

MORGAN ADVANCED MATERIALS PLC
EHS REPORT 2013



ONE MORGAN

MORGAN ADVANCED MATERIALS IS COMMITTED TO BUILDING A SUSTAINABLE COMPETITIVE ADVANTAGE IN ATTRACTIVE MARKETS WITH TRULY DIFFERENTIATED PRODUCTS AND SERVICES UNDERPINNED BY WORLD-LEADING TECHNOLOGY.

The Group produces a wide range of specialist, high-specification materials that have extraordinary attributes and properties.

Engineered into products, they deliver enhanced performance, often under extreme conditions.

The Group's dynamic, highly skilled people are continuously engaged in finding solutions for complex and technologically demanding applications, which are used all over the world.

In short, the group supplies innovative, differentiated products made from highly technical advanced materials which enable its customers' products and processes to perform more efficiently, more reliably and for longer.

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GROUP STRATEGY

THE GROUP'S STRATEGY IS BASED ON BUILDING A SUSTAINABLE BUSINESS FOR THE LONG-TERM, BY FOCUSING ON ITS FIVE STRATEGIC PRIORITIES AND REMAINING COMMITTED TO DELIVERING STRONG FINANCIAL RETURNS.

STRATEGIC PRIORITIES	IMPLEMENTATION
Be innovative, differentiated and high value-added to our customers	By helping to solve technically demanding challenges for our discerning customers, the Group is able to secure the value that these skills and efforts justify, allowing it to build long-term relationships with customers who regard Morgan as a solutions provider rather than just another supplier.
To focus on higher growth, higher margin, non-economically cyclical markets	Over time Morgan actively manages its portfolio and makes capital and people investments to maximise exposure to its chosen geographies and markets.
Be number one or number two in our chosen market segments	<p>A significant majority of revenue comes from markets where the Group has successfully established a leading position. Through detailed 'share of wallet' assessments Morgan understands its position and actively targets where this can be improved. The Group nurtures and maintains relationships with key customers at multiple levels in the organisation.</p> <p>From these strong positions the Group is able to invest in long-term relationships with customers, providing technology leadership and delivering good, sustainable returns.</p>
Have a culture of operational excellence and cost efficiency	Providing the Group's customers with product and service excellence secures Morgan's revenue stream, and a focus on all elements of its cost base maximises the profits generated from that revenue. The Group is focused on managing its operational footprint, using its low-cost operations as much as possible, sourcing decisions, manufacturing and back office efficiency and on minimising scrap and any other inefficiencies throughout its processes.
Find, keep and develop the right people	The 'people process' begins with a robust recruitment process, considering internal and external candidates, utilising a suite of assessment tools and interviews. There is a growing graduate recruitment programme, targeting the world's best universities and providing a pipeline of talent. Training and development is targeted to develop job-specific and wider management skills and a flexible remuneration package considers the external market and individual contribution. Site, regional and global communication is regular and environmental, health and safety is a key focus at all levels of the business.

The Group uses its strategic priorities to test new investment opportunities, to screen its businesses for fit with the existing Group and to identify areas requiring strategic attention and action.

AT A GLANCE

WHAT DIFFERENTIATES US?

- Advanced material science and processing capabilities
- Our applications engineering experience
- A strong history of innovation and reinvention
- Consistent and reliable performance
- A truly global footprint
- We find and invest in the best people

OUR MARKETS



HEALTHCARE

Morgan Advanced Materials produces components used in medical monitoring and diagnostic instrumentation and tools for treatment and surgery.



PETROCHEMICAL

Morgan Advanced Materials makes critical components for tough assignments in the global petrochemical industry.



TRANSPORTATION

Morgan Advanced Materials makes high-performance products to exacting standards for aerospace, automotive, marine and rail applications.



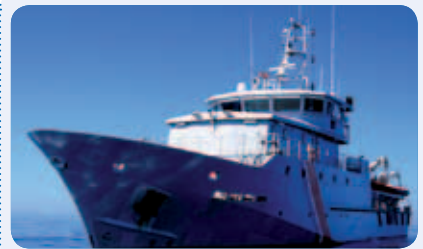
ELECTRONICS

Morgan Advanced Materials makes components that help the electronics industry in its drive towards higher performance and reliability in smaller, lighter, more robust products.



ENERGY

Morgan Advanced Materials develops products for power distribution and generation from renewable and traditional sources and insulation materials for heat management.



SECURITY AND DEFENCE

Morgan Advanced Materials supplies precision-engineered materials, components and assemblies to meet the exacting standards of the international defence and security markets.

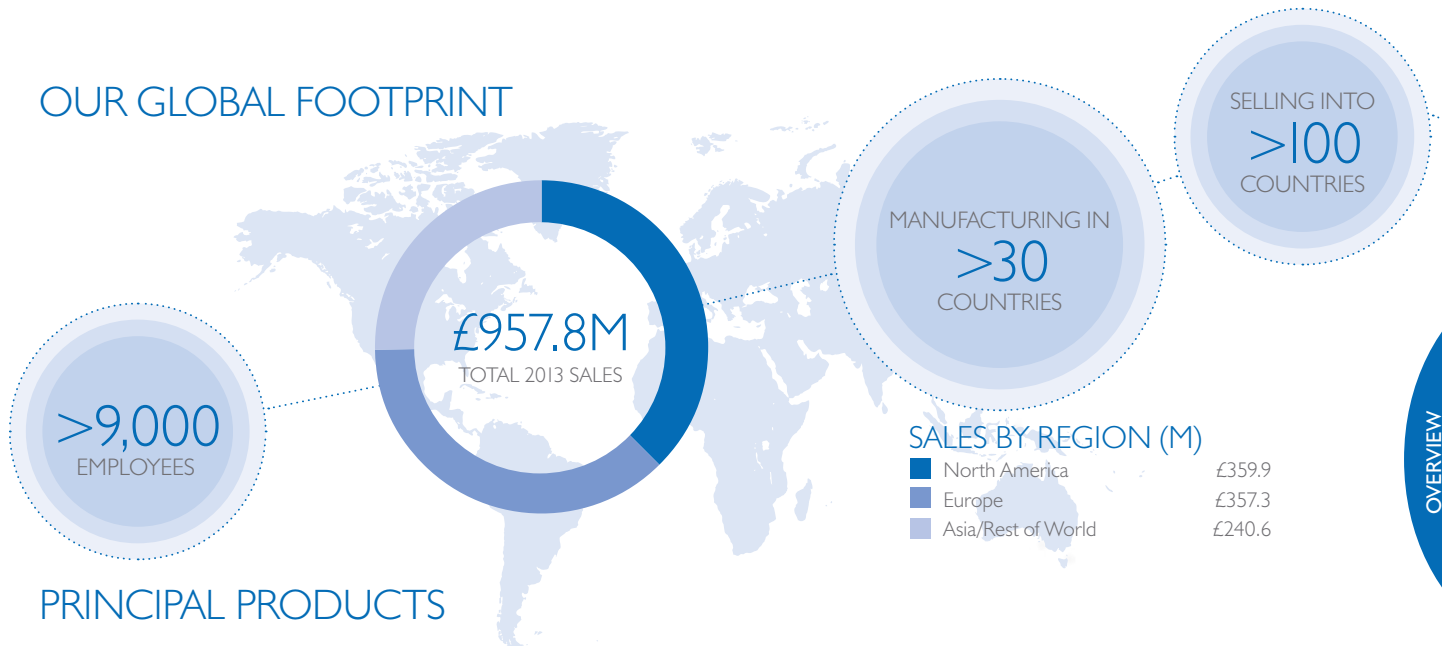


INDUSTRIAL

Morgan Advanced Materials designs and manufactures products for use in a broad range of challenging process and manufacturing environments.

