

Our Divisions

Morgan Ceramics

Morgan Ceramics uses competences in material science and applications engineering to manufacture custom products for demanding environments.

Through its Technical Ceramics Business it supplies customer-specific, applications-engineered industrial products manufactured from advanced materials including structural ceramic, electro-ceramic and precious metals. The Thermal Ceramics Business provides thermal management solutions for high-temperature applications which benefit technically, financially and environmentally from optimised energy and emissions control.

Core products
- Insulating fibre, insulating bricks and monolithics
- Ceramic cores for complex turbine blades
- Components for electron tubes
- Feedthroughs for medical implants
- Piezoelectric ceramic actuators

Core markets
- Petrochemical & industrial
- Energy
- Healthcare
- Transportation
- Electronics

Revenue £m

609.1m

Divisional EBITA# £m
Continuing business

68.8m

Morgan Engineered Materials

Morgan Engineered Materials delivers materials technology through its global businesses.

Morgan Engineering Materials delivers highly engineered solutions across the world from a portfolio of advanced material technologies that include carbon, silicon carbide, oxide-based ceramics and advanced polymeric composites. The Division's core applications are industrial and rail transportation, fluid handling, power generation (gas turbine, solar and wind), molten metal handling and advanced lightweight ceramic/composite armour systems for personnel and vehicle protection.

Core products
- Electrical brushes
- Seals and bearings
- Protective ballistic armour
- Ultra-high-temperature insulation
- Crucibles and furnaces

Core markets
- Security & defence
- Transportation
- Petrochemical & industrial
- Energy
- Electronics

Revenue £m

408.0m

Divisional EBITA# £m
Continuing business

45.5m

* Operating profit before restructuring costs, other one-off items and amortisation of intangible assets.
\# Defined as segment operating profit before restructuring costs, other one-off items and amortisation of intangible assets.

Overview

About this report

Our 2010 EHS Report summarises Morgan Crucible's environmental, health and safety performance in the year to 2 January 2011. This, our seventh annual EHS Report, covers the available data for the whole Group. It also details our EHS Policies and management systems.

Our EHS polices and programmes support our five strategic priorities and our Core Values Statement which commit us 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.

The health and safety data in this report covers 100% of our employees and the environmental data covers 100% of our production sites.

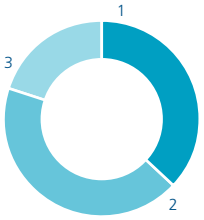
We have a wide portfolio of products which help make the world safer, healthier and more efficient, helping to improve the environmental sustainability performance of our customer's products and operations. Although we have not sought to quantify this benefit, a key part of our contribution to sustainability is the development and supply of new and improved products.

About Morgan Crucible

Morgan Crucible is a world leader in advanced materials providing high-technology solutions for specialised applications in selected global markets.

2010 Revenue by destination

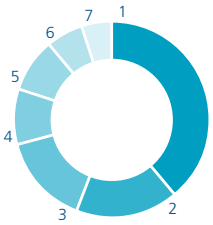
%



1 Americas: 37%
2 EMEA: 43%
3 Asia: 20%

2010 revenue by market

%



1 Industrial: 39%
2 Transportation: 17%
3 Security & defence: 15%
4 Electronics: 9%
5 Petrochem: 9%
6 Energy: 6%
7 Healthcare: 5%

	2010	2009	2008	2007	2006
Revenue (£m)	**1,017.1**	942.6	835.0	693.2	677.8
EBITA* margin (%)	**10.8%**	9.4%	13.0%	12.7%	11.1%
R&D spend#~ (£m)	**15.9**	14.6	11.4	8.7	8.2
Dividends (£m)	**20.9**	18.8	18.8	18.8	13.2
Charitable donations (£k)	**250**	302	115	192	146

* Profit from operations before restructuring costs, other one-off items and amortisation of intangible assets.
~ Includes capitalised development costs. 2010: £nil (2009: £0.7 million, 2008: £1.6 million, 2007: £nil).
# Excludes the amounts spent working with customers and others by way of product enhancement and application engineering.

