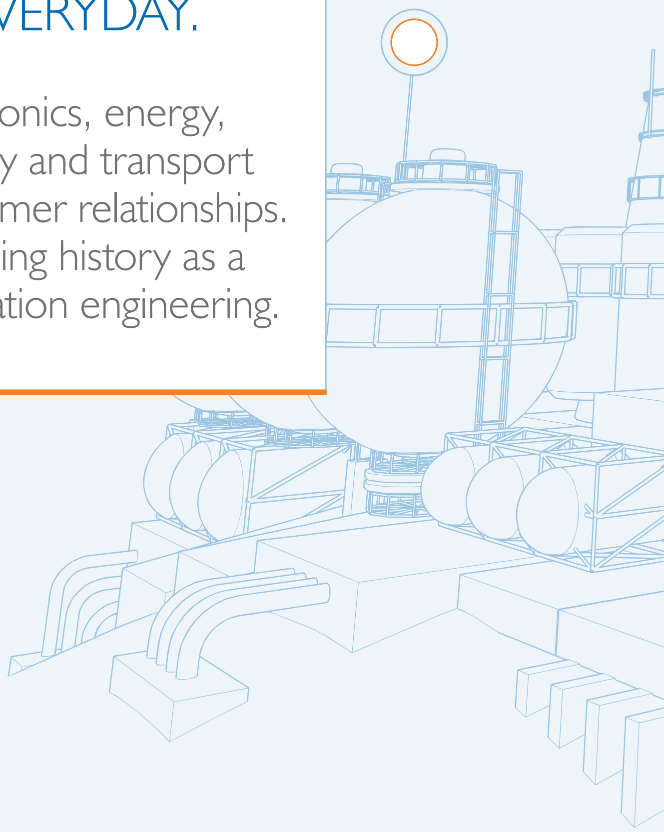
ANNUAL REPORT 2016

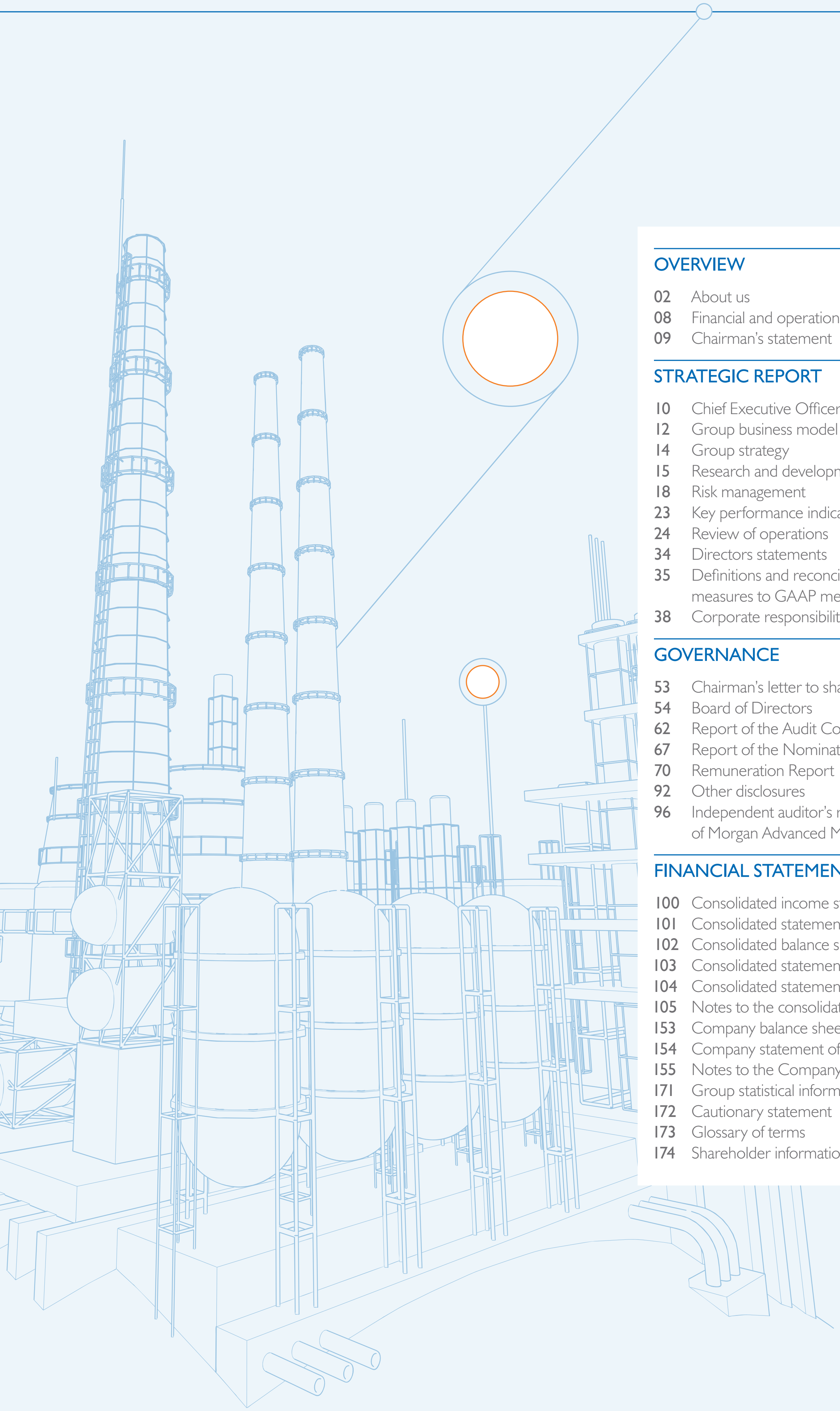
Morgan Advanced Materials

MORGAN ADVANCED MATERIALS

MORGAN ADVANCED MATERIALS IS A GLOBAL ENGINEERING COMPANY. WE APPLY WORLD-CLASS MATERIALS SCIENCE AND MANUFACTURING EXPERTISE TO SOLVE THE TECHNICAL CHALLENGES THAT OUR CUSTOMERS FACE EVERYDAY.

We work in selected segments of the electronics, energy, healthcare, industrial, petrochemical, security and transport markets, typically in close collaborative customer relationships. Morgan Advanced Materials has a longstanding history as a global leader in materials science and application engineering.





OVERVIEW

STRATEGIC REPORT

GOVERNANCE

FINANCIAL STATEMENTS

ABOUT US

MORGAN ADVANCED MATERIALS USES ITS DEEP KNOWLEDGE OF MATERIALS SCIENCE TO PRODUCE TECHNICALLY DIFFERENTIATED COMPONENTS, ASSEMBLIES AND SYSTEMS THAT DELIVER SIGNIFICANTLY ENHANCED PERFORMANCE IN A MULTITUDE OF INDUSTRIES.

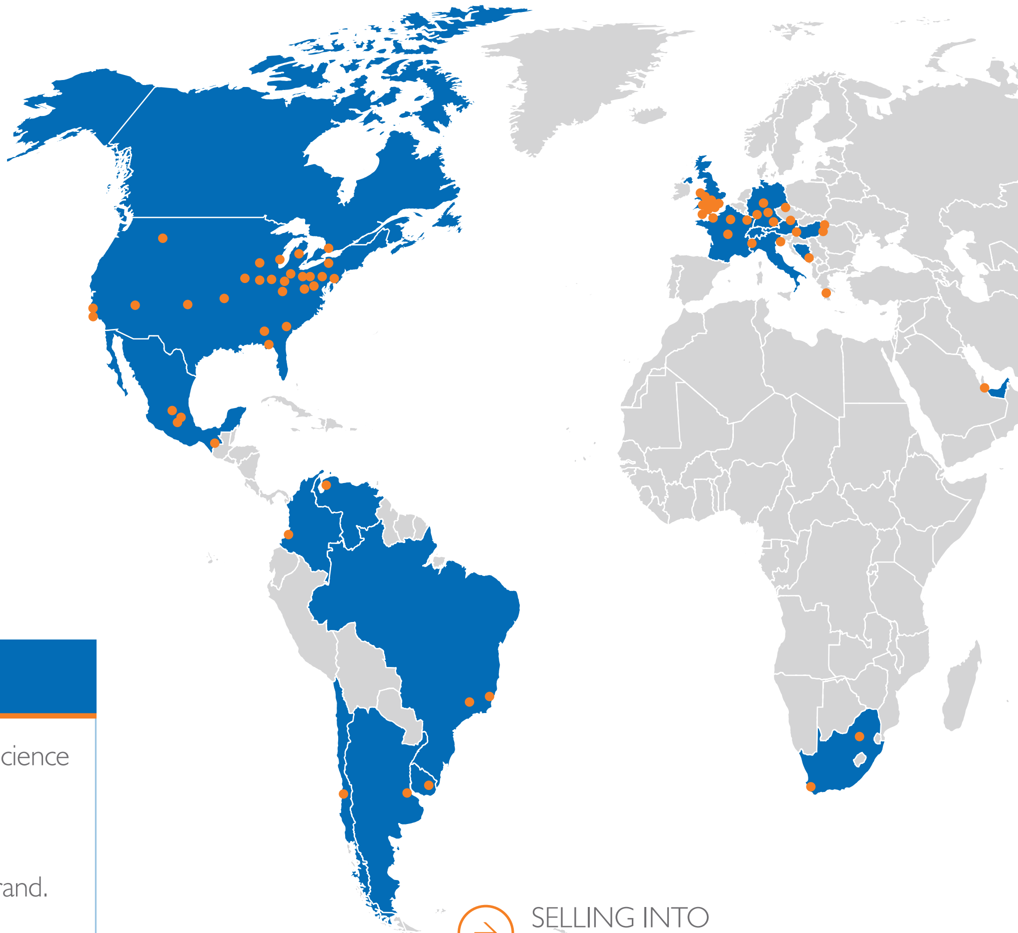
Our engineered solutions are developed to exacting specifications and deliver ever greater performance through materials and production process innovation.

The Group's highly experienced scientists and application engineers are constantly engaged with our customers to find new solutions for complex and technologically demanding environments.

This work is underpinned by a passion to develop the next generation of skilled materials scientists and application engineers, coupled with a commitment to the environment, to health and safety, and to operate to highly ethical standards.

OUR STRENGTHS

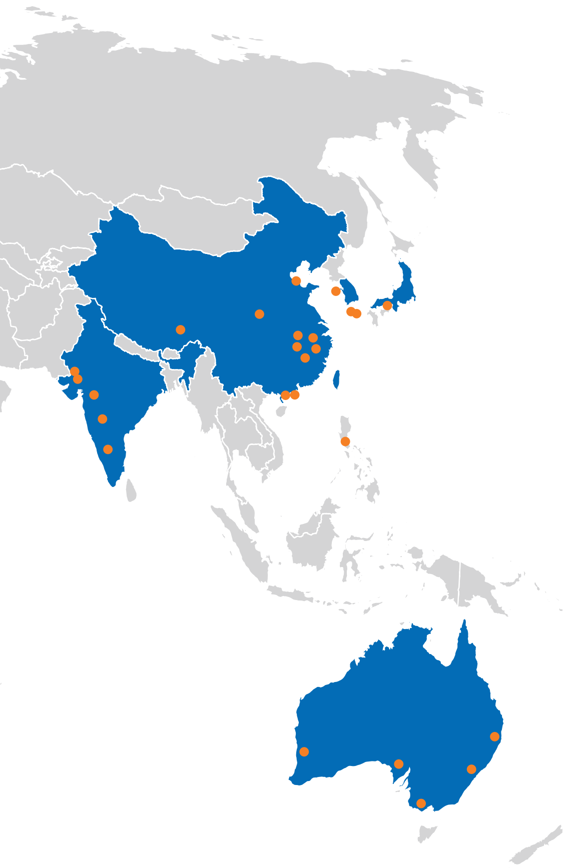
- Leading technology and materials science capability and process know-how.
- Application engineering.
- Customer focus, reputation and brand.
- Strong market positions.
- People and culture.



SELLING INTO **100** COUNTRIES

MANUFACTURING IN **30** COUNTRIES

APPROXIMATELY **8,900** EMPLOYEES



£989.2M

TOTAL GLOBAL SALES

PRODUCTS

Morgan Advanced Materials manufactures an extensive range of products, satisfying a variety of applications across numerous end-markets.

The principal product ranges are:

- Insulating fibre, brick and monolithics – 42% of Group revenue in 2016 – an extensive range of high-temperature insulation products used to reduce energy consumption in industrial processes and provide fire protection.
- Structural ceramics – 17% of Group revenue in 2016 – advanced ceramic components which demonstrate exceptional properties in harsh environments, such as our hydrocyclones for water treatment and Nilcra™ zirconia for chemical processing.
- Electrical carbon, linear and rotary transfer systems – 16% of Group revenue in 2016 – primarily used for transferring electrical energy in motor and generator applications within the mining, transportation and power generation markets.
- Seals and bearings – 10% of Group revenue in 2016 – carbon, graphite and silicon carbide components which deliver improved performance, reliability and extended life to pumps and similar equipment used in petrochemical, automotive, aerospace and water applications.
- Piezoelectric sensors and transducers – 5% of Group revenue in 2016 – products for measurement duties including level, flow, vibration and pressure in aerospace, medical, industrial and defence applications.
- Crucibles for metals processing – 4% of Group revenue in 2016 – comprehensive range of crucibles for optimum performance in non-ferrous metal and alloy melting in foundries, die-casters and metal processing facilities.
- Personal protection – 3% of Group revenue in 2016 – ballistic protection in the form of personal body armour or vehicle armour, utilising the Group's advanced ceramics for lightweight armour systems capability.
- Ceramic cores for investment casting – 3% of Group revenue in 2016 – consumable products used to create intricate internal cooling cavities in aero-engine and industrial gas turbine blades.

In addition to these principal product ranges, Morgan also offers application-specific products for each of its target markets. These products are designed and manufactured to specific customer requirements using a wide range of thermal structural ceramics, electro-ceramics and precious metals.

ABOUT US

OUR MARKETS

The Group operates in a number of market sectors; examples of the products Morgan supplies and its customer collaborations, are provided on the following pages.

INDUSTRIAL

45.4%

of 2016 revenue

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

A number of manufacturing environments rely on Morgan's material innovations every day, for improved reliability, efficiency, and performance industries.

The Group's advanced materials offer a wide range of performance characteristics including superior insulating properties, dimensional stability, strength and stiffness. Components which are highly resistant to chemical and physical wear, corrosion and extreme temperatures support optimised process efficiency and increase productivity. These attributes are helping to reduce industrial waste, improve safety and lower environmental impact.

Morgan's industrial partnership with Gripple is just one example; Gripple, a leading manufacturer of wire joiners, tensioners, and cable hanging systems, is highly successful in agricultural and industrial applications across the globe. By including Morgan's renowned Sintox™ FA alumina ceramic in its range of steel wire joiners and tensioners Gripple has distinguished itself from its competitors. Morgan's unique alumina ceramic is enabling Gripple to manufacture tensioners which are robust enough to withstand constant exposure to the elements and extremes of temperature, whilst remaining corrosion-resistant.

This year also saw Morgan partner with Pennsylvania State University in the USA to establish a Carbon Science Centre of Excellence, aimed at driving global developments in carbon science. As Morgan's third global Centre of Excellence, and its first in North America, this partnership is expected to deliver significant improvements in carbon materials for a range of sectors and applications. The Group plans to invest heavily in this Centre of Excellence over the next few years, to create a truly world-class facility.

Morgan's industrial focus has also been expanded by the launch of its hydrocyclone liners to a range of industrial sectors including mining and paper, which face similar challenges to the oil and gas sector when it comes to material separation. This is demonstrative of the Group's commitment to continually seek additional applications for leading products in new industry sectors.

TRANSPORTATION

21.7%
of 2016 revenue

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

Aerospace, automotive, marine and rail applications require high-performance components and sub-assemblies manufactured to exacting standards, which is where Morgan leads the global market for advanced materials.

The Group combines its materials science and manufacturing capabilities to offer consistent and reliable products in flexible production quantities, from small – even one-off – runs, to high volumes. For example, Morgan's carbon brushes and collectors are used extensively in trains. High-temperature fibre products are widely used for emission control in a wide variety of vehicles, specially engineered to customer requirements.

Morgan continues to expand its activity in the rail sector, with its plain carbon strips and metallised collector strips for high-speed railway application helping to double the service life of high-speed rail networks. These products offer a longer-lasting alternative to the carbon typically used in rigid catenary systems, which is prone to strong electric wear from electric sparks and arcs, resulting in a shorter service life. They have already been used in the 300km/h level high-speed railway system in China, where they have doubled service life compared with previous collectors installed. This translates to a significant reduction in operational and maintenance costs for the high-speed railway.

PETROCHEMICAL

8.5%
of 2016 revenue

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

The petrochemical industry operates in demanding environments, creating a requirement for more durable, resistant and efficient materials. Morgan's components are used globally in critical applications to meet on- and offshore exploration challenges, and support drilling and downstream processing, thanks to their resistance to chemical and physical wear, corrosion, and extreme temperatures.

Morgan supplies carbon graphite, zirconia materials and silicon carbide into a range of critical components such as mechanical seal faces, pump bearings and specialist valves.

The last year saw the Group push the rheology of materials to new levels with the launch of its innovative range of extruded materials, which can achieve more complex geometries, to satisfy increasingly challenging environments. Made from grades of magnesium oxide, alumina, silica and hafnia, Morgan's range of extruded products have strong insulating properties and thermal conductivity, with the new range further controlling density, strength, and particle size distribution to meet unique and challenging specifications.

As global demand for silicon carbide continued to grow, Morgan announced a dedicated volume silicon carbide manufacturing facility in Stourport, UK. This enabled the Group to augment sales in Europe and worldwide with higher performing silicon carbide materials. From the facility, Morgan produces both silicon carbide and graphite-loaded silicon carbide materials, primarily for mechanical seals and radial bearings. These components are used both in domestic water pumps and in heavy-duty industrial water and chemical pump applications, including cooling pumps for plastic injection moulding machines.

Morgan's silicon carbide ceramics continue to give high performance when pumping contaminated, abrasive and corrosive fluids and provide excellent sealing at high pressures. They have a low thermal expansion coefficient and high thermal conductivity, improving overall pump reliability and reducing operational costs and downtime.

ABOUT US
continued

OUR MARKETS continued

ENERGY

6.7%
of 2016 revenue

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

Morgan has an enviable reputation for designing and engineering both world-class components for power distribution and generation, and energy and heat management.

Morgan's advanced thermal insulation is used to insulate heat recovery steam generators in power and industrial plants. Morgan's carbon brushes offer world-leading performance in power generation applications. Morgan has developed new carbon material grades for wind generation applications that extend life and reduce service costs.

SECURITY AND DEFENCE

6.3%
of 2016 revenue

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

The security and defence industries are constantly balancing the need for greater protection with the requirement for more lightweight materials, from platform applications to personnel protection. Morgan Advanced Materials supplies precision-engineered materials, components and assemblies to meet the exacting standards of the international defence and security markets.

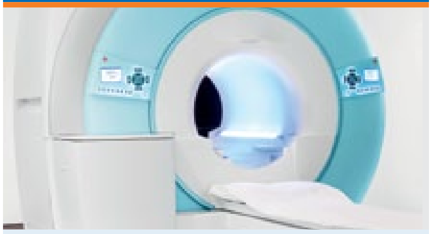
Morgan combines its manufacturing capability and materials technology to produce solutions that deliver real performance benefits for security and defence applications, in the most demanding environments. The Group has considerable experience in the area of explosive ordnance disposal, where comfort and freedom of movement need to combine with optimum protection for the user.

Morgan has continued to grow its presence in the defence market, securing a £1.1 million contract with the UK Ministry of Defence to supply ballistic shields and supporting services. Morgan's ballistic shields combine outstanding levels of multi-hit protection, with the latest in lightweight armour, ensuring maximum mobility and protection for army personnel in the arena of combat.

The global reach of Morgan's security and defence products was further demonstrated with a contract to supply specialist armour for 16 development prototypes for the US Marine Corps' next-generation Amphibious Combat Vehicles. Key to being awarded the contract was the multi-hit protection that Morgan's CAMAC® armour provides, and the fact that it is typically 50% lighter than steel alternatives, allowing a vehicle to benefit from improved manoeuvrability and enhanced handling, with an improved centre of gravity.

Meanwhile Morgan's LASA ballistic shield continued to attract global attention after achieving National Institute of Justice certification, and the blast testing of our Silverback 4020 Elite demonstrated the outstanding survivability and protection offered by our specialist bomb disposal suits in a range of challenging situations.

HEALTHCARE



5.6%
of 2016 revenue

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

Medical engineering requires the highest standards of precision, accuracy, reliability and performance, which is why many medical original equipment manufacturers (OEMs) choose materials from Morgan to help improve the performance of their equipment.

Morgan's experienced team of materials scientists have an unrivalled understanding of the uniquely demanding environment in which equipment for the global medical market is developed. This allows the Group to produce a broad variety of components for use in medical monitoring and instrumentation as well as in tools for treatment and surgery. By combining materials innovation with high-quality manufacturing capabilities, Morgan produces parts which are optimised to meet precise and complex physical and chemical specifications.

Morgan's deep understanding of ceramic material properties, together with expertise in braze alloy design, allows the Group to produce high-density, highly reliable feed-throughs for a range of medical applications, including cochlear implants and neuro-stimulation.

ELECTRONICS

5.8%
of 2016 revenue

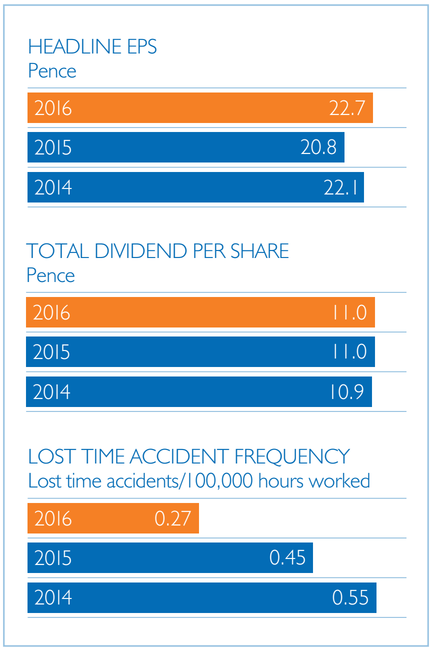
Morgan Advanced Materials makes components that help the electronics industry in its drive towards higher performance and reliability in smaller, lighter, more robust products.

Electronics manufacturers are under constant pressure to meet competing demands on component size, functionality and cost. Morgan Advanced Materials eases some of this burden by engineering high-purity, high-specification components which are used globally in semiconductor fabrication and electronic products.

Morgan's research and development teams work closely with customers to design and manufacture intricate components with specific electrical and thermal properties within restricted and challenging size constraints. The Group's piezoceramics and high-quality dielectric components are used in everything from mobile phones and televisions to lighting controls, instrumentation and high-voltage systems. In addition, Morgan's ceramic metallisation processes have played a major role in the commercialisation of modern communication, signalling and control technologies, including ultra-high-frequency signal transmission.

FINANCIAL AND OPERATIONAL HIGHLIGHTS

		2016	2015
FINANCIAL			
Headline performance			
Revenue	£ million	**989.2**	911.8
Group headline operating profit[1]	£ million	**116.9**	106.0
Headline EPS[1]	Pence	**22.7p**	20.8p
Total dividend per share	Pence	**11.0p**	11.0p
Statutory basis			
Operating profit	£ million	**107.3**	82.9
Profit before tax	£ million	**87.9**	59.0
Basic EPS (pence)	Pence	**18.4p**	11.9p
HEALTH AND SAFETY			
Lost Time Accident Frequency (per 100,000 hours worked)[2]	Frequency	**0.27**	0.45



1. Throughout the Strategic Report adjusted measures are used to describe the Group's financial performance. These are not recognised under IFRS or other generally accepted accounting principles (GAAP). The Executive Committee and the Board manage and assess the performance of the business on these measures and believe that they are more representative of ongoing trading, facilitate year-on-year comparisons, and hence provide additional useful information to shareholders.

   Throughout this Report these non-GAAP measures are clearly identified by an asterisk (*) where they appear in text, and by a footnote where they appear in tables and charts. Definitions and reconciliations of these non-GAAP measures to the relevant GAAP measures can be found in the Group Financial Review on pages 35 to 37.
2. Lost Time Accident Frequency has been subject to assurance by ERM Certification and Verification Services. See page 47 for further details.

CHAIRMAN'S STATEMENT

THE GROUP HAS DELIVERED SOLID FINANCIAL PERFORMANCE IN A DIFFICULT TRADING ENVIRONMENT. THE REVIEW OF THE GROUP'S STRATEGY, THE CHANGES TO THE ORGANISATION STRUCTURE, AND THE SETTING OF CLEAR EXECUTION PRIORITIES POSITIONS THE GROUP WELL TO DEAL WITH CHALLENGING MARKET CONDITIONS.

ANDREW SHILSTON
CHAIRMAN

2016 was a year of significant change at Morgan. This change has involved important management hires, new non-executive Directors, and the description and implementation of the strategy outlined in February 2016. These changes will lay the foundation for an exciting future for the Company over the coming years.

Inevitably, global trading conditions had a damping effect on Group results while we wait to see the benefits of the changes described above. At a headline* level, revenues of £989.2 million for 2016 were up by 8.5% compared to 2015, although this was entirely due to currency effects, on a constant currency basis* revenue was down by 1.5%. Similarly, headline operating profit* for 2016 was £116.9 million compared to £106.0 million in 2015. The balance sheet remains strong and there is capacity for future investment. Group headline earnings per share* was 22.7 pence and it is proposed that a final dividend of 7.0 pence is paid bringing the total to 11.0 pence for the full year, the same as in 2015.

Pete Raby has set out very clearly in his review the priorities for the Group, including product-related investment, more efficient operations, management capability and improving the effectiveness of our customer engagement. Together with the global business structure which will enable better standardisation, accountability, and benefits of scale the foundations have been set for growth in future. Pete is also making improvements in the safety of our operations a priority.

Management changes include the appointment of Peter Turner, a highly respected Finance Director from Smiths Group plc, a new Group Human Resources Director, and a new Group Financial Controller, all of whom strengthen significantly the head office team.

Board changes included the appointments of Helen Bunch in February and Laurence Mulliez in May as non-executive Directors, and they are already contributing to the Board deliberations.

I am confident we now have the right team and the right strategy for the Company to move ahead in years to come.

ANDREW SHILSTON
CHAIRMAN

Find out more
www.morganadvancedmaterials.com

CHIEF EXECUTIVE OFFICER'S REVIEW

WE ARE MAKING GOOD PROGRESS WITH THE IMPLEMENTATION OF OUR STRATEGY AND HAVE DELIVERED A SOLID SET OF RESULTS IN A DIFFICULT MARKET.

PETE RABY
CHIEF EXECUTIVE OFFICER

Safe and ethical working remains the top priority for the Group. During 2015 we began the rollout of 'thinkSAFE', a Group-wide project to deliver a step change in the safety of our operations. This has continued throughout 2016. Through this programme, and a strengthened focus on safety across the business, we have delivered a significant improvement in safety performance. In 2016 we saw a 42% reduction in the number of Lost Time Accidents from 91 to 53, and a 41% reduction in the Lost Time Accident Frequency rate from 2015.

I am very pleased with the engagement of the business leadership and our employees in our safety performance and would like to thank them for their support in this critical area.

We laid out our strategy for the Group in February 2016 and identified the improvement priorities for the next two to three years that begin the implementation of our strategy, and position the Group for growth. We have made good progress during the year, meeting the milestones established in February. It will take three to five years to see the full benefits of these actions materialise, but we have made a good start to improve the performance of the business and position the Group for more resilient financial performance and faster growth.

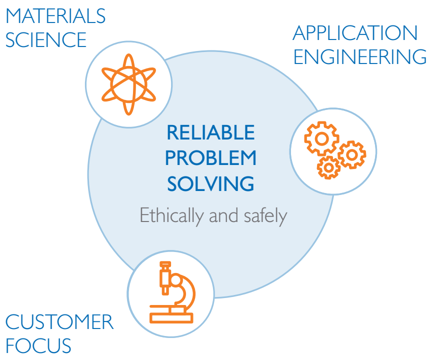
Looking forward to 2017, we are expecting the challenging market conditions to continue and we have planned prudently as a result. However, despite the challenging environment, we are making operational improvements across our business as part of our strategy execution and this is creating significant funds for reinvestment in the business in 2017. We will make a further £3 million planned investment in research and development. We will also be investing £3 million to strengthen our selling capability and in business development resources to support future growth in key business areas, as well as in closing other capability gaps.

Group results

The difficult market conditions seen in the second half of 2015 have continued through 2016 as we expected. We have delivered a solid set of results:

- Group revenue for 2016 was £989.2 million, 8.5% above 2015 at reported exchange rates. On a constant currency basis,* Group revenue was lower by 1.5%. The reported results have benefited from weaker sterling throughout the year.
- The 2016 Group headline operating profit* margin of 11.8% was in line with 2015, whilst weaker trading conditions impacted margins, this was largely offset by operational efficiencies and some foreign exchange benefits.
- Group headline earnings per share* was 22.7 pence (2015: 20.8 pence).
- Net capital expenditure was £38.4 million (2015: £62.7 million, this included £12 million for the acquisition of the freehold of the Swansea, UK facility). The Group has continued its investment in additional capability and capacity to support future growth.
- Operating cash generation* was good, with a cash flow from operations of £128.3 million (2015: £139.4 million). Net debt* at the year end was £242.5 million (2015: £216.0 million), primarily driven by movements in foreign exchange rates.
- The net debt to EBITDA* ratio at the year-end remained at 1.6x (2015: 1.6x). The Group remains well within its banking covenants and has good headroom and balance sheet capacity for appropriate future investment.
- On a statutory reporting basis operating profit improved to £107.3 million (2015: £82.9 million) and profit before tax improved to £87.9 million (2015: £59.0 million). Both of these benefited from year-on-year movements in exchange rates and specific adjusting items (2016: £1.7 million charge, 2015: £16.0 million charge). See pages 24 to 33 for further details.

Group strategy



Our long-term strategy is to build a Group with distinctive capabilities and performance in three areas:

1. Materials science capability and technology.
2. Application engineering capability.
3. Customer and end-market focus.

We have strengths in these areas today to build on, and developing these capabilities further will be our focus in the coming years. Through the application of our core skills in these areas we will add value as a Group. We will apply these skills in markets that are growing and where we can operate at scale, on a global basis. We will apply these skills to solve difficult materials-based problems for our customers, ethically and safely and where they value our differentiated solutions. This set of capabilities provides a resilient and distinctive source of differentiation and is an enduring strategic goal for the Group.

To reach this goal we need to develop our capabilities further and address performance gaps in the business. In February 2016 we set six execution priorities that we will pursue over the next three years to strengthen the Group and deliver resilient financial performance and faster growth:

1. Move to a global business structure.

We completed the move to a global business structure in March 2016. The change in structure has improved global co-ordination across the Group and has sharpened accountability within each of our global business units. This is an important change to enable the wider changes we need to make and we completed this without any loss of business momentum.

2. Improve our technical leadership.

Our objective is to strengthen our technical teams and increase our investment in research and development to around 4% of sales (from 2.8% of sales in 2015) over the next three to four years.

We increased our investment by £3.8 million during 2016, adding technical resources to our two existing Fibre and Structural Ceramics Centres of Excellence, and across the businesses. We have also established two new research and development (R&D) Centres of Excellence, one for Carbon Science at Penn State University, Pennsylvania, US and one for Metals and Joining in Hayward, California, US. These two new Centres of Excellence will enable an increased focus on the core materials science that underpins our products and will enable the accelerated development of key products. We are planning to invest a further £3 million in 2017, funded through the reinvestment of the savings we are generating through operational improvements.

3. Improve our operational execution.

Our objective is to strengthen our operational capabilities, reduce operational costs to fund reinvestment in the business, and improve delivery and quality performance.

We are progressing well with a broad-based programme of improvements across the business. These are being delivered bottom up, on a business by business basis through the application of lean tools and techniques, consolidated procurement and targeted yield and scrap improvement projects. We are targeting £6 million savings in 2017 to support further investment in R&D and investment to build the effectiveness of our business development and sales teams, positioning the Group for future growth.

4. Drive sales effectiveness and market focus.

Our objective is to strengthen our sales capability, and increase the intensity of effort with new customers and markets.

During 2016 we completed a capability assessment for much of our sales force, identifying the strengths and gaps in our sales teams, and started the work to determine the optimum sales structures across the Group. We will continue this work in 2017. We are investing in additional resources focused on a number of market segments where we have opportunities to accelerate our growth. We expect to invest a further £3 million in additional sales and application engineering resources targeting markets including the automotive, transportation, medical and electronics sectors. In early 2017 we started pilot work across the business to improve our underlying sales processes and routes to market.

5. Increase investment in people management and development.

We are aiming to strengthen our leadership capability and deepen functional capabilities across the business, including in sales and engineering.

In addition to the sales capability efforts outlined above, we have also focused on our leadership capability, materials science careers and graduate development. We have developed a new leadership framework that sets out clear expectations for leadership behaviours and will be the basis for assessing performance, building strong succession, deploying our leadership development programmes and rewarding achievements. The leadership behaviours will be launched at a leadership conference in March 2017. We are also well advanced in designing the career structures for our materials scientists to provide a clear set of career options to this community. Finally, we have expanded our graduate development programme globally and, after five consecutive years, have been rated publicly by our graduates as a top company for graduate programmes.

6. Simplify the business.

We have announced two divestments which will materially simplify the Electrical Carbon and Technical Ceramics global business units. These divestments see the Group exiting businesses where we are sub-scale and where there is limited synergy with the remainder of the Group and enable a sharpened focus on our core business areas in both of these global business units.