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OUR GLOBAL FOOTPRINT



PRINCIPAL PRODUCTS

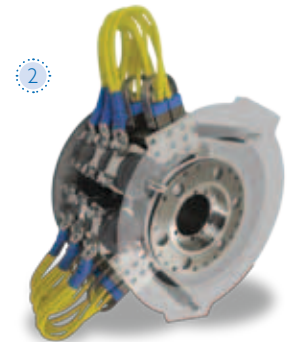
1 INSULATING FIBRE, BRICK AND MONOLITHICS

Extensive range of high-temperature insulation products used to reduce energy consumption in industrial processes



2 ELECTRICAL CARBON, LINEAR AND ROTARY TRANSFER SYSTEMS

Used to transfer current and data between stationary and rotating or linear moving parts, in motor, generator, current collector and rotary signal applications within mining, power, transportation and industrial markets



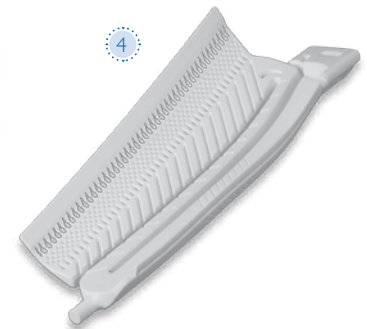
3 SEALS & BEARINGS

Providing improved performance, reliability and extended life to pumps and similar equipment used in petrochemical, aerospace and water applications



4 CERAMIC CORES FOR INVESTMENT CASTING

Consumable products used to create intricate internal cooling cavities in aero engine and industrial gas turbine blades



5 PIEZOELECTRIC SENSORS AND TRANSDUCERS

Products for measurement duties including level, flow, vibration and pressure in aerospace, medical, industrial and defence applications



6 CRUCIBLES FOR METALS PROCESSING

Comprehensive range for optimum performance in non-ferrous metal and alloy melting in foundries, die-casters and metal processing facilities



7 PERSONNEL BALLISTIC PROTECTION

Lightweight armour systems combining advanced ceramics with high-technology composites to create high-performance products



OVERVIEW

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INTRODUCTION



KEVIN DANGERFIELD
CHIEF FINANCIAL OFFICER

THE GROUP'S LOST TIME ACCIDENT FREQUENCY WAS REDUCED BY 15% IN 2013, WITH THE NUMBER OF DAYS LOST DOWN 23%. PARTICULAR PROGRESS WAS MADE IN THE ASIA/ REST OF WORLD REGION.

In February last year, Morgan embarked on a major re-organisation of the Group, streamlining the former Divisional organisation and moving to the One Morgan model which has a management structure organised on a regional basis: North America, Europe and Asia/Rest of World.

This new model enables each region to offer our customers the full range and depth of our products and technologies. The simplification of the management structure has improved our global communication and accelerated the pace of change, leaving the Group increasingly well positioned for future profitable growth and margin enhancement.

The new structure has an additional significant benefit in that it closely aligns the Group's global management structure and the regional EHS management structure that we have developed over the past few years. We are already beginning to see the benefits from this alignment.

I want to take this opportunity to reaffirm the commitment at every level of the Group, from the Board downwards, to conducting all the Group's activities in a manner which achieves high standards of health and safety for employees and others affected by its operations. This commitment is continuous and on-going and involves significant investment in safety systems and training as well as capital projects to improve the safety of the workplace.

We believe that it is essential to have a culture of safety at all levels in the Group and to build on our existing programmes, during 2014 we will be launching a new safety initiative, 'thinkSAFE', throughout the Group. The thinkSAFE programme is designed to develop and maintain a high level of behavioural safety awareness at all levels. It involves a number of elements including top to bottom training in behavioural safety, the introduction of Safety Corners at every facility to enable intranet based introduction of safety topics and training and global accident reporting, follow up and analysis.

We believe that it is important to ensure that good financial performance is not achieved at the expense of our programme of continuous improvement in EHS performance. We see this as a key part of our aim to create long term sustainable value and our EHS programmes continue to be integral to our business and are aligned with our Core Values Statement and our strategic priorities.

This is the tenth year in which we have published an EHS Report. Looking at 2013 performance, I was particularly pleased that as a result of our health and safety initiatives the Group's Lost Time Accident frequency was reduced by 15% in the year with the number of days lost down 23%. Particular progress was made in the Asia/Rest of World Region and their region-wide safety week was a catalyst for this.

I was also pleased when, for the second year running, Morgan was noted in the 2013 CDP FTSE 350 Report as one of 11 companies featured in both the Carbon Disclosure Leadership Index and the Carbon Performance Leadership Index. This reflects the progress made throughout the Group to reduce energy usage and resulting CO₂e emissions.

During 2013 we continued to work with PricewaterhouseCoopers LLP (PwC) in order to provide independent assurance of the EHS KPI data that we include in this report and the Annual Report. For 2013, we expanded the scope of the KPI data assured by PwC to include lost time accident frequency in addition to the energy, CO₂ emissions, water, waste and recycling data that was the subject of assurance in 2012. Their assurance report is included on page 16 of this report.

I look forward to reporting further progress next year, but in the meantime if you have any comments or suggestions, please let us know at ehs@morganplc.com

Kevin Dangerfield
Chief Financial Officer
May 2014

ABOUT MORGAN

GROUP ACTIVITIES

Morgan Advanced Materials is a world-leader in advanced materials, focused on specialist ceramics, carbon and composites. Working at the forefront of materials science, the Group supplies differentiated products to a range of attractive growth markets, helping to make the world more efficient, better protected and healthier.

BUSINESS STRUCTURE

Operating from approximately 100 manufacturing sites, supported by a network of sales offices, and employing approximately 9,100 people, Morgan Advanced Materials has a significant operational presence in all the world's major regions, serving customers in over 100 countries.

Following the implementation of One Morgan in early 2013, the Group reports through three geographical regions, North America, Europe and Asia/Rest of World, and each of those regions offers the full range of Morgan's product and services.

Morgan has a wide portfolio of products which help make the world safer, healthier and more efficient, helping to improve the environmental sustainability performance of the Group's customer's products and operations. Although Morgan has not sought to quantify this benefit, it is a key part of the Group's contribution to sustainability.

PRODUCTS

The principal product ranges are:

- Insulating fibre, brick and monolithics – 35% of Group revenue in 2013 – an extensive range of high-temperature insulation products used to reduce energy consumption in industrial processes. A Morgan design team will often work with the customer to ensure an optimum solution.
- Electrical carbon, linear and rotary transfer systems – 15% of Group revenue in 2013 – primarily used for transferring electrical energy in motor and generator applications within mining, transportation and power generation markets.
- Seals and bearings – 7% of Group revenue in 2013 – carbon/graphite and silicon carbide components that provide improved performance, reliability and extended life to pumps and similar equipment used in petrochemical, aerospace and water applications.
- Ceramic cores for investment casting – 5% of Group revenue in 2013 – consumable products used to create intricate internal cooling cavities in aero engine and industrial gas turbine blades.
- Piezoelectric sensors and transducers – 4% of Group revenue in 2013 – products for measurement duties including level, flow, vibration and pressure in aerospace, medical, industrial and defence applications.
- Crucibles for metals processing – 5% of Group revenue in 2013 – comprehensive range for optimum performance in non-ferrous metal and alloy melting in foundries, die-casters and metal processing facilities.
- High-technology composites – 3% of Group revenue in 2013 – which are combined with the Group's advanced ceramics for lightweight armour systems, providing ballistic protection in the form of personnel body armour or vehicle armour.

In addition to these principal product ranges, there are also a high number of application specific products made to customer requirements using a wide range of structural ceramics, electro-ceramics and precious metals that are sold into the seven markets listed on page 3.

2013 revenue for the Group was £957.8 million, down 4.9% from 2012. Group underlying operating profit was £108.5 million.

The Group's intensity targets and KPIs relate environmental impact to revenue and whilst the lower production volumes contributed to the absolute reductions in CO₂ emissions, energy use, water use and waste generation they also resulted in lower efficiency in some of the Group's energy-intensive operations, as detailed on page 11. Thus whilst the Group reduced its overall environmental impact in 2013 and is ahead of plan on its targets to reduce waste and water intensity over the two year period 2012-14, it is behind plan in respect of CO₂ and energy intensity.

Additional information on other areas of Morgan Advanced Materials' CSR-related activities and performance can be found on pages 23-34 of the Group's 2013 Annual Report.