Further information about Morgan Crucible is available on our website at www.morgancrucible.com

EHS Policy and management

EHS Policy

The Group's EHS Policy applies to all Morgan Crucible businesses worldwide. It requires high standards of EHS management at all of Morgan Crucibles' facilities and seeks to provide continuous improvement in environmental, health and safety performance in support of our strategic priorities. As summarised below, the Policy is made available to all employees and published on the Group's website and intranet.

The purpose of our EHS Policy is:

- To maintain a safe working environment for staff, contractors and visitors across all Morgan Crucible companies worldwide (the Group).
- To minimise the impact of the Group's activities on the environment.
- To confirm the Group's commitment to excellence and continuous improvement in Environmental, Health and Safety (EHS) performance.

All employees have responsibility for EHS policy and related matters:

- The Chief Executive Officer has overall accountability for corporate responsibility matters.
- The Chief Financial Officer is responsible for EHS policy, strategic direction and performance monitoring.
- The Chief Executive of each of the Group's Divisions has responsibility for EHS performance and reporting within their respective business and for implementing this policy and ensuring compliance.
- The manager of each operation has operational responsibility for EHS.
- Employees at all levels are responsible for implementing EHS rules and guidance, avoiding potential and actual hazards, for warning others accordingly and for identifying opportunities for improvement.

It is the Group's EHS policy that all businesses:

- Comply with EHS legislation, regulations and other applicable legal requirements as a minimum standard.
- Conduct operations so as minimise the impact on human health, prevent pollution, minimise CO_2 emissions and to reduce hazards.
- Include EHS and climate change related considerations in our business decisions, promote resource and efficiency programmes across the Group and minimise the environmental impact of historic, current and future operations.
- Supply products that, when used in compliance with product safety communications and common safety practices, will not present an unacceptable risk to human health and safety.
- Assess and minimise the environmental impact of the Group's products during design, manufacture, use, and on disposal.
- Set objectives and targets for the continuous improvement of EHS performance and monitor and report progress internally and externally as appropriate.
- Ensure competence in EHS matters through training and education at all levels of the organisation.
- Conduct periodic reviews of the Group's Environmental and Health & Safety management systems.
- Maintain communications with stakeholders on EHS matters to help ensure alignment with their needs and expectations.
- Encourage our business partners to adopt this same accountability.

In addition to the Group Policy our businesses are required to ensure that they are aware of and take account of national, regional and local EHS laws and regulations and best practice, including that set out in the *Morgan Crucible EHS Good Management Practice Manual*.

Where appropriate our operations have supplementary environmental and health and safety policies, key performance indicators and targets according to the risks, opportunities and needs of each particular business.

EHS Policy implementation

Morgan Crucible's EHS Policy forms the basis of our environment, health and safety management systems and processes. The core objectives of our systems are to identify risks and opportunities, legal and other requirements and to monitor and continuously improve performance in support of our strategic objectives.

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 designed to be forward-looking in the identification, management and mitigation of EHS risks and opportunities that could impact the Group's short- and long-term performance and value.

The management of our environmental and health and safety performance is aligned with the operation of our day-to-day business. The Chief Executive Officer has overall responsibility for corporate responsibility matters and the Chief Financial Officer has specific responsibility for EHS policy, strategic direction and performance monitoring, supported by the Director of Environment, Health and Safety. Operational responsibility is delegated to the Chief Executive of each Division and the manager of each operation. In practice, all employees are responsible for ensuring that our EHS policy is implemented and for identifying additional areas and opportunities for further development.

Morgan Crucible's EHS management processes include the EHS Compliance Audit Programme. This programme 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 and improve their EHS performance to meet internationally accepted good management practice standards.

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. These actions are regularly tracked by the audit teams.

The Group's manufacturing sites are audited on a three year rolling cycle. During 2010 28 sites were audited, exceeding our target of 26 sites. Our objective for 2011 is to audit a further 26 sites.

Environmental management systems are in place at 87 sites worldwide, representing over 90% of output, including 35 major sites or 58% of sales certified to ISO 14001 (2009: 35 sites and 38% of sales). Three sites achieved certification in 2010, including the main NP Aerospace sites and one ISO 14001 site was closed. We plan for a further seven sites to be certified over the period 2011-12. All new certifications are in addition to the ongoing programme of re-certifications. All of our major sites worldwide have health and safety management systems in place, with 11 sites certified to or working towards OHSAS 18001.