Looking forward

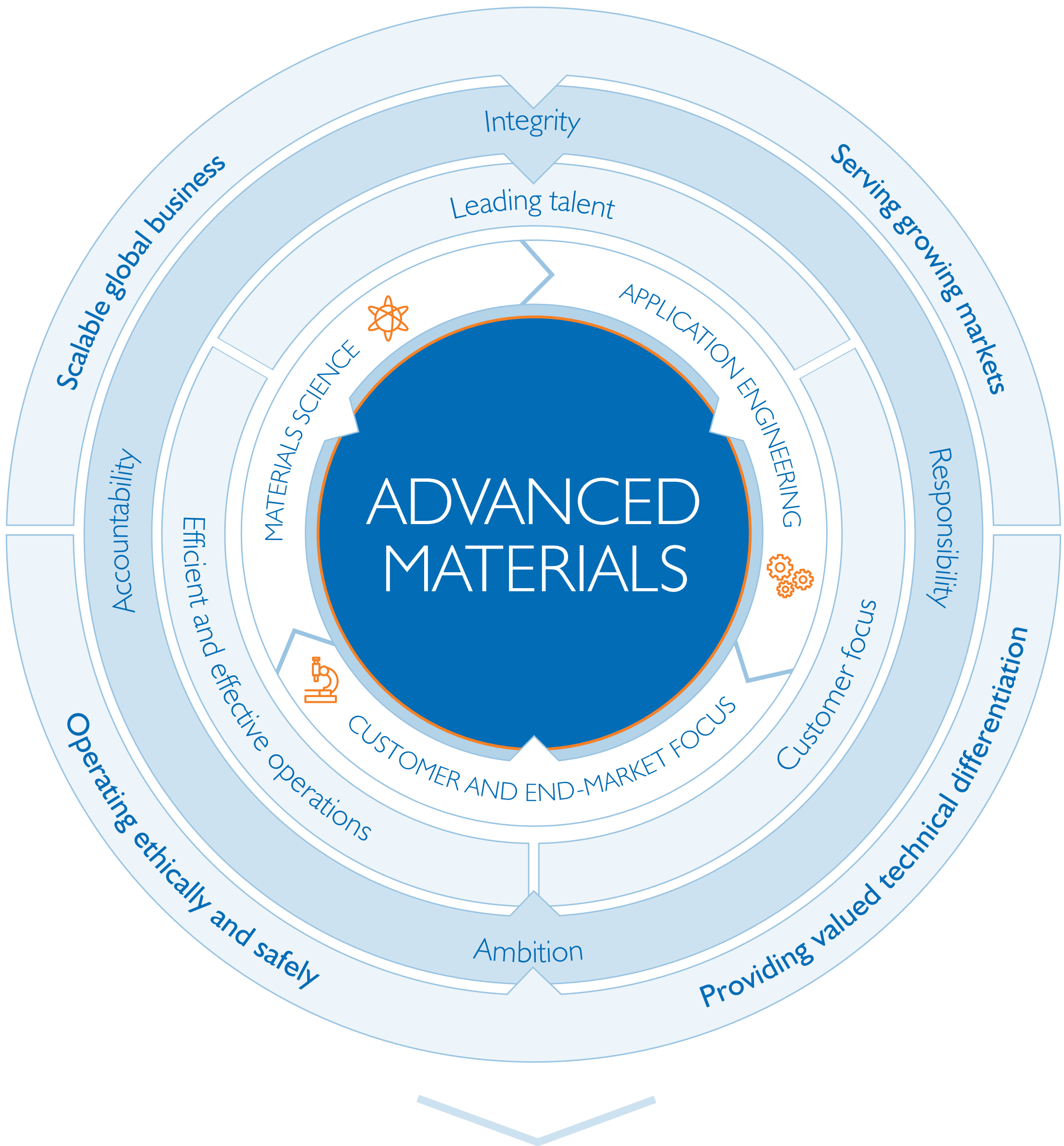
With the global market environment remaining challenging as we enter 2017, we have again planned prudently for the year ahead. We will deliver significant efficiencies in our global operations to support reinvestment in capability, including in technology and in our sales and business development, to improve the resilience of the Group, improve our execution and position us for future growth.

Finally, I would like to thank our employees for their hard work and support during 2016.

PETE RABY
CHIEF EXECUTIVE OFFICER

GROUP BUSINESS MODEL

MORGAN PROVIDES ADVANCED MATERIALS SOLUTIONS TO A VARIETY OF END-MARKETS. WE WORK COLLABORATIVELY WITH CUSTOMERS WORLDWIDE TO PROVIDE ENGINEERED PRODUCTS THAT SATISFY TECHNICALLY CHALLENGING REQUIREMENTS IN DEMANDING ENVIRONMENTS.



SUSTAINING VALUE GENERATION

The Group's business model is based on taking the full depth and breadth of its advanced materials capabilities to selected markets across the globe. Effective from March 2016, the Group reports as two global Divisions and six global business units: Thermal Products Division, organised into two global business units Thermal Ceramics and Molten Metal Systems; Carbon and Technical Ceramics Division, organised into three business units Electrical Carbon, Seals and Bearings, Technical Ceramics; and Composites and Defence Systems, a single global business unit. Each serves its local markets with the full range of Morgan's material capabilities. Where appropriate, cross-regional and Divisional collaboration takes place to support, for example, key global customer accounts, operational benchmarking or product development.

The Group's core values are based on a commitment to act with integrity when dealing with customers, employees, shareholders, suppliers and the wider community, so that it maintains the trust and confidence of its stakeholders. The Group aims to be vigilant and proactive in respect of environmental, health and safety matters. This common culture is critical to the continued growth and development of Morgan Advanced Materials.

The Group is organised and managed to ensure absolute clarity as to responsibility and accountability with a focus on pushing as much decision-making as possible to the business units, within a well-understood strategic framework and schedule of authorities. The Group's business model is based on building three distinctive core capabilities: materials science and technology, application engineering and customer and end-market focus.

Materials science and technology

The understanding and application of materials science underpins Morgan's differentiated products and services. Research and development (R&D) is key to the development and maintenance of the Group's distinctive materials science capabilities. The Group's R&D activities are led by a Chief Technology Officer, who oversees the work of technical resource across the globe and ensures a co-ordinated and focused approach to the large and critical investment that the Group makes in this area.

Due to the importance to Morgan of R&D and its global approach to this activity, a specific review of this area is provided on pages 15 to 17 of this Report.

Application engineering

Our application engineering capability is used extensively across the Group to develop solutions to demanding customer problems. It is the combination of the Group's materials science understanding and ability to engineer solutions that differentiates Morgan. This capability resides in application engineering teams in each of the business units. These teams have strong relationships with their customers and use their insight into customer issues, and their understanding of the Group's core products and technologies, to design solutions for customers.

Customers and end-market focus

At the core of what Morgan does is the development of long-term trusted relationships with customers, working collaboratively with them over time and on multiple initiatives to develop materials, components and sub-assemblies that address very specific needs. The parts that the Group makes often play a critical role in its customers' products, helping them to perform more efficiently, more reliably or for longer, sometimes in the most demanding environments. Relationships are built at multiple levels between Morgan Advanced Materials and its customers, to ensure its materials science and its manufacturing know-how are utilised at the start of its customers' product lifecycle and through the ongoing refinement of products and solutions, positioning Morgan as the supplier of choice for current and next-generation products.

The Group focuses on growing markets, where customers demand product and service excellence and where the Group's technical differentiation is valued by customers.

The Group enjoys a good spread of customers in terms of markets and geographies and while the loss of certain of these could affect the operations of a particular local business, none are considered financially essential to the Group as a whole. Notwithstanding this, the Group devotes significant resources to ensuring these relationships continue to operate productively.

Additional information on the markets served by the Group and on its products is included in the sections 'About Us' and 'Our Markets', on pages 2 to 7.

Operations

As noted above, the Group has a truly global footprint that allows it to serve its customer base effectively. Using that footprint to provide excellent service to its customers and maximise operational excellence and cost-efficiency is a critical element of the business model.

The Group's spread and number of sites allow it to be close to its customers and to optimise its logistics, particularly for its fibre product range.

The Group continues to increase the effective use of its low-cost manufacturing footprint, through sites in Hungary, Mexico, India and China. These sites act as points of supply to their immediate geographic regions and also as global points of supply where appropriate. Operational benchmarking across sites with similar products/processes is also utilised alongside a suite of operational efficiency initiatives.

The quality and reliability of certain raw material inputs is critical and, just as the Group has developed excellent relationships with customers, it also has long-term and effective relationships with its key raw material suppliers. Wherever possible raw materials are dual-sourced, or there are actionable plans in place for alternative sources should the supply chain be disrupted.

Role of centre

The Group's head office – comprising approximately 35 people – is based in Windsor, UK and is the location of the Group's central functions. The centre provides the strategic framework for the Group and drives strategy execution. It also defines the Group's Responsible Business approach and the processes for appropriate business monitoring through the business planning and budget cycles. The centre is also responsible for external investor relations, funding and treasury management and other areas where it is appropriate for specialist expertise to be brought together in one place for the benefit of the Group, such as pensions, insurance, tax, legal, and environmental, health and safety. The corporate centre is small and the lines of communication with the businesses are short and responsive.

GROUP STRATEGY

THE GROUP'S LONG-TERM STRATEGY IS TO BUILD THREE DISTINCTIVE CORE CAPABILITIES: MATERIALS SCIENCE, APPLICATION ENGINEERING AND CUSTOMER AND END-MARKET FOCUS, AND TO APPLY THESE TO A PORTFOLIO OF SCALABLE GLOBAL BUSINESSES WHERE TECHNICAL EXPERTISE AND DIFFERENTIATION ARE VALUED TO SOLVE CUSTOMERS' CHALLENGING PROBLEMS.

These capabilities will strengthen the Group to deliver resilient financial performance and faster growth, at all times operating in an ethical and safe manner.

To support its strategy, the Group has set six key execution priorities:

PRIORITIES	IMPLEMENTATION
1 Move to a global business structure	The reorganisation to six global business units is complete. It has led to improved global co-ordination across the Group and strengthened accountability within each global business unit, simplifying the approach to customers and markets and increasing operational focus.
2 Improve technical leadership	Research and development investment has been increased to extend Morgan's technical lead and to accelerate new product development. Additional Centres of Excellence will be established allowing further concentration of development efforts in those areas that can deliver the greatest benefit globally to the Group.
3 Improve operational execution	There are a number of opportunities across the global business units to improve operational execution. Resource and capital will be allocated to target specific improvements to efficiency and effectiveness on a business-by-business basis.
4 Drive sales effectiveness and market focus	The Group is focused on improving a number of aspects of its sales capabilities and process: sales processes and their efficiency, the management of key customer accounts and distribution channels, and deeper understanding of end-markets and faster-growing segments.
5 Increase investment in people management and development	The Group aims to strengthen its leadership capability and deepen functional capabilities across the business, including in sales and engineering. Senior leaders will be benchmarked externally, new talent introduced and future leadership candidates identified from within the business. Performance management will be enhanced for the Group's top management and the structures and targets for incentive schemes will be reviewed. The Group will invest more in executive training and create clear career paths for its technologists and engineers.
6 Simplify the business	The reorganisation of the business enables the Group to run each business unit on a global basis. A Morgan business will have sustainable presence in its end-market and be scalable, operating in attractive growing markets where it has the ability to add value to our customers. It will have synergies with the rest of the portfolio, be organisationally robust and deliver – or be capable of delivering – strong financial performance.

The Group uses the characteristics of a Morgan business as set out above to test new investment opportunities, to screen its existing businesses for fit with the Group and to identify areas requiring strategic attention and action.

RESEARCH AND DEVELOPMENT

MORGAN IS DISTINGUISHED BY ITS DEEP UNDERSTANDING OF ADVANCED MATERIALS SCIENCE, ALIGNED WITH ITS RANGE OF PROCESSING CAPABILITIES THAT ALLOW ITS APPLICATION ENGINEERS TO DESIGN DIFFERENTIATED SOLUTIONS FOR OUR CUSTOMERS.

THESE CORE COMPETENCES UNDERPIN THE GROUP'S ABILITY TO ESTABLISH LONG-TERM, COLLABORATIVE RELATIONSHIPS WITH A DISCERNING CUSTOMER BASE. MORGAN'S SIGNIFICANT FOCUS ON AND INVESTMENT IN RESEARCH AND DEVELOPMENT ALLOWS THE GROUP TO MAINTAIN THIS MARKET ADVANTAGE.

MIKE MURRAY
CHIEF TECHNOLOGY OFFICER

Research and development

The long-term profitable strength of Morgan Advanced Materials depends on constantly refreshing the innovation pipeline to anticipate, or respond to, market needs. The Group's research and development (R&D) activities are headed and co-ordinated by the Chief Technology Officer, Dr Mike Murray, with R&D resource deployed across the globe. The focus of Morgan's R&D strategy is on creating critical mass within our Centres of Excellence, allowing Morgan to accelerate its strategic priorities in order to maintain and grow its technology leadership positions.

The Group's R&D strategy will continue to be governed by four key underlying principles:

1. To be the **acknowledged leader in materials science** for our chosen technology families.
2. To understand the **application of our materials science in our customers' products** and processes, providing maximum benefit to them through advanced application engineering.
3. To demonstrate a clear **understanding of where our technology competences are positioned today against competitors** and emerging and competing technologies, forming a clear view of where we need to be.
4. The depth and the breadth of our understanding will be built through a **community whose culture is collaborative** and which develops deep institutional knowledge.

The Group's commitment to technology is demonstrated by the Group's total R&D spend in 2016 of £29.2 million, equal to 3.0% of sales, representing a significant increase compared to the 2015 spend of £25.4 million, 2.8% of sales. The Group anticipates increasing its investment to around 4% of sales over the next three to four years (from a 2015 actuals baseline).

RESEARCH AND DEVELOPMENT
continued

Centres of Excellence

Morgan has recognised the benefits of consolidating R&D efforts around its core technologies and this is reflected in the move towards global Materials Centres of Excellence. In 2016 the Group established two new Centres of Excellence for Carbon Science (based at Penn State University, Pennsylvania, USA) and one for Metals and Joining (based at the Hayward facility in California, USA). These are in addition to our two existing Centres in Insulating Fibre and Structural Ceramics (both in the UK). These Centres will work on the strategic priorities of the businesses and Group, maintaining Morgan's world-leading position in its chosen technology areas. The global business units ensure the Centres prioritise their efforts and focus and retain a very strong commercial direction. The Centres of Excellence enhance the R&D capability of the business by delivering core materials science platforms that the manufacturing sites transform into products.

The Insulating Fibre Centre of Excellence in Bromborough, UK, is a state-of-the-art facility employing 25 dedicated scientists focused on the continued development of Morgan's fibre product range. Morgan's market-leading low bio-persistent Superwool® fibre technology and product range continue to be developed with patented materials science. Morgan is now extending the operational temperature range, allowing it to provide customers with superior insulation performance, improved fire protection and weight-saving opportunities in more applications. There has been particular success across a range of end-markets such as iron and steel, aluminium processing, automotive and passive fire protection.

The Structural Ceramics Centre of Excellence in Stourport, UK, opened in 2015 and oversees the major advanced ceramic science developments for the Group. The facility concentrates on leading-edge ceramic materials developments to support both current and new markets. Initial focus has been on opportunities in the medical, aerospace and environmental sectors, whilst a focus on new emerging markets and technologies also ensures that the Group stays at the forefront of materials science. As part of this focus the Centre includes the R&D programme for Morgan's additive manufacturing of ceramic materials. The Centre's remit will also include enhancing the Group's network of global technology partners to ensure it is positioned to work with the world's best academics and research institutes.

The Carbon Science Centre of Excellence will support the Electrical Carbon and Seals and Bearings businesses and will be located in the Innovation Park at Penn State University, close to the university's top talent and facilities. The partnership with Penn State will combine resources and experience, creating a synergy which will enable significant progress in the development of carbon materials for a range of sectors and applications. Pennsylvania was seen as the ideal location for the new Centre due to Penn State's cutting-edge academic research and proximity to a number of Morgan's key manufacturing sites.

The Metals and Joining Centre of Excellence will support the Technical Ceramics businesses that are involved in providing metallic joining solutions and joining ceramic/metal to metals to form hermetic seals. This Centre will be located in Hayward, California, at Morgan's largest facility utilising this technology and hence in close proximity to the business, production process and customers. The Centre was formally launched in 2016.

Core technologies supporting Morgan's approach to its markets

The Group's materials technology is and will remain a unifying feature across its organisation. Major technological initiatives are co-ordinated and introduced across the global customer base ensuring that maximum value is derived from the investment made in product and process development. During 2016 sessions were held with the Group's larger existing and potential customers, at which the Group's senior commercial and technology management presented the product and technology portfolio. Excellent engagement from a number of these customers has helped drive our technology roadmaps and align them to customer and market need.

Driving innovation and growth

The Group takes a consistent, systematic approach to managing new business development and R&D project management across the organisation. This approach allows the Group both to identify the largest and most profitable growth opportunities and to make effective decisions for the deployment of resource on those opportunities.

As part of the increasing focus on technology and innovation, the Group has created a Morgan Technical Advisory Board. This brings together world-leading academics who are recognised as subject-matter experts for a number of Morgan's key technology families. They provide a sounding board for Morgan's plans for technical development of ceramic, carbon and polymer composite products and processes, keeping Morgan abreast of the latest developments in materials science, and advising on new areas of opportunity for the Group. This helps ensure the Group maintains and develops its leading edge in new and emerging materials science around the globe.

Morgan is also working with the world's best research centres to maintain and develop its leading edge in materials science in new and emerging applications. One such collaboration was formalised with the announcement of a new joint development agreement with the University of Manchester, aimed at scaling up a new process for manufacturing graphene – a one-atom thick carbon allotrope first isolated at the university ten years ago and for which a Nobel Prize was awarded. The world's thinnest material and a potent conductor, graphene is also extremely lightweight, chemically inert and has a large surface area which means that with further research and testing, it could change the way we think about electrical and chemical engineering.

Some of the specific areas of technology-led success in the Group in 2016 are listed below:

Unique lightweight plate to combat the threat of SS109 ammunition. The 'LASA™ LWA III+ 109' ballistic insert is the latest addition to Morgan's extensive LASA™range of combat equipment. Weighing just 1.6kg (3.5lbs) compared to a standard 2.5kg, and with a thickness of 21mm (0.8 inches), the LASA LWA III+ 109 ballistic insert has been developed to directly address the safety concerns of military, law enforcement and security personnel against the growing threat of the 'green tip' SS109 round.

Thermal bag to counter fire risk from lithium-ion batteries. The FireMaster® battery bag, which measures 500mm x 500mm, comprises two of Morgan's specialist thermal materials to create a sealable, water-resistant compartment capable of containing the heat spread in the event of a primary-lithium or lithium-ion battery fire. Lithium batteries are used in many everyday electronic devices, such as mobile phones, tablet computers and MP3 players. While they are considered a safe and effective form of power storage for portable technology, there have been a number of instances of overheating, with the potential for 'thermal runaway'. This has raised questions over their safety within an aircraft environment and driven an increase in regulation in this area. At its core, the bag benefits from Morgan's FireMaster® Marine Plus technology, which was originally designed for use in the oil & gas sector. Providing thermal protection from uncontrolled fire for sustained periods of time, Morgan's FireMaster® material is now making its debut in the aviation market in the fight against thermal runaway.

Electric vacuum pump vanes. Morgan utilises its high-volume production technology to deliver state-of-the-art material, providing cost and time efficiencies to OEMs in the automotive sector. This material extends the life of the vane compared with the best alternative materials. A modification to our existing materials range, it is capable of withstanding the harsh environment of an automotive electric vacuum pump, and successfully operates at temperatures in excess of 200°C (292°F). This outstanding material performance, combined with Morgan's regional manufacturing solutions, is the ideal combination for automotive OEMs and engineers looking to deliver quality and longevity, alongside cost and time efficiencies.

Salamander SiC crucible: a promising energy-saving solution. Morgan has further optimised its existing Salamander SiC reducing the wall thickness by a further 20%, and increasing thermal conductivity by 60% compared with our competitors. The energy-optimised Salamander SiC now increases energy transfer by more than 50%. Field results are currently being collected, but the data suggests that the optimised Salamander SiC may generate energy cost savings of 10-20%.

Brazing of zirconia to growing product portfolio. In demanding applications, such as those within the petrochemical and industrial sectors, it is not uncommon for components to become damaged when subjected to sustained wear and corrosion, which can result in significant cost and disruption. Where other materials fail, zirconia remains highly resistant while exhibiting high fracture toughness. Modifications to its existing materials science and process know-how have allowed Morgan to braze zirconia to a whole range of metals and offer a new combination for the extreme environments that our customers operate in.

RISK MANAGEMENT

The Group has an established risk management methodology which seeks to identify, prioritise and mitigate risks, underpinned by a 'three lines of defence' model comprising of an internal control framework, monitoring and independent assurance processes. The Board considers that risk management and internal control are fundamental to achieving the Group aim of creating long-term sustainable shareholder value.

Risks are identified both 'top down' by the Board and Executive Committee, and 'site up' through the Group's businesses, and are quantified by assessing their inherent impact and mitigated probability to ensure that residual risk exposures are understood and prioritised for control throughout the Group. Senior executives are responsible for the strategic management of the Group's principal risks, including related policy, guidelines and process, subject to Board oversight.

Throughout 2016, the Board reviewed the status of all principal risks with a notable potential impact at Group level. Additionally, the Audit Committee carried out focused risk reviews of each Division. These reviews included an analysis of principal risks, together with the controls, monitoring and assurance processes established to mitigate those risks to acceptable levels. As a result of these reviews, a number of actions were identified to continue to improve internal controls and the management of risk. In 2016, the Executive Committee initiated a review of the Group's policies that set the framework for effective management of risk, and a number of these have been updated and rolled out across the Group. This work will continue in 2017. Also in 2016, the Group's risk management methodology and related processes were updated and aligned with the new Divisional business structure.

The Board has also, for the first time, included high-level guidance on its appetite for different risks. The Group is willing to take considered risks to develop new technologies, applications, partnerships and markets for its products, and to meet customer needs. The Group strives to eliminate risks to product quality and health and safety, which are essential to the success of our products and the safety of our people and contractors. The appetite for risk in the areas of legal and regulatory compliance is extremely low and the Group expects its businesses to comply with all laws and regulations in the countries where they operate. The Group has a low appetite for financial risk, although it recognises that certain risks, such as pension funding, will likely require a longer time period to resolve.

An indication of the Board's assessment of the 'trend' of each risk – whether the potential impact has increased, decreased or is broadly unchanged over the past year – is also included for the first time.

The following are the Group's principal risks and uncertainties, representing those risks that the Board feels could have the most significant effect on achieving the Group's strategy of building a sustainable business for the long term and delivering strong returns to the Group's shareholders.

RISK DESCRIPTION, ASSESSMENT AND TREND FROM 2015 | MITIGATION

Strategic and external risks

Technical leadership

Risk description, assessment and trend from 2015

The Group's strategic success depends on maintaining and developing its technical leadership in materials science over its competitors.

Unforeseen/unmitigated technology obsolescence, the emergence of competing technologies, the loss of control of proprietary technology or the loss of intellectual property/know-how would impact the Group's business and its ability to deliver on its strategic goals.

The advanced technological nature of the Group requires people with highly differentiated skillsets. Any inability to recruit, retain and develop the right people would impact the Group's ability to achieve its strategic goals.

Trend
Unchanged

Mitigation

The Group has a Chief Technology Officer and a dedicated technology team which monitors technology and business developments globally using technology roadmaps linked to 20 major technology families to ensure it remains at the leading edge of technology development. Two global Centres of Excellence are now established, to focus expertise and resources in core technologies, underpinned by a Technical Advisory Board comprising some of the world's leading academics, who provided valuable insight, advice and challenge in respect of the Group's technology plans during the year.

The technology team proactively manages the Group's technology pipeline and research and development (R&D) investment in improving technologies as well as providing active management of the technology lifecycle. The technology pipeline and key R&D projects are regularly reviewed by the Executive Committee and the Board.

Where Group products are designed for a specific customer, they are developed in tandem with the customer to maintain leading-edge differentiated solutions. The Group seeks to secure intellectual property protection, where appropriate, for its existing and emerging portfolio of products; external advisers manage this protection globally.

The Group continued its global leadership programme in conjunction with Cranfield University, adding an advanced programme to reach more high-potential commercial, functional and technical leaders. The Graduate Leadership Programme continued to run in 2016.

Further detail on our people is set out on pages 49 to 51.

Further detail on R&D is set out on pages 15 to 17.

RISK DESCRIPTION, ASSESSMENT AND TREND FROM 2015 | MITIGATION

Strategic and external risks continued

Macro-economic and political environment

The Group operates in a range of markets and geographies around the world and can be affected by political, economic, social or regulatory developments or instability, for example an economic slowdown or issues stemming from oil and natural resources price shocks.

The UK's exit from the EU may have an impact on the Group, in the event that tariff changes affect the profitability of the Group's products. The current value of Group UK exports to the EU is approximately £30 million, and imports into the UK from the EU are approximately £7 million.

Trend
Increased

Mitigation:

The Group's broad market and geographic spread helps to mitigate the effects of political and economic crises.

Budgets and forecasts for Morgan's different businesses are used to monitor delivery against expectations and anticipate potential external risks to our performance. These are subject to regular review by the Executive Committee and Board.

The impact of the UK's exit from the EU could be mitigated by moving production to alternative sites where tariffs are not applied to products.

Operational risks

Environment, health and safety (EHS) risks

The Group operates a number of manufacturing facilities around the world. A failure in the Group's EHS procedures could lead to environmental damage or to injury or death of employees or third parties, with a consequential impact on operations and the increased risk of regulatory or legal action being taken against the Group. Any such action could result in both financial damages and damage to reputation.

Trend
Unchanged

Mitigation:

Managing its operations safely is the Group's number one priority. The Group has a comprehensive EHS programme managed by the EHS Director, with clear EHS standards and a programme of independent audits to assess compliance.

The EHS Director sets annual priorities for EHS alongside the Executive Committee and these form the basis for individual sites' own EHS priorities and plans. These complement the Group's existing 'thinkSAFE' behavioural safety programme.

EHS performance is monitored by the Executive Committee and the Board.

As at 31 December 2016 the Group was managing projects to remediate legacy contamination at three former sites and one operational site in conjunction with external specialists and relevant authorities. The anticipated costs of these projects are provided for in the financial statements.

Further detail of the EHS programme in place to manage these risks is available on pages 41 to 46.

Product quality, safety and liability

Products used in applications for which they were not intended or inadequate quality control/over-commitment on customer specifications could result in products not meeting customer requirements, which could in turn lead to significant liabilities and reputational damage.

Some of our products are used in potentially higher risk applications such as in the aerospace, military, medical and power industries.

Trend
Unchanged

Mitigation:

Many of the Group's products are designed to customer specifications. The businesses' quality management systems and training help ensure that Morgan's products meet or exceed customer requirements and national/international standards.

The Group Legal Policy requires that contracts relating to products used in potential high-risk applications are subject to legal review to ensure that appropriate protections are in place for product quality risks.

The Group insurance programme includes product liability insurance; this Group-level insurance is reviewed annually by the Board.

RISK MANAGEMENT
continued

RISK DESCRIPTION, ASSESSMENT AND TREND FROM 2015	MITIGATION

Operational risks continued

IT risks and cyber risks

Information security/cyber risks are dynamic and ever-present in the external environment. If the Group lost critical data or information, including proprietary technology information, through inadequate data management or compromised information security, the business would be impacted and suffer reputational damage.

The effective management of the Group's IT infrastructure is important in enabling our businesses to reliably deliver customer requirements. If a key business system were to fail or core systems implementation were ineffective, the ability of the business to deliver on its strategic goals might be impacted.

Trend
Unchanged

The Group has an Information Technology (IT) Policy and guidelines in place as well as Group and business IT teams to manage the Group's infrastructure, IT systems roadmap and information security risks. The IT Policy will be updated and relaunched in 2017 as the Group continues to move towards greater centralisation of IT.

During the course of 2016 there was continued focus on testing and reviewing information security with the aim of reducing the Group's information risk. Good progress was made in securing our Centres of Excellence with the development and implementation of new security countermeasures and information protection practices. An enhanced, globally consistent, security training and awareness programme has been developed for implementation in 2017.

Supply chain / business continuity

The Group has a number of potential single-point exposure risks, which include:

- Single-point supplier – a significant interruption of a key internal or external supply could impact business continuity.
- Single-point customer – the unmitigated loss of a major customer could have an impact on Group profit. The Group's largest customer represents circa 2% of Group revenue.
- Single-point profit – a key site exposed to a strike, a natural catastrophe or serious incident, such as fire, could impact business continuity. One Group site, Hayward, is situated in the California earthquake zone.

Trend
Unchanged

The Group has a diversified manufacturing, customer and geographic base which provides a level of resilience against single-point exposures. Were any site to be unavailable, production in most cases could be switched to other sites.

Management of these risks also involves monitoring and reviewing supply chains (internal and external), dual/multiple sourcing of materials or strategic stock, site security and safety mechanisms, business continuity plans, and maintaining product quality and strong customer relationships.

The Group insurance programme includes business interruption cover and specific cover in relation to the impact of an earthquake in California; this Group-level insurance is reviewed annually by the Board.

Contract risk management

As a global advanced materials business supplying components into critical applications, the Group may be exposed to liabilities arising from the use of its products. Ineffective contract risk management could result in significant liabilities for the Group and damage customer relationships.

Trend
Unchanged

The Group has an in-house legal function supplemented by specialist external lawyers.

The Group Legal Policy requires in-house legal review of high-value or high-risk contracts to ensure they contain appropriate protections for the Group. The Policy requires CEO approval before a business can enter into an unlimited liability contract or one where the liability cap exceeds £5 million.

Contract risk management training is provided by the in-house legal function. Additionally, a Group-wide project has been developed to ensure that appropriate contractual terms and conditions are in place across the business.

To the extent that risk cannot be mitigated through contractual arrangements, the Group has insurance cover in place, including product liability insurance.

RISK DESCRIPTION, ASSESSMENT AND TREND FROM 2015	MITIGATION
Financial risks	
Treasury risks The Group's global nature means that it is exposed to uncertainties in the financial markets, the fiscal jurisdictions where it operates, and the banking sector which heighten the Group's funding, foreign exchange, tax, interest rate, credit and liquidity risks as well as the risk that a bank failure could impact the Group's cash. **Trend** Decreased	The Group's treasury function operates on a risk-averse basis and the required controls over selection of banks, cash management and other treasury practices and payments globally are documented in the Treasury Policy and related procedures. The Group treasury team manages the Group's funding, liquidity, cash management, interest rate, foreign exchange, counterparty credit and other treasury-related risks. Treasury matters are regularly reviewed by the Board/Audit Committee. In 2016 the Group completed a US private debt placement, raising $112 million and €60 million, which will be used to refinance existing financial indebtedness. Further detail on the Treasury Policy is set out in the Group Financial Review on page 32.
Tax risks The Group operates in many jurisdictions around the world and can be affected by changes in tax laws and regulations within the complex international tax environment. The OECD Base Erosion and Profit Shifting (BEPS) programme provides additional obligations and filing requirements for the Group as countries implement the actions in the framework. These could have a potential impact on the tax paid by the Group. **Trend** Unchanged	The Group's tax function, working in conjunction with external specialists as required, closely monitors fiscal developments and changes such as BEPS, to ensure that the Group's tax arrangements and practices continue to comply with the requirements of all relevant jurisdictions whilst also enabling efficient management of the Group's tax liability.
Pension funding risk The Group sponsors several defined benefit pension arrangements whose liabilities are subject to fluctuating interest rates, investment values and inflation. This coupled with the increased longevity of members will result in increased funding burdens on the Group in the future. The deficit in Morgan's global defined benefit pension schemes calculated on the basis required for IAS19 accounting disclosures increased from £204 million as at 31 December 2015 to £271 million at 31 December 2016. **Trend** Increased	Proactive management of the pension scheme assets and liabilities through an integrated pension strategy focusing on funding, investment and benefit risk is the primary means of mitigation. This involves management both internally within the Group and also externally through the scheme Trustees, corporate actuaries and professional advisers. In the USA, in June 2016 one Defined Benefit Pension Plan completed a full legal termination, and for a second, a formal offer of a present-value-equivalent, lump-sum cash payment was made to members. In the UK, the Morgan Senior Executive Pension and Life Assurance Scheme closed to future accrual in April 2016.

RISK MANAGEMENT
continued

RISK DESCRIPTION, ASSESSMENT AND TREND FROM 2015	MITIGATION
Compliance risk	
Changes to or non-compliance with laws and regulation The Group's global operations must comply with a range of national and international laws and regulations including those related to bribery and corruption, human rights, trade/export compliance and competition/anti-trust. A failure to comply with any applicable laws/regulations could result in civil or criminal liabilities and/or individual or corporate fines and could also result in debarment from government-related contracts or rejection by financial market counterparties as well as reputational damage. **Trend** Unchanged	The Group is committed to the highest standards of corporate and individual behaviour and this commitment is set out in the Group's Core Values Statement and Ethics Policy, underpinned by ongoing investment in the Responsible Business Programme (RBP). RBP includes policies, standards and guidance; training materials; the provision of an employee ethics hotline; and systems to support effective screening and due diligence of third parties. The Group has an Export Compliance Director in the USA whose role is dedicated to ensuring compliance with export controls. In addition to Group compliance specialists, all businesses are required to establish compliance officer roles, responsible for supporting local training and monitoring with trade and export compliance specialists in higher risk businesses and jurisdictions. Further details on the RBP can be found on page 39.