Further information about Morgan Advanced Materials is available on the Group's website at www.morganadvancedmaterials.com

ABOUT THIS REPORT

MORGAN ADVANCED MATERIALS' 2013 EHS REPORT SUMMARISES THE GROUP'S ENVIRONMENTAL, HEALTH AND SAFETY PERFORMANCE IN THE YEAR ENDED 31 DECEMBER 2013.

This, the Group's tenth annual EHS Report, covers the available data for the whole business. It also details the Group's EHS Policies and management systems.

Morgan's Environment, Health and Safety (EHS) Policy and implementation programmes support its five strategic priorities and Core Values Statement. EHS performance has a direct and significant effect on operating performance and is therefore a key focus for risk assessment and operational management across the Group.

Morgan Advanced Materials is committed to conducting all its activities in a manner which achieves high standards of health and safety for employees and others affected by its operations. This commitment is continuous and on-going.

The Group is also committed to minimising the impact of its business on the environment and maximising the positive environmental benefits of its products. Examples of Morgan's products which help enhance the environment-related performance and efficiency of the products and operations of the Group's customers are included in pages 17 to 20 of this Report.

The health and safety data in this report covers 100% of Morgan's employees and the environmental data covers 100% of its production sites.

The Group engaged PricewaterhouseCoopers LLP ('PwC') to provide independent external assurance on its 2013 energy, CO₂e[>], waste, recycling and water related environmental data and on its lost time accident frequency. PwC's independent assurance report is set out on page 16.

For the first time in 2013 the Group was required to report its annual emissions of greenhouse gases in its Directors' Report under The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013. This information is shown on page 82 of the Group's 2013 Annual Report and is reproduced in the Appendix on page 23 of this report.

[>] CO₂e. Carbon Dioxide Equivalent – the amount of carbon dioxide and the amount of non-CO₂ greenhouse gas with the equivalent global warming potential.

EHS POLICY

MORGAN ADVANCED MATERIALS' EHS POLICY APPLIES TO ALL GROUP BUSINESSES WORLDWIDE. IT FORMS THE BASIS FOR EXECUTIVE AND MANAGEMENT OVERSIGHT, REQUIRING HIGH STANDARDS OF EHS MANAGEMENT AT ALL MORGAN FACILITIES.

The Policy seeks to provide continuous improvement in environmental, health and safety performance in support of the Group's 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 Morgan Advanced Materials' EHS Policy is:

- To maintain a safe working environment for staff, contractors and visitors across all Morgan Advanced Materials 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 Operating Officer and the operational management teams have responsibility for EHS performance and reporting across the businesses for which they are responsible, 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 Morgan businesses:

- Comply with EHS legislation, regulations and other applicable legal requirements as a minimum standard.
- Conduct operations so as to minimise the impact on human health, prevent pollution, minimise CO₂ emissions and to reduce hazards.
- Include EHS and climate change related considerations in 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 business partners to adopt this same accountability.

In addition to the Group Policy, Morgan 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 Group's EHS Good Management Practice Manual.

Where appropriate the Group's 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's EHS governance procedures are centred on its EHS Policy which forms the basis of its environment, health and safety management systems and processes. The core objectives of these systems are to identify risks and opportunities, legal and other requirements and to monitor and continuously improve performance in support of the Group's strategic objectives.

The Group's operations involve the normal environmental and health and safety risks associated with manufacturing and other activities in the countries in which Morgan operates. 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 governance structure for EHS places responsibility for EHS performance with the Chief Operating Officer and the operational management team, with each site having a point of accountability. EHS performance is reported regularly to the Board by the Chief Financial Officer who has specific responsibility for EHS policy, strategic direction and performance monitoring. He is supported by the Group's Director, Environment, Health and Safety who provides Group direction and oversight with responsibility for implementation of Group EHS programmes, the review of standards and procedures, training, the review of the adequacy of EHS resources across the Group, for performance reporting and all assurance processes.

During 2013, the Group completed the recruitment of EHS leaders in all the regions that it operates. This global network of EHS specialists reports to the regional management teams and is responsible for improving the standards of EHS management and performance in the Group's businesses. This has already begun to show benefits in intra and inter regional co-operation on EHS issues.

In addition, as described on page 16 below, the Group commissioned external assurance on selected EHS data from PricewaterhouseCoopers LLP (PwC).

Morgan Advanced Materials' EHS management processes include the EHS Compliance Audit Programme. The audits cover the EHS management systems and the EHS KPIs reported by each site and also help to identify how sites can anticipate and respond to developing and impending regulations and improve their EHS performance to meet internationally accepted good practice. The programme helps ensure compliance with national and other regulatory requirements, with the Group's EHS reporting criteria and with good management practice as set out in the Group's Environmental, Health and Safety Good Management Practice Manual which is issued to all sites world-wide.

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. The audit reports are reviewed by the Director, Environment, Health and Safety and by regional management. Sites are required to develop a corrective action plan following the audit. These actions are regularly tracked by the audit teams and regional management. From 2014 the audits in the Americas will be led by external auditors with support from internal experts.

Manufacturing sites are audited on a three year rolling cycle. During 2013 30 sites were audited (2012: 29 sites) and the plan for 2014 is to audit 31 sites.

In 2013 environmental management systems were in place at 98 sites worldwide, including 41 major sites certified to ISO 14001. Additional sites in the Argentina, Japan and China achieved certification in 2013. These new certifications are in addition to the ongoing programme of re-certifications. All major production sites worldwide have health and safety management systems in place, with 18 sites certified or working towards OHSAS 18001.



Safety Week – Asia and Rest of World Region

In September 2013 a 'Safety week' was held simultaneously at all sites across the Asia and Rest of World Region. In total over 3,400 people at more than 60 sites across the four continents of Asia, Australasia, Africa and South America participated.

For example in China, all shop-floor and office based employees were involved:

- The executive team featured in a video, shown every day during Safety Week, linking EHS to business strategy, market development and operational excellence.
- The executive team also appeared in a special poster as pictured above.
- Employees signed a safety 'charter', received tool-box training and a special 'EHS Awareness Manual' supported by competitions to encourage employee engagement and participation.
- Lessons learnt from previous lost time accidents were shared with employees region-wide to help prevent similar accidents re-occurring.
- A new EHS suggestion reporting process was introduced to encourage employee participation and the reporting of near-miss incidents and opportunities for improvement. Over 300 employees contributed more than 400 suggestions during the week.
- Job safety analysis for both shop floor and office employees with special training for those who drive and travel as part of their work.

Many of the initiatives started during Safety Week are now used on an ongoing basis across the Region to help drive further improvements.

EHS POLICY EFFECTIVENESS

EHS PERFORMANCE IS REPORTED MONTHLY BY ALL SITES AND IS REPORTED TO THE EXECUTIVE COMMITTEE AND THE BOARD TWICE PER YEAR.

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 monthly by all sites and are subject to twice-annual review and challenge at Group level with reporting of performance to the Executive Committee and the Board by the Chief Financial Officer.

The charts in this report summarise the Group's EHS performance in real terms, covering 100% of production sites and 100% of employees during the year. Environmental intensity KPIs are reported at constant currency and, where necessary, historic data has been restated to reflect changes to the business, in reporting methodology and to ensure year-on-year consistency.

As noted above, since 2011 the Group has commissioned an annual external assurance process from PwC and in 2013 expanded this to cover the Group's lost time accident frequency data in addition to CO₂e intensity, energy intensity, water intensity, waste intensity and the proportion of total waste which is recycled that were assured in 2013. The assurance report from PwC is set out on page 16.

Environmental performance

Wherever possible the Group works to minimise the impact of its business on the environment. 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 21 with performance against target reviewed by KPI below.

Key environmental impacts

Morgan Advanced Materials' key environmental impacts include the Scope 1 and Scope 2 CO₂e emissions due to the use of energy in the Group's processes and facilities, the consumption of raw materials, water use and discharge, the recycling and disposal of waste and the impact of products on the Group's customers' environmental performance.

Morgan sets two-year targets for the reduction of the impact of its operations on the environment, as measured by CO₂e emissions, energy, waste and water intensity. The Group's 2013 performance is an interim report against the current targets which cover the two-year period 2012-14.