EHS training in India and China

In 2010, we continued our programme of EHS training in China and extended the programme to our sites in India. In China, a workshop was conducted in Shanghai on Job Safety Analysis (JSA) methodology and practice and then specific JSA training was conducted at the individual sites. EHS training in will continue in 2011 as we work to raise the level of EHS awareness and practice in our sites in China.

In India, Kevin Dangerfield met with the local Thermal Ceramics management team (pictured above) and attended the training session held in Ahmedabad for personnel who have site EHS responsibility. This was followed by the commencement of the installation of our Indian EHS management system at each of the sites. This programme will be completed in 2011.

EHS Policy effectiveness

In addition to the EHS Compliance Audit Programme, the Group monitors the effectiveness of its EHS Policy through a series of EHS key performance indicators (KPIs). These are reported Group-wide on a monthly basis and the Executive Committee and the Board receive reports every six months.

The charts in this report summarise the Group's EHS performance in real terms, covering 100% of production sites during the year. Where necessary, historic data has been restated to reflect changes to the business, improved reporting and with environmental intensity KPIs reported at constant currency. The verification of our environmental, health and safety disclosures is discussed in note 2 on page 18. The Group is also considering the potential for external assurance of its EHS KPIs in 2011.

Environmental performance
Wherever possible we work to minimise the impact of our business on the environment. As stated above, the Group monitors the effectiveness of its environmental policy through a series of environmental key performance indicators (KPIs) reported by all sites on a monthly basis with the Executive Committee and the Board receiving regular reports. The Group also sets targets[#] for key aspects of its environmental performance. These are summarised in the table on page 17 with performance against target reviewed by KPI below.

Key environmental impacts
Morgan Crucible's key environmental impacts include the emissions due to the use of energy in our processes and facilities, the consumption of raw materials, water use and discharge, the recycling 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 or customers have direct control. Where possible we report on both of these. In future we plan to report on the impacts of business travel where the data is available and this is cost-effective.

UK businesses achieve Carbon Trust Standard

CARBON TRUST STANDARD
REDUCING CO2 YEAR ON YEAR

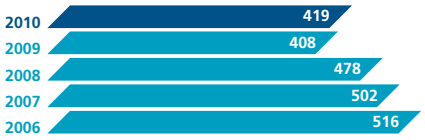
During 2010 Morgan Crucible's UK businesses (including all UK sites) gained certification to the Carbon Trust Standard. This certified that the UK businesses have achieved an absolute reduction in CO_2 emissions, are committed to further reductions and have effective governance procedures, accurate carbon accounting and carbon management programmes in place.

The certification process included site visits, interviews with the management team and an in-depth review of our climate change-related policies, management systems, employee engagement, reporting, and reduction programmes. The Carbon Trust Standard assessment verified that the reduction in emissions over the period 2007-09 was some 12,700 tonnes of CO_2.

[#] Previously multi-year targets referred to the performance period over two years (eg 2009-10). We have clarified this to refer to the base line year and the end of the performance period (eg 2008-10). The targets and performance periods are unchanged.

EHS Policy effectiveness continued

Total CO_2 intensity*
Tonnes CO_2 per £m sales#



Energy intensity**
MWh per £m sales#

* CO_2 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

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_2 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 and emissions relative to turnover.

Although our CO_2 intensity was up by 3% in 2010 compared with 2009, over the two-year period 2008-10 our 2010 CO_2 intensity was down by 12% from 478 tonnes per £m revenue to 419 tonnes per £m revenue. This improvement was ahead of our two-year intensity reduction target of 5%. Excluding the impact of the less energy intensive NP Aerospace business, CO_2 intensity improved by 6% in 2010 compared with 2009 and by 1% over the two-year period 2008-10.

In absolute terms total CO_2 emissions due to energy use were some 426,330 tonnes in 2010 against 389,763 tonnes in 2009, 457,862 tonnes in 2008, ,439,778 tonnes in 2007 and 417,456 tonnes in 2006.

Energy intensity up was by 1% in 2010 but was down by 12% over the two-year period 2008-10. Excluding NP Aerospace, energy intensity improved by 7% in 2010 and by 1% over the two-year period 2008-10. This performance reflected the benefits of energy efficiency measures at our energy-intensive businesses.