KEY PERFORMANCE INDICATORS

To support the Group's strategy and to monitor performance, the Board of Directors and the Executive Committee use a number of financial and non-financial key performance indicators (KPIs). These KPIs are selected measures which are important to the Group. Progress is assessed by comparison with the Group's strategy, its budget for the year and historic performance. Divisional and business management use a range of further benchmarks and other KPIs as part of their planning and performance review processes. In order to measure the organic performance of the business, management further analyse the headline KPIs to exclude the impact of acquisitions and foreign exchange.

The KPIs are selected and reviewed to ensure they remain important to the success of the Group. Financial and non-financial performance is reviewed in more detail in the Corporate Responsibility, Review of Operations and Group Financial Review sections of this Report.

KPI	2016	2015	WHY A KPI?	PERFORMANCE COMMENTARY
Financial KPIs				
Constant currency revenue growth[1]	**(1.5)%**	(1.2)%	Creating consistent long-term value for shareholders. Focus on higher growth markets.	At constant currency revenue declined by 1.5%. See Review of Operations on pages 24 to 33.
Group headline operating profit margin[1]	**11.8%**	11.6%	Creating consistent long-term value for shareholders. Focus on higher growth markets. To have a culture of operational excellence and cost-efficiency.	Whilst weaker trading conditions impacted the Group, these were offset by operational efficiencies.
Free cash flow before acquisitions and dividends[1]	**£48.0m**	£30.1m[3]	Creating consistent long-term value for shareholders.	The increase compared to 2015 was due to lower capital expenditure in 2016.
Return on invested capital[1,2]	**16.7%**	16.0%	Creating consistent long-term value for shareholders.	Return on invested capital improved as a result of lower restructuring costs and reduced average third-party working capital.
Headline earnings per share[1]	**22.7p**	20.8p	Creating consistent long-term value for shareholders.	The 9.1% increase in headline earnings per share reflects lower restructuring costs and movements in foreign exchange rates.
Dividend per share	**11.0p**	11.0p	Creating consistent long-term value for shareholders.	The Board has held the dividend flat during 2016 as it looks to rebuild dividend cover in the medium term.
Non-financial KPIs				
Employee turnover	**11.7%**	13.6%	To attract, retain, and develop the right people in the right roles.	This is believed to be an appropriate level of employee turnover.
Lost Time Accident Frequency[5] (per 100,000 hours worked)	**0.27**	0.45	To maintain a workplace that focuses on the health and safety of its employees and others affected by the Group's operations.	The improvement in this measure reflects the focus placed on health and safety at all sites and across all levels of the Group through 'thinkSAFE' (the Group's safety performance improvement programme).
Tonnes CO_2e per £m revenue[4,5]	**346**	364	To minimise the impact of the Group's business on the environment.	This measure improved as the Group benefited from a series of projects and environmental programmes focused on the sites identified as having the greatest environmental impact.

1. Definitions of these non-GAAP measures, and their reconciliation to the relevant GAAP measure, are provided on pages 35 to 37.
2. In 2016 the Group has included Return on invested capital as a KPI for the first time. This replaces Return on operating capital employed as a KPI. This measure has been included as the Directors consider that it provides a more holistic and balanced indicator of performance.
3. 2015 has been re-presented for the reclassification of £3.8 million of dividends paid to non-controlling interests from 'Cash generated from operations' to 'Net cash flows from other investing and financing activities'. See page 36 for further details.
4. This KPI uses revenue at constant currency in its calculation.
5. The 2016 Lost Time Accident Frequency and CO_2e information have been subject to assurance by ERM Certification and Verification Services, see page 47 for further details.

REVIEW OF OPERATIONS

A SOLID SET OF RESULTS IN CHALLENGING MARKET CONDITIONS.

PETER TURNER
CHIEF FINANCIAL OFFICER

GROUP PERFORMANCE

Group revenue and operating profit

Group revenue was £989.2 million (2015: £911.8 million), an increase of 8.5% on a reported basis compared with 2015. The increase was as a result of the decline in the value of sterling against other currencies, with much of the Group's business being denominated in non-sterling currencies. At constant currency revenue declined by 1.5%.

Group headline operating profit was £116.9 million (2015: £106.0 million). Headline operating profit margin was 11.8%, compared to 11.6% for 2015.

Operating profit improved to £107.3 million (2015: £82.9 million) and profit before tax improved to £87.9 million (2015: £59.0 million). Both of these benefited from year-on-year movements in exchange rates and specific adjusting items (2016: £1.7 million, 2015: £16.0 million charge).

Statutory basis	Revenue 2016 £m	Revenue 2015 £m	EBITA 2016 £m	EBITA 2015 £m	Margin % 2016	Margin % 2015
Thermal Ceramics	**413.3**	372.4	**55.0**	55.2	**13.3**	14.8
Molten Metal Systems	**43.5**	39.7	**6.7**	5.3	**15.4**	13.4
Thermal Products Total	**456.8**	412.1	**61.7**	60.5	**13.5**	14.7
Electrical Carbon	**156.2**	145.6	**19.7**	19.3	**12.6**	13.3
Seals and Bearings	**97.7**	88.6	**14.2**	9.9	**14.5**	11.2
Technical Ceramics	**248.1**	237.8	**26.6**	26.1	**10.7**	11.0
Carbon and Technical Ceramics Total	**502.0**	472.0	**60.5**	55.3	**12.1**	11.7
Composites and Defence Systems	**30.4**	27.7	**1.1**	(1.0)	**3.6**	(3.6)
	989.2	911.8				
Divisional EBITA[1]			**123.3**	114.8		
Corporate costs			**(5.4)**	(5.2)		
Group EBITA[1]			**117.9**	109.6	**11.9**	12.0
Restructuring costs and other items			**(1.0)**	(3.6)		
Group headline operating profit[1]			**116.9**	106.0	**11.8**	11.6
Amortisation of intangible assets			**(7.9)**	(7.1)		
Operating profit before specific adjusting items			**109.0**	98.9		
Specific adjusting items included in operating profit			**(1.7)**	(16.0)		
Operating profit			**107.3**	82.9	**10.8**	9.1
Net financing costs			**(20.0)**	(18.1)		
Loss on disposal of business			**–**	(6.1)		
Share of profit of associate (net of income tax)			**0.6**	0.3		
Profit before taxation			**87.9**	59.0		

1. Definitions of these non-GAAP measures, and their reconciliation to the relevant GAAP measure, are provided on pages 35 to 37.

Restructuring costs and other items

Restructuring costs and other items were £1.0 million (2015: £3.6 million). In 2016 these costs represent the conclusion of the significant rationalisation of the Carbon Materials footprint, corporate restructuring, partially offset by the gain on disposal of property within the Carbon business.

	2016 £m	2015 £m
Specific adjusting items		
Restructuring costs	**–**	1.5
Net pension settlement credit	**(6.8)**	–
Business exit costs	**–**	2.8
Impairment of property, plant and equipment	**–**	5.9
Impairment of intangible assets	**8.5**	5.8
Net loss on disposal of business	**–**	6.1
	1.7	22.1
Income tax charge/(credit) from specific adjusting items	**2.8**	(3.3)
	4.5	18.8

Specific adjusting items

In the consolidated Income statement, the Group presents specific adjusting items separately. In the judgment of the Directors, due to the nature and value of these items they should be disclosed separately from the underlying results of the Group to allow the reader to obtain a proper understanding of the financial information and the best indication of underlying performance of the Group.

Details of specific adjusting items incurred during the year and the comparative period are given in note 6 to the financial statements.

REVIEW OF OPERATIONS
continued

DIVISIONAL AND GLOBAL BUSINESS UNIT PERFORMANCE

THERMAL PRODUCTS

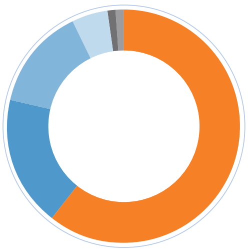
REVENUE
£m

2016	456.8
2015	412.1

DIVISIONAL EBITA
£m

2016	61.7
2015	60.5

THERMAL PRODUCTS
2016 % OF REVENUE



Industrial	60%
Transportation	18%
Petrochemical	14%
Energy	5%
Security and Defence	1%
Electronics	1%

HIGHLIGHTS

- The Thermal Products Division 2016 reported revenue was £456.8 million (2015: £412.1 million), an increase of 10.8% compared to 2015.
- On a constant currency revenue* basis, revenue increased by 0.1% compared to 2015. Growth in Asia, South America and Europe was offset by decline in North America.
- Divisional EBITA margin* declined to 13.5% (2015: 14.7%), driven by regional mix changes.

Business description

The Thermal Products Division comprises the Thermal Ceramics and Molten Metal Systems global business units.

Thermal Ceramics manufactures advanced ceramic materials, products and systems for thermal insulation in high-temperature environments. Systems are designed for the safety of people and equipment in demanding applications, while products help customers, especially those operating energy-intensive processes, to reduce energy consumption, emissions and operating costs. Thermal Ceramics products are used in high-temperature industrial processing of metals, petrochemicals, cement, ceramics and glass, and by manufacturers of equipment for aerospace, automotive, marine and domestic applications. One of Thermal Ceramics' core strengths is the ability to get to grips with individual customer problems, using materials and applications expertise to design, manufacture and install optimal thermal solutions.

Molten Metal Systems manufactures an extensive range of high-performance crucibles and foundry consumables for non-ferrous metal melting applications. Its products provide melting solutions for foundries, die-casters and melting facilities working with zinc, precious metals, aluminium, copper, brass, bronze and other non-ferrous metals. With its extensive applications experience and process knowledge Molten Metal Systems helps customers put together the optimal system for their needs. The global business unit works with customers in non-ferrous castings, metal powder production, refining and recycling of precious metals and the production of pure aluminium for electronics applications.

Footprint

As at 31 December 2016 Thermal Products comprised 28 operating sites employing approximately 3,300 people, with manufacturing sites across the world. It also has a comprehensive network of sales offices allowing immediate access to and facilitating direct working with end-users. Some sales, particularly for the insulating fibre and crucible product ranges, are made through a well-established distributor network.

Performance and business review

Revenue for Thermal Products for the year was £456.8 million, representing an increase of 10.8% compared with £412.1 million in 2015. At constant currency*, year-on-year revenue increased by 0.1%.

Divisional EBITA* for Thermal Products was £61.7 million (2015: £60.5 million) with a Divisional EBITA* margin of 13.5% (2015: 14.7%).

Revenue for Thermal Ceramics for the year was £413.3 million, representing an increase of 11.0% compared with £372.4 million in 2015. At constant currency*, year-on-year revenue increased by 0.1%. The increase was driven by strong growth in Asia, in particular in Japan, and in Europe, where growth was driven by applications in consumer products and medical, as well as projects in iron and steel and ceramics. The growth in Asia and Europe was offset by significantly lower activity levels in North America in most industrial markets, and in particular transportation, a continuation of the environment seen at the end of 2015.

Thermal Ceramics 2016 EBITA* was £55.0 million (2015: £55.2 million) with EBITA margin* declining to 13.3% (2015: 14.8%), driven by regional mix changes.

Revenue for Molten Metals Systems for the year was £43.5 million, representing an increase of 9.6% compared with £39.7 million in 2015. At constant currency*, revenue remained unchanged year-on-year, due to weak activity in its non-ferrous metals end-markets.

Molten Metal Systems 2016 EBITA* was £6.7 million (2015: £5.3 million) with EBITA margin* of 15.4% (2015: 13.4%), reflecting the benefits from cost efficiency.

Priorities

The priorities for the Division reflect the six execution priorities of the Group. The most critical is improvement in operational performance, with markets seen as broadly flat for at least the next year, the Division needs to ensure it achieves more from its existing manufacturing footprint. Our major sites are utilising lean manufacturing techniques to drive greater efficiency and effectiveness in their processes; lessons learnt in these will then be replicated across our smaller operating facilities.

Similarly, all sites are set cost reduction targets covering all departments from production to administration. Utilising its global structure, the Division will use internal benchmarking to ensure best practice is learnt and utilised. The other immediate priority is sales effectiveness training which has commenced within the Division and forms a short-to-medium term goal to ensure the businesses take advantage of the opportunities presented.

Outlook

The Division's book-to-bill ratio* was 0.96 times in 2016.

Overall, market conditions remain weak, moving into 2017, the Division is cautious about any improvement in macro-economic conditions.

REVIEW OF OPERATIONS
continued

DIVISIONAL AND GLOBAL BUSINESS UNIT PERFORMANCE continued

CARBON AND TECHNICAL CERAMICS

REVENUE
£m

2016	502.0
2015	472.0

DIVISIONAL EBITA
£m

2016	60.5
2015	55.3

CARBON AND TECHNICAL CERAMICS 2016 % OF REVENUE

Industrial	36%
Transportation	26%
Electronics and Telecomms	11%
Healthcare	10%
Energy	8%
Security and Defence	6%
Petrochemical	4%

HIGHLIGHTS

- The Carbon and Technical Ceramics Division 2016 reported revenue was £502.0 million (2015: £472.0 million), an increase of 6.4% compared to 2015.
- On a constant currency revenue* basis, revenue was down 3.5% compared to 2015, with declines in Electrical Carbon and Technical Ceramics being partially offset by an increase in Seals and Bearings.
- Divisional EBITA margin* improved to 12.1% (2015: 11.7%), largely as a result of improved operational execution.

Business description

The Carbon and Technical Ceramics Division comprises the Electrical Carbon, Seals and Bearings and Technical Ceramics global business units.

Electrical Carbon uses advanced materials science to develop and manufacture a wide range of carbon brushes and collectors, brush holders, slip rings and rotary and linear transfer systems, which are used to transfer electrical current and data between stationary and rotating or linear moving parts in motor, generator, current collector and rotary signal applications. Products are engineered for specific customer applications and they are often required to operate in harsh or extreme environments. Electrical Carbon's main markets are rail, industrial drives, power generation, iron and steel, mining and wind. The business's core strength is its longstanding materials and applications experience and its ability to engineer appropriate, reliable solutions for individual customer requirements.

Seals and Bearings makes high-performance self-lubricating bearing and seal components, used predominantly in pumps, industrial and domestic, or other sealing applications. It uses advanced carbon/graphite, silicon carbide, alumina and zirconia materials to engineer lightweight, low-friction bearings and seals. These materials help solve the problems associated with use of lubricants in extreme temperatures, corrosive or hygienic environments and where access is restricted. These materials are engineered in to products that provide customer-specific solutions.

The business's components often help to extend the operating life of customers' equipment and make it more energy-efficient. The main markets served are specialist applications in the oil and gas, automotive, industrial, water pump, aerospace and home appliance sectors.

Technical Ceramics engineers high performance functional and structural ceramic materials, components and sub-assemblies to address customer-specific technical challenges. The business employs advanced materials science and applications expertise to produce parts that enhance reliability or improve the performance of its customers' products. Much of what the global business unit makes is destined for use in demanding, harsh or critical environments. The global business unit works in selected segments of the electronics, energy, healthcare, industrial, petrochemicals, security and transport markets, typically in close collaborative customer relationships.

Footprint

As at 31 December 2016 the Carbon and Technical Ceramics Division comprised 52 operating sites employing approximately 5,300 people, with manufacturing sites across the world. Due to the customer-specific nature of most of the products sold and the importance of staying very close to the market, most sales are made directly by the Division's sales force and application engineers, with limited use being made of distributors. The global spread of operating sites supplemented by a comprehensive network of sales offices allows immediate access to and facilitates direct working with customers and the products' end-users.

Performance and business review

Revenue for the Carbon and Technical Ceramics Division for the year was £502.0 million, representing an increase of 6.4% compared with £472.0 million in 2015. At constant currency*, year-on-year revenue decreased by 3.5%.

Divisional EBITA* for the Carbon and Technical Ceramics Division was £60.5 million (2015: £55.3 million) with Divisional EBITA margin* improving to 12.1% (2015: 11.7%).

Revenue for Electrical Carbon for the year was £156.2 million, representing an increase of 7.3% compared with £145.6 million in 2015. At constant currency*, year-on-year revenue decreased by 2.4%, with declines in North America and in Asia. The North American business was impacted by weak demand from the mining and traction markets in particular, but general industrial demand was also weaker relative to 2015. Asian sales were particularly lower in China where sales into the wind energy and general industrial market were down on 2015. The declines in both North America and Asia were a continuation of the slowdown experienced in the second half of 2015.

Electrical Carbon EBITA* was £19.7 million (2015: £19.3 million) with an EBITA margin* of 12.6% (2015: 13.3%). The impact of the reduced sales volumes was largely, but not fully, offset by operational improvements and other cost savings.

Revenue for Seals and Bearings for the year was £97.7 million, representing an increase of 10.3% compared with £88.6 million in 2015. For Seals and Bearings, the constant currency* increase in revenue was 0.4% with strong sales into the aerospace, automotive and water markets more than offsetting the impact of the weaker oil and gas market.

Seals and Bearings EBITA* for the business was £14.2 million (2015: £9.9 million) with an EBITA margin* of 14.5% (2015: 11.2%). The increased revenue helped the EBITA margin* but the main reason for the strong improvement in margin was the continued operational improvements.

Revenue for the Technical Ceramics global business unit was £248.1 million, an increase of 4.3% compared with £237.8 million in 2015. At constant currency*, year-on-year revenue declined by 5.6%. The main reason for this decline was the completion of a contract to supply electro-ceramic components to the hard disk drive market.

Technical Ceramics EBITA* was £26.6 million (2015: £26.1 million) with an EBITA margin* of 10.7% (2015: 11.0%). The decline in the high-margin hard disk drive business was largely offset by operational improvements and other cost reduction programmes.

Priorities

The priorities of the Carbon and Technical Ceramics Division, and of the three global business units of which it comprises, reflect the six execution priorities of the Group set out in early 2016. The move to a global organisation has been successfully implemented and the benefits envisaged are being delivered, in particular a simplified approach to global customers and market opportunities, leveraging of operational and research and development synergies, and more effective lines of communication within the business. From this solid organisational base, the focus is now on extending technology leadership and further delivering operational efficiency.

Carbon and Technical Ceramics has opened two new global Centres of Excellence – Carbon Science and Metals and Joining. Investment in these Centres started in 2016 and will be ramped up during 2017. Their focus will be on ensuring a strong pipeline of innovation for the businesses within the Carbon and Technical Ceramics Division.

The focus on operating costs is starting to be reflected in the Division's results, most notably in the improved EBITA margin* in Seals and Bearings, though operational improvements have also helped the Electrical Carbon and Technical Ceramics businesses.

Plant-specific initiatives are being introduced to reduce costs, including a focus on reducing scrap and improving yields, which when combined with the benefits of global footprint management, and the increased use of low-cost manufacturing operations, underpin the reductions in the operational cost base of the business. A significant part of the Division's capital expenditure is on investments which will improve the operational efficiency of the businesses. Where and how the Division makes its products will continue to be an area of focus going forward.

In line with the Group priorities, the Division is improving the capabilities of its sales force and the supporting processes, and has commenced an assessment of current structure and capabilities, with a pilot programme in the Electrical North American business designed to upskill the teams and drive process improvements scheduled for 2017.

Outlook

The Division's book-to-bill ratio* was 1.02 times for 2016.

Whilst there is some good order intake in certain end and geographical markets there remains a significant amount of uncertainty about the global economy and the likely implications of the socio-political changes of 2016.

The Division's focus will be on ensuring that operational efficiencies are delivered and that the savings from these are appropriately invested in technology, product development and sales effectiveness to maximise opportunity in the prevailing market conditions.

REVIEW OF OPERATIONS
continued

DIVISIONAL AND GLOBAL BUSINESS UNIT PERFORMANCE continued

COMPOSITES AND DEFENCE SYSTEMS

REVENUE
£m

GLOBAL BUSINESS UNIT EBITA
£m

HIGHLIGHTS

- Composites and Defence Systems 2016 reported revenue, and constant currency revenue* was £30.4 million (2015: £27.7 million), reflecting a 9.7% increase compared to 2015. EBITA margin* was 3.6% (2015: -3.6%)
- On a statutory basis Composites and Defence Systems reported an operating loss of £8.7 million (2015: £9.0 million loss).

Business description

The Composites and Defence Systems global business unit develops high-strength, lightweight, fatigue-resistant products using some of the world's most advanced composite materials to provide customers with solutions for unusually demanding or critical applications.

With its materials technology and advanced capability in manufacturing and systems integration, Composites and Defence Systems is able to solve complex engineering problems for the defence and commercial markets.

The business's products are used for specialist applications in the security, medical, transport and aerospace markets. Its core strength is its capability for full engineering engagement from concept development, design engineering, tooling design and precision manufacturing, to scalable production and lifecycle support.

Footprint

As at 31 December 2016 Composites and Defence Systems employed approximately 175 people from its operating sites in the UK and Canada.

Performance and business review

Revenue for Composites and Defence Systems for the year was £30.4 million, representing an increase of 9.7% compared with £27.7 million in 2015, on a reported and constant currency* basis.

EBITA* for Composites and Defence Systems was £1.1 million (2015: loss of £1.0 million) with EBITA margin* of 3.6% (2015: -3.6%). The EBITA* improvement reflects the mix of contracts delivered, as well as the benefits arising from efficiency improvements.

On a statutory basis Composites and Defence Systems reported an operating loss of £8.7 million (2015: £9.0 million loss), due to an impairment charge of £8.5 million. Following the continued reduction in demand in the defence market, a review of the carrying value of the remaining intangible assets of Composites and Defence Systems was carried out, which resulted in the impairment charge, this reflected the full impairment of the remaining technology intangible asset.

Priorities

Composites and Defence Systems is seeking to capitalise on recent research and development investment with product leadership in personal protection and armour. Through this technology, new business relationships have been established in both domestic and export markets. The Commercial composites segment has seen a broadening of the customer base into new segments and further customer enquiries emerging.

The Vehicles business has continued to grow as a result of excellent responsiveness and customer relationships and this has created further opportunities in the existing portfolio and in the aftermarket space.

Outlook

The business continues to have strong relationships with its customers and a developing pipeline of potential new customers. The business expects the outlook for 2017 to be at a similar level to 2016.

GROUP FINANCIAL REVIEW

Foreign currency impact

The principal exchange rates used in the translation of the results of overseas subsidiaries were as follows:

	2016		2015	
	Closing rate	**Average rate**	Closing rate	Average rate
USD	**1.23**	**1.35**	1.47	1.53
€	**1.17**	**1.22**	1.36	1.38

The potential impact of changes in foreign exchange rates is given in note 20 to the financial statements on pages 133 to 135.

Amortisation of intangible assets

The Group amortisation charge was £7.9 million (2015: £7.1 million).

Finance costs

The net finance charge was £20.0 million (2015: £18.1 million), comprising net bank interest and similar charges of £13.2 million (2015: £12.2 million), gain from financial instruments of £0.3 million (2015: £1.0 million) and the finance charge under IAS 19 (revised), being the interest charge on pension scheme net liabilities, which was £7.1 million (2015: £6.9 million). The impact of potential changes in interest rates on profit or loss is stated in note 20 to the financial statements on page 133.

Taxation

The Group taxation charge, excluding specific adjusting items, was £26.6 million (2015: £24.2 million). The effective tax rate, excluding specific adjusting items, was 29.7% (2015: 29.8%). Note 8 to the financial statements, on pages 116 to 117, provides additional information on the Group's taxation charge.

Earnings per share

Headline earnings per share[*] was 22.7 pence (2015: 20.8 pence), and basic earnings per share was 18.4 pence (2015: 11.9 pence). Details of these calculations can be found in note 9 to the financial statements on pages 117 to 118. Headline earnings per share[*] is a non-GAAP measure. A reconciliation from IFRS profit to the profit used to calculate headline earnings per share is included in note 9 to the financial statements on page 118.

Dividend

The Board is recommending a final dividend, subject to shareholder approval, of 7.0 pence per share on the ordinary share capital of the Group, payable on 26 May 2017 to ordinary shareholders on the register at the close of business on 5 May 2017. Together with the interim dividend of 4.0 pence per share paid on 25 November 2016, this final dividend, if approved by shareholders, brings the total distribution for the year to 11.0 pence per share (2015: 11.0 pence). A total dividend of 11.0 pence per share represents a dividend cover of headline EPS[*] 2.1x in 2016.

The Board has held the dividend flat during 2016 as it looks to rebuild dividend cover in the medium to long term. Note 40 to the financial statements, on page 165, provides additional information on the Company's distributable reserves.

A five-year summary of the Group's financial results is set out on page 171 of this Report.

Cash flow

Cash flow from operations was £128.3 million (2015: £139.4 million[2]). Free cash flow before acquisitions and dividends was £48.0 million (2015: £30.1 million[2]). Net debt[*] at the year end was £242.5 million (2015: £216.0 million), representing a net debt to EBITDA ratio of 1.6x (2015: 1.6x).

	2016 £m	2015[2] £m
Cash generated from operations	**121.7**	133.9
Add back: cash flows from restructuring costs and other items	**6.6**	5.5
Cash flow from operations[1]	**128.3**	139.4
Net capital expenditure	**(38.4)**	(62.7)
Net interest paid	**(13.1)**	(11.2)
Tax paid	**(22.2)**	(29.9)
Restructuring costs and other items	**(6.6)**	(5.5)
Free cash flow before acquisitions and dividends[1]	**48.0**	30.1[2]
Dividends paid to external plc shareholders	**(31.4)**	(31.4)
Net cash flows from other investing and financing activities	**(15.6)**	(2.9)
Exchange movement	**(27.5)**	(4.8)
Movement in net debt in period[1]	**(26.5)**	(9.0)
Opening net debt[1]	**(216.0)**	(207.0)
Closing net debt[1]	**(242.5)**	(216.0)

1. Definitions of these non-GAAP measures, and their reconciliation to the relevant GAAP measure, are provided on pages 35 to 37.
2. 2015 has been re-presented for the reclassification of £3.8 million of dividends paid to non-controlling interests from 'Cash generated from operations' to 'Net cash flows from other investing and financing activities'.

Commitments for property, plant and equipment and computer software for which no provision has been made are set out in note 24 to the financial statements on page 151.

REVIEW OF OPERATIONS
continued

GROUP FINANCIAL REVIEW continued

Capital structure
At the year end total equity was £164.7 million (2015: £186.4 million) with closing net debt* of £242.5 million (2015: £216.0 million).

Non-current assets were £560.9 million (2015: £501.6 million) and total assets were £1,039.3 million (2015: £857.0 million).

Details of undiscounted contracted maturities of financial liabilities and capital management are set out in note 20 to the financial statements on pages 135 to 138.

Since the balance sheet date, the Group has announced the following two transactions:

1. The sale of its UK electro-ceramics business was announced on 22 February 2017. The business comprises two sites at Ruabon and Southampton. The transaction is structured as a sale of the business, assets and goodwill for a consideration of £47 million on a cash-free, debt-free basis, payable in cash on completion and subject to customary working capital adjustments. In the year ended 31 December 2016, UK Electro-Ceramics generated an operating profit of £6.2 million on revenues of £22.7 million. Gross assets at 31 December 2016 were £7.0 million. Additionally, the Group will close a small electro-ceramics site in the USA.

2. The sale of its global Rotary Transfer Systems business was announced on 17 February 2017. The business is principally located at two manufacturing sites; Antweiler, Germany, and Chalon, France. The sale values the business at €40 million on a cash-free, debt-free basis, with consideration payable in cash at completion, subject to customary closing working capital adjustments. Completion is subject to customary conditions of closing, including merger clearance in Germany. In the year to 31 December 2016, the Rotary business generated €4.7 million of operating profit on €19.5 million of sales. Gross assets at 31 December 2016 were €7.1 million.

There have been no further material subsequent events.

Capital structure is further discussed in note 20 to the financial statements on pages 135 to 136 under the heading Capital management.

Pensions
The Group operates a number of pension schemes throughout the world, the majority of which are of a funded defined benefit type. The largest of these are located in the UK and the USA with the majority of others in continental Europe.

The charge before specific adjusting items incurred in relation to the Group's defined benefit arrangements are summarised in the table below.

	2016 £m	2015 £m
Operating costs:		
– Service cost	**(4.3)**	(4.3)
– Administration costs	**(2.5)**	(2.2)
Total operating costs	**(6.8)**	(6.5)
Net finance charge	**(7.1)**	(6.9)
Total before specific adjusting items	**(13.9)**	(13.4)

The Group pension deficit has increased by £66.6 million since last year end to £271.1 million on an IAS 19 (revised) basis due to lower discount rates and the weakening of sterling against the US dollar and the euro.

- The UK schemes deficit increased by £63.1 million to £180.5 million (2015: £117.4 million), mainly as a result of the discount rate reducing to 2.62% (2015: 3.70%).
- The USA schemes deficit decreased by £6.1 million to £49.0 million (2015: £55.1 million), as settlement gains, employer contributions and investment gains more than offset changes in assumptions and exchange rate adjustments. The discount rate on USA schemes reduced to 4.16% (2015: 4.50%).
- The European schemes deficit increased by £9.2 million to £37.5 million (2015: £28.3 million), with approximately 50% of the deterioration due to exchange rate adjustments, with the remainder due to changes in assumptions, service cost and interest charges. The discount rate on European schemes reduced to 1.6% (2015: 2.3%).

Note 21 to the financial statements, on pages 139 to 145, provides additional information on the Group's pension schemes.

Treasury Policies
The following Policies were implemented and in place across the Group throughout the year. The manager of each business unit is required to confirm compliance as part of the year-end process.

Financial Risk Management and Treasury Policy
Group Treasury works within a framework of policies and procedures approved by the Audit Committee. It acts as a service to Morgan Advanced Materials' businesses, not as a profit centre, and manages and controls risk in the treasury environment through the establishment of such procedures. Group Treasury seeks to align treasury goals, objectives and philosophy to those of the Group. It is responsible for all of the Group's funding, liquidity, cash management, interest rate risk, foreign exchange risk and other treasury business. As part of the policies and procedures, there is strict control over the use of financial instruments to hedge foreign currencies and interest rates. Speculative trading in derivatives and other financial instruments is not permitted.

Foreign exchange risks
Due to the international reach of the Group, currency transaction exposures exist. The Group has a policy in place to hedge all material firm commitments and a large proportion of highly probable forecast foreign currency exposures in respect of sales and purchases over the following 12 months, and achieves this through the use of the forward foreign exchange markets. A significant proportion of the forward exchange contracts have maturities of less than one year after the balance sheet date. The Group continues its practice of not hedging income statement translation exposure.

There are exchange control restrictions which affect the ability of a small number of the Group's subsidiaries to transfer funds to the Group. The Group does not believe such restrictions have had or will have any material adverse impact on the Group as a whole or the ability of the Group to meet its cash flow requirements.

Currency translation risks are controlled centrally. To defend against the impact of a permanent reduction in the value of its overseas net assets through currency depreciation, the Group seeks to match the currency of financial liabilities with the currency in which the net assets are denominated. This is achieved by raising funds in different currencies and through the use of hedging instruments such as swaps, and is implemented only to the extent that the Group's gearing covenant under the terms of its loan documents, as well as its facility headroom, are likely to remain comfortably within limits. In this way, the currencies of the Group's financial liabilities become more aligned to the currencies of the trading cash flows which service them.

Interest rate risk

The Group seeks to reduce the volatility in its interest charge caused by rate fluctuations. This is achieved through a combination of fixed rate debt and interest rate swaps. The proportions of fixed and floating rate debt are determined having regard to a number of factors, including prevailing market conditions, interest rate cycle, the Group's interest cover and leverage position and any perceived correlation between business performance and rates.

Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations. The Group is exposed to credit risk on financial instruments such as liquid assets, derivative assets and trade receivables.

Cash balances held by companies representing over 75% of the Group's revenue are managed centrally through a number of pooling arrangements. Credit risk is managed by investing liquid assets and acquiring derivatives in a diversified way from high-credit-quality financial institutions. Counterparties are reviewed through the use of rating agencies, systemic risk considerations, and through regular review of the financial press. Credit risk is further discussed in note 20 to the financial statements on pages 130 to 131.

Capital investment

The Group has well-established formal procedures for the approval of investment in new businesses and for capital expenditure to ensure appropriate senior management review and sign-off.

Borrowing facilities and liquidity

All of the Group's borrowing facilities are arranged by Group Treasury with Morgan Advanced Materials plc as the principal obligor. In a few cases operating subsidiaries have external borrowings but these are supervised and controlled centrally. Group Treasury seeks to obtain certainty of access to funding in the amounts, diversity of maturities and diversity of counterparties as required to support the Group's medium-term financing requirements and to minimise the impact of poor credit market conditions.

The Group's debt and maturity profile is provided in notes 19 and 20 to the financial statements on pages 129 to 138.

Tax risks

The Group follows a tax policy to fulfil local and international tax requirements, maintaining accurate and timely tax compliance whilst seeking to maximise long-term shareholder value. The Group adopts an open and transparent approach to relationships with tax authorities and continues to monitor and adopt new reporting requirements arising from the implementation of the OECD action plan on Base Erosion and Profit Shifting proposals within tax legislation across various jurisdictions.

The tax strategy is aligned to the Group's business strategy and ensures that tax affairs have strong commercial substance.

Tax risks are set out in the Risk Management section on page 21.

DIRECTORS STATEMENTS

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position are set out in the Strategic Report on pages 10 to 51. The financial position of the Group, its cash flows, liquidity position and borrowing facilities, are described earlier in this Financial Review. In addition, note 20 to the financial statements, includes the Group's policies and processes for managing financial risk; details of its financial instruments and hedging activities; and its exposures to credit risk and liquidity risk.

The Group meets its day-to-day working capital requirements through local banking arrangements underpinned by the Group's £200 million unsecured multi-currency revolving credit facility maturing October 2019. The Group's forecasts and projections, taking account of reasonably possible changes in trading performance and exchange rates, show the Group operating comfortably within its debt financial covenants for the next 12 months.