EHS POLICY EFFECTIVENESS

continued

Environmental performance

Energy use and emissions intensity

Much of Morgan's production involves the use of high-temperature processes. The Group reports the environmental impact of the energy used in these process and elsewhere in its facilities as CO₂e emissions, indexed to turnover. This takes into account the use of all sources of energy. Business performance is assessed on the basis of energy and emissions intensity i.e. energy use and emissions relative to turnover.

CO₂e[>] INTENSITY DUE TO ENERGY USE^{^*} Tonnes CO₂e/£m revenue^{**}

2013	404
2012	392
2011	401
2010	430
2009	419

CO₂e[>] DUE TO ENERGY USE^{^*} Tonnes^{**}

2013	387,100
2012	395,200
2011	433,700
2010	424,200
2009	387,500

ENERGY INTENSITY^{^+} MWh/£m revenue^{**}

2013	1,343
2012	1,302
2011	1,323
2010	1,407
2009	1,389

ENERGY USE^{^+} GWh^{**}

2013	1,287
2012	1,312
2011	1,430
2010	1,388
2009	1,286

The decline in revenue in 2013 and corresponding reduction in production volumes had an impact on the absolute energy use and related emissions of CO₂e with these being lower than in 2012. However, the Group's intensity targets and KPIs relate environmental measures to revenue and the reduced revenue and corresponding reduction in production volumes led to lower efficiency in some of the Group's energy-intensive operations resulting in a deterioration in the Group's energy and CO₂e-related key performance indicators.

In absolute terms total CO₂e emissions due to energy use in 2013 were some 387,100 tonnes, down by 2% from 395,200 tonnes in 2012 and 11% lower than the 433,700 tonnes reported for 2011. Total energy use was some 1,287 GWh, down by 2% from 1,312 GWh in 2012 and 10% down against the 1,430 GWh reported for 2011.

Taking into account the decline in the Group's sales, CO₂e intensity[^] increased by 3% in 2013. This was behind the running rate required to achieve the Group's target to reduce the CO₂e emissions intensity due to energy use by 5% over the two year period 2012-14. 2013 energy intensity[^] was also up by 3% compared to 2012.

The Group has a number of energy reduction programmes designed to reduce energy intensity in 2014 and beyond. These include plans to increase kiln efficiencies, to install high-efficiency variable speed drives on compressors, dust collectors and other equipment and the replacement of lighting systems which will both save energy and improve the working environment.

In addition to improving energy consumption and emissions performance through increased efficiency, changes in Morgan's business and product mix influence the Group's energy and emissions when indexed to turnover. Emissions are also affected by changes in national electricity-CO₂ conversion factors.

More details on Morgan Advanced Materials' carbon management can be found in the Group's submissions to the Carbon Disclosure Project. See www.cdproject.org for further details.



Venezuela energy and CO₂ savings

Thermal Ceramics de Venezuela is a key supplier of high temperature insulation and other products to local foundries and to the petrochemical, steel and other industries.

In addition to helping their customers save energy and reduce CO₂ emissions, during 2013 the team in Venezuela also focussed their attention on reducing their own energy intensity.

The site already obtains its electricity from renewable sources so the ambitious 2013 initiative focussed on reducing natural gas use in site's kilns.

The energy saving measures included significant upgrades to control systems, improved monitoring and metering, new gas burners, and process changes. Over the course of the year, natural gas use was reduced by 53% without a reduction in production output. Annual CO₂ emissions were cut by over 500 tonnes.

In the coming year the team at TC Venezuela is targeting a further 10% improvement in efficiency at the site.

[^] The 2013, 2012 and 2011 CO₂e intensity and energy intensity information has been subject to assurance by PwC. For further details of the assurance provided see the Independent Assurance Report on page 16. Further details of the 2012 and 2011 assurance provided are included in the Independent Assurance Reports on page 25 of the 2012 Annual Report and page 41 of the 2011 Annual Report.

* Scope 1 CO₂e emissions from fossil fuel usage and Scope 2 CO₂ using country-specific electricity factors as CO₂e factors are not consistently available for electricity use in all countries.

** Constant currency basis and updated to reflect changes in reporting methodology.

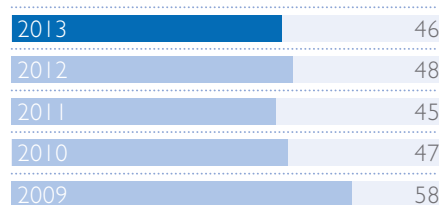
+ Energy from all sources.

> CO₂e. Carbon Dioxide Equivalent - the amount of Carbon Dioxide or the amount of non-CO₂ Greenhouse Gas with the equivalent global warming potential.

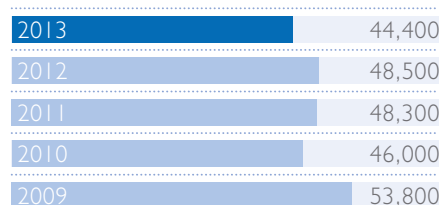
EHS POLICY EFFECTIVENESS

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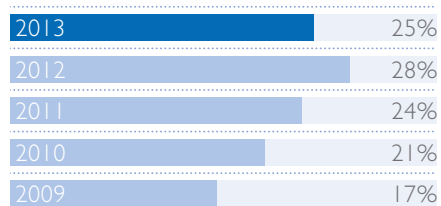
WASTE INTENSITY[^] Tonnes waste/£m revenue^{**}



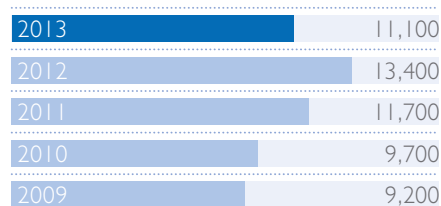
WASTE[^] Tonnes^{**}



RECYCLING %[^] % of total waste recycled



RECYCLED WASTE[^] Tonnes^{**}



[^] The 2013 and 2012 waste intensity and recycling information has been subject to assurance by PwC. For further details of the assurance provided see the Independent Assurance Report on page 16.

^{**} Constant currency basis and updated to reflect changes in reporting methodology.

[~] Hazardous and non-hazardous waste, including recycled material.

Waste and recycling

Waste management is a key area of focus for the Group with opportunities to reduce the use of raw materials, packaging and other consumables. As well as saving money through waste reduction, by recycling certain waste streams including scrap metal, cardboard and other materials, the Group can turn costs into revenue.

Hazardous and non-hazardous waste is monitored according to waste stream and disposal route, with performance assessed on the basis of waste intensity (i.e. waste quantities indexed to turnover) and the proportion of total waste which is recycled.

Total waste reported in 2013 was some 44,400 tonnes, down by 8% from 48,500 tonnes in 2012 and 8% lower than the 48,300 tonnes reported for 2011. Waste intensity[^] was reduced by 4% in 2013. This was ahead of the rate required to achieve the target to reduce waste intensity by 5% over the two-year period 2012-14.

The reduction in 2013 waste tonnage and intensity follows programmes to identify and dispose of accumulated waste and surplus materials and equipment across a number of sites world-wide in 2012, much of which was recycled.

As a result, the proportion of total waste which was recycled[^] was 25% in 2013, down by 3 percentage points from 28% in 2012 but up by 1 percentage point from the 24% reported for 2011. The 28% recycling rate achieved in 2012 was enhanced by a number of one-off disposals of recyclable material.

Consistent attention to waste management has helped to drive improved underlying rates of recycling through increased site-level awareness of recycling opportunities. As a result over 11,100 tonnes of waste material was recycled during the year. This included some 890 tonnes of paper and cardboard, 270 tonnes of plastic, 1,100 tonnes of wood and 1,060 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 purposes.

The Group's target continues to be to increase the proportion of total waste which is recycled over the two years 2012-14, as well as to reduce total waste intensity.

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EHS POLICY EFFECTIVENESS

continued

Water Use and Intensity

The Group reports water use for potable, sanitary, irrigation and process purposes. A significant proportion of the Group's water usage is in production processes, approximately 60% of which is subsequently discharged. The Group monitors use of water from both on-site extraction and from local authority and similar sources and assesses performance on the basis of water intensity.