In addition to improving energy consumption 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_2 conversion factors.

Our objective for the two years 2010-12 is to reduce our CO_2 emissions intensity due to the use of energy by a further 5%.

Thermal Ceramics – low energy furnacing in India

The Thermal Ceramics facilities in Ranipet and Gujarat, India manufacture Superwool™ and other high-temperature insulating products which help customers in the petrochemical, metals, power and other markets to run their processes more efficiently, save energy and reduce CO_2 emissions.

To help drive down the use of energy in its own manufacturing processes Thermal Ceramics has been developing low-energy furnacing. This can save up to one third of the energy consumed in the melting furnaces used to convert powder raw materials into the glassy fibres in the finished product.

During 2009 and 2010 this technology was implemented at the sites in India helping to improve overall energy intensity by some 17% and CO_2 intensity by 14% over the two year period.

EHS Policy effectiveness continued

Total waste intensity*
Tonnes waste/£m sales#

Recycling %
% of total waste recycled

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. As well as saving money through waste reduction, by recycling certain waste streams we can turn costs into revenue.

We monitor hazardous and non-hazardous waste at a site, Divisional and Group level according to waste stream and disposal route, assessing performance on the basis of waste intensity (i.e. waste quantities indexed to turnover). We also monitor and target the proportion of total waste which is recycled.

During the year we reassessed our waste management reporting to exclude scrap material which is reused in-house and have restated our historic reports accordingly.

On this basis waste intensity was down by 20% in 2010 and by 34% over the two-year period 2008-10, ahead of our 5% reduction target. Excluding the impact of NP Aerospace waste intensity was down by 28% in the year and by 25% over two years. The improvement was in part due to the completion of various one-off programmes to dispose of historic waste at a small number of major sites.

The proportion of total waste which was recycled was 24% in 2010, up 7% on the prior year. This was ahead of our previous target which was to increase the proportion of waste which is recycled by six percentage points.

In total, some 11,000 tonnes of waste material was recycled during the year. This included 850 tonnes of paper and cardboard, 135 tonnes of plastic, 510 tonnes of wood and 480 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 markets for recycled materials strengthened in 2010 from a low in 2009, helping to drive the increased rates of recycling. In addition, consistent 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 the focus going forward will be on under-performing sites as well as reducing total waste intensity.

Our objectives for the two years 2010-12 are to reduce our waste intensity by a further 5% and to increase the proportion of total waste which is recycled by 5%.

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

EHS Policy effectiveness continued

Enhanced waste management at Technical Ceramics Stourport

The Stourport, UK site is the centre of excellence for ceramic materials production for Technical Ceramics' European operations. The site also uses ceramic injection moulding, freezecasting and other specialised manufacturing technologies to produce critical ceramic components for customers in the industrial, medical, electronics and other sectors.

As a materials production centre, waste management is a key focus for the site. Over the past four years the Stourport team have been focusing on reducing waste and enhancing recycling rates. This included a rigorous process to select waste management partners for both hazardous and non-hazardous waste. As a consequence the site has achieved a dramatic improvement in its waste-related performance. Total waste is down from some 900 tonnes in 2007 to 723 tonnes in 2010 whilst the proportion of waste which is recycled is up from 8% to over 85%. The Technical Ceramics team is now working to leverage the best practice developed at Stourport to other sites in the Group.

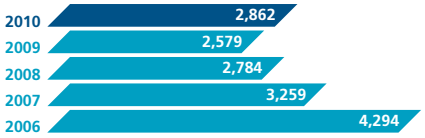
AM&T Luxembourg receives SuperDrecksKescht® award

The environmental initiatives at the AM&T site at Capellen, Luxembourg cover waste miminisation, reducing packaging, and energy and water conservation. During 2010 the site received the prestigious 'SuperDrecksKescht® fir Betriber' quality label in recognition of its dedication to waste management, robust systems and employee involvement.

The award process involves a full audit by SuperDrecksKëscht, investigating all aspects of waste recycling including employee motivation, waste prevention measures, compliant storage, visible and accessible containers, selective waste collection and transparent high-quality disposal/recovery of waste.