The current economic climate continues to have an impact on the Group, its customers and suppliers. The Board fully recognises the challenges that lie ahead but, after making enquiries, and in the absence of any material uncertainties, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for a period of 18 months from the date of signing of this Annual Report and Accounts. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report and Accounts.

Viability statement

In accordance with provision C.2.2 of the UK Corporate Governance Code, the Directors have assessed the viability of the Group over a three-year period, taking into account the Group's current position and the potential impact of the principal risks documented on pages 18 to 22 of the Annual Report. Based on this assessment, the Directors confirm that they have a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the period to 31 December 2019.

The Directors have determined that a three-year period to 31 December 2019 is an appropriate period over which to provide its viability statement. This is the period reviewed by the Group Board in the Group's strategic planning process and is considered to be appropriate given the dynamics in the markets in which Morgan Advanced Materials plc operates.

To allow the Directors to make this assessment, a business base case has been built up, initially using a detailed bottom up approach and then applying what the Directors consider to be an appropriate set of assumptions in respect of growth, margins, working capital flows, capital expenditure, dividends and all other matters that could have a significant impact on the financial performance and liquidity of the Group. The resulting base case provides the Directors with an EBITA*, debt and finance charge headroom relative to current bank covenants.

The Directors have made a robust assessment of the principal risks facing the Group and their potential impact and the adequacy of the headroom relative to a severe but plausible combination of these risks. While the review has considered all the principal risks identified by the Group, the following were focused on for enhanced stress testing: technological obsolescence; single point exposure, export compliance; and the risks from a deep global recession. The geographical and product diversification of the Group's operations helps minimise the risk of serious business interruption or a catastrophic damage to our reputation. Furthermore, the spread of the Group's end-markets is such that Morgan is not reliant on one particular group of clients or sector.

Whilst this review does not consider all of the possible risks that the Group could face, the Directors consider that the approach adopted and the work performed is reasonable in the circumstances of the inherent uncertainty involved and that it allows the Board to confirm that it has a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period to 31 December 2019.

DEFINITIONS AND RECONCILIATIONS OF NON-GAAP MEASURES TO GAAP MEASURES

Reference is made to the following non-GAAP measures throughout this Strategic Report. These measures are shown because the Directors consider they provide useful information to shareholders, including additional insight into ongoing trading and year-on-year comparisons. These non-GAAP measures should be viewed as complementary to, not replacements for, the comparable GAAP measures.

Headline profit and earnings measures

Group headline operating profit is stated before specific adjusting items and amortisation of intangible assets. Specific adjusting items are excluded on the basis that they distort trading performance. Amortisation is excluded as the charge arises primarily on externally acquired intangible assets since the adoption of IFRS and does not therefore reflect all intangible assets consistently.

Earnings before interest, tax and amortisation (EBITA) is stated before specific adjusting items, amortisation of intangible assets, restructuring costs and other items. Segment EBITA is stated before unallocated corporate costs.

2016	Thermal Ceramics £m	Molten Metal Systems £m	**Thermal Products Division £m**	Electrical Carbon £m	Seals and Bearings £m	Thermal Ceramics £m	**Carbon and Technical Ceramics Division £m**	Composites and Defence Systems £m	**Segment total £m**	Corporate costs[1] £m	**Group £m**
Operating profit/(loss)	53.6	6.6	**60.2**	19.2	14.0	22.4	**55.6**	(8.7)	**107.1**	0.2	**107.3**
Add back: specific adjusting items included in operating profit	–	–	**–**	–	–	–	**–**	8.5	**8.5**	(6.8)	**1.7**
Add back: amortisation of intangible assets	1.5	0.1	**1.6**	0.4	0.3	4.2	**4.9**	1.4	**7.9**	–	**7.9**
Group headline operating profit											**116.9**
Add back: restructuring costs and other items	(0.1)	–	**(0.1)**	0.1	(0.1)	–	**–**	(0.1)	**(0.2)**	1.2	**1.0**
Group EBITA											**117.9**
Corporate costs[1]										5.4	**5.4**
Divisional EBITA/global business unit EBITA	55	6.7	**61.7**	19.7	14.2	26.6	**60.5**	1.1	**123.3**		

1. Corporate costs consist of the cost of the central head office.

2015	Thermal Ceramics £m	Molten Metal Systems £m	**Thermal Products Division £m**	Electrical Carbon £m	Seals and Bearings £m	Thermal Ceramics £m	**Carbon and Technical Ceramics Division £m**	Composites and Defence Systems £m	**Segment total £m**	Corporate costs £m	**Group £m**
Operating profit/(loss)	50.5	5.1	**55.6**	14.4	5.5	23.0	**42.9**	(9.0)	**89.5**	(6.6)	**82.9**
Add back: specific adjusting items included in operating profit	2.8	–	**2.8**	3.9	3.5	–	**7.4**	5.8	**16.0**	–	**16.0**
Add back: amortisation of intangible assets	1.8	0.2	**2.0**	0.3	0.2	2.7	**3.2**	1.9	**7.1**	–	**7.1**
Group headline operating profit											**106.0**
Add back: restructuring costs and other items	0.1	–	**0.1**	0.7	0.7	0.4	**1.8**	0.3	**2.2**	1.4	**3.6**
Group EBITA											**109.6**
Corporate costs[1]										5.2	**5.2**
Divisional EBITA/global business unit EBITA	55.2	5.3	**60.5**	19.3	9.9	26.1	**55.3**	(1.0)	**114.8**		

1. Corporate costs consist of the cost of the central head office.

DEFINITIONS AND RECONCILIATIONS OF NON-GAAP MEASURES TO GAAP MEASURES
continued

Group EBITDA

Group EBITDA is defined as operating profit before specific adjusting items, restructuring costs, other items, depreciation and amortisation of intangible assets.

The Group uses this measure as it is a key metric in covenants over debt facilities.

A reconciliation of operating profit to Group EBITDA is as follows:

	2016 £m	2015 £m
Operating profit:	**107.3**	82.9
Add back: specific adjusting items included in operating profit	**1.7**	16.0
Add back: restructuring costs and other items	**1.0**	3.6
Add back: depreciation	**29.5**	27.1
Add back: amortisation of intangible assets	**7.9**	7.1
Group EBITDA	**147.4**	136.7

Cash flow from operations and free cash flow before acquisitions and dividends

Cash flow from operations excludes the cash flows associated with restructuring activities and is shown because it illustrates the timing of the outflows relating to restructuring charges that may be incurred over more than one reporting period.

Free cash flow before acquisitions is defined as cash generated from operations less net capital expenditure, net interest paid and tax paid.

The Group discloses free cash flow before acquisitions and disposals as this provides readers of the financial statements with a measure of the cash flows from the business before corporate level cash flows (acquisitions and dividends).

A reconciliation of cash generated from operations to cash flow from operations and free cash flow before acquisitions and dividends is as follows:

	2016 £m	2015[1] £m
Cash generated from operations	**121.7**	133.9
Add back: cash flows from restructuring costs and other items	**6.6**	5.5
Cash flow from operations	**128.3**	139.4[1]
Net capital expenditure	**(38.4)**	(62.7)
Net interest paid	**(13.1)**	(11.2)
Tax paid	**(22.2)**	(29.9)
Restructuring costs and other items	**(6.6)**	(5.5)
Free cash flow before acquisitions and dividends	**48.0**	30.1

1. 2015 has been re-presented for the reclassification of £3.8 million of dividends paid to non-controlling interests from 'Cash generated from operations' to 'Net cash flows from other investing and financing activities'.

Net debt

Net debt is defined as interest-bearing loans and borrowings and bank overdrafts less cash and cash equivalents. The Group discloses this metric as it is a key metric in covenants over debt facilities.

	2016 £m	2015 £m
Cash and cash equivalents	**122.4**	49.8
Non-current interest-bearing loans and borrowings	**(204.0)**	(257.4)
Current interest-bearing loans and borrowings and bank overdrafts	**(160.9)**	(8.4)
Net debt	**(242.5)**	(216.0)

Constant currency revenue and Group headline operating profit

Constant currency revenue and Group headline operating profit are derived by translating the prior year results at current year average exchange rates. These measures are used as they allow revenue to be compared excluding the impact of foreign exchange rates. Page 31 provides further information on the principal foreign exchange rates used in the translation of the Group's results to constant currency at average exchange rates, the potential impact of foreign exchange movements is provided in note 20 to the financial statements on pages 133 to 135.

Return on operating capital employed

Return on operating capital employed (ROCE) is defined as Group headline operating profit (operating profit excluding specific adjusting items and amortisation of intangible assets) divided by the sum of working capital as defined below and the net book value of property, plant and equipment and land and buildings. Goodwill and other intangible assets are excluded.

ROCE is used by management to assess the return obtained from the Group's asset base, excluding intangible assets. From 2017 onwards, the Group intends instead to use ROIC as its key measure of return from the Group's asset base. ROCE has been provided as it continues to be a measure for pre-existing Long-Term Incentive Plan awards, as disclosed in the Remuneration Report on pages 70 to 91.

	2016 £m	2015 £m
Operating profit	**107.3**	82.9
Add back: specific adjusting items included in operating profit	**1.7**	16.0
Add back: amortisation of intangible assets	**7.9**	7.1
Group headline operating profit	**116.9**	106.0
Inventories	**148.2**	129.2
Trade and other receivables	**205.7**	174.4
Net derivative financial liabilities	**(9.2)**	(0.3)
Trade and other payables	**(192.5)**	(168.6)
Plus deferred consideration, third-party dividends payable and other sundry items	**0.5**	(0.5)
Working capital as used in the calculation of ROCE	**152.7**	134.2
Property, plant and equipment	**189.0**	158.8
Land and buildings	**114.7**	97.9
	456.4	390.9
ROCE	**25.6%**	27.1%

Return on invested capital

Return on invested capital (ROIC) is defined as Group headline operating profit (operating profit excluding specific adjusting items and amortisation of intangible assets) divided by the 12-month average adjusted net assets (third-party working capital, property, plant and equipment, land and buildings, intangible assets and other balance sheet items).

ROIC has been introduced as a KPI in 2016 and will be used going forward instead of ROCE to assess the return obtained from the Group's asset base over a 12-month average period, limiting currency fluctuation impacts.

	2016 £m	2015 £m
Operating profit	**107.3**	82.9
Add back: specific adjusting items included in operating profit	**1.7**	16.0
Add back: amortisation of intangible assets	**7.9**	7.1
Group headline operating profit	**116.9**	106.0
12-month average adjusted net assets:		
Third-party working capital	**168.2**	170.5
Property, plant and equipment	**175.7**	150.6
Land and buildings	**105.5**	95.4
Intangible assets	**240.8**	232.8
Other assets (net)	**9.2**	14.4
12-month average adjusted net assets	**699.4**	663.7
ROIC	**16.7%**	16.0%

Headline earnings per share

Headline earnings per share is defined as operating profit adjusted to exclude specific adjusting items and amortisation of intangible assets, plus share of profit of associate less net financing costs, income tax expense and non-controlling interests, divided by the weighted average number of ordinary shares during the period. This measure of earnings is shown because the Directors consider it provides a better indication of headline performance.

Whilst amortisation of intangible assets is a recurring charge it is excluded from these measures on the basis that it primarily arises on externally acquired intangible assets and therefore does not reflect consistently the benefit that all of Morgan's businesses realise from their intangible assets, which may not be recognised separately.

Further information on earnings per share can be found in note 9 to the financial statements on pages 117 to 118.

Book-to-Bill ratio

The book-to-bill ratio is the ratio of orders received to sales in the period.

CORPORATE RESPONSIBILITY

VALUES, STRATEGY AND TONE FROM THE TOP

CORPORATE RESPONSIBILITY IS INTEGRAL TO THE MORGAN GROUP; IT MEANS A COMMITMENT TO BEHAVING WITH INTEGRITY AND HAVING A POSITIVE IMPACT ON EMPLOYEES, STAKEHOLDERS AND THE COMMUNITIES IN WHICH THE GROUP WORKS.

Morgan values
Morgan's Core Values Statement is the guiding principle for the Group's global approach to corporate responsibility. This underpins the Group's commitment to doing business in the right way: limiting the impact of its operations on the environment; protecting and developing its people; and supporting the communities where it works.

Morgan strategy
This firm commitment to doing business in the right way is integral to the Group in continuing to be one of the world's very best advanced materials companies, where corporate responsibility is a differentiator. The Group's Responsible Business Programme (RBP), Environment, health and safety (EHS) programme and the approach to Morgan's people, all support the aim of creating long-term sustainable shareholder value.

Tone from the top
The Board is ultimately accountable for corporate responsibility and receives regular reports on RBP, EHS and global talent management.

The senior management team recognises the need to lead by example. The Chief Executive Officer (CEO) takes the lead on doing business in the right way, whilst the Chief Financial Officer (CFO) is responsible for the Group's approach to EHS. They are supported by the Divisional and global business unit executive teams together with functional heads with specific responsibility for environment, health and safety, legal compliance and human resources. Tone from the top has been central to the 2016 message across the Group, through the restatement of strategy, its ethical and safe business approach, leadership briefings on RBP and EHS, as well as a regular training sessions across the Group.

"Doing business the right way, ethically and safely, is fundamental to the way we do business. It is the top priority for the Group."

PETE RABY
CHIEF EXECUTIVE OFFICER

CORPORATE RESPONSIBILITY

Doing business in the right way

The RBP is the Group-wide ethics and compliance programme, launched in 2010. It provides a policy and compliance framework underpinning the Group's commitment to doing business in the right way, and ensures a common approach.

The core elements of the RBP are policies/ guidance, training/education, compliance risk assessments, monitoring and assurance through certifications, Internal Audit and site compliance visits.

Policies

RBP Policies are available to all employees in 13 languages, together with related manuals and guidelines. These require employees to operate in accordance not only within applicable laws and regulations, but also in line with internal rules and reporting requirements relating to areas such as ethical business behaviour, trade compliance, hospitality, gifts, donations and sponsorships.

These policies also apply, to the extent appropriate, to Morgan's business partners including agents, joint venture partners and third-party representatives. The RBP Guide for Representatives summarises the ethical principles the Group requires its representatives to adhere to in order to act on behalf of the Group.

All policies, manuals and guidelines are subject to annual review.

Training

Raising awareness of and educating employees on Group compliance policies and the applicable laws and regulations is a fundamental part of the RBP.

Delivering a programme of this nature across more than 30 countries raises a number of challenges including language, culture and logistics. For this reason, feedback is sought from all participants to ensure that the programme develops year on year and is relevant to each region and its employees rather than taking a 'one size fits all' approach.

Annual training in 2016 included:

- e-learning modules on human rights, anti-bribery and ethics, anti-trust and contract risk management. Each of these requires a 100% test score in order to pass.
- Externally facilitated training for local managers and site-based compliance officers where appropriate.
- In-person training by Group Compliance staff at selected sites to support online webinar cascade training.

Group-wide induction training continues to be supported and developed by Group Compliance with the aim of ensuring that standard guidance and practices are applied across the Group.

Risk assessment

Annual compliance risk assessments across the Group help to identify those businesses which have a higher risk of a compliance breach, these are often associated with high-risk territories. These high-risk businesses receive additional focus and support including further training, and guidance.

Implementation

How the Policies are cascaded

The RBP Policies and procedures are mandated across the Group and apply to all employees.

The main method for the internal communication of Group policies, procedures and other RBP or EHS updates is through the Group intranet, hard copies are made available locally at particular sites where connection may be limited.

Regular training and awareness is also built into e-learning modules and all face-to-face materials.

How the training is given

In 2016 the RBP training focus has been on anti-bribery, competition, contract risk management and trade compliance. Presentations and supporting materials were provided in 13 languages to facilitate the cascade of core elements of this training to new employees, graduate trainees, and existing employees undergoing refresher training.

Outcomes of the risk assessments

In 2015 the Group-wide bribery risk assessments focused on additional support, monitoring and training for a number of the Group's businesses including those in China and South America.

The 2016 assessment reviewed a number of perceived risks, which included the location of business, location of customers, type of third party and market sector. This informed a review of third parties in the delivery channel and a refresh of the evaluation procedures for the 2017 programme.

CORPORATE RESPONSIBILITY
continued

Effectiveness

Annual certification

Divisional presidents and all functional heads are required on an annual basis to certify that the businesses/functions they are responsible for have implemented and complied in full with Group policies or declared any exceptions.

This certification forms an integral part of the Group's system of internal controls. No material exceptions were declared in respect of 2016.

This process is supplemented by annual site-level certification, where relevant employees certify that they understand and are compliant with the RBP and its related policies and manuals.

Compliance visits

In 2016 members of Group Legal and the Compliance function, as well as Internal Audit, visited a number of sites and met with management and local employees to discuss and assess compliance practices, processes and issues. These visits are a means of monitoring and obtaining assurance on the efficacy of the RBP at business level and provide an opportunity to support the individual business through local training and face-to-face dialogue.

Internal Audit

Internal Audit monitors adherence to key RBP processes including completion of site-level training, RBP in induction processes, compliance with key elements of RBP policies and the filing of reporting forms. Internal Audit also ensures that the ethics hotline and its availability, are adequately promoted at site level.

During 2016, Internal Audit identified a number of corrective actions at a number of the sites they visited for audit within the year, which included (i) competitor contact and trade association membership reporting requirements to be improved, (ii) timely completion of RBP induction training by new employees, and (iii) recommunication of gifts and hospitality procedures in local languages. These matters have been addressed in the compliance visits referred to above and through cascade training provided by management teams.

Ethics hotline

The ethics hotline, operated by the independent third-party company Expolink, was in place throughout the year. It enables employees who are aware of, or suspect, misconduct, illegal activities, fraud, abuse of Group assets or violations of any Group policy to report these confidentially without fear of retribution should they feel they cannot use a local channel. The hotline includes local free-phone numbers in each of the countries in which the Group operates, with real-time translators available as necessary.

Issues raised through the ethics hotline or via other channels are followed up by the Company Secretary, Group Compliance, Human Resources functions, or members of senior management teams as appropriate. Further investigation may be conducted through Internal Audit and reported through the Audit Committee as required. Where appropriate, disciplinary action up to and including dismissal is taken and/or additional guidance and training provided.

The Audit Committee annually monitors and reviews the effectiveness of the ethics hotline and the follow-up investigation processes by considering the number of calls, which countries they came from and the results of the investigations.

Group Compliance plans for 2017

During 2017, the Group plans to further develop ethical business behaviours and safety throughout the business by enhancing a number of key areas including the development of greater transparency in supply chains, further standardisation in business practices and refreshed communication strategies. This will be achieved through continued development and improvement of:

- Online e-learning modules.
- Review of the Group Compliance training strategy to meet requirements of the new Divisional structure implemented in 2016.
- Greater visibility through verification and audit activities.
- Enhanced third-party management and control.
- Continuing strong delivery of consistent messaging across the Group to enhance awareness of standard procedures and requirements.

ENVIRONMENT, HEALTH AND SAFETY

MORGAN ADVANCED MATERIALS IS COMMITTED TO PROTECTING THE HEALTH AND SAFETY OF EMPLOYEES AND OTHERS AFFECTED BY ITS OPERATIONS. IT ALSO SEEKS TO MINIMISE THE ENVIRONMENTAL IMPACTS OF ITS ACTIVITIES AND MAXIMISE THE POSITIVE EFFECTS OF ITS PRODUCTS AND SERVICES. THE GROUP'S ENVIRONMENT, HEALTH AND SAFETY (EHS) PROGRAMMES DELIVER REAL BUSINESS BENEFITS WHILST ENSURING ITS OBLIGATIONS TO STAKEHOLDERS ARE MET.

2016 highlights

- Health and safety performance improved in the year with a 42% reduction in the number of Lost Time Accidents from 91 to 53 and a 41% reduction in the Lost Time Accident Frequency rate. The percentage of working time lost due to accidents and work-related ill health was also reduced by 32% and the number of days lost was down by 33%.
- Environmental performance improved in key areas over the Group's two-year target period 2014-16 with a 10% reduction in CO_2e intensity, a 12% reduction in energy intensity, a 3% reduction in waste intensity and an improvement in the recycling rate of 12 percentage points. Water intensity was unchanged over the two-year period. Thus the Group achieved its targets to reduce CO_2e[1] and energy intensity by 5% and to improve the recycling rate over the two years 2014-16 but was behind its targets to reduce waste and water intensity by 5% over the period.
- The momentum of 'thinkSAFE', the Group's safety performance improvement programme, was sustained with a series of preventative quarterly safety briefings. Topics covered were Slips, Trips and Falls, 'Take 5 for Safety' (5S), Gas Safety and Bright, clean and 'thinkSAFE'.
- Morgan also carried out 21 two-day 'thinkSAFE'+ train-the-trainer sessions for senior managers with a focus on behavioural safety coaching, feedback and team communications. These managers rolled out the training to leaders down to supervisor level.
- The Group's safety-related leading indicators were extended and embedded with the launch of two mobile apps for the reporting of near misses and for monitoring visible safety leadership activities.
- Morgan developed and launched a new EHS Framework. This Framework covers 10 key risk areas against which sites carried out a gap analysis and developed action plans.
- An EHS leadership committee was created to help develop and drive future EHS strategy for the Group.
- A new EHS Compliance Audit Programme was launched with an external global audit provider and an internal EHS audit programme with training for internal auditors.
- Morgan participated in the Carbon Disclosure Project (CDP) 2016 and achieved a score of A- which places the Group joint top of the CDP's FTSE 350 Industrial sector. This ranking testifies to the strength of the Group's climate change and energy related disclosure and performance.

Morgan Advanced Materials is committed to conducting all its activities in a manner that achieves high standards of health and safety for employees and others affected by its operations. This commitment is reflected in the Group's core health and safety values set out below and which are available in 17 languages:

- We are committed to creating a culture and environment that is 'zero harm' with no accidents or illness due to our activities.
- We encourage and expect our employees and contractors to be passionate about safety.
- We are dedicated to creating a positive safety culture based on openness, transparency and responsibility.
- We support a safe working culture through investment and training.
- We engage with our people to continuously improve safety knowledge, reporting and performance through our commitment to Morgan's 'thinkSAFE' programme.

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 environmental performance and efficiency of the Group's customers are included in pages 2 to 7 of this Report.

Under The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013, the Group is required to report its annual greenhouse gas emissions for the year in its Directors' Report. This information is shown on page 48 and includes the CO_2 due to energy use which is further analysed in this section, as well as other sources of greenhouse gases.

1. CO_2e. Carbon Dioxide Equivalent – the amount of carbon dioxide or the amount of non-CO_2 greenhouse gas with the equivalent global warming potential.

CORPORATE RESPONSIBILITY
continued

EHS Policy

Morgan's EHS Policy applies to all Group businesses worldwide; it forms the basis for the Executive Committee and management oversight and implementation and has been communicated across all sites within the Group. The Policy is regularly reviewed and is published on the Group's website.

EHS Policy implementation

Morgan's EHS governance procedures are centred on its EHS Policy, which forms the basis of the Group's EHS management systems and processes. This is achieved through performance monitoring, risk assessment and the management and mitigation of identified risks to help provide continuous improvement in EHS performance in support of the Group's strategic priorities.

The Group is committed to providing effective leadership in pursuit of an injury-free and environmentally responsible work place and the Chief Executive Officer and the operational management team are responsible for EHS performance, with each site having a point of accountability. There are EHS leaders in each region and within each business. This global network of specialists reports to their respective regional management team and are responsible for improving the standards of EHS management and performance across the Group's businesses.

Morgan's Group-level EHS management processes include:

- The external assurance of selected EHS data by ERM Certification and Verification Services (ERM CVS). The assurance report from ERM CVS is on page 47.
- The EHS Compliance Audit Programme. This was re-launched during the year and is now carried out by the same external audit provider world-wide. This helps to ensure consistency and facilitates the effective sharing of best practice across the Group. Audits are conducted against the Morgan EHS Framework with a focus on high-risk items. The programme also covers the EHS management systems and the EHS KPIs reported by each site and helps ensure compliance with local regulations and good management practice. All the Group's manufacturing facilities are reviewed on a three-year rolling cycle. Accordingly, 24 sites were audited during 2016. The audit reports are reviewed by the Director, Environment, Health and Safety and by members of the Executive Committee and Regional Executive teams. Action items are tracked through a formal follow-up process.
- Formal training as an integral part of the implementation of the Group's EHS Policy. This is undertaken at a regional level and tailored to business-specific risks and opportunities, with Group-level support and oversight.
- Monthly performance reporting to Group and regional executives against the Group KPIs by all Group sites. The data is subject to regular review and challenge at Group level with reporting of performance to the Executive Committee and the Board.

Taking site openings and closures into account, in 2016 environmental management systems were in place at 97 sites worldwide, including 46 sites certified to ISO 14001. Worldwide, 104 sites have health and safety management systems in place, with 14 sites certified to or working towards OHSAS 18001.

EHS Policy effectiveness

The Group monitors the effectiveness of its EHS Policy through the external EHS Compliance Audit Programme, the internal EHS audit programme, the review of performance against a series of Group-wide KPIs, the external assurance programme and by participating in a number of external initiatives as further described below.

The summary charts on pages 43 to 46 represent the Group's EHS performance, covering all production sites during the year.

Environmental intensity KPIs are reported at constant currency and, where necessary, historic EHS data is restated to reflect changes in reporting methodology and to ensure year-on-year consistency.

The independent external assurance performed by ERM CVS covered the Group's Lost Time Accident Frequency rate, CO_2e intensity, energy intensity, waste intensity, water intensity and the waste recycling rate. The Assurance Report from ERM CVS is set out on page 47.

The Group also participates in a number of external initiatives that help to benchmark Policy effectiveness and progress. These include the Carbon Disclosure Project (CDP) in respect of the Group's climate change-related strategies, risks, management and performance. In 2016, Morgan achieved a score of A- placing it joint top of the CDP's FTSE 350 Industrial sector. This reflects the Group's performance, and the depth and quality of climate change data disclosed to investors and the global marketplace through the CDP.

Morgan Advanced Materials has also made filings in respect of the Group's UK facilities under the UK government's Carbon Reduction Commitment (Energy Efficiency) Scheme.

Environmental performance

The Group is committed to environmental responsibility and works to minimise the impact of its business on the environment and to maximise the positive environmental benefit of its products.

The Group monitors the material impacts of its operations on the environment as measured by its Scope 1 CO_2e and Scope 2 CO_2 emissions, energy, waste and water intensity per million pound of revenue and the proportion of total waste which is recycled.

Two-year targets are set for the improvement in environmental metrics, and the Group's 2016 performance is reported against the targets for the two-year period 2014-2016. Each production site also sets specific internal targets for improvement which are reviewed as part of the annual budget process to ensure they are aligned with and contribute to the Group's targets. Further details of the Group's EHS targets and objectives will be included in the Group's 2016 EHS Report which is scheduled for publication on the Group website in mid-2017.

During the year, the Group undertook a series of projects and environmental programmes focused on the sites identified as having the greatest environmental impact. These are subject to regular review and follow-up by the Executive Committee to ensure key opportunities and risks are addressed. In addition, regional programmes covering topics such as energy awareness help to enhance business and environmental performance and competitiveness.

These programmes helped the Group to reduce its environmental intensity in key areas over the two years 2014-2016 and to achieve its target to reduce CO_2e and energy intensity by 5% and to increase its recycling rate. However, although total waste was down by 6% and water use was down by 2.4%, as a result of the 2.6% decrease in revenue at constant currency compared to 2014, the baseline year for the Group's intensity targets, the Group's waste intensity was down less than the 5% reduction target and water intensity was flat over the period.

In absolute terms, total CO_2e emissions due to energy use in 2016 were 342,600 tonnes, down by 6% from 365,600 tonnes in 2015 and 12% lower than the 389,800 tonnes reported for 2014. Energy use was 1,145 GWh, down by 6% from 1,224 GWh in 2015 and 14% down against the 1,333 GWh reported for 2014.

CO_2e intensity was down by 5% compared to 2015 and by 10% compared to 2014. Thus the Group exceeded its target to reduce CO_2e emissions intensity due to energy use by 5% over the two-year period 2014-2016. Energy intensity in 2016 was down by 5% compared to 2015 and by 12% compared to 2014.

The five-year performance charts reflect reductions in energy and CO_2e intensity from 2012. The Group continues to work on a number of production improvement projects which include energy-efficiency programmes. These are aimed at driving continuous performance improvement in energy and CO_2e intensity in 2017 and beyond.

CO_2e[5] INTENSITY DUE TO ENERGY USE[1, 2]
Tonnes CO_2e/£m revenue[3]

2016	346
2015	364
2014	384
2013	384
2012	377

CO_2e[5] DUE TO ENERGY USE[1, 2]
Tonnes[3]

2016	342,600
2015	365,600
2014	389,800
2013	382,200
2012	394,100

ENERGY USE[1, 4]
GWh[3]

2016	1,145
2015	1,224
2014	1,333
2013	1,295
2012	1,319

ENERGY INTENSITY[1, 4]
MWh/£m revenue[3]

2016	1,157
2015	1,219
2014	1,313
2013	1,303
2012	1,262

1. The 2016 CO_2e intensity, energy intensity, water intensity, waste intensity and waste recycling rate information has been subject to assurance by ERM CVS. For further details of the assurance provided see the Independent Assurance Report on page 47. Further details of the 2015, 2014, 2013 and 2012 assurance provided by PwC are included in the Independent Assurance Reports on page 32 of the 2015 Annual Report, page 30 of the 2014 Annual Report, page 31 of the 2013 Annual Report and page 25 of the 2012 Annual Report.
2. Scope 1 CO_2e emissions from fossil fuel usage and Scope 2 CO_2 using country-specific electricity factors as CO_2e factors are not consistently available for electricity use in all countries.
3. Constant currency basis and updated to reflect changes in reporting methodology.
4. Energy from all sources.
5. CO_2e. Carbon Dioxide Equivalent – the amount of carbon dioxide or the amount of non-CO_2 greenhouse gas with the equivalent global warming potential.

CORPORATE RESPONSIBILITY
continued

WASTE[1, 3]
Tonnes[2]

Year	Tonnes
2016	46,500
2015	48,400
2014	49,400
2013	44,600
2012	48,700

WASTE INTENSITY[1, 3]
Tonnes waste/£m revenue[2]

Year	Tonnes waste/£m revenue
2016	47.0
2015	48.2
2014	48.7
2013	44.8
2012	46.6

WATER USE[1, 4]
million m^3 [2]

Year	million m^3
2016	2.44
2015	2.35
2014	2.50
2013	2.27
2012	2.52

WATER INTENSITY[1, 4]
m^3/£m revenue[2]

Year	m^3/£m revenue
2016	2,466
2015	2,337
2014	2,463
2013	2,285
2012	2,407

1. The 2016 CO_2e intensity, energy intensity, water intensity, waste intensity and waste recycling rate information has been subject to assurance by ERM CVS. For further details of the assurance provided see the Independent Assurance Report on page 47. Further details of the 2015, 2014, 2013 and 2012 assurance provided by PwC are included in the Independent Assurance Reports on page 32 of the 2015 Annual Report, page 30 of the 2014 Annual Report, page 31 of the 2013 Annual Report and page 25 of the 2012 Annual Report.
2. Constant currency basis and updated to reflect changes in reporting methodology.
3. Hazardous and non-hazardous waste, including recycled material.
4. Water from all sources, including process, irrigation and sanitary use.

Total waste reported in 2016 was 46,500 tonnes, down by 4% from 48,400 tonnes in 2015 and 6% lower than the 49,400 tonnes reported for 2014. Waste intensity was down by 2% compared to 2015 and down by 3% compared with 2014. Although waste intensity was reduced, the Group was 2% behind its 5% reduction target over the two-year period 2014-2016. This was partly due to one-off disposals at a number of sites and changes in product mix with increased production of products that have higher waste intensity compared to 2014.

The proportion of total waste which was recycled was 45% in 2016, an increase of 2%, from 43% in 2015, and an increase of 12% from 33% in 2014. This means that over the two years 2014-2016 the Group achieved its target to increase the proportion of total waste which is recycled. A significant part of the improvement over the period is due to the identification of an opportunity for a third party to re-use a significant waste stream at the Group's site in Augusta, Georgia, USA. Prior to 2014 the waste was unsegregated and was reported as landfill and the 2014 and 2015 reports have been restated accordingly.

Total water use in 2016 was 2.44 million m^3, up 4% from 2015 but down 2.4% from 2.50 million m^3 in 2014. Taking into account the decline in sales at constant currency, 2016 water use intensity was flat compared with 2014 and so the target to reduce water intensity by 5% over the two years 2014-2016 was not achieved. The increase in water use in 2016 compared to 2015 resulted from additional use of water for wash-down and clean-up activities as part of the 5S programme and the introduction of a new production line at one of the Group's more water-intensive sites in the USA. Many sites around the world and particularly in Asia, where water is a limited resource, achieved strong improvements over the period.

2017 priorities for environmental performance:

→ Focus on specific environmental improvement projects at sites with the biggest environmental impact.

→ Formalise the improvement project review process to include summary reporting to the Executive Committee.

→ Benchmark sites with similar production technologies to identify best practice and implement improvement plans accordingly.

→ Implement energy awareness and resilience programmes, focused on the Group's energy-intensive operations.

→ Focus on robust ownership and delivery of environmental targets at site, business and Divisional levels.

MORGAN 'thinkSAFE' OVERVIEW

MORGAN 'thinkSAFE' IS A BEHAVIOURAL BASED PROGRAMME. IT HELPS PROVIDE THE KNOWLEDGE AND SKILLS TO ENSURE OPERATIONS ARE CONDUCTED IN A SAFE AND CONTROLLED MANNER.