Total water use in 2013 was 2.26 million m³, down 10% from 2.51 million m³ in 2012 and down 19% from 2.77 million m³ in 2011. Taking into account the reduction in sales in the year, water use intensity[^] was reduced by 6% in 2013. This was ahead of the two-year target to reduce water intensity by 5% over the period 2012-14. This improvement was achieved through a widening focus on reducing water use at the Group's more water-intensive businesses, as highlighted in the case study on this page, combined with further reductions achieved through re-use and recycling of water at a number of sites. The Group will seek to achieve further improvements in 2014, with particular emphasis on reducing water use in countries and regions of high water stress including in India and China.

WATER INTENSITY[^]# m³/£m revenue^{**}

2013	2,356
2012	2,495
2011	2,567
2010	2,962
2009	2,664

WATER USE[^]# million m³^{**}

2013	2.26
2012	2.51
2011	2.77
2010	2.92
2009	2.47

[^] The 2013, 2012 and 2011 water intensity information has been subject to assurance by PwC. For further details of the assurance provided see the Independent Assurance Report on page 16.

^{**} Constant currency basis and updated to reflect changes in reporting methodology.

[#] Water from all sources, including process, irrigation and sanitary use.



Stourport water reductions

The Morgan facility in Stourport, Worcestershire, UK is a major manufacturing site which acts as a 'hub' location providing base materials to a number of the Group's manufacturing sites in Europe. It is also to house the Group's new Global Materials Centre of Excellence for structural ceramics materials and applications.

The site is a significant user of water which is abstracted from a borehole and subsequently discharged. Use had been rising for a number of years, broadly in line with sales growth. In late 2012 and through 2013 the team at Stourport decided to focus on water efficiency to help ensure water availability does not become a constraint to further growth at the site.

A site wide survey was undertaken to map key areas where water was used and where savings could be made. Measures implemented include changes to operating procedures to minimise wastage, the installation of variable flow rate valves to key equipment, ensuring water supply meets rather than exceeds demand and raising awareness of water use and explaining the contribution everyone can make, including simple things such as switching off taps and hoses and reporting leaks.

As a result 2013 water use was reduced by over 100,000m³ and the water used per unit of sales was cut by 47%. Further improvements are planned for the coming year, starting with an updated water 'map' and the daily monitoring of water use.

Environmental Regulatory Compliance

Morgan Advanced Materials received no violation notices, fines or penalties in relation to environmental compliance matters during 2013.

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

HEALTH AND SAFETY

IN ACCORDANCE WITH THE GROUP EHS POLICY OUTLINED ON PAGE 8 MORGAN ADVANCED MATERIALS IS COMMITTED TO CONDUCTING ITS ACTIVITIES IN A MANNER WHICH ACHIEVES HIGH STANDARDS OF HEALTH AND SAFETY FOR ALL EMPLOYEES.

The Group's policy statement on this is clear and communicated throughout the Group. The policy statement is supported by site level assessment and monitoring of risks.

The Group's health and safety KPIs include accident frequencies and causes and related lost working time. These are reported monthly by all sites to monitor the effectiveness of the Group's Health and Safety Policies and related systems. The Executive Committee and the Board receive reports and review health and safety matters on a regular basis.

Morgan's health and safety aim is to have no accidents or injuries. In 2013 the Group continued to extend its accident prevention and training programmes with the objective of reducing accident numbers and the time lost per lost time accident. Particular focus is placed on those sites with below-average performance, as measured by their EHS KPIs and through the EHS Compliance Audit Programme.

The investigation by the UK Health and Safety Executive following the employee fatality which occurred in December 2012 at the Group's site in Ruabon, UK is on-going.

In addition, Morganite Electrical Carbon Limited was prosecuted by the UK Health and Safety Executive following a 2011 fatal accident involving a third-party delivery driver at the site in Swansea, UK. In imposing a fine of £120,000 plus costs in January 2014, the Court took into account the way that the Company had addressed certain deficiencies in its goods delivery procedures.

Although differing in nature, these fatal accidents have demonstrated the importance of the behavioural safety culture throughout the Group and Morgan is committed to introduce programmes to further enhance this in 2014.

During 2013, the Group's health and safety initiatives included:

- The identification and development of a behaviour-based safety programme to be applied on a Group-wide basis. The programme, 'Morgan thinkSAFE', is designed to promote safe behaviours and to establish a 'total safety culture' throughout the Group. It has an initial programme of intensive training at all levels of the Group combined with the analysis of incidents and sharing of experience with regular reinforcement of the safety message using 'Safety Corners' in all facilities. Morgan thinkSafe is being formally launched in 2014.
- The independent external assurance performed by PwC was extended to cover the Group's Lost Time Accident ('LTA') frequency rate.
- The introduction of an enhanced process to track and manage LTAs and the associated lost time.
- A simultaneous 'Safety Week' was held at all sites across the four continents in the Asia Rest of World region, as is highlighted in the case study on page 9.

The health and safety KPIs in this report cover 100% of employees (2012: 100%).



Kailong contractor safety

The facility at Morgan Kailong Thermal Ceramics in Jingmen, China carried out a substantial expansion project in 2013, significantly increasing the size of the facility.

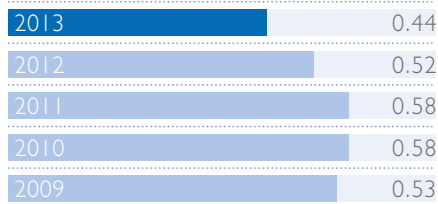
The project involved both building construction and machinery installation. The work was carried out by contractors and, aware of the possible safety issues involved in such projects, the management team at Morgan Kailong took steps to ensure that the work was carried out in a safe manner. They ran a contractor safety programme involving the careful pre-qualification of contractors, induction and safety training of contractor personnel and constant spot checks throughout the project on the safety behaviour of the workers.

As a consequence of this forward planning and vigilance, this large project was successfully completed without any lost time accidents.

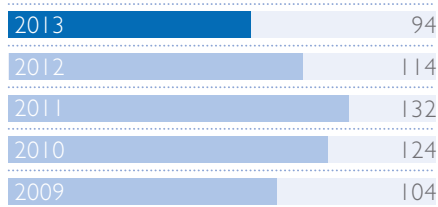
HEALTH AND SAFETY

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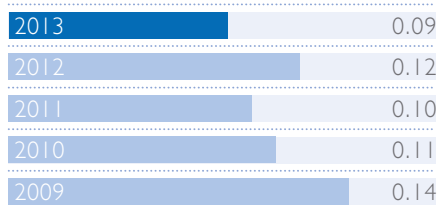
LOST TIME ACCIDENT FREQUENCY*^ LTAs/100k hours worked*



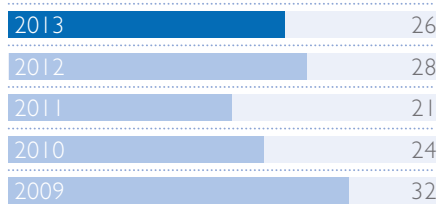
LOST TIME ACCIDENTS^ Number of LTAs*



HEALTH AND SAFETY-RELATED LOST TIME % of total working time



LOST TIME PER LTA*# Days per LTA*



* Lost Time Accident ('LTA'): accident which results in one or more days' lost time.
 ^ The 2013 Lost Time Accident Frequency information has been subject to assurance by PwC. For further details of the assurance provided see the Independent Assurance Report on page 16.
 # Total time lost due to health and safety in the year divided by the number of lost time accidents reported in the year.

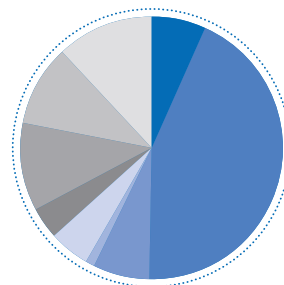
Health and Safety performance

Morgan Advanced Materials' long-term health and safety objective is to have no accidents or work-related illnesses. In 2013 the Group's LTA frequency^ was down 15% at 0.44 per 100,000 hours worked (2012: 0.52). The number of lost time accidents reported was 94 (2012: 114).

The reduction in the number of LTAs in 2013 was concentrated in the Asia and Rest of World Region. This improved performance follows a sustained effort over the past few years to increase safety awareness. During the year the Region hosted a number of safety initiatives which included a 'Safety Week' carried out simultaneously at all facilities in the Region, as highlighted in the case study on page 9.