EHS Policy effectiveness continued

Water intensity
m^3 water use per £m sales#



Water use and intensity

We include information on all water used for potable, sanitary, irrigation 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.

Although our water intensity is down by 33% over the last five years, water intensity was up 11% in 2010 and by 3% over the two years 2009-10. Therefore we did not achieve our targeted 5% reduction over the period. Excluding NP Aerospace water intensity increased by 2% in 2010 and by 17% over the two-year period 2008-10.

The increased water intensity reflects changes in product mix during 2010, particularly at one of our businesses in the USA. Total water use in 2010 was 2.91 million m^3, up from 2.47 million m^3 in 2009, but down from the 3.47 million m^3 reported in 2006.

The use and recycling of water remains an area of focus for the Group's businesses and our objective for the two years 2010-12 is to reduce our water intensity by 5%.

Environmental Regulatory Compliance

The Company received no fines or penalties in relation to environmental compliance matters during 2010. However, a small number of environmental violation notices were received as follows:

One of our facilities in the USA received a violation notice from the local air permitting authority as the facility submitted its air permit report in hard copy rather than electronically. Another facility in the USA received a notice in relation to a sewer discharge exceeding the required pH. This was a temporary condition due to a maintenance activity and the cause was established and resolved. A further facility received notices of violation in relation to the presence of boron in their water discharge. This was due to the installation of a new system at the site. The notices specified a time-frame for compliance which was adhered to. All were cleared through follow-up sampling.

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

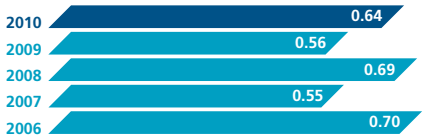
Morgan Ceramics Hayward achieves zero process water discharge

The Morgan Advanced Ceramics site in Hayward, CA, USA was awarded a Certificate of Merit by the California Water Environmental Association for achieving zero discharge of process water.

The site, which was nominated by the City of Hayward for its zero-discharge metal finishing process, treats process water by electro-coagulation and recycles it as 'make-up water' in the cooling tower for ceramic manufacturing. This also helps to save some 150,000 gallons per year of water at the Morgan Advanced Ceramics site which supplies the medical, aerospace, automotive and electronics industries with ceramics, high purity precious and semi-precious brazing materials and ceramic-to-metal brazed assemblies.

EHS Policy effectiveness continued

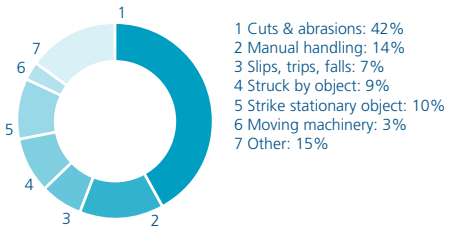
LTA frequency
LTAs/100,000 hours worked



Lost time due to accidents
% of working time lost

Lost time per accident
Days lost per LTA

Accident causes
%



Health and safety

In accordance with our EHS policy outlined on page 5 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. This commitment is aligned with our strategic objectives and our Core Values statement and our long-term health and safety objective is to have no accidents.

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. The Executive Committee and the Board review health and safety matters on a regular basis.

Health and Safety performance

Our health and safety KPIs include accident frequencies and causes and related lost working time. The Group's accident reporting and analysis systems continue to be refined to enable us to produce KPIs that more accurately reflect the health and safety situation throughout the Group. The health and safety KPIs in this report cover 100% of employees (2009: 100%).

In 2010 the Group achieved a 15% reduction in the proportion of working time lost due to accidents and work-related ill-health resulting from a reduction in the average number of days lost per lost time accident from 32 days in 2009 to 24 days in 2010. The absolute number of days lost was down by 11% in the year. This improvement reversed the trend seen since 2006 and reflects a reduction in the number of longer-term cases and an increased focus on 'back-to-work' programmes.

The frequency of lost time accidents during 2010 was 0.64 per 100,000 hours worked with a total of 122 accidents resulting in lost time of one day or more. (103 in 2009 and 142 in 2008) To address this increase we are placing further focus on behavioural safety initiatives, awareness and training. These programmes are being rolled out on a Divisional basis following a number of pilots in 2010.