Morgan 'thinkSAFE' is the Group's global safety performance improvement programme. This top-down programme was launched in 2015 and is led by the Chief Executive Officer and the Executive Committee. It has helped to drive a dramatic improvement in the health and safety performance of the Group since it was introduced.

During 2016 the Group focused on embedding the momentum of 'thinkSAFE' with a series of quarterly topics implemented on a global basis:

Bright, clean and 'thinkSAFE':

- Employee awareness, training and business improvement programme implemented across all sites worldwide.
- Objectives:
  - Instilling an unrelenting focus on work place safety as part of the drive to zero harm.
  - Implement 'Take 5 for Safety' (5S) workplace organisation to improve efficiency and productivity.
  - Make Morgan an even better place to work.
- Includes:
  - Global communications programme supported by training and audits across all site types.
  - Best practice and video safety talent competitions to engage employees and to accelerate progress.
  - 'Safety Week' held simultaneously at all sites in each region to reinforce the focus on 5S and safety in an active way.
  - Encouraging safety behaviours at work and beyond.

Take 5 for Safety (5S):

- Behavioural change initiative to reduce risk and to leverage lessons from near miss reporting.
- Objectives:
  - Implement a five-step 'pre-task' process to ensure potential hazards are identified and controlled before work commences.
  - Provide a last line of defence before an activity is undertaken.
  - Reinforce the messages of zero-harm and personal responsibility for own safety and that of colleagues.
- Includes:
  - The five-step pre-task process: (1) Stop, step back, observe; (2) Think through what you are about to do; (3) Can anything go wrong; (4) What can you do about it; (5) … so that you can complete the activity safely.
  - Use of near misses as free lessons.
  - Delivery of the message: 'Be safe and healthy in all you do: 'thinkSAFE'.'

Gas safety:

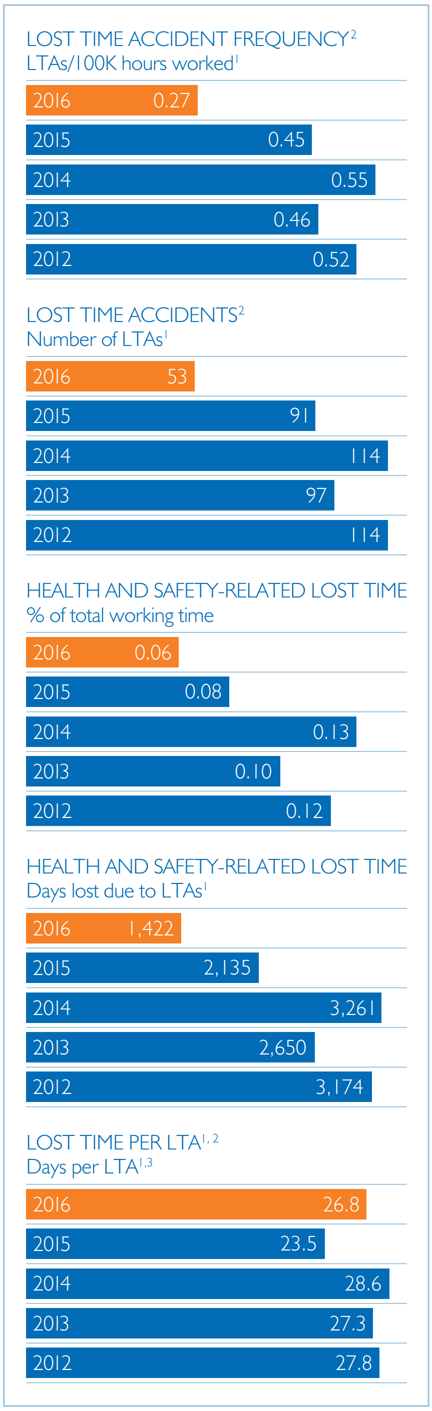
- Awareness and process initiative to address specific gas safety risks and equipment used in high-temperature processes.
- Objectives:
  - Sustain safety focus where flammable gases are in use.
  - Reduce risk of catastrophic accidents due to gas safety, focused particularly on hydrogen use.
  - Step change in awareness, risk reduction and action with follow-through across all gas safety risks.
- Includes:
  - Carrying out Process Hazard Analysis for hydrogen.
  - Consistent five-stage methodology adopted for gas/machine safety to deliver continuous improvements.
  - e-learning gas safety development and training implemented for nominated staff.
  - Involving suppliers and other functions including maintenance, engineering and facilities.
  - Ensuring gas safety systems and controls are in place, fully functional and tested.

Slips, trips and falls:

- Awareness and prevention of slips, trips and falls which account for circa 8% of accidents Group-wide.
- Objectives:
  - Develop full understanding of root causes.
  - Risk reduction and emphasis on designing risk out.
- Includes:
  - Integration with the 'Take 5 for Safety' quarterly theme.
  - Understanding of unsafe acts leading to near misses and potential accidents.

Around the world, the business unit management teams implemented these themes to promote and reinforce the Group-wide 'thinkSAFE' programme and to work towards a zero harm work place.

CORPORATE RESPONSIBILITY
continued



1. The 2016 Lost Time Accident Frequency information has been subject to assurance by ERM CVS. For further details of the assurance provided see the Independent Assurance Report on page 47. Further details of the 2015, 2014, 2013 and 2012 assurance provided by PwC are included in the Independent Assurance Reports on page 32 of the 2015 Annual Report, page 30 of the 2014 Annual Report, page 31 of the 2013 Annual Report and page 25 of the 2012 Annual Report.
2. Lost Time Accident (LTA): accident or work-related illness which results in one or more days' lost time.
3. 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

With the long-term aim of an injury-free workplace, Morgan Advanced Materials plc is committed to its health and safety core values and to conducting all its activities in a manner that achieves high standards of health and safety for all employees and others affected by its operations. The Group's long-term objective is 'zero harm' and it seeks to achieve year-on-year improvements in performance as it progresses towards this objective.

The Group's health and safety Policies are clear and communicated throughout the Group. Health and safety metrics receive a high degree of focus at all levels of the business. The Policy statements are supported by site-level assessment and monitoring of risks.

In 2016, the Group's accident prevention and training programmes were focused on reducing accident numbers and the time lost per lost time accident. Focus is increasingly placed on leading indicators as well as those sites with below-average performance, as measured by their health and safety KPIs and through the EHS Compliance Audit Programme.

The Group's health and safety KPIs include accident frequencies, causes and related lost working time. These are used to monitor the effectiveness of the Group's health and safety policies and related systems on a monthly basis. The independent external assurance performed by ERM CVS covered the Group's Lost Time Accident (LTA) frequency rate.

The Group's 2016 health and safety performance improved compared to 2015. Aggregating manufacturing sites and sales offices, the Group has over 130 locations worldwide and the majority reported no LTAs during the year.

In 2016, the Group's LTA frequency was down 41% at 0.27 per 100,000 hours worked (2015: 0.45). This followed a 17% reduction in 2015 from 2014. The number of LTAs reported was down 42% to 53 (2015: 91). Many sites had no LTAs and other sites improved on their accident frequency rates from 2015.

Reported lost time due to accidents and work-related illnesses as a percentage of working time decreased to 0.06% in 2016 (2015: 0.08%). The number of days lost during 2016 was down by 33% (2015: 35% reduction). The average number of days lost in 2016 per LTA reported in the year increased by 14% to 26.8 days (2015: 23.5 days). Morgan reports the accidents in the year in which they occur and the days lost in the year that the time is lost. The increase in the average days lost per LTA in 2016 was in part due to days lost in 2016 due to accidents which occurred in the prior year.

The 'thinkSAFE' programme, supported by a focus on leading indicators and on underperformance identified, helped to deliver this improved performance.

2017 priorities for health and safety

- → Sustain the momentum of the Morgan 'thinkSAFE' programme.
- → Monitor visible safety leadership at all levels of the organisation to help ensure strong, personal safety leadership is evident to all.
- → Continue to implement the new Group-wide EHS Framework with focus on high-risk health and safety issues.
- → Continue the focus on gas safety and ensure actions from the Process Hazard analysis are complete.
- → Continue to rollout quarterly themes to address safety risks and to help improve performance.
- → Focus on reducing the time lost by each lost time accident through appropriate return-to-work initiatives.
- → Carry out a Group-wide EHS personnel competency resource assessment.

INDEPENDENT ASSURANCE REPORT

INDEPENDENT ASSURANCE STATEMENT TO MORGAN ADVANCED MATERIALS PLC

ERM Certification and Verification Services (ERM CVS) was engaged by Morgan Advanced Materials plc ('Morgan') to provide limited assurance in relation to specified 2016 EHS performance data in Morgan's Annual Report for the year ended 31 December 2016 ('the Report') as set out below.

ENGAGEMENT SUMMARY	
Scope of our assurance engagement	Whether the following EHS performance data for year ended 31 December 2016 are fairly presented, in all material respects, with the reporting criteria: → GHG: Total Scope 1 and Scope 2 emissions due to energy use in tonnes CO_2e; CO_2e intensity (tonnes CO_2e/£m revenue). → Total Energy use (GWh) and Energy intensity (MWh/£m revenue). → Water use (million m^3) and Water intensity (million m^3/£m revenue). → Waste (tonnes) and waste intensity (tonnes/£m revenue). → Recycling rate. → Safety: Number of lost time accidents (LTAs) and Lost Time Accident Frequency (LTAs/100,000 hours worked).
Reporting criteria	Morgan's own internal reporting criteria and definitions set out at **www.morganadvancedmaterials.com/en-gb/corporate-responsibility/environment-health-and-safety**.
Assurance standard	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised).
Assurance level	Limited assurance.
Respective responsibilities	Morgan is responsible for preparing the data and for its correct presentation in reporting to third parties, including disclosure of the reporting criteria and boundary. ERM CVS's responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgment.

Our conclusions

Based on our activities, nothing has come to our attention to indicate that the EHS performance data for year ended 31 December 2016, as listed above, are not fairly presented, in all material respects, with the reporting criteria.

Our assurance activities

Our objective was to assess whether the selected data are reported in accordance with the principles of completeness, comparability (across the organisation) and accuracy (including calculations, use of appropriate conversion factors and consolidation). We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusions.

A multi-disciplinary team of EHS and assurance specialists performed the following activities:

→ Interviews with relevant staff to understand and evaluate the data management systems and processes (including IT systems and internal review processes) used for collecting and reporting the selected data;

→ A review of the internal indicator definitions and conversion factors;

→ Visits to five sites (two in USA, one each in Mexico, France and India) to review local reporting processes and consistency of reported annual data with selected underlying source data for each indicator. We interviewed relevant staff, reviewed site data capture and reporting methods, checked calculations and assessed the local internal quality and assurance processes.

→ An analytical review of the data from all sites and a check on the completeness and accuracy of the corporate data consolidation.

→ Year-end assurance activities at corporate level including the results of internal review procedures and the accuracy of the consolidation of the data for the selected indicators from the site data.

The limitations of our engagement

The reliability of the assured data is subject to inherent uncertainties, given the available methods for determining, calculating or estimating the underlying information. It is important to understand our assurance conclusions in this context.

JENNIFER LANSEN-ROGERS
HEAD OF CORPORATE ASSURANCE SERVICES
23 February 2017

ERM Certification and Verification Services, London
www.ermcvs.com; email: post@ermcvs.com

ERMCVS Informed Assured

ERM CVS is a member of the ERM Group. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our processes are designed and implemented to ensure that the work we undertake with clients is free from bias and conflict of interest. ERM CVS and the ERM staff that have undertaken this engagement work have provided no consultancy-related services to Morgan Advanced Materials plc in any respect.

CORPORATE RESPONSIBILITY
continued

GREENHOUSE GAS EMISSIONS

Under the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013 ('the Regulations') the Group is required to report its annual greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO_2e) in its Directors' 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 CO_2e emissions due to energy consumption have been externally assured (see 2016 Assurance Report from ERM CVS on page 47). The Group has participated in the Carbon Disclosure Project (CDP) since 2006 and in 2016 achieved a score of A-, reflecting the Group's strong performance and the depth and quality of climate change data Morgan has disclosed to investors and the global marketplace through the CDP.

The Regulations require the Group to disclose its emissions due to the combustion of biomass and due to process and fugitive emissions which are in addition to the emissions due to energy use reported on page 43 of this Annual Report. In the table below CO_2e is the amount of CO_2 and the amount of non-CO_2 greenhouse gas with the equivalent global warming potential. Data is rounded to the nearest 100 tonnes of CO_2e.

As required under the Regulations, 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 and one in Europe, 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's reporting methodology is based on the Greenhouse Gas Protocol with emission factors for standard grid electricity by country and year from the International Energy Agency together with other factors published by the UK Department for Environment, Food and Rural Affairs used to calculate the CO_2e emissions included in this Report.

	2016 Tonnes CO_2e	2015 Tonnes CO_2e
Emissions from combustion of fuels and operation of facilities[1]		
Combustion of fossil fuels[2]	**126,400**	133,200
Operation of facilities, including process emissions[3]	**29,100**	29,500
Electricity, heat, steam and cooling purchased for own consumption[4]		
Purchased electricity[2,3]	**216,200**	232,400
Intensity measurement[5]		
Tonnes CO_2e due to fossil fuels and purchased electricity per £m revenue[2]	**346**	364
Tonnes GHGs per £m revenue	**376**	393

1. Excludes emissions from Company-owned and leased vehicles estimated at circa 2,100 tonnes CO_2e in 2016 (2015: 2,200 tonnes CO_2e).
2. The 2016 information regarding CO_2e due to energy use has been subject to assurance by ERM CVS. See the Independent Assurance Report on page 47 of this Annual Report. See page 32 of the 2015 Annual Report for further details of the assurance of the 2015 information regarding CO_2e by PwC.
3. Electricity from renewable sources at zero tonnes CO_2 per kWh. Emissions increase by 2,600 tonnes at grid-average rates (2015: 4,400 tonnes).
4. Excludes steam supplied by third parties to two sites in China and one in Europe.
5. Constant currency basis and restated to reflect changes in reporting methodology.

PEOPLE

Morgan Advanced Materials' employees are critical to its success and the workforce comprises people with highly unique skills and abilities. Set out below are the Group's People Policies, how they have been implemented, with a review of their effectiveness.

People Policies and their implementation

The Group supports the Universal Declaration of Human Rights, and the Group's Human Rights Policy commits the Group to protect the rights of everyone who works for it and all those who have dealings with it. The principles of the Policy cover child labour, forced labour, health and safety, freedom of association, discrimination, discipline, working hours and compensation and the Policy is published on the Group's website. Morgan Advanced Materials plc does not unfairly discriminate and respects human rights. Our employee policies are set locally to comply with local law within the overall Group framework. The Morgan ethics hotline enables employees who are aware of or suspect issues under the Group's Human Rights Policy to report these confidentially.

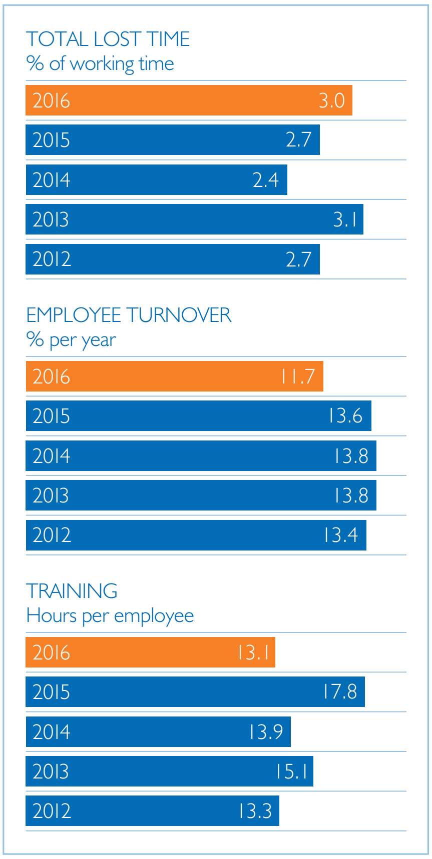
Talent

One of the Group's key execution priorities for the next 18 months is to increase investment in people management, key functional and technical skills and the development of future leaders. The Group is planning to strengthen leadership capability and deepen functional capabilities across the business, including in materials science and within the sales function. Senior leaders will be benchmarked externally, new talent will be introduced and future leadership candidates will be identified from within the business. The Group will invest more in training and create clear career paths for technologists and engineers. The annual intake of graduate trainees will be increased to 50 a year by 2020.

Following the announcement of the Group's intention to move to a global structure and in order to support the execution of that reorganisation targeted talent reviews were completed, resulting in internal promotions, development opportunities and recruitment during 2016. Due to the reorganisation in the early part of 2016 the normal talent review process was deferred until 2017 to allow the new organisation to embed. In 2017 the talent review process will itself be reviewed to ensure the Group is fully able to meet its stated objective of driving business performance through highly effective business development, sales, technology innovation, and commercial leadership. The Group continued to prioritise the global graduate development programme in 2016.

A key area of focus is the improvement of sales effectiveness through identifying the specific behaviours that contribute to a salespersons' successful performance in Morgan. Through identifying these behaviours or competencies, we will be able to build personal learning and development plans that will enable our sales teams to focus on the areas that matter most to our customers. During 2016 an assessment of the current sales organisation has been conducted, including a survey of people involved in the sales process to better understand their job roles and skills.

The Group continues to strengthen existing relationships with leading universities working in materials science, providing opportunities for employees as well as undergraduate and postgraduate students. This includes the establishment of the Carbon Science Centre of Excellence at Pennsylvania State University, USA, and the Centre of Excellence for Metals and Joining in Hayward, California, which will serve as a focal point for academic collaboration on joining technologies with key university faculties worldwide.



CORPORATE RESPONSIBILITY
continued

Recruitment

During 2016, the Group continued to develop its recruitment channels and processes. These include its online presence and assessment processes, and formal assessments at senior levels to help inform recruitment decision-making. Whether recruiting internally or externally, selection is based on many factors including relevant education, work experience, competencies, potential, and performance record. The Group does not unfairly discriminate and it respects human rights.

The Group has operated its global graduate programme for a fifth successive year. Graduates initially join our businesses in Asia, Europe and North America and take part in a common development programme that builds current and future capability, and gives access to international assignments and opportunities. The Chief Executive Officer and other members of the Executive Committee attend the development programmes.

The Group continues to create market leading undergraduate development opportunities, nurturing the pipeline for its global graduate programme. For the year 2016/17 Morgan Advanced Materials has been acknowledged by the Group's undergraduates and the market, via the undergraduate employer review site Rate My Placement, as a top company for undergraduate programmes. This is the first time Morgan has been recognised and demonstrates the excellent development opportunities the Group provides undergraduates.

Training and development

Overall training hours per employee have reduced by 26% to 13.1 hours per person. This was expected as training hours normalised following the large investment in training during 2015 with the launch of 'thinkSAFE', Morgan's behavioural safety programme. Morgan provides Group-wide and Division-based training where appropriate.

In 2016 the Group launched two new Company-wide training programmes, 'thinkSAFE'+ and the Environment, Health and Safety e-learning.

A train-the-trainer programme, 'thinkSAFE'+ is aimed at enhancing leaders' and managers' coaching and mentoring skills to engage employees in striving for a zero harm culture. Over 200 leaders, managers and supervisors attended the programme in 2016. The EHS e-learning training is focused on gas safety, one of the Group's high-risk priority areas, and is available in 17 languages. These programmes are covered in further detail in the Environment, health and safety section on pages 41 to 48.

Also at Group level, the global Advanced Leadership Programme is in its second year. Designed for high-potential and high-performing managers it is focused on building leadership capability and connecting future leaders deeply to Morgan's strategy and its execution. The Graduate Leadership Programme, which is a pipeline for future leaders within the business, was redesigned based on business needs and two additional modules were added to the programme for 2016. The Responsible Business Programme (RBP) is the Group-wide ethics and compliance programme, launched in 2010, with the core elements of policies, training, risk assessments, monitoring and assurance. The training content covers human rights, anti-bribery and ethics, anti-trust and contract risk management and is refreshed on an annual basis. This programme is covered in further detail on pages 38 to 40.

Division-based development programmes are provided where appropriate to supplement the Group programmes. For example, in the Thermal Products Division, the Ascend and Velocity leadership development programmes, which were developed in Asia, are being updated to be rolled out globally.

Reward, recognition and awards

The Group recognises the accomplishments of its people individually and as teams, and makes awards to acknowledge achievement, loyalty, and innovation. In 2016, recognition awards continued to be made across local businesses as well as to senior management, with awards linked to business performance.

The principle of pay for performance is applied to the Group's compensation approach and the Company sets compensation levels using external benchmarking and relevant commercial considerations that are both competitive in the countries in which they operate and affordable. Morgan offers short-term performance incentives globally to managers and technical and functional experts. The Executive Committee and senior management also have long-term incentives tied to personal and commercial performance. At plant level, most sites offer incentives to their workforce that result in payments based on meeting locally-set performance targets.

Morgan regularly reviews bonus arrangements and benefits to ensure they encourage and reward commercial and personal performance.

Communication

The Group recognises the continued importance of prioritising and improving employee communication across the Group. For example, in 2016 the Thermal Products Division increased the number of employee briefings and forums covering business results, business strategy, business improvement and safety. Videos, poster campaigns and newsletters have also continued to be a strong feature of communication activity.

Morgan continues to have formal and informal consultative arrangements globally, according to local requirements and regulations. The 20th annual European Employee Forum was held in May 2016, and was attended by site employee representatives from France, Germany, Hungary, Italy and the UK.

People Policy effectiveness

At the end of the year, Morgan employed 8,900 people. The Group additionally contracted with 800 people on short-term arrangements to provide the flexibility for the Group's businesses to react quickly to changes in market conditions. The Group's employee turnover was 11.7% in 2016, excluding disposals (2015: 13.6%), 1.0% of the workforce was made redundant during the year (2015: 1.4%).

The Group's geographical employee spread is as follows:

GEOGRAPHICAL SPREAD

	2016	2015
USA	**30%**	30%
UK	**13%**	14%
China	**15%**	15%
Other Europe	**20%**	18%
Other North America	**7%**	7%
South America	**4%**	4%
Rest of World	**11%**	12%

Breakdown of employees by gender at 31 December 2016 was as follows:

TOTAL WORKFORCE 8,900	
Male	6,297
	71%
Female	2,603
	29%
Senior managers – 14	
Male	12
	86%
Female	2
	14%
Directors – 7	
Male	5
	71%
Female	2
	29%

The Strategic Report, as set out on pages 10 to 51, has been approved by the Board.

On behalf of the Board

PAUL BOULTON
COMPANY SECRETARY & GENERAL COUNSEL

23 February 2017

GOVERNANCE

CONTENTS

CORPORATE GOVERNANCE

CHAIRMAN'S LETTER TO SHAREHOLDERS

Dear Shareholder

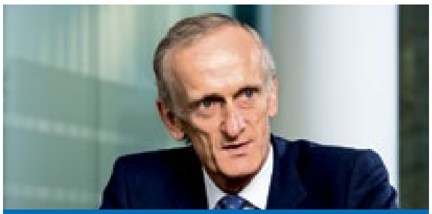
This year, the Board has continued to evolve with the aim of ensuring it aligns with the Company's strategic and governance needs. I am pleased to report to you on the Board's development and activities and on some of the significant governance matters that the Board has considered during the year as follows:

- Renewed focus on safety, environment and health matters, as well as on the objectives and targets for this key area, with regular updates on safety and environmental operational performance and initiatives undertaken to raise awareness of safety and improve safety culture globally. For example, on gas safety, this included reviewing the outcomes of global surveys, associated action plans and a gas safety initiative.
- Support to the Executive Committee on the implementation of the execution priorities arising from the strategic review. At its meetings in June and July 2016, the Board received dedicated presentations on, and had discussions with management representing, each of the global business units. In relation to these execution priorities, the Board agendas also included focused sessions on talent, technology, sales effectiveness and the external impacts on the Company such as competitors and changes in key customers across the global business units, together with the macro-economic environment.
- Selection and appointment of Helen Bunch and Laurence Mulliez as non-executive Directors, both having joined during 2016. With these appointments, progress has been made in ensuring that future refreshment will be planned to ensure continuity of knowledge and experience.
- Oversight of the induction of Helen Bunch and Laurence Mulliez to ensure their integration and rapid and effective contribution, with a focus on increasing their knowledge of the Group and its markets.
- Oversight of the induction of Peter Turner following his appointment as Chief Financial Officer in April 2016, and the continued induction of Pete Raby, who was appointed in August 2015 as Chief Executive Officer. Collectively, the Board has focused on providing support to Peter and Pete as necessary, together with several newly appointed members of senior management, such as the Head of Internal Audit, the Group Financial Controller and the Group Human Resources Director, all of whom are external appointments.
- Visits to different sites alongside scheduled Board meetings which afforded Directors a close insight into our businesses and enabled them to meet local management and to hear more on market trends, product development, innovation and operations. In March 2016, the Board visited sites in China relating to the Company's Seals and Bearings, Technical Ceramics and Thermal Ceramics businesses and also a customer site. The Board meeting in September 2016 was held at the Technical Ceramics site in Stourport, UK and included a tour of operations and of the Structural Ceramics Centre of Excellence. In November 2016, the Board meeting was held at the Advanced Ceramics and Metals site in Rugby, UK and again included a site tour.
- Review of the outputs from the Board performance evaluation which provided a number of useful insights into the Board and its Committees on potential areas for improvement. These are explained further below under the section 'Performance evaluation'.
- Support to the Audit Committee's review of internal controls and risk management processes, which is described in more detail in the Report of the Audit Committee.
- Review of how previously approved capital expenditure projects were implemented and any lessons learned, including operational and financial performance against plan, so as to promote sound decision-making in relation to future proposals.

2017 will be another progressive year when we will look to further enhance our effectiveness as a Board in line with the strategic direction and governance aspirations of the Group.

ANDREW SHILSTON
CHAIRMAN

BOARD OF DIRECTORS



ANDREW SHILSTON
CHAIRMAN

PETE RABY
CHIEF EXECUTIVE OFFICER

PETER TURNER
CHIEF FINANCIAL OFFICER

DOUGLAS CASTER
SENIOR INDEPENDENT DIRECTOR

ANDREW SHILSTON
NON-EXECUTIVE CHAIRMAN (AGED 61)

Appointed: May 2012 (Chairman Designate; August 2012, Chairman).

Career history: Having joined Rolls-Royce Holdings plc in 2002, Andrew was Finance Director from 2003 until his retirement in 2011 and prior to this he was the Finance Director at Enterprise Oil plc. Andrew was previously a non-executive Director of Cairn Energy plc, where he chaired the Audit Committee.

Additional appointments: Senior Independent Director of BP p.l.c.; non-executive Director and Chairman of Audit and Risk Committee of Circle Holdings plc.

Committees: Nomination (Chair) and Remuneration.

PETE RABY
CHIEF EXECUTIVE OFFICER (AGED 49)

Appointed: August 2015.

Career history: Pete joined Morgan Advanced Materials in August 2015 as Chief Executive Officer. Before joining Morgan Advanced Materials, Pete was President of the Communications and Connectivity sector of Cobham plc. Pete held a number of senior positions at Cobham over a nine-year period. Prior to Cobham, Pete was a partner at McKinsey & Company, specialising in the aerospace, defence and power and gas sectors. Pete has a PhD in satellite navigation and an M.Eng from the Department of Electronic and Electrical Engineering at the University of Leeds.

Additional appointments: None.

Committees: Nomination.

PETER TURNER
CHIEF FINANCIAL OFFICER (AGED 46)

Appointed: April 2016.

Career history: Peter joined Morgan Advanced Materials in April 2016 as Chief Financial Officer. Before joining Morgan Advanced Materials, Peter was Finance Director at Smiths Group plc from 2010 to 2015. Prior to Smiths, Peter was Finance Director from 2007 to 2009 at Venture Production plc, before it was acquired by Centrica plc in 2009. From 1995 to 2006, Peter held several positions at The BOC Group plc, including Finance Director of the Industrial & Special Products division. Peter started his career as an auditor at Price Waterhouse. He holds a degree in chemistry from Oxford University.

Additional appointments: None.

Committees: None.

DOUGLAS CASTER CBE
SENIOR INDEPENDENT DIRECTOR (AGED 63)

Appointed: February 2014.

Career history: Bringing to the Board broad experience as an electronics systems engineer and company director, Douglas started his career with the Racal Electronics Group in 1975, before moving to Schlumberger in 1986 and then to Dowty as Engineering Director of Sonar & Communication Systems in 1988. In 1992, he became Managing Director of that business and, after participating in the management buy-out that formed Ultra Electronics, joined the Board in October 1993. In April 2000, he became Managing Director of Ultra's Information & Power Systems division. In April 2004 he was appointed Chief Operating Officer and became Chief Executive in April 2005. He was appointed Deputy Chairman in April 2010 and became Chairman of Ultra in April 2011.

Additional appointments: Chairman of Ultra Electronics Holdings plc and Chairman of Metalysis Limited.

Committees: Audit, Nomination and Remuneration (Chair).

HELEN BUNCH
NON-EXECUTIVE DIRECTOR

HELEN BUNCH
NON-EXECUTIVE DIRECTOR (AGED 51)

Appointed: February 2016.

Career history: At the start of her career, Helen spent 17 years working in global businesses serving a wide variety of industries from automotive to household products: 11 years with ICI and the remainder with a successor company, Lucite International Ltd. In 2006, Helen joined Wates Group, the privately-owned construction and property services company, as Group Strategy Director and became Managing Director of Wates Retail Limited in January 2011. Since 2015, Helen has been Managing Director of Wates Smartspace Limited, the enlarged business following a merger with another Wates company and the acquisition of a facilities management business.

Additional appointments: Managing Director of Wates Smartspace Limited, Governor of the Westminster Academy (Westbourne Green).

Committees: Audit, Nomination and Remuneration.

LAURENCE MULLIEZ
NON-EXECUTIVE DIRECTOR

LAURENCE MULLIEZ
NON-EXECUTIVE DIRECTOR (AGED 51)

Appointed: May 2016.

Career history: Laurence started her career with Banque Nationale de Paris in 1988 before moving to M&M Mars Inc. in 1992 and then Amoco Chemical Inc. in 1993, which was acquired by BP p.l.c. in 1998. She spent a further 11 years at BP in a variety of roles including Chief Executive of Castrol Industrial Lubricants and Services. Following BP, Laurence became Chief Executive of independent power producer Eoxis UK Limited from 2010 to 2013.

Additional appointments: Chairman of Voltalia S.A., non-executive Director and Chair of Audit Committee of Aperam S.A., and non-executive Director of SBM Offshore N.V. and UK Green Investment Bank plc.

Committees: Audit, Nomination and Remuneration.

ROB ROWLEY
NON-EXECUTIVE DIRECTOR

ROB ROWLEY
NON-EXECUTIVE DIRECTOR (AGED 67)

Appointed: February 2014.

Career history: Rob joined Reuters in 1978 where he held various senior management positions, including Finance Director from 1990 to 2000. He retired as a director of Reuters Group plc in December 2001. Rob was previously Deputy Chairman of Cable & Wireless plc, and a non-executive Director of Intu Properties plc, Prudential plc and Taylor Nelson Sofres plc.

Additional appointments: Non-executive Director, Chairman of the Audit Committee and Senior Independent Director of Taylor Wimpey plc; non-executive Director and Senior Independent Director of Moneysupermarket.com Group PLC; non-executive Director, Chairman of the Audit Committee and Senior Independent Director of Greene King plc; non-executive Director and Chairman of the Audit, Risk and Security Committee of Camelot UK Lotteries Limited.

Committees: Audit (Chair), Nomination and Remuneration.

CORPORATE GOVERNANCE
continued

Statement of compliance with the UK Corporate Governance Code

Throughout the year ended 31 December 2016 the Company has been in compliance with the relevant provisions of the September 2014 version of the UK Corporate Governance Code (the 'Code') which applies to the 2016 financial year.

As reported in the Report of the Audit Committee on pages 62 to 66, the Group has not put the external audit contract out to tender during the last 10 years in accordance with provision C.3.7 of the Code. The external auditor was last appointed in 2001. The Board decided to take advantage of the Financial Reporting Council (FRC)'s guidance on transitional arrangements which allowed the Group to defer a formal third-party tender process until at least the end of the external audit engagement partner's tenure in 2018. Further information on the timing of a competitive tender process is set out on page 66 of the Report of the Audit Committee.

The main principles of the Code focus on Leadership, Effectiveness, Accountability, Remuneration and Relations with Shareholders. This statement describes how the Company has applied the main principles of the Code. It should be read in conjunction with the Strategic Report on pages 10 to 51 and the other sections of the Directors' Report on pages 52 to 95.

The Code, together with the April 2016 edition of the Code which the Company will report against from the 2017 Annual Report onwards, is published by the FRC and is available on its website **www.frc.org.uk**.

Leadership

The role of the Board

The Board is collectively responsible to the Company's shareholders for the long-term success of the Company. The Board is satisfied it has met the Code's requirements for its effective operation. Following the strategic review, the Company has set its strategic aims and execution priorities, and delivery against these has been reviewed by the Board on several occasions during the year. The Board has ensured that there is a framework of prudent and effective controls which enable risk to be assessed and managed. The Board sets the Company's values and standards, which are contained in the Core Values Statement and Ethics Policy, both of which are referred to on pages 38 to 40 of the Corporate Responsibility section of this Report.

Matters reserved

There is a schedule of matters specifically reserved for the Board, including: setting the Group's strategic aims and objectives; approving significant contractual commitments (including the acquisition or disposal of companies/businesses, and treasury and intellectual property transactions); and the review of the effectiveness of risk management processes, major capital expenditure and corporate responsibility. The schedule of matters reserved is available to view on the Company's website. Following the strategic review, the Board has reviewed the schedule of matters reserved and limitations of authority within the Group to ensure they remain appropriate.