Reported lost time due to accidents and work-related illnesses as a percentage of working time decreased from 0.12% in 2012 to 0.09% in 2013. The number of days lost during 2013 was down by 23% and the number of hours worked was decreased by 3%. The decrease in the number of days lost in 2013 was in part due to a reduction in the time lost in the year due to accidents which occurred in 2012 as well as a focus on return-to-work programmes.

ACCIDENT CAUSES (ALL ACCIDENTS)



- Musculoskeletal 7%
- Cuts & abrasions 44%
- Slips, trips, falls 7%
- Fall from height 1%
- Exposure to harmful substances 5%
- Struck by object 4%
- Strike stationary object 11%
- Moving machinery 10%
- Other 12%

Accidents are reported in the year in which the accident actually occurs with the lost time reported in the year in which the individual is away from work. Thus accidents which occur in a prior year which result in lost time the following year can impact the lost time as a % of total working time and the lost time per LTA key performance indicators. The reported average number of days lost per LTA reported in 2013 decreased to 26 from 28 in 2012. This reflected an increased focus on the management of LTAs and lost time.

Manual handling related cuts and abrasions remain the most common causes of accidents and the Group continues to address this, with attention being focussed through the regional EHS management team to targeting the main causes of accidents in each region.

Health and Safety Regulatory Compliance

As reported on page 14 there was one health and safety-related prosecution received during the year. This related to a fatal accident involving a third-party delivery driver at the site in Swansea, UK. A fine of £120,000 plus costs was imposed in January 2014.

In addition, a site in Germany received a health and safety related enforcement notice in respect of noise levels due to compressed air tools. The site installed low-noise versions to comply with the notice and no fines were imposed.

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INDEPENDENT ASSURANCE REPORT

Independent Limited Assurance Report to the Directors of Morgan Advanced Materials plc.

The Directors of Morgan Advanced Materials plc ('Morgan') engaged us to provide limited assurance on the information described below and set out in Morgan's Annual Report for the year ended 31 December 2013.

What we are assuring ('Selected Information')

The selected environment, health and safety ('EHS') data for the year ended 31 December 2013 (marked with the symbol ^ presented in the Annual Report 2013) consists of:

- CO₂e and CO₂e intensity (scope 1 and scope 2 emissions due to energy use);
- Energy use and energy intensity;
- Water use and water intensity;
- Waste and waste intensity;
- Recycling rate; and
- Number of lost time accidents and lost time accident frequency rate

The scope of our work was restricted to the Selected Information for the year ended 31 December 2013 and does not extend to information in respect of earlier periods or to any other information in the Annual Report 2013.

How the information is assessed ('Reporting Criteria')

We assessed the Selected Information using Morgan's Reporting Criteria as set out at: <http://www.morganadvancedmaterials.com/governance/responsible-business/environment-health-safety/>.

Professional standards applied² and level of assurance³

We have performed a limited assurance engagement in accordance with ISAE 3000 and, in respect of greenhouse gas emissions information, ISAE 3410. We have complied with the ICAEW Code of Ethics, as also stated in footnote 2.

Understanding reporting and measurement methodologies

There is no single globally recognised and established method for evaluating and measuring the Selected Information. The range of different, but acceptable, techniques can result in materially different reporting outcomes that may affect comparability with other organisations. The Reporting Criteria used as the basis of Morgan's reporting should therefore be read in conjunction with the Selected Information and associated statements reported on Morgan's website.

Work done

Considering the risk of material misstatement of the Selected Information, we:

- Made enquiries of Morgan's management, including those with responsibility for EHS management and Group EHS reporting;
- Evaluated the design of the key structures, systems, processes and controls for managing, recording and reporting the Selected Information. This included visiting 6 sites and analysing a further 10 sites, selected on the basis of their inherent risk and materiality to the Group, to understand the key processes and controls for reporting site performance data to the Group EHS team;
- Performed limited substantive testing on a selective basis of the Selected Information at corporate Head Office and in relation to the same 16 sites noted above to assure that data had been appropriately measured, recorded, collated and reported; and
- Assessed the disclosure and presentation of the Selected Information.

Morgan's responsibilities

The Directors of Morgan are responsible for:

- The identification and reporting of Morgan's material environmental and health and safety impacts which are included in the Selected Information;
- Designing, implementing and maintaining internal controls over information relevant to the preparation of the Selected Information that is free from material misstatement, whether due to fraud or error;
- Establishing objective Reporting Criteria for preparing the Selected Information;
- Measuring Morgan's performance based on the Reporting Criteria; and
- The content of the Annual Report 2013.

Our responsibilities

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the Selected Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to the Directors of Morgan.

Our conclusions

As a result of our procedures nothing has come to our attention that indicates the Selected Information for the year ended 31 December 2013 has not been prepared in all material respects with the Reporting Criteria.

This report, including our conclusions, has been prepared solely for the Directors of Morgan as a body in accordance with the agreement between us, to assist the Directors in reporting Morgan's EHS performance and activities.

We permit this report to be disclosed in the Annual Report for the year ended 31 December 2013, to enable the Directors to show they have addressed their governance responsibilities by obtaining an independent assurance report in connection with the Selected Information. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Directors as a body and Morgan for our work or this report except where terms are expressly agreed between us in writing.



PricewaterhouseCoopers LLP
Chartered Accountants
London
13 February 2014

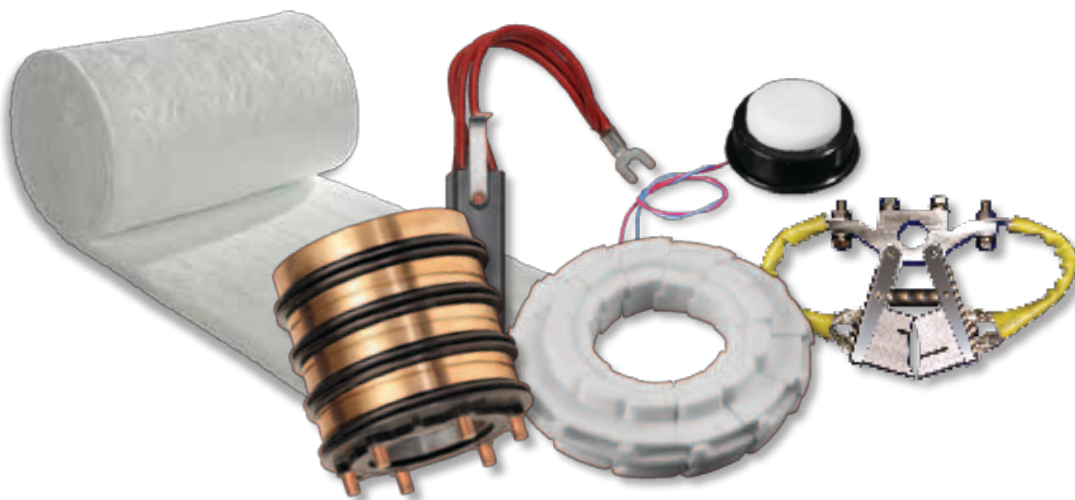
- 1 The maintenance and integrity of Morgan's website is the responsibility of the Directors; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any changes that may have occurred to the reported Selected Information or Reporting Criteria when presented on Morgan's website.
- 2 We have complied with International Standard on Assurance Engagements 3000 – 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' and in respect of greenhouse gas emissions information the International Standard on Assurance Engagements 3410 'Assurance Engagements on greenhouse gas statements', both issued by the IAASB. We have complied with the applicable independence and competency requirements of the Institute of Chartered Accountants in England and Wales (ICAEW) Code of Ethics and the International Standard on Quality Control (UK&I). To comply with those standards, our work was carried out by an independent and multi-disciplinary team of sustainability and assurance specialists.
- 3 Assurance, defined by the International Auditing and Assurance Standards Board (IAASB), gives the user confidence about the subject matter assessed against the reporting criteria. Reasonable assurance gives more confidence than limited assurance, as a limited assurance engagement is substantially less in scope in relation to both the assessment of risks of material misstatement, including an understanding of internal control, and the procedures performed in response to the assessed risks.