Manual handling cuts and abrasions are the most common cause of accidents and we will be working to address this, specifically targeting businesses with below-average performance.

Health and Safety Regulatory Compliance

No reported health and safety enforcement notices or prosecutions were received during the year.

EHS Policy effectiveness continued

Morgan Ceramics Americas: Safety achievement awards 2010

The 2010 safety achievement awards were presented at the Morgan Ceramics regional management meeting in the first quarter of 2011. There are four levels of award: Platinum for zero accidents, Gold for zero lost time accidents and no more than one non-lost time accident, Silver for zero lost time accidents and no more than two non-lost time accidents and Bronze for sites which reduce lost time and non-lost time accident rates by 50% or more.

Six sites received awards for their 2010 performance, including Alberox, Certech Mexico, Burlington and Girard at Platinum level, Melbourne at Gold and Canon City achieved silver.

AM&T: Operational Excellence Pillar 1 – Health and Safety

Health and safety is 'Pillar 1' of AM&T's Operational Excellence programme and during 2010 AM&T commenced the roll-out of the powerful DuPont™ 'Integrated STOP™ System' across its European sites. This builds on the success of STOP at sites in the US and is to support progress towards the target of zero accidents.

The 'Safety Training and Observation Programme' or STOP system is a two-way constructive process focused on people's attitudes and how they think and behave as critical factors in making the work-place safe. The objectives of the system include:

- Eliminate incidents and injuries
- Reduce related costs
- Raise safety awareness and transparency
- Increase safety observation skills
- Reinforce management's commitment to safety

Working with a team from DuPont the roll-out included an evaluation to position AM&T against a world-class bench mark and to identify issues and opportunities. This is being followed by train-the-trainer sessions at four locations around the region. The STOP system will then be cascaded across Europe with follow-up coaching and implementation days at each site.

Our products: enhancing global sustainability

The Group's Divisions work to help enhance the sustainability of many industries around the world. These three pages highlight select examples of the Group's products which make a positive contribution to the environment.

Energy

Improving performance...

High-performance material technologies from Morgan Crucible are used extensively in the energy sector. Our advanced solutions help to increase the efficiency of both renewable and traditional energy generation.

1. Wind turbine generators

3x
There is an improvement of up to 3x operating life (indicated by early trials) using Morgan Crucible materials compared to traditional components.

2. Solar

3. Power stations

+20%
Superwool® fibre can improve power plant insulation by up to 20% compared to conventional systems.

4. LEDs

1. Wind turbine generators
Advanced engineered solutions from Morgan Crucible play a key role in wind energy generation. From manufacturing turbine blades to power slip ring systems and environment-specific brush- holders, we supply components that help to optimise generator performance in virtually any type of climate and provide an efficient renewable energy source.

2. Solar
Ceramic's superior physical, thermal and electrical properties make it a reliable and cost- effective material for the harsh environment found in solar cell manufacturing.

Morgan Crucible is providing high-performance components and insulations to leading solar cell manufacturers, enabling them to improve the efficiency of silicon wafer and thin-film photovoltaic manufacturing processes.

3. Power stations
Insulation in power stations is vital in minimising energy losses and increasing efficiency. Morgan Crucible's next-generation high-temperature insulation fibre – Superwool® – is the preferred solution for duct and boiler insulation in heat recovery steam generator systems. It can improve power plant insulation materials by up to 20% compared to conventional systems, thereby reducing energy loss and enhancing sustainability.

4. LEDs
LEDs are fast emerging as the most energy-efficient light source, using 90% less power and lasting 50 times longer than conventional incandescent light bulbs.

Morgan Crucible designs and manufactures high-performance solutions for the efficient manufacture of low-power LEDs, from insulation for the melting of sapphire to components for chemical deposition of silicon carbide. This helps LED manufacturers reduce the costs of developing more environmentally friendly light sources.

Our products continued

Petrochemical & industrial

Making our customers more efficient...