Delegation of authority

The Board has delegated responsibility for certain matters to three principal committees, namely the Audit, Nomination and Remuneration Committees. The memberships, roles and activities of these Committees are described in separate reports: the Report of the Audit Committee is set out on pages 62 to 66; the Report of the Nomination Committee is set out on pages 67 to 69; and the Remuneration Report is set out on pages 70 to 91. The full terms of reference of the Board Committees are available on the Company's website.

The Board delegates the day-to-day management of the Group and operational matters to the Chief Executive Officer and the Chief Financial Officer. The executive Directors together with the Group Human Resources Director, the Company Secretary & General Counsel, the Director of Strategic Programmes, the Chief Technology Officer, and the two Divisional Presidents, form the Executive Committee.

The Board has delegated authority for certain other matters including routine approvals to a General Purposes Committee, which meets as required and at which a non-executive Director must be present.

Following the implementation of the EU's Market Abuse Regulation (MAR) in the UK on 3 July 2016, the Board has reviewed the terms of reference of the Disclosure Committee and that Committee has met several times in the year to discharge its duties as required by MAR, such as the consideration of whether the Company was in possession of any inside information. The membership of the Disclosure Committee comprises all the Directors and the Company Secretary.

Board meetings

In 2016, the Board met formally on eight occasions. An indication of the matters dealt with at these meetings is set out below.

During 2016, there have been several dedicated sessions on Group strategy, firstly to determine the long-term strategy and agree execution priorities, and then to monitor progress on achieving these execution priorities. As part of this review, the Board considered the key drivers of future organic growth, assessed the competitor and customer landscape and held detailed reviews of the strategic plans of each of the global business units.

Attendance at meetings

The attendance of each Director at Board and Audit, Remuneration and Nomination Committee meetings (based on membership of those Committees, rather than attendance as an invitee) is set out in the table below.

	Board		Audit Committee		Remuneration Committee		Nomination Committee	
Director	Eligible to attend	Attended	Eligible to attend	Attended	Eligible to attend	Attended	Eligible to attend	Attended
Andrew Shilston[1]	8	8	–	–	4	4	2	2
Pete Raby	8	8	–	–	–	–	2	2
Peter Turner[2]	6	6	–	–	–	–	–	–
Kevin Dangerfield[3]	2	2	–	–	–	–	–	–
Andrew Hosty[4]	0	0	–	–	–	–	–	–
Helen Bunch[1, 5, 9]	6	5	4	3	3	3	1	1
Douglas Caster[1]	8	8	5	5	4	4	2	2
Victoire de Margerie[1, 6]	0	0	0	0	0	0	0	0
Laurence Mulliez[1, 7, 9]	6	4	4	2	3	3	1	1
Andrew Reynolds Smith[1, 8, 10]	3	3	1	1	2	1	1	1
Rob Rowley[1]	8	8	5	5	4	4	2	2

1. Indicates a Director deemed by the Board to be independent or, in the case of the Chairman, independent on appointment.
2. Appointed to the Board 11 April 2016.
3. Stepped down from the Board 31 March 2016.
4. Stepped down from the Board 8 January 2016.
5. Appointed to the Board 24 February 2016.
6. Stepped down from the Board 4 February 2016.
7. Appointed to the Board 6 May 2016.
8. Stepped down from the Board 6 May 2016.
9. Due to prior commitments which were already in place at the time they were appointed to the Board, Helen Bunch was unable to attend the September Board and Audit Committee meetings and Laurence Mulliez was unable to attend the July and September Board and Audit Committee meetings, but Laurence Mulliez did attend the site tour and presentation and meeting with local management that was arranged to coincide with the September programme of meetings.
10. Andrew Reynolds Smith was unable to attend the May Remuneration Committee meeting immediately prior to his departure from the Board.

Should a Director have concerns about the running of the Company or a proposed action which are not resolved, their concerns would be recorded in the Board minutes. An appropriate Directors' and Officers' liability insurance policy is in place.

Summary of the Board's work during the year:

- Review of environmental, health and safety performance, including actions to identify and mitigate catastrophic risk such as hydrogen safety, and monitoring the launch of the EHS Framework.
- Review of business strategy and monitoring of progress on delivery of the execution priorities.
- Receipt of in-depth business and strategy briefings from each of the global business units, in the context of delivering the new strategy.
- Approval of the appointment of Peter Turner as Chief Financial Officer, and of Helen Bunch and Laurence Mulliez as non-executive Directors.
- Review of technology, intellectual property and know-how as part of the review of the technology strategic priority including plans for the establishment of two new research and development Centres of Excellence, increasing investment in technology and engineering, and bringing sharper focus to new product development processes and priorities.
- Review of talent strategy, another execution priority, including ensuring there are capable leaders to support the development of the business and supporting a new leadership framework scheduled for 2017 and a talent framework for materials science.
- Review and approval of the Group's half-year results, trading statements and preliminary announcement of the final results.
- Approval of the 2017 budget.
- Approval of major capital expenditure and review of major capital investment projects.
- Approval of the private placement debt refinancing.
- Review of the Group's principal risks.
- Review and approval of the UK and US defined benefit pension strategy.
- Receipt of a presentation from external counsel on, and review of procedures and policies in relation to, the EU's Market Abuse Regulation effective from 3 July 2016.
- Consideration of major shareholders' views on the Group's performance and prospects.
- Review of the Group's IT strategy and performance, including progress on implementation of an enterprise resource planning system in the USA.
- Review of the Group's treasury arrangements, including risk and policy.
- Review of outcomes of the Board performance evaluation and agreement on actions for further improvement, as well as monitoring of progress against actions arising from the 2015 performance review.

CORPORATE GOVERNANCE
continued

Chairman and Chief Executive Officer

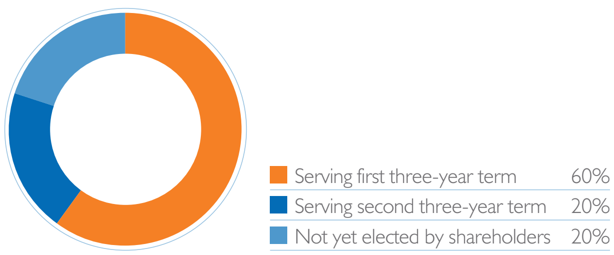
The roles of Chairman and Chief Executive Officer are separate, clearly established, set out in writing and agreed by the Board.

The Chairman is responsible for the leadership and effectiveness of the Board, in order to ensure effective stewardship is exercised over the Group's activities, including: setting the Board's agenda and ensuring sufficient time is available for all agenda items, particularly regarding strategic issues; promoting a culture of open debate and constructive challenge resulting in sound decision-making; facilitating effective contributions by the non-executive Directors; and ensuring constructive relationships between executive and non-executive Directors. The Chief Executive Officer is responsible for the management of the Group, including the delivery of the Group's business plan, the formulation and implementation of strategy, chairing the Executive Committee and ensuring the implementation of the Group's policies, all within the authorities delegated by the Board. The Chairman and Chief Executive Officer maintain a strong working relationship and open dialogue, thus ensuring coherent leadership of the Group.

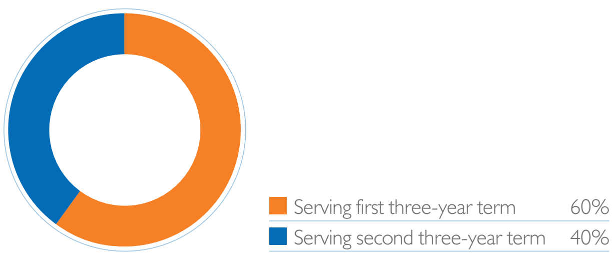
Chairman

On appointment as Chairman on 1 August 2012, Andrew Shilston met the independence criteria set out in the Code.

NON-EXECUTIVE DIRECTOR TENURE
%
As at 31 December 2016



As at 31 December 2015



Non-executive Directors

Non-executive Directors are appointed for a term of three years, subject to annual re-election in accordance with the Code. The independence, commitment and effectiveness of any non-executive Director who has served for two three-year terms is subject to rigorous review prior to reappointment for a further three-year term.

Helen Bunch and Laurence Mulliez were appointed to the Board on 24 February 2016 and 6 May 2016 respectively.

Victoire de Margerie and Andrew Reynolds Smith stepped down from the Board on 4 February 2016 and 6 May 2016 respectively, both due to an increase in other commitments.

The Chairman and the non-executive Directors met without the executive Directors present on a number of occasions during the year. In addition, the Senior Independent Director and the other non-executive Directors met without the Chairman present.

Effectiveness

Board balance and independence

The size, structure and composition of the Board were reviewed during the year, taking into account succession planning and the need to progressively refresh the membership and update the knowledge and range of skills and experience of the Board. The Board is keen to ensure that a balance of views and outlook is available and that the right decisions are made. The Board comprises members with a breadth of professional and sector experience and who come from various backgrounds; it has Directors with skills in the areas of strategy, finance and technology, as well as global commercial experience, and working knowledge of other Boards or executive roles. With regard to our new non-executive members, Helen Bunch brings significant experience of driving business performance and building businesses in new markets, and offers the Board a valuable external executive perspective, while Laurence Mulliez has significant experience in growing, simplifying and unifying complex international industrial manufacturing businesses.

Further to the non-executive Director appointments outlined above, Peter Turner was appointed to the Board as an executive Director on 11 April 2016. Further information on the processes used to appoint the new Directors is included in the Nomination Committee Report on pages 67 to 69.

Therefore, following the departures of Andrew Hosty, Victoire de Margerie, Kevin Dangerfield and Andrew Reynolds Smith during 2016, as at 23 February 2017 the Board comprises: Andrew Shilston, Chairman; Pete Raby, Chief Executive Officer; Peter Turner, Chief Financial Officer; and four independent non-executive Directors, namely Helen Bunch, Laurence Mulliez, Rob Rowley and Douglas Caster, Senior Independent Director. This is considered to be the right number of members given the scale of the Group's operations at this time. Biographies of the Directors in post at the date of this Report, including details of their other main commitments, are set out on pages 54 and 55.

Throughout the year, the Company complied with the requirement of the Code that at least half the Board, excluding the Chairman, should comprise non-executive Directors determined by the Board to be independent. In addition to considering the factors set out in the Code, the Board's assessment of a non-executive Director's independence and effectiveness covers their total number of commitments and any relationships with major suppliers and with charities receiving material support from the Company.

BOARD BALANCE
%
As at 31 December 2016

Executive Directors	29%
Independent non-executive Directors	57%
Chairman	14%

As at 31 December 2015

Executive Directors	38%
Independent non-executive Directors	50%
Chairman	12%

Commitment

Prior to undertaking an additional external role or appointment, the Chairman and the non-executive Directors are asked to confirm that they will continue to have sufficient time to fulfil their commitments to the Company.

There were no changes to the Chairman's other significant commitments during the year.

Information and support

The Company Secretary, with the Chairman, is responsible for ensuring the Board has full and timely access to all appropriate information to enable it to discharge its duties. Board papers are generally made available electronically five working days before each meeting. Non-executive Directors also receive updates and information between formal Board meetings. The recent appointments of both non-executive and executive Directors to the Board, together with the strategic review and new organisational structure, have led to changes in the way information is presented to the Board.

The Directors have access to the advice and services of the Company Secretary who, with the Chairman, is responsible for ensuring that Board procedures are followed and that applicable rules and regulations are observed. A procedure is in place to enable the Directors to seek independent professional advice at the Company's expense in connection with their duties as Directors.

Induction and professional development

New Directors receive a full, formal and tailored induction on joining the Board. A new Director's experience and background is taken into account in developing a tailored programme. Before and after his appointment to the Board on 11 April 2016, Peter Turner received comprehensive briefings to supplement the information on the Group's business provided during recruitment. Materials included further information on the business and its products and markets, brokers' reports on the Group, the Company's corporate governance structure and processes and key Group policies. The intensive induction programme included meetings with investors, analysts and the external auditor, and meetings with other executives and functional heads on governance, responsible business, key risks, human resources and environment, health and safety, together with numerous visits to operational sites globally and meetings with Divisional and operational management and personnel.

Helen Bunch and Laurence Mulliez also received tailored induction programmes comprising similar briefing materials and meetings to those arranged for Peter Turner, and also including a meeting with the Company's remuneration consultants. They have visited a number of operational sites and further visits are scheduled for 2017.

All non-executive Directors have access to management and employees at all levels and are encouraged to visit operational sites. Each year at least one Board meeting is held at an operating facility. In 2016, Board visits were made to China, and to the Rugby and Stourport sites in the UK, including the Structural Ceramics Centre of Excellence.

During 2016, the Board received briefings on the Group's tax strategy and developments in tax regulation, a presentation on the EU's Market Abuse Regulation and briefings on developments in corporate governance and remuneration. The Chairman considers the individual training and development needs of each Director. The Company Secretary keeps the suitability of external courses under review and facilitates the ongoing training and development of all Directors as necessary.

CORPORATE GOVERNANCE
continued

Performance evaluation

Following the externally facilitated review conducted in 2015, the Board conducted an internal Board performance evaluation in 2016, led by the Chairman, with the aim of identifying ways to improve effectiveness.

The process for the evaluation of the Board and its Committees was as follows:

- Completion by all Board members of tailored questionnaires which took into account the output from the 2015 performance evaluation process, the current dynamic of the Board and its current priorities.
- Report produced summarising the results of the questionnaires and highlighting any significant changes from the 2015 evaluation.
- Findings presented to the Chairman.
- The Chairman met each Board member to discuss the outputs from the report.
- The report was circulated to the Board, which had a full discussion on the results and comments at its December meeting and subsequently agreed an action plan.

The main aspects of the Board's work which the Board believes offer scope for further development relate to implementation of the Group's strategic review and ensuring that the Board works effectively in a time of significant change, and include:

- Assisting the non-executive Directors appointed during 2016 to increase their knowledge and understanding of the business and industry sector to enable them to contribute to the fullest extent at Board meetings.
- More effective use of the time set aside for scheduled meetings to allow greater opportunity for non-executive Directors to meet outside Board and Committee meetings in order to strengthen understanding and relationships on the Board.
- Continued focus on succession planning and developing leaders, which was identified as a key issue during 2016. A framework of debates and reviews has been scheduled for Board meetings in 2017 in order to support the executive management in delivering against this strategic execution priority.
- Further improvements to the format and structure of reports to the Board to support the Board in its monitoring of the performance of the Group.

Actions were taken during the year to implement the recommendations made following the 2015 Board performance review and, in the case of execution of the strategic review and focus on business leadership, the work is ongoing.

RECOMMENDATIONS FROM THE 2015 BOARD PERFORMANCE REVIEW AND ACTION IMPLEMENTED DURING 2016

Recommendations from 2015	Action taken/progress made during 2016
Strategy – challenging, supporting and monitoring the development and execution of the ongoing strategic review, with the need to increase the frequency of discussions on strategy and to effectively monitor execution against it.	Progress against the strategic execution priorities has been regularly reviewed by the Board. The global business unit strategies were reviewed at the June and July Board meetings, with other talent, technology and sales effectiveness reviews during the year and a strategy 'wrap-up' session in November.
Business leadership – an increasing focus on talent management as a fundamental part of executing the Group's strategic priorities.	Talent management strategy and resource were discussed at the May and June Board meetings, with further sessions scheduled in 2017 following the appointment of a new Group Human Resources Director towards the end of 2016.
Board dynamics – a focus on ensuring that the Board operates effectively, with the right mix of skills, against a background of continuing Board evolution and a period of significant change in the business.	Board effectiveness is monitored by the Chairman and, as appropriate, the Senior Independent Director over the course of the year. There has been good progress in relation to Board focus, level of constructive challenge and dynamics following the recent changes in Board composition.

The non-executive Directors, led by Douglas Caster, the Senior Independent Director, met without the Chairman present to evaluate the Chairman's performance during the year, taking into account the views of the executive Directors.

Conflicts of interest

The Board has procedures in place to address the requirements of the Companies Act 2006 concerning the duty of the Directors to avoid conflicts of interest. Accordingly, the Directors are required to:

- Disclose proposed outside interests before they are accepted in order to enable a prior assessment of any actual or potential conflict.
- Disclose without delay any situation which gives rise to an actual or potential conflict.

The Board reviews the outside interests of the Directors and any conflicts disclosed and authorisations annually. Should an actual or potential conflict be identified, the Board considers whether to authorise the situation in accordance with the Company's Articles of Association and, if so, the terms of any authorisation. In the event of an actual conflict arising, the Director concerned is to notify the Chairman (the Chairman would notify the Senior Independent Director) and the Director would be excluded from the relevant information, debate and decision.

Andrew Reynolds Smith, non-executive Director, who stepped down from the Board on 6 May 2016, was appointed CEO of Smiths Group plc in September 2015. As Morgan's Seals and Bearings business is a supplier to John Crane, a division of Smiths Group, there was a conflict of interest. The Board authorised the situational conflict, subject to the Company Secretary ensuring Andrew Reynolds Smith did not receive information relating to the Seals and Bearings business and that he was excluded from any discussion or decision relating to Seals and Bearings. On joining in April 2016, Peter Turner held shares in Smiths Group plc arising as a result of his previous employment with that company. These shares were sold in July 2016.

Neither of the current executive Directors holds any external non-executive directorships of other publicly-quoted companies.

Accountability

Financial reporting

A summary of the statement of Directors' responsibilities in respect of the Annual Report and the financial statements is set out on pages 94 and 95 and the going concern and viability statements are set out in the Strategic Report on page 34.

Business model and strategy

Details of the Group's business model, how it is working to generate and sustain long-term value and details of the Board's strategy for ensuring the Group meets its objectives are set out in the Strategic Report on pages 10 to 51.

Internal control

The Board has overall responsibility for establishing and maintaining a sound system of internal control to safeguard shareholders' investment and the Group's assets and for reviewing the effectiveness of this system. The system of internal control, and the role of the Audit Committee in ensuring its effectiveness, are set out in the Report of the Audit Committee on pages 62 to 66.

Relations with shareholders

During 2016, the Chairman and other non-executive Directors attended results presentations and other investor events. This provided opportunities to meet institutional shareholders and other attendees and to develop an understanding of their views.

Following the announcement of the Group's results and after other significant statements and presentations, investor opinion is canvassed and any feedback is made available to the Board. In addition, the Board is provided with brokers' reports and feedback from any shareholder meetings on a regular basis.

The Remuneration Committee consulted shareholders in January 2016 on changes to the Directors' Remuneration Policy introduced during 2016. There was further follow-up with institutional shareholder representative bodies in April 2016 to update them on the final proposals put to the 2016 AGM, commenting on the main issues which emerged from the consultation and noting that there was one resultant change to the original proposal, namely an increase in the executive shareholding guidelines.

To help facilitate dialogue with shareholders, the Investors section of the Company's website includes details of Regulatory News Service announcements, press releases, presentations, webcasts and other relevant Company and shareholder information.

Constructive use of the AGM

The AGM is normally attended by all members of the Board and by a representative of the external auditor. At the AGM held in May 2016, the Chief Executive Officer made a short business presentation. Shareholders are invited to ask questions during the meeting and have the opportunity to meet the Directors and other members of senior management before and after the formal meeting. The results of the proxy voting on all resolutions are released to the London Stock Exchange and published on the Group's website as soon as practicable after the meeting.

Information on share capital and other matters

The information about share capital required to be included in this statement can be found on pages 92 to 95 in the 'Other Disclosures' section.

REPORT OF THE AUDIT COMMITTEE

THIS REPORT GIVES AN OVERVIEW OF THE RESPONSIBILITIES OF THE AUDIT COMMITTEE AND HOW IT DISCHARGED THESE DURING 2016, TOGETHER WITH INFORMATION ON ITS MEMBERSHIP AND GOVERNANCE.

ROB ROWLEY
COMMITTEE CHAIRMAN

COMMITTEE MEMBERS

Rob Rowley (Chairman)
Helen Bunch[1]
Douglas Caster
Laurence Mulliez[2]
Victoire de Margerie[3]
Andrew Reynolds Smith[4]

1. From appointment on 24 February 2016.
2. From appointment on 6 May 2016.
3. Until resignation as a Director on 4 February 2016.
4. Until resignation as a Director on 6 May 2016.

All members of the Committee are independent non-executive Directors and Rob Rowley, the Chairman of the Committee, has the requisite financial experience.

Chairman's introduction

I am pleased to present the Report of the Audit Committee for 2016. It has been a busy year for the Committee as we have carried out our primary function of ensuring the integrity of the financial reporting and audit processes and the maintenance of sound internal control and risk management processes within the context of the implementation of the Group's strategic review and a new executive management team. The Committee continues to respond to the continuing challenges of ensuring consistent and robust financial controls across a global business and to address the changes in governance and reporting requirements.

I would like to highlight a number of key areas of focus for the Committee in 2016, as follows:

- The Committee had oversight of a review of the Internal Audit function. This included a comprehensive review of the scope, purpose and resource of the function, its programme of work and the way internal audit findings are presented.
- We continued to monitor our internal controls closely and received a presentation from each Division on their internal controls and risk management. The presentations were delivered by the Divisional Finance Directors, accompanied by their respective Divisional Presidents, which gave the Committee the opportunity to ask questions face-to-face and gain a real insight into the internal control environment and risk management approach of each Division. Where issues were reported the Committee gave full consideration to the cause, potential or actual impact and the response by management.
- The Committee received progress updates on a review by management of the Group's approach to risk management and internal controls which commenced in 2015. The review resulted in implementation of certain changes to the control framework and processes, including a review of Group policies and processes to strengthen the second line of defence, and will continue to evolve as changes are embedded into the businesses.
- The Committee reviewed the key accounting judgments made by executive management, taking into account the views of the external auditor. The key areas of significant judgment were in respect of specific adjusting items, intangible asset impairment testing, provisions and contingent liabilities and tax balances, and further details on these in relation to the 2016 financial statements are set out on page 64 of this Report.
- The Committee reviewed and confirmed the appropriateness of changes to financial reporting to reflect the new Group structure comprising two global Divisions and the new reporting structure of six global business units in the financial statements.

I continue to be satisfied that the Committee is working well, is contributing effectively to the governance framework and is properly discharging its responsibilities.

ROB ROWLEY
COMMITTEE CHAIRMAN

Meetings

The Audit Committee met five times during the year. At the end of most meetings the non-executive Directors who are members of the Committee also meet the external auditor, the Head of Internal Audit and the Head of Responsible Business & Compliance without the executive Directors or other members of management present. Between meetings the Chairman of the Audit Committee keeps in contact with the Chairman of the Board, the Chief Executive Officer, the Chief Financial Officer, the external auditor and the Head of Internal Audit as necessary.

Information and support

The Committee may request the attendance at meetings of any Director or employee as may be considered appropriate by the Committee. The Chairman of the Board, the Chief Executive Officer, the Chief Financial Officer, the Head of Internal Audit, the Group Financial Controller, the Head of Responsible Business & Compliance and senior representatives of the external auditor attended meetings by invitation.

The Committee identifies and ensures that it receives the information it needs to enable it to fulfil its responsibilities. This is complemented by annual presentations made by the Divisional Presidents and Divisional Finance Directors on the internal control environment and risk management within their respective Divisions. Training and development information is made available to the members of the Audit Committee when appropriate.

Audit Committee terms of reference

The Audit Committee has a clear set of responsibilities and these are set out in its terms of reference and agreed by the Board. These terms of reference were reviewed and updated during the year to ensure that they are wholly compliant with the September 2014 version of the UK Corporate Governance Code which applied to the 2016 financial year. They are available on the Company's website and are summarised below:

- Monitoring and making appropriate recommendations to the Board with regard to the financial reporting process, the integrity of the financial statements of the Group, preliminary announcements of results, half-year reports and any formal announcements relating to the Group's financial performance, and reviewing significant financial reporting judgments contained in them.
- Reviewing accounting policies used by the Group and their consistent application across the Group.
- Reviewing whether the Group has followed appropriate accounting standards and made appropriate estimates and judgments, taking into account the views of the external auditor.
- Reviewing, prior to approval by the Board, the assessment of whether it is appropriate to adopt the going concern basis of accounting in preparing the financial statements and the identification of material uncertainties to the ability to do so over a period of at least 12 months from the date of approval.
- Reviewing the content of the Annual Report and Accounts and advising the Board on whether, taken as a whole, it is fair, balanced and understandable and provides the information necessary for shareholders to assess the Company's position and performance, business model and strategy.
- Agreeing the processes to enable the ongoing monitoring and review of the scope, adequacy and effectiveness of the Group's internal controls and risk management systems.
- Carrying out, at least annually, a review of the Group's internal controls and risk management systems, including procedures for identifying and assessing principal risks to the Group's business and the management and mitigation of those risks.
- Reviewing, prior to approval by the Board, the assessment of whether there is a reasonable expectation, taking the Group's position and principal risks into account, that the Group will be able to continue in operation and meet its liabilities as they fall due over the period covered by that assessment, prior to approval by the Board.
- Reviewing and monitoring the Group's whistleblowing arrangements and systems and controls for the prevention of bribery.
- Monitoring and reviewing the effectiveness of the Group's Internal Audit function, approving the remit of the function and ensuring it has adequate standing and is free from management or other restrictions.
- Making recommendations to the Board, for it to put to shareholders for their approval at the AGM, in relation to the appointment, reappointment and removal of the external auditor and the approval of the remuneration and terms of engagement of the external auditor.
- Subject to the current transitional provisions, ensuring that the audit services contract is put out to competitive tender every 10 years, supervising any such process and overseeing the selection process for a new auditor.
- Reviewing and monitoring the external auditor's independence and objectivity.
- Reviewing the effectiveness of the process for the statutory audit of the annual consolidated accounts, taking into consideration relevant UK professional and regulatory requirements.
- Developing and implementing the policy on the engagement of the external auditor to supply non-audit services, taking into account relevant ethical guidance regarding the provision of non-audit services by the external auditor.
- Reporting to the Board, identifying any matters in respect of which it considers that action or improvement is needed and making recommendations as to the steps to be taken.

The Committee has the authority, in accordance with its terms of reference, to investigate any matters and may obtain external advice at the cost of the Company, but did not do so during the year.

Main areas of work in 2016

During 2016, in addition to the areas of work outlined in the Chairman's letter above, the Committee:

- Reviewed the Group's 2016 half-year and full-year statements prior to Board approval.
- Made a recommendation to the Board that it is appropriate to prepare the accounts for the year on a going concern basis.
- Reviewed the methodology proposed for preparation of the Company's first viability statement (see page 34 of the Strategic Report) and agreed an appropriate time period for that statement and a reasonable financial 'base case' for that period, together with an in-depth evaluation of the risks affecting the financial viability of the Company over that timeframe, all for recommendation to the Board.

REPORT OF THE AUDIT COMMITTEE
continued

- In response to a letter from the Financial Reporting Council (FRC), considered the use of 'Alternative Performance Measures' and the accounting treatment of R&D in the Annual Report.
- Reviewed the scope of the external audit, and confirmed the external auditor's terms of engagement and fee structure.
- Assessed the effectiveness of the external audit process and all aspects of the service provided by the external auditor.
- Monitored the level of non-audit work of the external auditor, which in 2016 included services amounting to £0.2 million, mainly in connection with tax services.
- Approved a revised policy on the provision of non-audit services by the external auditor to take effect from 2017.
- Reviewed the controls and assurance processes that are in place to mitigate the Group's key risks.
- Reviewed the effectiveness of, and received reports from management on, the Group's Internal Audit and risk management systems and monitored the implementation of enhanced governance processes to monitor assurance and audit work to the Group's governance, risk and compliance plans, including a review of Group policies.
- Reviewed and approved the plan, work and overall effectiveness of the Internal Audit function, monitored its progress against the plan and ensured that the appropriate resource was deployed within the function.
- Reviewed the systems of internal controls of, and risks managed in, the Divisions.
- Reviewed the Group's whistleblowing process and related procedures and policies.
- Reviewed material litigation.
- Reviewed compliance with and implementation of the Group's policies.
- Reviewed the status of the Group's export controls compliance programme.
- Reviewed the status of the Group's third-party representative risk.

Public reporting

The Committee, as requested by the Board, considered the Code requirement for the Board to make a statement on whether the Annual Report and Accounts is fair, balanced and understandable. The Committee approached this as follows:

- Considered the questions which need to be answered in order to evaluate whether the Annual Report and Accounts meets the fair, balanced and understandable test.
- Reviewed the methodology used to construct the narrative sections of the Annual Report.
- Reviewed the disclosure judgments made by the authors of each section and considered the balance of good and bad news in the Annual Report.
- Received confirmation from external advisers that all regulatory requirements are satisfied.
- Received confirmation of verification of content from the authors of each section.
- Received confirmation from the Chief Financial Officer that the narrative reports and financial statements are consistent.
- Reviewed a first draft of the Annual Report and Accounts prior to the financial year end.
- Made a recommendation to the Board to assist the Board in determining whether it is able to make the statement on whether the Annual Report and Accounts is fair, balanced and understandable.

The significant areas of judgment considered by the Committee in relation to the 2016 financial statements, and how these were addressed, were as follows:

- Specific adjusting items
  In the consolidated income statement, the Group has again presented specific adjusting items separately in order to provide the best indication of the underlying performance of the Group, and details of the nature and quantum of the individual items are provided in note 6 to the financial statements. The Audit Committee fully considered this principle and the individual items and, taking into account guidelines issued by the FRC and peer group disclosure of similar items, concluded that it is the best way to present the Group's results.
- Intangible asset impairment testing
  The latest financial projections and other assumptions support the valuation of the intangible assets of the Group. Further information on the goodwill generally and the sensitivities associated with the impairment calculations are given in note 11 to the financial statements.
- Provisions and contingent liabilities
  The level of provisioning for known and contingent liabilities, including those arising from trading, environmental issues and litigation, is an issue where management and third-party judgments are important. These are addressed through the Committee and the Board discussing with various members of senior management the key judgments made, supported, where appropriate, by relevant external advice. KPMG LLP also reports regularly on all material provisions and contingent liabilities. During the year the Group recorded redundancy and restructuring provisions in the ordinary course of business totalling £1.1 million, which are charged against underlying earnings but are disclosed separately to provide investors with additional information to assist in their assessment of the Group's performance.
- Tax balances
  Accounting for current and deferred tax involves a range of judgments. The Committee and the Board address these issues through reporting from the Chief Financial Officer and the Director of Group Tax, supported as necessary by external professional advice.

The Committee reviewed the content of the Annual Report and Accounts and advised the Board on whether, taken as a whole, it is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy.

Internal financial control and risk management systems

The Committee assists the Board in fulfilling its responsibilities relating to the adequacy and effectiveness of the control environment and risk management systems. The Group's system of internal control has been in place for the year under review and up to the date of approval of the Annual Report.

Through the Audit Committee, the Board reviews the effectiveness of the internal control system annually and did so during the year. The system of internal control accords with the FRC's guidance on the internal control requirements of the Code. This review covered all material controls, including financial, operational and compliance controls, and risk management systems. The Audit Committee and Board receive regular risk management reports and together they ensure there are adequate internal controls in place and that they are functioning effectively.

The Directors believe that the Group's system of internal financial controls provides reasonable, but not absolute, assurance in the following areas: that the assets of the Group are safeguarded; that transactions are authorised and recorded in a correct and timely manner; and that such controls would prevent and detect, within a timely period, material errors or irregularities. The system is designed to manage, rather than eliminate, risk and to address key business and financial risks.

The main features of the Group's systems for internal control and for assessing the potential risks to which the Group is exposed are summarised as follows:

→ Control environment
The Group's control environment is underpinned by the Group's policy set. This covers financial procedures, environmental, health and safety practice, compliance (eg anti-bribery and corruption, and trade compliance) and other areas such as IT and HR. There is a Limit of Authorities Policy which describes the matters reserved for the Board and the delegations granted to the Chief Executive Officer and other executives. The Group operates various programmes to continuously improve the control environment and management of risk. These include the Group's Responsible Business Programme, which includes relevant training, the provision of systems to help businesses manage risk consistently, and reporting processes. The external ethics hotline is available to employees to raise concerns and all reports made to the ethics hotline are investigated by senior management. The Divisional Presidents and other senior operational and functional management make an annual statement of compliance to the Board confirming that, for each of the businesses for which they are responsible, the financial statements are fairly presented in all material respects, appropriate systems of internal controls have been developed and maintained and the businesses comply with Group policies and procedures or have escalated known exceptions to an appropriate level of management. In addition, the Audit Committee receives an annual presentation on business risk and internal controls for both Divisions from the Divisional President and Finance Director.

→ Financial reporting
Risk management systems and internal controls are in place in relation to the Group's financial reporting processes and the process for preparing consolidated accounts. These include policies and procedures which require the maintenance of records which accurately and fairly reflect transactions and disposal of assets, provide reasonable assurance that transactions are recorded as necessary to allow the preparation of financial statements in accordance with International Financial Reporting Standards (IFRS), and the review and reconciliation of reported data. Representatives of the businesses are required to certify that their reported information gives a true and fair view of the state of affairs of the business and its results for the period. The Audit Committee is responsible for monitoring these risk management systems and internal controls.

→ Performance monitoring
There are regular meetings of the Board and of the Executive Committee. A comparison of forecast and actual results is considered, including cash flows and comparisons against budget and the prior year. Divisional management teams also meet regularly to review performance. In addition, regular site visits are made by members of the Executive Committee.