MORGAN ADVANCED MATERIALS IS HELPING TO ENHANCE GLOBAL SUSTAINABILITY

STRATEGY IN ACTION

- ▶ Morgan identifies major opportunities in sectors driven by megatrends where its materials science and applications engineering skills can solve technically demanding challenges. The Company chooses its markets carefully, focussing on those in which it can achieve leadership quickly and then continue to refine its output to increase the proportion of high-margin, technically complex products.

HOW **ENERGY EFFICIENCY** ISSUES ARE CREATING OPPORTUNITIES ACROSS MORGAN ADVANCED MATERIALS' SECTORS AND MARKETS



The development of advanced materials science and engineering has a major role to play in the global drive towards energy efficiency. In implementing its strategic priorities,

Morgan is ideally placed to provide the technical support that its customers need to plan their own approach to improving energy management.

HOW ENERGY EFFICIENCY ISSUES ARE CREATING OPPORTUNITIES ACROSS MORGAN'S SECTORS AND MARKETS

ENERGY DEMAND IS A CRUCIAL GLOBAL ISSUE. ADVANCED MATERIALS ARE INCREASINGLY PLAYING A SIGNIFICANT ROLE IN HELPING TO DEVELOP GREATER ENERGY EFFICIENCIES FOR A SUSTAINABLE FUTURE.

As Global energy demand continues to rise, the solutions to the world's energy problems will include optimisation of a range of traditional and renewable energy sources.

The dilemma of how to deal with rising energy demand will not be met by a single panacea solution. The way to make a difference and to start to reverse the global trend is through a combination of efforts. Energy efficiency improvements, clean energy initiatives and education to reduce consumption will all play a part. And in all these, materials science and developments in ceramics and carbon technology in particular, have a major role to play.

Morgan Advanced Materials is working with leading players in energy generation, distribution and usage on a wide range of significant projects, where incremental advances in the performance of critical components can facilitate step changes in commercial advancement and application.

The Company works with customers in energy and related industrial sectors all over world, but particularly in the high growth expanding industrial economies in China, India and Latin America.

In well-developed markets and dynamic growth economies, innovation in carbon and ceramics is helping to improve efficiencies in fossil fuel energy generation and distribution systems, and is a key enabler in the new clean energy infrastructures including wind, solar and electric vehicle technology.

In the drive to reduce energy consumption, ceramic materials are being used to make energy efficiency improvements in a wide variety of existing industrial and transportation systems, for example by reducing friction and increasing reliability. Ceramic and carbon materials are also used to provide high performance insulation for use in buildings and in industrial processes.

Central to Morgan's strategy, culture and vision are the first-class people that make it happen. The company strives to attract, retain and develop the very best for every aspect of the business from engineering excellence and technical innovation to business management and customer service. This fundamental recognition of the contribution of the individual is apparent throughout the company's activities from its outstanding graduate and apprenticeship schemes to its acquisition strategy and lean management team.

In the energy sectors there are many examples of how Morgan's expert teams, advanced materials science and engineering are making a contribution to the cumulative global effort to manage climate change now and in to the future.

Carbon and ceramic components play a critical role in traditional and renewable power generation and throughout the electricity supply chain.

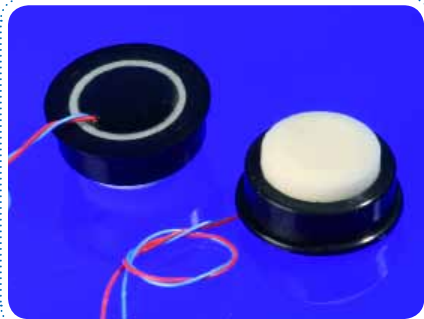
World-renowned for performance and reliability, Morgan's carbon brush technology is used in coal, gas, nuclear and wind power plants all over the world and is at the heart of electricity storage and distribution systems for applications from rail transport to electric vehicles.

Ceramic technology is contributing to the development of solar energy systems in the production of photovoltaic cells using silicon wafers and by thin film deposition.

For example, alumina/silica rollers are used to move the wafers through the high temperature (900°C) deposition furnaces without damage, and fully stabilised zirconia is used for high reliability thermocouples. Similarly, high purity aluminium oxide bars and locator pins are used for wafer lifting, stacking and transporting between furnaces. They provide greater strength at high temperatures and eliminate the buckling associated with metal equipment.

A specialist ceramic, Pyrolytic Boron Nitride (PBN) has been developed by Morgan for use in crucibles and boats used to hold materials for thin film deposition. It is chemically inert at high temperatures, has low wetting to alloys and is resistant to chemical shock. As a result, the crucibles remain dimensionally stable and do not react with the molten material.

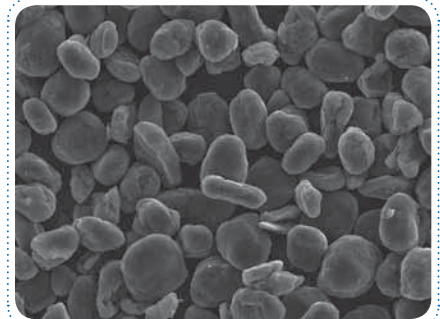
ENHANCING SUSTAINABILITY



Smart metering
Piezoelectric ceramic sensors enable accurate measurement and control of gas usage.



Rail
Morgan materials ensure reliable and efficient operation of electric trains.



Electric cars
The development of new carbon materials holds the key to better performing electric cars.

SMART METERING

Morgan is developing ultrasonic piezoceramic sensors which provide utility companies and OEMs with high reliability, high accuracy gas measurement cost-effectively, making high volume manufacture of smart domestic gas meters a reality.

RAIL

Rail is on average four times more energy efficient than road transport. It has huge potential to make a difference to fuel consumption globally. Carbon technology is at the heart of rail transportation with brushes, collectors and rotary current transfer products used in over-ground and underground rail and tram systems all over the world.

Railway applications are exceptionally demanding on these components; they have to be able to cope with large current peaks, weak load operation, intermittent usage and aggressive environments and especially in long distance networks, perform in high ambient temperature differentials and humidity.

Morgan's advanced technology components perform optimally over a wide range of environments from sub zero to >40oC ambient and at up to 2km above sea level. They are designed for high reliability on all types of rolling stock from high-speed trains to long haul trains covering varying terrain, changeable loads, impact and vibration.

ELECTRIC CARS

The development of new carbon materials holds the key to better performing electric cars.

Electric vehicles are starting to become a reality on our streets. All the leading car manufacturers now have models available, but battery life remains the limiting factor, with few being capable of more than 100 miles range.

Lithium Ion battery anodes are made from highly engineered graphite powders, and it is development of these materials that holds the key to longer lasting batteries and better performing electric cars.

Morgan is developing a full range of carbon-based anode materials. These include novel performance-enhancing coatings as well as nano-metal additives for improving capacity. The company is working with academic and industrial partners (University of Cambridge and Boston-Power) to develop metal-loaded carbon nanoparticles tailored for this application.

4x

Energy efficiency of rail vs. road

INCREASING EFFICIENCY



LED technology

Carbon and ceramic materials are key enablers for LED technology and for low cost smart gas meters.



Insulation

Advances in ceramic insulation materials help industrial installations to reduce energy consumption.



Pumping systems

Pumping systems account for nearly 20% of the world's energy demand.

LED TECHNOLOGY

Morgan makes graphite felt which is used in LED sapphire production to provide a uniform thermal environment to support crystal growth. This highly stabilized, long-life insulation enables long process cycles and the high chemical inertness of the insulation minimizes contamination of the sapphire ingot.

PUMPING SYSTEMS

Improvement in the efficiency of pumps and pump systems has the potential to impact global energy consumption significantly.

Morgan has developed a family of graphite-loaded silicon carbide materials based on the patented PGSI00 for hardwearing seals in long-life pumps for demanding processing applications such as those with extremely caustic environments, abrasive process fluids or high pressures and operating temperatures.

The material contains a free-graphite, which improves lubricity, for greater dry run survivability and better thermal shock resistance than conventional sintered materials. The graphite also gives it better pressure-velocity capability between hard-face mating pairs. As a result, it lasts twice as long as other materials in harsh field conditions.