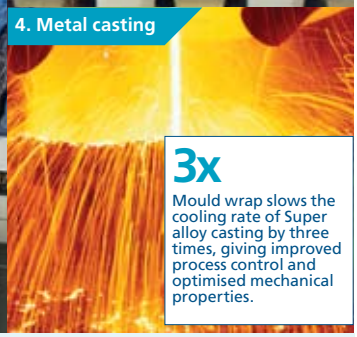
Throughout the petrochemical & industrial sectors our specialised materials are enabling customers to improve their process efficiency and productivity, minimise waste and reduce their environmental footprint.

1. High-performance drilling

2. Water filtration and desalination

3. Ceramic and glass manufacture

4. Metal casting



3x
Mould wrap slows the cooling rate of Super alloy casting by three times, giving improved process control and optimised mechanical properties.

1. High-performance drilling
Drilling bit reliability and tolerance are key to successful onshore and offshore exploration for oil, gas and other fossil fuels. We are a major supplier of highly engineered graphite powder used to manufacture polycrystalline diamond cutters, and our proprietary process for producing high-strength, high-purity brazed alloys for specialised drill bits ensures high performance, increased life and enhanced productivity.

2. Water filtration and desalination
Our composite electrodes are being trialled in wastewater treatment to remove disinfectant and phosphates – the only phosphate removal method to comply with forthcoming 2013 EU legislation. We are developing new materials to improve water sustainability, such as lightweight, low-friction and hence long- lasting ceramic shafts for water pumps, and ceramic discs and membranes for efficient wastewater filtration.

3. Ceramic and glass manufacture
Our fibre products are widely used in the ceramics and glass sectors to manufacture products ranging from tiles to tableware and from sanitaryware to bone china. By reducing kiln car mass, they provide manufacturers with significant energy savings. We also provide insulating firebricks used in roller, shuttle, tunnel and hobby kilns.

4. Metal casting
Our specialised insulation materials are widely used in metals casting to maintain furnaces at the required temperature while minimising energy use and improving efficiency and sustainability. Rolls-Royce is replacing its current insulation with our thermally efficient Superwool® fibres for mould wrap.

Our products continued

Transportation

Specialist solutions...

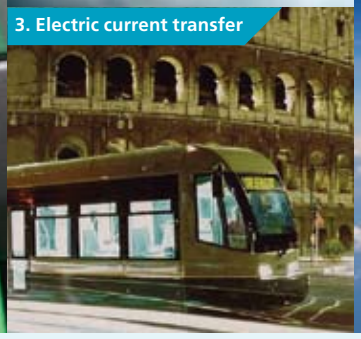
Morgan Crucible's advanced materials are used for precision-engineered components and assemblies throughout the aerospace and transportation industries, from trains and heavy goods lorries to commercial and military aircraft and the space shuttle.

1. Lithium ion batteries

1m
One million electrical vehicles manufactured in China by 2020.

2. Diesel particulate filters

3. Electric current transfer



4. Ceramics for engine turbine blades

1. Morgan AM&T Hairong

We recently acquired Changsha Hairong New Materials Co., Ltd. a company which manufactures graphite-based anode materials for lithium ion batteries. Hairong's materials are market-leading in the fast-growing electric vehicle industry. Its new advanced technology materials will help to improve battery performance and reduce costs for car makers. The technology is also used for energy storage in conjunction with wind and solar power.

2. Diesel particulate filters

Demand for diesel particulate filters is increasing rapidly, driven by stringent vehicle emission standards worldwide. The world's leading filter manufacturer uses our advanced technology insulation to enable the filter to reach the high temperatures needed for 'self-cleaning'. We jointly developed a solution using our Superwool 607 HT® fibre, which is efficient, reliable and sustainable.

3. Electric current transfer

Electric current transfer is critical in many transportation systems such as rail, trams, the underground and helicopters. As well as supplying carbon brushes, collectors and rotary current transfer products, we have developed an innovative carbon material which transfers current between stationary wires and moving parts in the low- humidity environments found at high altitude and in space. Used in starter motors for fixed and rotary wing aircraft, it provides high performance with increased life, reducing maintenance and operating costs.

4. Ceramics for engine turbine blades

Our ceramic cores are used in the manufacture of turbine blades for the Rolls-Royce engines which power the world's largest commercial passenger planes – the Airbus A380 and the Boeing Dreamliner. They reduce weight and improve thermal operating performance, increasing fuel efficiency during take-off, flight and landing.