→ Risk management
The Board has undertaken a robust annual assessment of the Group's principal risks. The identification, assessment and reporting of risks is an ongoing process carried out in conjunction with operational management and steps are taken to mitigate and manage all material risks including those relating to the Group's business model, solvency and liquidity. The Board, either directly or through the Audit Committee, receives updates on risks, internal controls and future actions from both Divisional and Group perspectives. The Executive Committee also reviews risk management and internal controls for all principal Group risks. The Group's risk management system, as set out in the Risk Management section on pages 18 to 22, supports the going concern statement on page 34 and the viability statement on page 34.

→ Risk factors
The Group's businesses are affected by a number of factors, many of which are influenced by macro-economic trends and are therefore outside the Company's immediate control, although, as described above and in the Strategic Report, the identification and management of such risks is carried out systematically. These are further discussed in the Risk Management section on pages 18 to 22.

→ Internal Audit
The Group's Internal Audit function reviews internal control and risk management processes. The Audit Committee approves the annual Internal Audit plan and receives regular reports showing the results of these audits. Actions resulting from internal audit reviews are agreed with management and the Audit Committee monitors progress against outstanding actions. The Head of Internal Audit has direct access to the Chairman of the Audit Committee and meets privately with the Audit Committee without executive management at least twice per year.

REPORT OF THE AUDIT COMMITTEE
continued

Audit Committee and the external auditor

The Audit Committee has received confirmation from KPMG LLP that its general approach and practices support the auditor's independence and objectivity in relation to non-audit services. After considering such procedures, the opinion of the Audit Committee was that the auditor's objectivity and independence were safeguarded despite the provision of non-audit services by KPMG LLP.

To help ensure the objectivity and independence of the external auditor, the policy, which applied to the 2016 financial year, implemented by the Committee for the provision of non-audit services by the external auditor is in summary as follows:

- Certain non-audit services may not be provided by the external auditor, including: the review of their own work; they may not make management decisions; their work must not create a mutuality of interest; and they may not put themselves in the position of advocate.
- Any permissible non-audit work proposed to be placed with the external auditor with a fee between £50,000 and £200,000 must be approved in advance by the Chairman of the Audit Committee. Projects in excess of £200,000 must be approved in advance by the Audit Committee. Work which includes multiple phases is treated as a single project for approval purposes.
- The prior approval of the Audit Committee is required for any non-audit work which, when added to the fees paid for other non-audit work, would total more than 80% of the audit fee.

As a result of the implementation of the EU Audit Regulation and Directive, the Committee approved a revised policy on the provision of non-audit services to apply with effect from the 2017 financial year which further reduced the scope of non-audit services the auditor may provide and reinforced the process for approval of services provided by the auditor.

In 2016, the proportion of the auditor's fees for non-audit work relative to the audit fee was 8% (2015: 14%).

The Committee's policy is to undertake an annual review of the effectiveness of the audit process and of all aspects of the external auditor's performance and independence before determining whether to undertake a formal review of the auditor, including a re-tender presentation, or whether to put the Group's audit work out to full third-party tender.

The external auditor has processes in place to safeguard its independence and has written to the Committee confirming that, in its opinion, it is independent. The Group last changed its auditor in late 2001. The external auditor rotated the partner responsible for the Group's audit work in 2008 and 2013. The Code required that FTSE 350 companies should put the external audit contract out to tender at least every 10 years. The Company followed the guidance issued by the FRC on transitional arrangements on tendering which permit KPMG LLP to continue in office until 2018 without an audit tender. Having reviewed the effectiveness of the audit process and all aspects of the service provided by the auditor, and taking account of the assurance given by the auditor as to its independence, the Committee recommended to the Board that the Group's external audit work should be put out to third-party tender no earlier than 2018 when the current audit engagement partner is due to rotate and no later than 2023, which is the latest date by which the Company must change its auditor as permitted by the EU Audit Regulation's transitional arrangements. The Company has complied with the provisions of the Competition & Markets Authority's Order on statutory audit services.

REPORT OF THE NOMINATION COMMITTEE

THE MAIN ROLE OF THE NOMINATION COMMITTEE IS TO LEAD THE PROCESS FOR BOARD APPOINTMENTS AND TO MAKE RECOMMENDATIONS TO THE BOARD ON THE APPOINTMENT OF NEW DIRECTORS HAVING CONSIDERED BOARD BALANCE IN TERMS OF COMPOSITION, SKILLS AND EXPERIENCE TO ENSURE EFFECTIVENESS.

ANDREW SHILSTON
COMMITTEE CHAIRMAN

COMMITTEE MEMBERS

Andrew Shilston (Chairman)
Helen Bunch[1]
Douglas Caster
Laurence Mulliez[2]
Pete Raby
Rob Rowley
Victoire de Margerie[3]
Andrew Reynolds Smith[4]

1. From appointment on 24 February 2016.
2. From appointment on 6 May 2016.
3. Until resignation as a Director on 4 February 2016.
4. Until resignation as a Director on 6 May 2016.

A majority of members of the Committee are independent non-executive Directors.

Chairman's introduction

2016 was once again an important year for the Committee with a number of changes to the Board.

As a consequence of Kevin Dangerfield's departure on 31 March 2016, the Committee oversaw the succession planning process for a new Chief Financial Officer, concluding with the announcement on 30 March 2016 that Peter Turner would be joining the Company as Chief Financial Officer on 11 April 2016.

The Committee evaluated the Board's succession needs, noting it wished to avoid undue disruption, and taking into account the outcomes of the strategic review and the challenges and opportunities facing the Company. The Committee worked closely with executive search agents to evaluate the skills and experience required to balance the Board and to meet the needs of the Company.

Continuing the process of ongoing refreshment of the Board, the Committee led a process which culminated in the recruitment of two additional non-executive Directors. Following the creation of candidate specifications, the Committee reviewed long- and short-lists of candidates and conducted interviews. As reported in the 2015 Annual Report, Helen Bunch joined as non-executive Director with effect from 24 February 2016 and the Company subsequently announced on 8 April 2016 that Laurence Mulliez would be joining the Board immediately following the conclusion of the 2016 AGM on 6 May 2016.

Looking ahead, the Nomination Committee will continue to review skills requirements against long-term strategy, and is always mindful of proactive succession planning.

There is a formal, rigorous and transparent procedure for appointments to the Board which is described in more detail below. Appointments are made on merit and against objective criteria, having due regard for diversity, including gender.

ANDREW SHILSTON
COMMITTEE CHAIRMAN

REPORT OF THE NOMINATION COMMITTEE
continued

Meetings
The Committee met formally twice during 2016. In addition, a number of working groups of members of the Committee met between scheduled meetings to progress the recruitment of the Chief Financial Officer and the new non-executive Directors.

Information and support
The Committee has the power to request the attendance of any other Director or member of management, for all or part of any meeting, as may be considered appropriate by the Committee.

Nomination Committee terms of reference
The Committee's terms of reference were reviewed during the year. The terms of reference are available to view on the Company's website.

Main areas of work during 2016
The Nomination Committee reviews the balance of skills, knowledge and experience on the Board, succession planning and the leadership needs of the Group. The work of the Committee in discharging those responsibilities in respect of 2016 included:

- Reviewing the executive and non-executive leadership needs of the Company.
- Instigating and overseeing the selection process in relation to the appointment of Peter Turner as Chief Financial Officer.
- Leading the search for new non-executive Directors, resulting in the selection and recommended appointment of Helen Bunch and Laurence Mulliez.
- Ensuring, by means of talent discussions at Board meetings, further development of management succession and development plans for the Executive Committee and senior executives.
- Considering the Directors' annual re-election at the 2016 AGM.
- Reviewing, for recommendation to the Board, the Board's policy on diversity.

Appointments to the Board
One of the Company's strategic execution priorities is to increase investment in people management and development. The Board discussed the Group's approach to talent management and succession planning at senior levels in both May and June 2016 as part of its review of progress on the execution priorities. The Board noted progress to date in increasing succession strength and in creating an enhanced performance culture, including the development of a new leadership framework for rollout in 2017. This is expected to ensure the right talent and talent processes are in place to execute the strategy successfully and to facilitate further the development of current and potential leaders.

Succession planning for appointments to the Board, noting two non-executive Directors will reach the end of their first three-year term in May, and for senior management, will be a continued area of focus for the Committee in 2017.

Following the appointment of Pete Raby as Chief Executive Officer in 2015 and having considered other leading firms, Spencer Stuart was retained for external searches both for executive and non-executive Directors. Spencer Stuart has signed up to the voluntary code of conduct for executive search firms which includes provisions on diversity. Spencer Stuart has no other connection with the Company.

The process to recruit Peter Turner, Chief Financial Officer, is described below:

- The skills and attributes required of an incoming Chief Financial Officer were discussed and a job specification was agreed.
- Following a selection exercise in which a number of external search agents were considered and three firms were interviewed, Spencer Stuart was appointed and briefed. Spencer Stuart has signed up to the voluntary code of conduct for executive search firms which includes provisions on diversity. Spencer Stuart was appointed and managed the search for Morgan's CEO in 2015 and in 2013 conducted psychometric testing for senior executives but has no other connection with the Company.

- The Committee agreed that the Chairman of the Committee and the Senior Independent Director should continue to progress the search between formal meetings of the Committee.
- The search was conducted globally and a long-list of candidates was considered, including external and internal, international and female candidates. The search agent travelled to meet candidates outside the UK.
- Short-listed candidates were then interviewed by all members of the Nomination Committee. Spencer Stuart then conducted an independent assessment and references were taken up before the decision was made and announced on 30 March 2016 to appoint Peter Turner as Chief Financial Officer, commencing his role on 11 April 2016.

The process for appointing Helen Bunch and Laurence Mulliez as non-executive Directors is described below:

- The Committee considered and formulated a candidate specification for the roles in the light of its discussions on the balance of skills, knowledge, experience and diversity on the Board.
- The external search agent produced a long-list of candidates for the roles.
- Interviews were held with a short-list of candidates and members of the Nomination Committee participated in interviews with the preferred candidates.
- The Committee selected its preferred candidates based on objective criteria and recommended their appointment to the Board. The Board approved the appointments with Helen Bunch commencing on 24 February 2016 and Laurence Mulliez on 6 May 2016.

The terms and conditions of appointment of non-executive Directors are available for inspection. Non-executive Directors, including the Chairman, are asked to undertake that they will allocate sufficient time to meet their commitments to the Company and their other significant commitments are disclosed to the Board before appointment, with an indication of the time involved. The Board is informed of any subsequent changes with additional commitments disclosed before they are accepted.

Board Diversity Policy

The Board firmly believes in the value of diversity of perspective, including background, nationality, experience and gender, at all levels of the Company as well as on the Board. As is not unusual in engineering or manufacturing businesses, diversity in gender is the hardest to achieve.

At the graduate recruitment level, the Group is now having success in attracting good candidates of both genders and many nationalities. In 2016, 37% of the graduate intake (2015: 41% and 2014: 32%) were female. At the senior level, 14% (2015: 13% and 2014: 5%) of senior managers and two of the Board Directors are female.

New appointments to the Board are made on merit, with a focus on international and industrial experience, but diversity of perspective and the mix of skills around the Board table are also taken into account when selecting potential candidates. During the selection process for new non-executive Directors, the Committee has used and will continue to use, a search agent who has signed up to the voluntary code of conduct which ensures that diversity is considered when developing a candidate pool. The brief to the search agent is to put forward a long-list of candidates from a wide range of backgrounds to ensure that the best candidate is selected.

When monitoring the development of leadership and considering the succession planning for executive management, the Board will take into account the need for talented leaders with the skills needed to lead a global company with a presence in the key world economies and manage the associated macro-economic challenges.

The Board will continue to monitor whether it is taking diversity into account when planning executive succession and appointing new Board members, and the Board effectiveness evaluation process addresses diversity.

The Board has discussed whether a quota for female Directors should be introduced by a certain date, but feels this is unrealistic given the current gender composition of senior executives, the nature of the business and the competition for female non-executive Directors. Two of the seven Board Directors are female.

REMUNERATION REPORT

A STATEMENT TO SHAREHOLDERS FROM THE CHAIRMAN OF THE REMUNERATION COMMITTEE

I am pleased to present the remuneration report for the year ended 31 December 2016. In last year's report I outlined the changes that the Committee proposed to make to the Remuneration Policy following its review of the Policy approved by shareholders at the 2014 AGM. These proposals were put forward in last year's report, approved at the AGM in May 2016 and implemented as the Group's 2016 Remuneration Policy, which will stand for the next three years.

2016 was the first full year for Pete Raby as the Chief Executive Officer (CEO) of the Group and it was the year for implementing the first stages of the Group's new strategy. 2017 will see Morgan investing for sustainable, long-term growth as well as implementing portfolio re-shaping as first outlined by Pete Raby in February 2016. The Remuneration Committee is therefore making minor amendments to the implementation of the Remuneration Policy in 2017 to ensure that we offer incentives that continue to support strategy development and execution and to maximise returns to shareholders. The incentives will be implemented to ensure a focus on the quality of performance across the year as well as the year-end result.

In summary, the proposals for how we implement our Remuneration Policy in 2017 are as follows:

- The Long-Term Incentive Plan (LTIP) Return on Capital Employed* (ROCE) performance measure will be replaced by a Return on Invested Capital* (ROIC) measure, which provides a more complete measure of Morgan's returns.
- The bonus plan cash generation element will continue to be measured on a straight-line basis but will be subject to an adjustment based on meeting quarterly cash targets in addition to the year-end measure. For each quarterly cash target that is missed there will be a corresponding 10% reduction in the result of the cash generation element.

We have engaged with our largest shareholders on these proposals, and we value the views, feedback and support we have received. The feedback we have received on our overall proposals at the time of writing has been generally positive.

In reviewing performance in 2016, some level of bonus will be paid in respect of all elements; cash generation, Group EBITA* and the good progress made on personal objectives which are focused on a mix of short-term and long-term priorities to drive sustainable, enduring growth. The 2014 LTIP awards will also see a partial level of vesting in respect of the Group's relative total shareholder return (TSR), which places Morgan at the 53rd percentile of the comparator group.

The Committee decided that, taking into account the performance of the Group in 2016, labour market conditions and the below-median recruitment salary of the CEO (which for 2016 was unchanged on that set in August 2015 on appointment), the appropriate level of salary increase for the CEO would be 5.3% and for the Chief Financial Officer (CFO) it would be 2%. There will also be an increase to the fees for the Chairman and non-executive Directors of 2% for 2017.

The difficult market conditions and the achievability of incentive targets have once again caused us to reflect on their motivational impact on retaining and attracting key executive talent. We have therefore reconsidered performance measures and incentive targets to ensure

they are aligned with our strategic aims, motivate and reward management for delivering sustainable above-peer performance, and support retention.

For the 2017 cycle, it is proposed that the ROCE* performance measure be replaced by a ROIC* measure, which includes total intangible assets in the definition of capital employed. This is felt to be a more complete measure of the return on capital employed and so will incentivise better capital management across the Group. The range being applied to the new ROIC* measure will be 16%-19%, which is considered to be of equivalent stretch as the ROCE* performance range applied to that element of the 2016 LTIP. The relative TSR element of the LTIP remains split equally between two comparator benchmarks: the constituents of the FTSE All-Share Industrials Index, and a tailored group of international sector comparators. The constituents of this sector benchmark are shown on page 85 of this Remuneration report.

The EPS performance range against multiple relevant reference points (including the Group's strategic plan, external market factors and broker forecasts), remains 4%-11% pa.

During the year, the Committee met four times, and its activities included:

- A review of the Group's Remuneration Policy and its implementation supporting the Group's business strategy.
- A review of external benchmarking of executive remuneration packages.
- Determination of the remuneration packages for the executive Directors and other Group executives.
- A review of whether the measures for the bonus and share incentive schemes remain appropriate.
- Determination of appropriate performance targets for bonus and share incentive schemes.
- Determination of whether targets for the bonus and share incentive schemes were achieved.

This report is intended to be consistent with the current reporting regulations for executive remuneration. I hope we have been successful in continuing to achieving the clarity and transparency that will be of help to our shareholders.

DOUGLAS CASTER
CHAIRMAN OF THE REMUNERATION COMMITTEE

Compliance statement

This Report covers the period 1 January 2016 to 31 December 2016 and provides details of the Remuneration Committee and Remuneration Policy of Morgan Advanced Materials plc, and how that Policy has been implemented for the year under review and will be implemented for the coming year.

During the year under review, the Company has complied with the principles and provisions relating to Directors' remuneration in the UK Corporate Governance Code and this Remuneration Report has been prepared in accordance with Schedule 8 of the Large & Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013. This includes the implementation of malus and clawback provisions for short- and long-term incentives granted in the 2016 financial year and to be granted in future years, as detailed in last year's Remuneration Report. In accordance with Section 439A of the Companies Act an advisory resolution to approve the Annual Report on Remuneration will be proposed at the AGM on 5 May 2017.

Remuneration Committee

The Remuneration Committee determines and agrees with the Board the framework or broad policy for the remuneration, including pension rights and any compensation payments, of the Group's executive Directors and the Chairman. The Committee's terms of reference are available on the Group's website.

The Remuneration Committee consults the CEO and invites him to attend meetings when appropriate. The Group Human Resources Director attends meetings of the Committee by invitation. The Committee also had access to advice from the CFO. The Company Secretary acts as secretary to the Committee. No executive Director or other attendee is present when his or her own remuneration is being discussed.

Membership of the Committee is shown on page 78.

1. POLICY REPORT

Key principles of the executive Directors' Remuneration Policy

The Remuneration Committee aims to ensure that all the remuneration packages offered are competitive and designed to promote the long-term success of the Company by ensuring that we are able to attract, retain and motivate executive Directors and senior executives of the right calibre to create value for shareholders.

The policy of the Committee is to ensure that a significant proportion of the total remuneration opportunity is performance-related, with an appropriate balance between short- and long-term performance, and is based on the achievement of measurable targets that are relevant to, and support the business strategy.

The Remuneration Committee will keep the Remuneration Policy under periodic review to ensure it remains aligned with the Group's strategy, and in line with the principles set out in the UK Corporate Governance Code in relation to Directors' remuneration. This includes ensuring that performance-related elements are transparent, stretching and rigorously applied, as well as reflecting the guidance of institutional investors and their representative bodies.

REMUNERATION REPORT
continued

Summary of Morgan Advanced Materials plc's Remuneration Policy for executive Directors

This section of the Report sets out the current Remuneration Policy for executive Directors and non-executive Directors. This Policy remains unchanged from that which was approved by shareholders at the 2016 AGM and which is effective for a period of up to three years from that date. The only amendments in the Policy Report below compared to that approved by shareholders in 2016 are: to update the data used in the pay for performance scenario analysis to provide figures for 2017; to remove references to implementation in 2016; and to update page references.

PURPOSE AND LINK TO STRATEGY	OPERATION	OPPORTUNITY	PERFORMANCE METRICS
Fixed pay			
Base salary Provides the fixed element of the remuneration package. Set at competitive levels against the market.	Base salaries are generally reviewed each January, with reference to the salary levels at companies of similar sector, size and complexity. The Committee also considers individual contribution and the range of salary increases applying across the Group when determining increases.	Base salary increases are applied in line with the outcome of the annual review. Salaries in respect of the year under review (and for the following year) are disclosed in the Annual Report on Remuneration. Salary increases for executive Directors will normally be within the range of increases for the general employee population over the period of this Policy. Where increases are awarded in excess of those for the wider employee population, for example in instances of sustained strong individual performance, if there is a material change in the responsibility, size or complexity of the role, or if an individual was intentionally appointed on a below-market salary, the Committee will provide the rationale in the relevant year's Annual Report on Remuneration.	Not applicable.
Pension Provides post-retirement benefits for participants in a cost-efficient manner.	Defined benefit scheme subject to a notional earnings cap with an above-the-cap allowance for executive Directors who joined the Company before 1 August 2011. Defined contribution scheme (and/or a cash allowance in lieu thereof) for executive Directors who joined the Company after 1 August 2011.	Opportunities vary depending on the scheme in which an executive Director participates. Details are set out in the Annual Report on Remuneration on pages 78 to 91. Above-the-cap pension allowances will be established in line with our principle to be broadly cost-neutral. For new hires, defined contributions (or cash in lieu thereof) will be up to 20% of salary.	Not applicable.
Benefits Designed to be competitive in the market in which the individual is employed.	Can include company car/car allowance, health insurance and, where appropriate, relocation allowances and other expenses.	Benefits values vary by role and are reviewed periodically relative to market. It is not anticipated that the cost of benefits provided will change materially year on year over the period for which this Policy will apply. The Committee retains the discretion to approve a higher cost in exceptional circumstances (eg relocation expenses, expatriation allowances etc) or in circumstances where factors outside the Group's control have changed materially (eg market increases in insurance costs). Benefits in respect of the year under review are disclosed in the Annual Report on Remuneration.	Not applicable.

PURPOSE AND LINK TO STRATEGY	OPERATION	OPPORTUNITY	PERFORMANCE METRICS
Variable pay			
Annual bonus Incentivises the achievement of specific goals over the short term that are also aligned to the long-term business strategy.	Performance measures are set by the Committee at the start of the year and are weighted to reflect a balance of financial and strategic objectives. At the end of the year, the Remuneration Committee determines the extent to which these have been achieved. To the extent that the performance criteria have been met, up to 67% of the resulting annual bonus is paid in cash. The remaining balance is deferred into shares and released after a further period of three years, subject to continued employment only. Cash and deferred share bonuses awarded for performance in 2016 onwards will be subject to malus and clawback. Further details of our malus and clawback Policy are set out at the end of this table.	Up to 150% of salary. The payout for threshold performance may vary year on year, but will not exceed 25% of the maximum opportunity.	Bonuses for the executive Directors may be based on a combination of financial and non-financial measures. The weighting of non-financial performance will be capped at 30% of the maximum opportunity. Further details are set out in the Annual Report on Remuneration on pages 78 to 91.
Long-Term Incentive Plan (LTIP) Aligns the interests of executives and shareholders by delivering shares to executive Directors and other senior executives as a reward for outstanding long-term performance.	The Remuneration Committee has the ability each year to grant an award under the LTIP. The award levels and performance conditions on which vesting depends are reviewed prior to the start of each award cycle to ensure they remain appropriate. For awards made in 2016 onwards, vested shares may be subject to a post-vesting holding period. Details of any such holding period will be disclosed in the Annual Report on Remuneration for the year in which the relevant award is made. Awards are subject to malus and/or clawback for a period of five years from the date of grant. Further details of our clawback Policy are set out at the end of this table.	The LTIP provides for a conditional award of shares up to an annual limit of 250% of salary. 25% of an award vests for achievement of the threshold level of performance.	The vesting of awards is usually subject to: → continued employment. → the Group's performance over a three-year performance period, currently a combination of TSR, EPS and ROCE. → Measures continue to include TSR and EPS as in previous years. → ROCE* to be replaced in 2017 with ROIC*. The Committee has discretion to extend the performance period and adjust the measures, their weighting, and performance targets prior to the start of each cycle to ensure they continue to align with the Group's strategy. Further details of the measures attached to the LTIP awarded in the year under review (and the coming year) are set out in the Annual Report on Remuneration on pages 78 to 91.
Sharesave A voluntary scheme open to all UK employees which aligns the interests of participants with those of shareholders through any growth in the value of shares.	An HMRC-approved scheme where employees may save up to a monthly savings limit out of their own pay towards options granted at up to a 20% discount. Options may not be exercised for three years.	Up to the savings limit as determined by HMRC from time to time, across all Sharesave schemes in which an individual has enrolled.	None.

REMUNERATION REPORT
continued

Malus and clawback Policy
Malus and clawback will apply on the annual bonus and LTIP (as set out on page 73) in cases of misconduct or material misstatement in the published results of the Group or where, as a result of an appropriate review of accountability, a participant has been deemed to have caused in full or in part a material loss for the Group as a result of reckless, negligent or wilful actions or inappropriate values or behaviour. Cash bonuses will be subject to clawback, with deferred shares subject to malus over the deferral period. LTIP awards are subject to malus over the vesting period and clawback from the vesting date to the fifth anniversary of grant.

Payments under existing awards
The Company will honour any commitment entered into, and Directors will be eligible to receive payment from any award granted, prior to the approval and implementation of the current Remuneration Policy detailed in this Report (ie before 6 May 2016), even if these commitments and/or awards fall outside the above Policy. The Company will also honour any commitment entered into at a time prior to an individual becoming a Director if, in the opinion of the Committee, the payment was not in consideration for the individual becoming a Director of the Company. Details of these awards are, and will be, disclosed in the Annual Report on Remuneration.

Difference in policy between executive Directors and other employees
The Remuneration Policy for other employees is based on principles broadly consistent with those described in this Report for the executive Directors. Annual salary reviews across the Group take into account business performance, local pay and market conditions, and salary levels for similar roles in comparable companies. All executives are eligible to participate in an annual bonus scheme. Opportunities and performance measures vary by organisational level, geographical region and an individual's role. Other senior executives participate in the LTIP on similar terms to the executive Directors, although award sizes may vary according to each individual, and by organisational level. Below this level, executives are eligible to participate in the LTIP and other share-based incentives by annual invitation.

Use of discretion
To ensure fairness and align executive Director remuneration with underlying individual and Group performance, the Committee may exercise its discretion to adjust, upwards or downwards, the outcome of any short- or long-term incentive plan payment (within the limits of the relevant Plan Rules) for corporate or exceptional events including, but not limited to: corporate transactions, changes in the Group's accounting policies, minor or administrative matters, internal promotions, external recruitment, terminations, etc. Any adjustments in light of corporate events will be made on a neutral basis, to not be to the benefit or detriment of participants.

Any use of discretion by the Committee during the financial year under review will be detailed in the relevant Annual Report on Remuneration.

Performance measure selection
The Committee considers carefully the selection of performance measures at the start of each performance cycle, taking into consideration the macro-economic environment as well as specific Group strategic objectives.

Annual bonus measures are selected to closely reinforce the Group's short-term KPIs. Because these can change from year to year (in line with the Remuneration Policy), the rationale for the selection of bonus measures for each year has been moved to the Annual Report on Remuneration.

LTIP performance measures are reviewed periodically to ensure they continue to align with the Company's strategy, as well as provide an appropriate balance between growth and returns, internal and external performance, and absolute and relative performance.

For 2017 awards, the TSR element of the LTIP award will continue to comprise two parts. One half of the TSR element will vest subject to the Group's performance relative to a TSR benchmark comprising the 114 constituents of the FTSE All-Share Industrials Index. This benchmark is robust to M&A activity and comprises companies that are subject to the same market influences as Morgan Advanced Materials plc. The remaining half of the TSR element will vest subject to Morgan's performance relative to a TSR benchmark comprising 16 listed international carbon, ceramics and other materials companies. This benchmark was selected to complement the FTSE All-Share Industrials Index with a group of companies that better reflect Morgan's business, the markets in which Morgan operates and the geographical footprint of the Group. For each part of the TSR award, the vesting performance range is calibrated to be stretching and in line with common market practice for FTSE TSR-based long-term incentives.

EPS targets are set taking account of multiple relevant reference points, including internal forecasts, external expectations for future EPS performance at both Morgan Advanced Materials plc and its closest sector peers, and typical EPS performance ranges at other FTSE 350 companies. LTIP EPS performance ranges are set to represent demanding and challenging performance targets over the three-year performance period.

For 2017, it is proposed to amend the definition of returns used in the LTIP to include total intangible assets in the definition of capital employed (ie using Return on Invested Capital, or ROIC*, rather than ROCE* as in previous cycles). The Board considers ROIC* to be a more complete measure of value creation because it measures the efficiency of Morgan's total capital base rather than its operational capital base only. For the 2017 LTIP cycle, ROIC* will be calculated as follows:

$$\frac{\text{EBITA* pre-specific adjusting items}}{\text{12-month average (third party working capital + total fixed assets + total tangible fixed assets}}$$

ROIC* targets are set using a similar approach referring to external reference points and reflecting the returns required to meet and exceed the Group's internal strategic plan.

Share ownership guidelines

In order to encourage alignment with shareholders, individual shareholding guidelines are operated for executive Directors. Under such guidelines, executive Directors are encouraged to build and maintain over time a shareholding in the Company equivalent to at least 200% of basic salary.

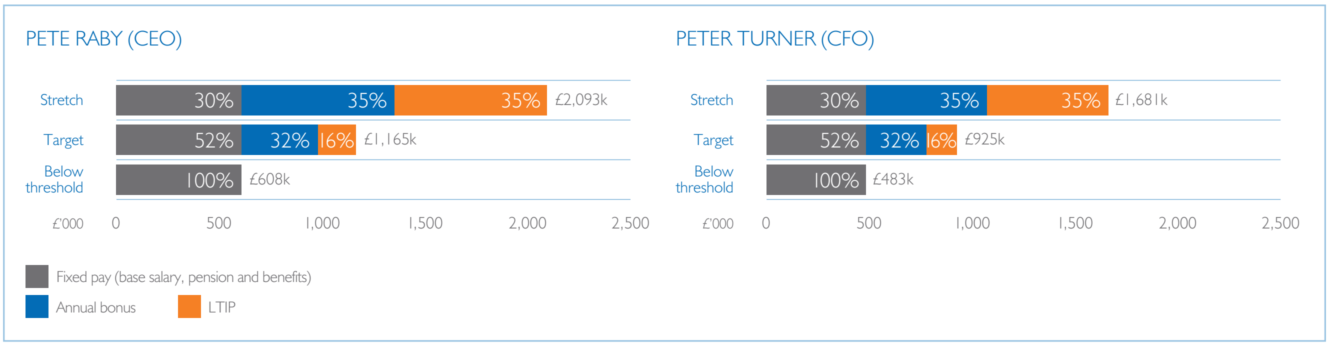
Current executive Director shareholdings are set out in the Annual Report on Remuneration on page 87.

External appointments

With the approval of the Board in each case, and subject to the overriding requirements of the Group, executive Directors may accept external appointments as non-executive Directors of other companies and retain any fees received. Details of external directorships held by executive Directors along with fees retained are provided on page 84.

Pay-for-performance: scenario analysis

The graphs below provide detailed illustrations of the potential future reward opportunity for executive Directors, and the potential mix between the different elements of remuneration under three different performance scenarios; 'Below threshold', 'Target' and 'Stretch'. These have been updated to illustrate the potential opportunity under the 2017 packages proposed for executive Directors.



Potential reward opportunities illustrated above are based on the Policy which was approved at the 2016 AGM, applied to the annual base salary in effect at 1 January 2017. For the annual bonus, the amounts illustrated are those potentially receivable in respect of performance for 2017 (before mandatory deferral into shares). The LTIP is based on the face value of awards to be granted in 2017 (150% of salary). It should be noted that any awards granted under the LTIP in a year do not normally vest until the third anniversary of the date of grant. This illustration is intended to provide further information to shareholders on the relationship between executive pay and performance. The value of the LTIP assumes no increase in the underlying value of the shares, and actual amounts delivered will be further influenced by changes in factors such as the Company's share price and the value of dividends paid. The following assumptions have been made in compiling the above charts:

Scenario	Annual bonus	LTIP	Fixed pay
Stretch	Maximum annual bonus.	Performance warrants full vesting (100% of the award).	Latest disclosed base salary, pension and benefits.
Target	On-target annual bonus.	Performance warrants threshold vesting (25% of the award).	
Below threshold	No annual bonus payable.	Nil vesting.	

Details of executive Directors' service contracts

The executive Directors are employed under contracts of employment with Morgan Advanced Materials plc. Contracts may be terminated on 12 months' notice given by the Company or on six months' notice given by the executive Director concerned. The following table shows the date of the contract for each executive Director who served during the year:

Executive Director	Position	Date of appointment	Date of service agreement	Notice period	
				From employer	From employee
Pete Raby	CEO	1 August 2015	30 January 2015	12 months	6 months
Peter Turner	CFO	11 April 2016	30 March 2016	12 months	6 months
Kevin Dangerfield[1]	CFO	4 August 2006	15 August 2008	12 months	6 months
Andrew Hosty[2]	COO	28 July 2010	17 August 2010	12 months	6 months

1. Kevin Dangerfield left the Group on 31 March 2016.
2. Andrew Hosty left the Group on 8 January 2016.

REMUNERATION REPORT
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Exit payments Policy

The Group's Policy is to limit severance payments on termination to pre-established contractual arrangements comprising base salary and any other statutory payments only. In the event that the employment of an executive Director is terminated, any compensation payable will be determined in accordance with the terms of the service contract between the Company and the employee, as well as the rules of any incentive plans.

The Group may terminate the employment of an executive Director by making a payment in lieu of notice equal to base salary, together with the fair value of any other benefits to which the executive is contractually entitled under his or her service agreement, for the duration of the notice period.

The Remuneration Committee will exercise discretion in making appropriate payments in the context of outplacement, settling legal claims or potential legal claims by the departing executive Director, including any other amounts reasonably due to the executive Director, for example, to meet the legal fees incurred by the executive Director in connection with the termination of employment, where the Company wishes to enter into a settlement agreement and the individual must seek independent legal advice.