INSULATION

Morgan's new low bio-persistent Superwool® Plus fibre, designed for use in duct and chimney insulation, process heater linings, pipe wrap and automotive exhaust heat shields is 17% more energy efficient than traditional insulation products such as Refractory Ceramic Fibre (RCF) and Alkaline Earth Silicate (AES).

High-temperature insulating fibre, bricks and monolithics are used to help optimise thermal efficiency in industrial applications from 500°C to 1,600°C.

+17%

Superwool® increase in energy efficiency

GROUP EHS TARGETS

MORGAN ADVANCED MATERIALS SETS TWO YEAR TARGETS FOR ENVIRONMENTAL PERFORMANCE. THE GROUP'S 2013 ENVIRONMENTAL PERFORMANCE IS AN INTERIM REPORT AGAINST THE TARGETS FOR THE PERIOD 2012-14.

In addition to Group targets, Morgan Advanced Materials' 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	2013 TARGET	2012 PROGRESS	FUTURE OBJECTIVE
Environmental and Health and Safety data reporting	Gain external assurance for the Group's lost time accident frequency related KPIs in 2013.	Achieved: Independent external assurance was extended to cover the Group's lost time accident frequency related KPIs in 2013, in addition to the CO ₂ e, energy, water, waste and recycling data which were assured in 2012.	Maintain standards of reporting, supported by external assurance where appropriate.
Environmental management systems	Maintain and where appropriate extend ISO 14001 coverage.	Achieved: Additional certifications to ISO 14001 were achieved at sites in Argentina, China and Japan during the year.	Maintain and where appropriate extend ISO 14001 coverage.
Reduction in emissions intensity	A 5% reduction in emissions intensity due to energy use over the two years 2012-14.	Behind plan: Interim update: Absolute emissions were down by 2% but emissions intensity due to energy use increased by 3% in 2013.	Focus on energy efficiency to reduce emissions intensity to achieve the target for the two years 2012-14.
Reduction in waste intensity	A 5% reduction in waste intensity over the two years 2012-14.	Ahead of plan: Interim update: Waste intensity improved by 4% in 2013 against 2012.	Continue to reduce waste intensity to meet the target to reduce waste intensity by 5% over the two years 2012-14.
Increase recycling	Increase the proportion of total waste which is recycled over the two years 2012-14.	Behind plan: Interim update: The proportion of total waste recycled was down by three percentage points in 2013 to 25%.	Focus on increasing the proportion of total waste which is recycled to achieve the target for the two years 2012-14.
Reduction in water use intensity	A 5% reduction in water use intensity over the two years 2012-14.	Ahead of plan: Interim update: Water use intensity improved by 6% in 2013.	Continue to reduce water intensity to help ensure the 2012-14 target is met.
Health and safety management systems	Work to introduce programmes to enhance the behavioural safety culture throughout the Group.	Ongoing: The Group has identified and developed 'Morgan thinkSAFE' a behaviour-based safety programme which will be rolled-out in 2014	Work to introduce and roll-out the Morgan thinkSAFE programme Group-wide.
Reduction in lost time accident frequency	Reduce accident frequencies to make progress towards the long term goal of zero accidents.	Ongoing: Lost time accident frequency was 15% lower in 2013 than 2012 at 0.44 LTAs per 100,000 hours worked.	Continue to reduce accident frequencies to make progress towards the long term goal of zero accidents.
Reduction in lost time	Reduce the average time lost per LTA and implement additional monitoring systems to further manage lost time.	Achieved: Average lost time per lost time accident decreased from 28 days per LTA in 2012 to 26 days in 2013. A new monitoring process was introduced to further manage lost time.	Continue to reduce the average time lost per LTA and further embed the additional monitoring to further manage lost time.
EHS compliance audit programme	Continue to audit all manufacturing sites on a three-year rolling cycle with 36 EHS compliance audits planned for 2013.	Ongoing: Sites are audited on a three-year cycle with 30 EHS audits completed during 2013.	Continue to audit all manufacturing sites on a three-year rolling cycle with 31 EHS compliance audits planned for 2014.



NOTES

1. Data gathering and comparisons.

Morgan Advanced Materials' 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, the Group ensures meaningful comparisons between annual performance indicators are available.

2. Verification. In 2013 the Group engaged PwC to provide independent external assurance on the Group's CO₂e emissions and intensity; energy use and intensity; water use and intensity; waste generation and intensity; recycling and the proportion of total waste recycled; and the number of lost time accidents and the lost time accident frequency rate using international assurance standards. The report from PwC is set out on page 16. This follows on from the external assurance of the Group's CO₂, energy, water, waste and recycling data in 2012.

In addition, all Morgan Advanced Materials manufacturing facilities are regularly reviewed under the Group's EHS Compliance Audit Programme. Those sites certified to ISO 9001, ISO 14001, OHSAS 18001 and other standards have regular external audits. The Group's Director, Environment, Health and Safety and the Divisional EHS teams also work with independent external consultants to review and where appropriate verify the Group's environmental and health and safety related key performance indicators.

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 relevant ISO standards.

4. External Assistance. Morgan Advanced Materials utilised the assistance of CSR Consulting Ltd. in the compilation and production of this report.

5. Feedback The Group welcomes feedback on this EHS report and comments on ways reporting could be further developed at Morgan Advanced Materials. You can contact the Group by e-mail at ehs@morganplc.com or write to Morgan Advanced Materials 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 Advanced Materials Ethics Hotline. Further details are available on the Morgan Advanced Materials website and on the Group's intranet.

APPENDIX: GREENHOUSE GAS EMISSIONS DISCLOSURES

The Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013 ('the Regulations') require UK listed companies to disclose their Greenhouse Gas Emissions in their Directors' Report within their Annual Report. This information is on page 82 of the Group's Annual Report 2013 and the information is reproduced here for completeness.

The Regulations require that the Group discloses its emissions due to the combustion of biomass and due to process and fugitive emissions as well as the emissions due to energy use which are reported on page 11 in the Environmental performance section of this Report.

Morgan has published information on its emissions due to the combustion of fossil fuels and the electricity purchased by the Company for its own use in its annual EHS Report since 2004 and in its Annual Report since 2005. Since 2011 the Group's CO₂e emissions due to energy consumption has been externally assured by PwC (see PwC's 2013 Assurance report on page 16). The Group has also participated in the Carbon Disclosure Project since 2006 and in 2013 was one of 11 FTSE350 companies to feature in both the Carbon Performance Leadership index and the Carbon Disclosure Leadership Index.

As required under the Companies Act 2006 (Strategic and Directors' Reports) Regulations 2013, the above report includes the material emission sources from the operations and activities covered by the Group's financial statements. As noted, the reports exclude emissions from company owned and leased vehicles and emissions relating to steam supplied by third parties to two sites in China which are in total estimated to account for less than 1% of total emissions. The Directors consider that these sources of emissions are not material to the total of the emissions.

The Group uses the Greenhouse Gas Protocol with emission factors for standard grid electricity by country and year from the International Energy Agency together with other factors as published by the DEFRA in order to calculate the CO₂ and CO₂e emissions included in this report.

	2013 Tonnes CO ₂ e ^{>}	2012 Tonnes CO ₂ e ^{>}
Emissions from combustion of fuels and operation of facilities[#]		
Combustion of fossil fuels [^]	148,300	152,200
Operation of facilities, including process emissions	31,600	36,300
Electricity, heat, steam and cooling purchased for own consumption⁺:		
Purchased electricity ^{^~}	238,800	242,900
Intensity measurement[*]		
Tonnes CO ₂ e due to fossil fuels and purchased electricity per £m revenue [^]	404	392
Tonnes GHGs per £m revenue	437	428

Data is rounded to the nearest 100 tonnes of CO₂e.

[#] Excludes emissions from company owned and leased vehicles estimated at approx. 2,000 of tonnes CO₂e in 2013.

[^] The 2013 and 2012 information regarding CO₂e due to energy use has been subject to assurance by PwC. See the Independent Assurance Report on page 16 for further details.

[~] Electricity from renewable sources at zero tonnes CO₂ per kWh. Emissions increase by 2,800 tonnes at grid-average rates. (2012: 2,900 tonnes).

^{*} Constant currency basis and updated to reflect changes in reporting methodology.