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	2010 Target/ Objective#	2010 Progress	Future objective
EHS Compliance Audit Programme	Continue to audit all manufacturing sites on a three-year rolling cycle. 26 EHS compliance audits planned for 2010	**Achieved:** 28 EHS audits were completed during the year, exceeding our objective for the year.	Continue to audit all manufacturing sites on a three-year rolling cycle. 26 EHS compliance audits are planned for 2011.
Environmental and health and safety data reporting	Maintain coverage and continue to improve data quality.	**Achieved:** Reporting was extended to include waste management performance for NP Aerospace. EHS data is collected systems from all sites worldwide and the data in this report covers 100% of production sites*.	Consider the potential for external assurance of the Group's EHS KPIs in 2011.
Environmental management systems	Continue to extend EMS coverage. ISO 14001 certification is planned for five further sites over the two year period 2009-11.	**On plan:** Over 90% of sales across 87 sites covered by an EMS. Three further sites were certified to ISO 14001 during the year. A total of 35 sites are certified to ISO 14001 covering 58% of sales.	Continue to extend ISO 14001 coverage to achieve our objective of certifying five additional sites over the two years period 2009-11.
Reduction in emissions intensity	A 5% reduction in emissions intensity due to energy use over the two years 2008-10.	**Achieved:** Emissions intensity due to energy use improved by 12% over the two years 2008-10.	A further 5% reduction in emissions intensity due to energy use over the two years 2010-12.
Reduction in waste intensity	A 5% reduction in waste intensity over the two years 2008-10.	**Achieved:** Waste intensity improved by 34% over the two years 2008-10.	A further 5% reduction in waste intensity over the two years 2010-12.
Increase recycling	Increase % of total waste which is recycled: by 6 percentage points.	**Achieved:** The proportion of total waste which is recycled was up by seven percentage points to 24%.	Increase proportion of total waste which is recycled by 5 percentage points over the two years 2010-12.
Reduction in water use intensity	A 5% reduction in water intensity over two years 2008-10.	**Not achieved:** Water intensity increased by 3% over the two years. 2008-10.	A 5% reduction in water intensity over two years 2010-12.
Health and safety management systems	Continue to ensure all production sites have H&S management systems. Three additional sites planning OHSAS 18001 certification over the period 2009-11.	**On plan:** All production sites are covered by an H&S management system. Seven sites are certified and four further sites are implementing OHSAS 18001.	Continue to ensure all production sites have H&S management systems. Four sites are planning OHSAS 18001 certification over the period 2010-12.
Reduction in lost time accident frequency	Continue to make progress towards our long term goal of zero accidents.	**Not achieved:** Lost time accident frequencies were up from 0.56 per 100,000 hours worked to 0.64.	Reduce accident frequencies to make progress towards our long term goal of zero accidents.
Reduction in lost time	Increase focus on longer term cases and on reducing the average time lost per LTA.	**Achieved:** Average lost time per lost time accident increased from 32 days to 24 days per LTA.	Continue to reduce the average time lost per LTA.

Previously multi-year targets referred to the performance period over two years (eg 2009-10). We have clarified this to refer to the base line year and the end of the performance period (eg 2008-10). The targets and performance periods are unchanged.
* Also includes non production sites where the utilities are not included in the lease costs and the data is available.
** Target takes into account the restatement of the Group's recycling data to exclude scrap material re-used in house and maintains the objective for an absolute increase of six percentage points in the recycling rate.

Notes

1. Data gathering and comparisons. Our EHS reporting processes are focussed on data that is of EHS and commercial value and are increasingly accurate. Thus improvements in environmental and health and safety performance reporting and measurement may increase or decrease 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 ISO 9001, ISO 14001, OHSAS 18001 and other standards have regular external audits. In addition, the Director of EHS and the Divisional EHS teams work 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.

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.

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 and the International Organization for Standardization's ISO14001 standards.

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 or write to The Morgan Crucible Company plc, Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP, United Kingdom.

Employees and others who have concerns regarding EHS or other matters which cannot be satisfactorily resolved locally may also use the Morgan Crucible Ethics Hotline. Further details are available on the Morgan Crucible website and on the Group's intranet.

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