On termination of an executive Director's service contract, the Remuneration Committee will consider the departing Director's duty to mitigate his loss when determining the timing of when any payment in lieu of notice will be made. There is no automatic entitlement to bonus or the vesting of long-term incentives on termination. However, the table that follows summarises the Policy on how awards under the annual bonus, LTIP and BDSMP will normally be treated in specific circumstances, with the final treatment remaining subject to Committee discretion:

Treatment of awards on cessation of employment and a change of control

Reason for cessation	Calculation of vesting/payment	Time of vesting
	Annual bonus	
All reasons	The Committee may determine that a bonus is payable on cessation of employment, and the Committee retains discretion to determine that the bonus should be paid wholly in cash. The amount of bonus payable will be determined in the context of the time served during the performance year, the performance of the Group and of the individual over the relevant period, and the circumstances of the Director's loss of office. If Group or individual performance has been poor, or if the individual's employment has been terminated in circumstances amounting to misconduct, no bonus will be payable.	
	Mandatory deferred bonus share awards	
Injury, disability, death, redundancy, retirement, or other such event as the Committee determines	Awards will normally vest in full (ie not pro-rated for time).	At the normal vesting date, unless the Committee decides that awards should vest earlier (eg in the event of death).
Change of control	Awards will normally vest in full (ie not pro-rated for time). Awards may alternatively be exchanged for equivalent replacement awards, where appropriate.	On change of control.
All other reasons	Awards normally lapse.	Not applicable.
	LTIP awards and BDSMP matching awards	
Injury, disability, death, redundancy, retirement, or other such event as the Committee determines	Awards will normally be pro-rated for time and will vest based on performance over the original performance period (unless the Committee decides to measure performance to the date of cessation).	At the normal vesting date, unless the Committee decides that awards should vest earlier (eg in the event of death).
Change of control	LTIP awards will be pro-rated for time and will vest subject to performance over the performance period to the change of control. LTIP awards may alternatively be exchanged for equivalent replacement awards, where appropriate. BDSMP matching awards will normally vest subject to performance over the performance period to the change of control and will be pro-rated for time.	On change of control.
All other reasons	Awards normally lapse.	Not applicable.

The Remuneration Committee retains discretion, where permitted by the scheme rules, to alter these default provisions on a case-by-case basis, following a review of circumstances and to ensure fairness for both shareholders and participants.

Approach to recruitment remuneration

External appointment

In cases of hiring or appointing a new executive Director from outside the Group, the Committee may make use of all existing components of remuneration, as follows:

Pay element	Policy on recruitment	Maximum
Salary	Based on: the size and nature of the responsibilities of the proposed role; current market pay levels for comparable roles; the candidate's experience; implications for total remuneration; internal relativities; and the candidate's current salary.	–
Pension	Option to join the defined contribution scheme, and/or to receive a cash allowance.	–
Benefits	As described in the Policy table and may include, but are not limited to, car, medical insurance, and relocation expenses and/or allowances.	–
Sharesave	New appointees will be eligible to participate on identical terms to all other UK employees.	In line with HMRC limits.
Annual bonus	As described in the Policy table and typically pro-rated for proportion of year served; performance measures may include strategic and operational objectives tailored to the individual in the financial year of joining.	150% of salary.
LTIP	New appointees may be granted awards under the LTIP on similar terms to other executives.	250% of salary.
Other	The Remuneration Committee may make an award under a different structure under the relevant Listing Rule to replace incentive arrangements forfeited on leaving a previous employer. Any such award would have a fair value no higher than that of the awards forfeited, taking into account relevant factors including performance conditions, the likelihood of those conditions being met and the proportion of the vesting period remaining. Details of any such award will be disclosed in the first Annual Report on Remuneration following its grant.	–

Internal promotion to the Board

In cases of appointing a new executive Director by way of internal promotion, the Policy will be consistent with that for external appointees detailed above. Where an individual has contractual commitments made prior to their promotion to executive Director, the Company will continue to honour these arrangements even if there are instances where they would not otherwise be consistent with the prevailing executive Director Remuneration Policy at the time of promotion.

Chairman and non-executive Directors' Remuneration Policy

Purpose and link to strategy	Operation	Opportunity	Performance metrics
Annual fee To attract and retain high-calibre non-executive Directors.	Annual fees paid to the Chairman and non-executive Directors are reviewed periodically. An additional fee is payable for the Senior Independent Director, and also in respect of Committee chairmanship. Currently paid 100% in cash.	Annual fees are applied in line with the outcome of the review.	None.

REMUNERATION REPORT
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None of the non-executive Directors has a service contract with the Company. They do have letters of appointment. The non-executive Directors do not participate in any of the incentive, share or share option plans. The dates relating to the appointments of the Chairman and non-executive Directors who served during the reporting period are as follows:

Non-executive Director	Position	Date of appointment	Date of letter of appointment	Date of election/re-election
Andrew Shilston	Chairman	8 May 2012	30 March 2012	6 May 2016
Helen Bunch	Non-executive Director	24 February 2016	19 January 2016	6 May 2016
Douglas Caster	Non-executive Director	14 February 2014	15 January 2014	6 May 2016
Victoire de Margerie[1]	Non-executive Director	8 May 2012	1 March 2012	n/a
Laurence Mulliez	Non-executive Director	6 May 2016	4 April 2016	n/a[3]
Andrew Reynolds Smith[2]	Non-executive Director	10 May 2013	14 February 2013	n/a
Rob Rowley	Non-executive Director	14 February 2014	15 January 2014	6 May 2016

1. Victoire de Margerie stepped down from the Board on 4 February 2016.
2. Andrew Reynolds Smith stepped down from the Board on 6 May 2016.
3. Laurence Mulliez was appointed a Director at the conclusion of the 2016 AGM and a resolution to propose her election will be voted on by shareholders at the 2017 AGM.

Consideration of employment conditions
The Group seeks to promote and maintain good relations with employee representative bodies – including trade unions and works councils – as part of its broader employee engagement strategy, and consults on matters affecting employees and business performance as required in each case by law and regulation in the jurisdictions in which the Group operates. In making remuneration decisions, the Remuneration Committee also considers the pay and employment conditions elsewhere in the Group, but the Committee does not currently consult with employees specifically on executive Remuneration Policy and framework. Prior to the annual salary review, the Remuneration Committee is briefed by the Director of Human Resources about pay increase data that individual business units will consider when deciding local pay awards for their specific businesses and countries. This also forms part of the considerations for determining executive Director remuneration.

Consideration of shareholder views
The Committee considers shareholder views received during the year and at the AGM each year, as well as guidance from investor representative bodies more broadly, in shaping Remuneration Policy. The Committee keeps the Remuneration Policy under regular review, to ensure it continues to reinforce the Group's long-term strategy, and aligns executive Directors with shareholders' interests. It is the Remuneration Committee's policy to consult with major shareholders prior to any major changes to its executive Remuneration Policy.

2. ANNUAL REPORT ON REMUNERATION
The following section provides details of how the Remuneration Policy was implemented during the year.

Remuneration Committee membership in 2016
The Remuneration Committee is currently composed of five non-executive Directors. Each of the non-executive Directors is regarded by the Board as independent, except the Chairman of the Company who was considered independent upon appointment. The Remuneration Committee met four times during the year. Attendance at meetings by individual members is detailed in the Corporate Governance Report on page 57.

COMMITTEE MEMBERS

Douglas Caster (Chairman)
Andrew Shilston
Rob Rowley
Helen Bunch[1]
Laurence Mulliez[2]
Victoire de Margerie[3]
Andrew Reynolds Smith[4]

1. Helen Bunch was appointed to the Board and the Committee on 24 February 2016.
2. Laurence Mulliez was appointed to the Board and the Committee on 6 May 2016.
3. Victoire de Margerie stepped down from the Board and the Committee on 4 February 2016.
4. Andrew Reynolds Smith stepped down from the Board and the Committee on 6 May 2016.

Summary of shareholder voting at the 2016 AGM

The following table shows the results at the 2016 AGM of the binding vote on the Remuneration Policy, the advisory vote on the 2015 Annual Report on Remuneration and the binding vote on an amendment to the LTIP.

Resolution	For	Against	Withheld[1]
Remuneration Policy	98.86%	1.14%	932,484
Annual Remuneration on Remuneration	98.56%	1.44%	1,073,981
Amendment to the LTIP	98.85%	1.15%	929,576

1. Votes 'withheld' are not votes in law and, therefore, have not been included in the calculation of the proportion of votes 'for' or 'against' the resolution.

Single total figure of remuneration for executive Directors

The auditors are required to report on the information in this table.

The table below sets out a single figure for the total remuneration received by each executive Director for the year ended 31 December 2016 and the prior year.

	Pete Raby[1]		Peter Turner[2]		Kevin Dangerfield[3]		Andrew Hosty[4]	
	2016	2015	**2016**	2015	**2016**	2015	**2016**	2015
1. Salary	**£470,000**	£195,833	**£278,878**	–	**£80,625**	£403,438	**£6,808**	£380,833
2. Benefits	**£13,482**	£5,531	**£8,767**	–	**£3,482**	£12,641	**£39**	£12,676
3. Bonus	**£208,210**	£97,721	**£145,241**	–	**£41,360**	£197,281	**–**	£186,227
4. BDSMP	**–**	–	**–**	–	**–**	–	**–**	–
5. LTIP	**–**	–	**–**	–	**–**	–	**£22,455**	–
6. Pension	**£94,000**	£39,167	**£55,776**	–	**£41,469**	£81,373	**£3,894**	£81,228
7. Other	**£1,800**	£450,000	**–**	–	**–**	–	**–**	–
Total	**£787,492**	£788,252	**£488,662**	–	**£166,936**	£694,733	**£33,196**	£660,964

1. Pete Raby joined the Group on 1 August 2015. His remuneration for 2015 reflects the period 1 August to 31 December 2015.
2. Peter Turner joined the Group on 11 April 2016. His remuneration for 2016 reflects the period 11 April to 31 December 2016.
3. Kevin Dangerfield left the Group on 31 March 2016. Details shown above are for the period 1 January to 31 March 2016. For further details regarding Kevin Dangerfield's leaving arrangements, please see page 83.
4. Andrew Hosty left the Group on 8 January 2016. Details shown above are for the period 1 January to 8 January 2016. For further details regarding Andrew Hosty's leaving arrangements, please see page 83.

The figures have been calculated as follows:

1. Base salary: amount earned for the year.
2 Benefits: the taxable value of benefits received in the year. Includes private medical insurance and a company car (or car allowance).
3. Annual bonus: the total bonus earned on performance during the year. The maximum opportunity in 2016 for each executive Director was 150% of the total salary earned during the 2016 year. At the Committee's discretion, Kevin Dangerfield remained eligible for a pro rata bonus in relation to the 2016 financial year. Andrew Hosty did not participate in the annual bonus scheme for the 2016 financial year.
4. BDSMP: no matching share awards were made to executive Directors under the 2014 BDSMP. Andrew Hosty participated in the 2013 BDSMP, under which matching share awards lapsed based on performance over the three-year period to 31 December 2015 (as disclosed in last year's Remuneration Report).
5. LTIP: the estimated value on 31 December 2016 of 2014 LTIP shares vesting in 2017 subject to performance over the three-year period ended 31 December 2016. The 2015 value represents the actual value of 2013 LTIP shares at vesting (on 28 February 2016), which lapsed based on performance over the three-year period to 31 December 2015.
6. Pension: in respect of Pete Raby and Peter Turner, the figure is a cash allowance in lieu of pension. In respect of Kevin Dangerfield and Andrew Hosty, the figure is 20 times the increase in the value of their accrued benefit (net of inflation) over the year, less Directors' contributions, plus the value of any Company contribution.
7. Other: for Pete Raby comprises the value of Sharesave options granted in the year, based on the embedded value at grant (20% of the grant-date share price multiplied by the number of options granted). Full details of executive Director Sharesave options are available on pages 88 to 90 of the Annual Report on Remuneration.

   For Pete Raby in 2015, reflects the value at grant of the one-off restricted share awards on recruitment disclosed in the 2015 Annual Report on Remuneration. This value comprises a one-off cash award of £50,000, and a restricted share award with a face-value on grant of £400,000. The first tranche of Pete Raby's restricted share award vested on 31 December 2016, with the remainder due to vest on 31 December 2017, subject to his continued employment with the Group.

REMUNERATION REPORT
continued

Incentive outcomes for the year ended 31 December 2016

Annual bonus in respect of 2016 performance

Targets for the annual bonus are set by the Remuneration Committee, taking into account the short- and long-term requirements of the Group. Challenging goals are set, which must be met before any bonus is paid. This approach is intended to align executive reward with shareholder return by rewarding the achievement of 'stretch' targets.

For 2016, the bonus targets for the executive Directors were split between Group EBITA before restructuring (weighted 40%), cash generation (weighted 40%) and individual strategic personal objectives (weighted 20%). The targets were set to incentivise the executive Directors to deliver stretching profit and cash performance for the Group.

In addition to the achievement of the targets set, in considering any awards to be made, the Committee also takes into account the quality of the overall performance of the Group.

The table that follows sets out retrospectively the assessment of performance relative to the 2016 bonus targets for the executive Directors. Actual bonus payments are shown in the single total figure of remuneration table above. Andrew Hosty did not participate in the annual bonus scheme for the 2016 financial year.

Performance measure	% of maximum bonus element	Performance range: Threshold (0% payout)	Performance range: Maximum (100% payout)	Actual performance outcome	% payout of element	% salary earned
Group EBITA	40%	£100.4m	£113.65m	£101.9m	11.3%	6.8%
Cash generation	40%	£121.0m	£133.0m	£124.5m	29.2%	17.5%
Personal objectives						
Pete Raby	20%	Please see narrative below for further details on objectives and performance against these			66.7%	20%
Peter Turner	20%				86.7%	26%
Kevin Dangerfield[1]	20%				90.0%	27%[2]

1. Kevin Dangerfield left the Group on 31 March 2016 and was eligible for a pro-rated discretionary cash bonus for the first quarter only of the 2016 year.
2. Personal objective performance for Kevin Dangerfield was agreed at the point of termination and set at 27% out of the maximum 30%.

Overall outcome	Maximum bonus (% salary)	% of salary earned: Group EBITA*	% of salary earned: Cash generation	% of salary earned: Personal	Total outcome	Total payable
Pete Raby	150%	6.8%	17.5%	20%	**44.3%**	**£208,210**
Peter Turner	150%	6.8%	17.5%	26%	**50.3%**	**£145,241**
Kevin Dangerfield[1]	150%	6.8%	17.5%	27%	**51.3%**	**£41,360**

Note: For both the EBITA* and cash generation metrics, there was a straight-line payout between the threshold and maximum figures and all figures were calculated using 2016 budgeted exchange rates.
1. Kevin Dangerfield left the Group on 31 March 2016 and was eligible for a pro-rated discretionary cash bonus for the first quarter only of the 2016 year.

Pete Raby's personal objectives were based on six main priorities: (1) drive improvement in the safety culture and behaviours of the Group, (2) talent management, (3) efficiency and on-time delivery performance, (4) technology priorities and performance, (5) sales effectiveness and (6) portfolio management. Pete delivered most of these priorities during 2016, notably including the targeted improvement in Health and Safety performance of the Group, the acceleration of the technology management and steady improvement in efficiency and delivery over the year leading to close-to-target attainment. Further, Pete continued to build his Executive team during 2016. The payout of this element was adjudicated at two-thirds of maximum, reflecting that some actions will continue into 2017.

Peter Turner's personal objectives after joining in the second quarter of 2016 were based on six main priorities: (1) drive improvement in the safety culture and behaviours for the group, (2) develop the finance strategy for the group, (3) support group strategy implementation & development, (4) improve management information, (5) develop the finance team and (6) improve cash management. Payout of this element was adjudicated at 86.7% of maximum, reflecting that Peter delivered against these objectives with most being met in full, particularly delivering against the financial management strategy, execution in the business and developing the finance function. Further, Peter Turner supported the continued development of the Group corporate strategy and execution against that, partnering with the CEO.

Performance against Kevin Dangerfield's personal objective was assessed at the point he left the Group and the payout confirmed as being 90% of that element.

2014 LTIP award vesting

Awards granted to executive Directors in 2014 were subject to relative TSR performance, EPS growth and Group average ROCE® over a three-year period ended 31 December 2016. The EPS target (applying to one-third of each award) required three-year EPS growth of 8% per annum for 30% of that element to vest, rising to full vesting for EPS growth of 15% pa or higher. Over the period Morgan Advanced Materials plc's actual EPS growth was below threshold and accordingly none of the award will vest under this criterion.

The TSR target (applying to one-third of each award) required Morgan Advanced Materials plc's three-year TSR performance to rank at median against constituents of the FTSE All-Share Industrials Index for 30% of that element to vest, rising to full vesting if Morgan Advanced Materials plc's TSR ranked at or above the upper quartile against this Index. Morgan Advanced Materials plc's TSR was 7%, which was at the 53rd percentile versus the FTSE All-Share Industrials Index. Accordingly, this warrants 38.1% vesting of the TSR element of the 2014 LTIP.

The Group average ROCE® target (applying to the remaining one-third of each award) required three-year Group average ROCE® of 33% for 30% of that element to vest, rising to full vesting for Group average ROCE® of 37% or higher. Morgan Advanced Materials plc's Group average ROCE® was 25.6%, which was below the 33% threshold for this part of the award, and therefore none of the award will vest under this criterion.

This combined performance resulted in a partial vesting of the 2014 LTIP at 12.7%. Details of the awards to executive Directors are set out in the table below[1]:

Director	Maximum potential LTIP award[4]	Maximum potential LTIP-CSOP award	LTIP award vested	LTIP-CSOP award vested	LTIP-CSOP award exercised[5]	Date of vesting
Kevin Dangerfield[2]	–	–	–	–	–	28 February 2017
Andrew Hosty[3]	93,101	7,883		–	–	28 February 2017

1. Pete Raby and Peter Turner had not joined the Board in 2014 and are therefore did not participate in this cycle.
2. Kevin Dangerfield's awards lapsed in full when he left the Group on 31 March 2016 in line with the default provisions of the Policy.
3. In line with the default provisions of the Policy, Andrew Hosty was treated as a good leaver in respect of outstanding LTIP awards. Andrew Hosty's original 2014 award was over 93,101 shares, but this was pro-rated for time and reduced to 62,027 when he left the Group on 8 January 2016. The vesting of these awards remained subject to performance over the full performance period and will vest in line with the performance criteria achieved as described above.
4. Calculated using the award price of £3.3834 (the average share price over the five dealing days from 21 February 2014 to 27 February 2014).

The interest in the 2014 LTIP retained by Mark Robertshaw (who left the Company on 31 December 2014) will vest in line with performance conditions and has been pro-rated according to time served. The vested amount of Mark Robertshaw's 2014 LTIP Award will be 12.7 % of 58,521 shares.

2015 recruitment award to Pete Raby

As disclosed in last year's Remuneration Report, an award of 114,351 ordinary shares in the Company (valued on the date of award at £400,000, calculated using the share price on 3 August 2015 of £3.4980) was made to Pete Raby on 3 August 2015 in connection with his recruitment. This award was granted in accordance with Recruitment Policy, and was made in recognition of the fair value of incentive awards which he forfeited on leaving his former employer. The award vests in two tranches, on the dates set out below, subject to Pete Raby not having resigned or been dismissed in specified circumstances. There are no performance conditions attached to this award, reflecting the structure of the award forfeited on his joining Morgan.

Number of shares subject to award	Shares released on vesting	Vesting date
57,176	57,176[1]	31 December 2016
57,175	–	31 December 2017

1. The first tranche of the recruitment award to Pete Raby was released on 3 January 2017.

Pension

The auditors are required to report on the information in this table.

In the year under review, one of the four executive Directors, Kevin Dangerfield, participated in the Morgan Group Senior Staff Pension and Life Assurance Scheme (the Senior Scheme) which is a contributory, HMRC-registered, defined benefit, funded occupational pension scheme.

With effect from 6 April 2006 the basis of the scheme switched from final salary to career average and the normal pension age increased by five years. Its main features are now:

- A normal pension age of 65.
- Pension at normal pension age based on two-thirds of career average pensionable salary, for those with at least 20 years' (26 years and eight months for joiners since 2006) potential service to age 65 on joining.
- Life assurance of four times basic salary.
- Dependants' pension on death.

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Pensionable salary in the Senior Scheme is the member's basic salary restricted to an earnings cap of £117,375 for Kevin Dangerfield.

			Additional information	
Executive Director	**2016 Value of increase in scheme benefit less Directors' contributions £000**	2015 Value of increase in scheme benefit less Directors' contributions £000	**Accrued pension 31 December 2016 £000 pa**	Accrued pension 31 December 2015 £000 pa
Kevin Dangerfield	**14**	27	**49**	49
Andrew Hosty	**4**	23	**63**	62

Pete Raby and Peter Turner each receive a cash allowance in lieu of pension of 20% of basic salary. They are not accruing benefits within the Senior Scheme.

Single total figure of remuneration for non-executive Directors

The auditor is required to report on the information in this table.

The table below sets out a single figure for the total remuneration received by each non-executive Director for the year ended 31 December 2016 and the prior year.

	Andrew Shilston		Douglas Caster		Helen Bunch[1]		Laurence Mulliez[2]	
	2016	2015	**2016**	2015	**2016**	2015	**2016**	2015
1. Fee	**£178,500**	£178,500	**£63,000**	£63,000	**£39,890**	–	**£30,670**	–
2. Benefits	**–**	–	**–**	–	**–**	–	**–**	–
3. Pension	**–**	–	**–**	–	**–**	–	**–**	–
4. Bonus	**–**	–	**–**	–	**–**	–	**–**	–
5. BDSMP	**–**	–	**–**	–	**–**	–	**–**	–
6. LTIP	**–**	–	**–**	–	**–**	–	**–**	–
7. Other	**–**	–	**–**	–	**–**	–	**–**	–
Total	**£178,500**	£178,500	**£63,000**	£63,000	**£39,890**	–	**£30,670**	–

	Victoire de Margerie[3]		Andrew Reynolds Smith[5]		Robert Rowley	
	2016	2015	**2016**	2015	**2016**	2015
1. Fee	**£3,917**	£46,196	**£16,571**	£47,000	**£55,000**	£55,000
2. Benefits	**–**	–	**–**	–	**–**	–
3. Pension	**–**	–	**–**	–	**–**	–
4. Bonus	**–**	–	**–**	–	**–**	–
5. BDSMP	**–**	–	**–**	–	**–**	–
6. LTIP	**–**	–	**–**	–	**–**	–
7. Other	**–**	£5,329[4]	**–**	–	**–**	–
Total	**£3,917**	£51,525	**£16,571**	£47,000	**£55,000**	£55,000

1. Helen Bunch was appointed to the Board on 24 February 2016.
2. Laurence Mulliez was appointed to the Board on 6 May 2016.
3. Victoire de Margerie stepped down from the Board on 4 February 2016.
4. Payments made on behalf of Victoire de Margerie by the Company in respect of UK tax filings.
5. Andrew Reynolds Smith stepped down from the Board on 6 May 2016.

Scheme interests awarded in 2016

2016 LTIP awards

In 2016, Pete Raby and Peter Turner were granted awards under the LTIP as follows:

			Value of awards at grant		
Executive Director	Number of LTIP shares granted[*]	Number of LTIP-CSOP shares granted[1]	£	as % of 2016 annualised salary	Date of vesting
Pete Raby	292,022	–	705,000	150%	23 May 2019
Peter Turner	226,783	12,426	577,500	150%	23 May 2019

1. Calculated using the award price of £2.4142 (the average share price over the five dealing days from 16 to 20 May 2016).

The Committee discusses and reviews the performance criteria for new three-year LTIP awards before they are granted. For the awards granted in 2016, the Committee considered the balance of measures in light of the Group's business plan and shareholder feedback, and decided to maintain the equal (one-third) weighting of the three performance criteria introduced in 2012.

For the 2016 LTIP award, the TSR element was split into two parts; one half of this element will vest based on Morgan's TSR performance relative to the constituents of the FTSE All-Share Industrial Index (comprising 118 companies) and one half will vest based on Morgan's TSR performance relative to a tailored comparator group of 17 industry comparators.

The table below sets out the targets attaching to 2016 LTIP awards:

TSR vs FTSE All-Share Industrials Index	% of award that vests	TSR vs peer group	% of award that vests	EPS growth	% of award that vests	Group ROCE[*]	% of award that vests
Upper quartile	16.67%	Upper quartile	16.67%	11% pa	33.33%	33%	33.33%
Median	4.17%	Median	4.17%	4% pa	8.33%	27%	8.33%
Below median	Nil	Below median	Nil	< 4% pa	Nil	< 27%	Nil

Exit payments made in year

The auditor is required to report on the information in this table.

Kevin Dangerfield

Kevin Dangerfield left the Group on 31 March 2016. Details of payments made to Kevin Dangerfield relating to his termination of employment were published on 24 March 2016. In accordance with the terms of his service agreement, Kevin Dangerfield received a one-off payment of £87,360 in connection with the termination of his employment and the Group agreed to make three payments to Kevin Dangerfield in lieu of notice for the remainder of his contractual notice period, comprising base salary, the cash equivalent of pension contributions and other benefits. The Company also agreed to pay outplacement fees up to £20,000. The first of the payments, relating to termination, was made on his termination date and totalled £151,076 along with a payment for accrued but unused holiday of £7,442. The two subsequent payments were due to be for £141,076 each and the last was due to be made no later than November 2016. It was further determined that, if Kevin Dangerfield was to obtain an alternative remunerated position prior to 31 March 2017 the Group was entitled to make a corresponding reduction to these payments. Following Kevin Dangerfield's appointment to Laird PLC as CFO on 17 October 2016 the final payment of £141,706 was not paid. All unvested share awards to Kevin Dangerfield lapsed upon termination of his employment. It was agreed that Kevin Dangerfield would be entitled to a pro rata bonus payment for the 2016 bonus plan year, the value of which is disclosed in the single total figure of remuneration for executive Directors on page 79 (along with the remuneration received by Kevin Dangerfield in respect of his employment from 1 January to 31 March 2016).

Andrew Hosty

Andrew Hosty left the Group on 8 January 2016 as a result of the role of COO being made redundant. Details of payments due to him on cessation of employment were published on 2 October 2015. In accordance with the terms of his service agreement, the Company agreed to make three equal payments to Andrew Hosty in lieu of notice for the remainder of his contractual notice period, comprising base salary, the cash equivalent of pension contributions and other benefits. This totalled £104,468.02 for each instalment. The first of these payments was made on his termination date and the last was made in July 2016. The Company also made a lump sum payment for accrued but unused holiday of £24,507.72, and paid overall outplacement fees of £39,000 on Andrew Hosty's behalf. In response to the fact that the Company incurred outplacement fees in excess of the amount of £20,000 previously agreed with Andrew Hosty, Andrew Hosty's gross payment in lieu of notice was therefore reduced by £19,000. Because his termination was as a result of redundancy, the Committee agreed to apply the good leaver provisions set out in the Remuneration Policy (pro-rated for time, and subject to performance measures, as approved by shareholders) for his retained share awards. Details of these unvested awards are shown in the corresponding tables on page 90.

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Payments to past Directors
The auditor is required to report on the information in this table.

Other than the payments set out in the section above, 12.7% of the time pro-rated interest in the 2014 LTIP retained by Mark Robertshaw (who left the Company on 31 December 2014) will vest in early 2017, in line with the Group's performance over the completed performance period. The number of shares vesting to Mark Robertshaw will be 7,432 shares. Mark Robertshaw has no outstanding interests in the LTIP.

No payments were made to past Directors in the 2016 financial year.

External appointments
Details of external appointments held by executive Directors and the fees retained in 2016 are provided in the table below:

Executive Director	Company	Role	Fees retained
Kevin Dangerfield[1]	e2v Technologies plc	Non-executive Director	£11,875
Andrew Hosty[2]	Consort Medical plc	Non-executive Director	£888
Pete Raby	–	–	–
Peter Turner[3]	–	–	–

1. Kevin Dangerfield left the Group on 31 March 2016.
2. Andrew Hosty left the Group on 8 January 2016.
3. Peter Turner joined the Group on 11 April 2016.

Implementation of Remuneration Policy for 2017
Base salary
In line with the Remuneration Policy, executive Directors' salaries were reviewed by the Committee and increased for 2017. The table below shows the base salaries in 2016, and those which took effect from 1 January 2017:

		Base salary at:		
Executive Director	Position	1 January 2017	1 January 2016	Increase
Pete Raby	CEO	£495,000	£470,000	5.3%
Peter Turner[1]	CFO	£392,700	£385,000[1]	2.0%

1. Peter Turner was appointed to the Board on 11 April 2016. The above figure is an annualised amount.

As disclosed in the 2015 Remuneration Report, the Committee set Pete Raby's salary at a below-market positioning on appointment as Group CEO in 2015, and maintained it at this level for the 2016 financial year. The Committee and Board as a whole have been delighted by Pete Raby's performance and contribution to date in the role against the agreed strategic objectives. In line with the Group's philosophy of linking salary increases to individual performance (in 2016, merit increases averaged 1.9% across the global employee population) the Committee has agreed that an above-inflation increase to Pete Raby's salary (by 5.3% to £495,000) is appropriate for the 2017 financial year. Future above-inflation increases will continue to be based on Pete Raby's performance in the role and the performance of the Group. The rationale for any future increases will be disclosed in the relevant Annual Report on Remuneration.

In agreeing the increase awarded to Peter Turner, the Committee has been mindful of the range of increases to be awarded across the Group of 2% – 2.5% on average in 2017, as well as Peter Turner's strong performance in the role since his appointment.

Pension
Pete Raby and Peter Turner will continue to receive a cash allowance in lieu of pension worth 20% of salary.

Annual bonus in respect of 2017 performance
The maximum bonus opportunity remains at 150% of salary with 33% of any bonus result deferred into shares for a further three-year period.

The only change proposed to the annual bonus for the 2017 financial year is to measure cash generation (defined as EBITA plus depreciation and adjusted for the impact of working capital movements, and weighted 40% of the total bonus opportunity) against quarterly cumulative targets as well as over the complete financial year. For every quarterly target that is missed, the payout warranted for full-year performance under this element will be reduced by 10%. The Committee believes that this approach better incentivises management to maintain focus on operating efficiency in difficult markets, as generating cash continues to be an important aspect of Group performance. EBITA will also continue be weighted at 40%, with the remaining 20% of the bonus opportunity continuing to be based on strategic personal objectives.

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The actual performance targets set at the beginning of the performance period are not disclosed as they are considered commercially sensitive at this time, given the close link between performance measures and the Group's longer-term strategy. This is particularly relevant in the context of some of the Group's close and unlisted competitors who are not required to disclose such information, and for whom the assumptions in our targets would provide valuable information in the current trading year. We will disclose these targets retrospectively, a practice we have implemented since 2013, at such time as these targets have become less commercially sensitive, and within three years of the end of the performance year.

2017 LTIP awards

In March 2017, Pete Raby and Peter Turner will be granted awards under the 2017 LTIP with face value of 150% of their respective base salaries for 2017. The three-year performance period over which performance will be measured begins on 1 January 2017 and will end on 31 December 2019. Further details of the awards will be disclosed in next year's report.

The performance measures are detailed below:

- The relative TSR element of the LTIP will remain equally split between two comparator benchmarks to ensure the relevance and robustness of the TSR element. The two comparator benchmarks are the constituents of the FTSE All-Share Industrials Index and the following tailored group of international sector comparators: BASF, Carborundum, Ibiden, Imerys, Krosaki Harima, LyondellBasell, Magnesita, Mersen, Minerals Technologies, RHI, SGL Carbon, Sumitomo Chemical, Toyo Tanso, Worley Parsons, Vesuvius and Victrex. British Polythene Industries has been removed from the comparator group following its acquisition by RPC Group. Each TSR element will operate independently, with vesting determined based on Morgan's TSR rank relative to constituents of each TSR benchmark. The performance range for each element will remain median to upper quartile.
- From 2017 Return on Invested Capital® (ROIC) will be used rather than ROCE®, as in previous cycles. ROIC® will include total intangible assets in the definition of capital employed. The Board considers ROIC® to be a more complete measure of value creation because it measures the efficiency of Morgan's total capital base, rather than its operational capital base only. The calculation will be based on a 12-month average asset value to mitigate the impact of exchange rate fluctuations in the year, and any goodwill write-offs that occur during the performance period will be added back to the capital base.
- The EPS performance range remains unchanged to support the Group's strategy for sustainable long-term growth over the next three years whilst continuing to represent an appropriately demanding target.
- For all three measures, awards will continue to vest on a straight-line basis between threshold and maximum, with 25% of each element vesting at threshold.
- For the 2017 LTIP cycle, and in response to shareholder feedback, executive Directors will be required to hold any vested 2017 LTIP awards for an additional two-year period. Vested awards that are subject to the holding period will remain subject to clawback in line with our Policy, but will not be forfeitable on cessation of employment.

Chairman and non-executive Director fees

The Chairman's and non-executive Directors' fees were reviewed in December 2016. The following fees will apply in 2017:

Role	2016 fee pa	2017 fee pa	Increase
Chairman	£178,500	£182,100	2%
Non-executive Director	£47,000	£47,940	2%
Committee chairman (additional fee)	£8,000	£8,000	0%
Senior Independent Director (additional fee)	£8,000	£8,000	0%

Percentage change in CEO remuneration

The table below shows the percentage change in CEO remuneration (from 2015 to 2016) compared to the average percentage change in remuneration for other UK-based employees over the same period. The UK employee workforce was chosen as a suitable comparator group as the CEO is based in the UK (albeit with a global role and responsibilities) and pay changes across the Group vary widely depending on local market conditions. Although similar remuneration principles apply across the wider Group, pay decisions for this subset are impacted by similar external market forces (eg wage inflation, local practice with respect to the provision of benefits, etc.).

	CEO			% change in 2016 (vs 2015) for other employees
Elements of remuneration	**2016**	2015[1]	% change	
Base salary received during the year	**£470,000**	£470,000	0%	1.7%
Taxable benefits (excluding pension)	**£13,482**	£13,274	1.6%	6.9%
Annual bonus	**£208,210**	£234,530	-11.2%	56.7%

1. Pete Raby commenced employment on 1 August 2015. The 2015 figures have been annualised.

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Relative importance of spend on pay

The graphs below show shareholder distributions (ie dividends and share buybacks) and total employee pay expenditure for the financial years ended 31 December 2015 and 31 December 2016, and the percentage change year on year.

SHAREHOLDER DISTRIBUTIONS
£m

No change

TOTAL EMPLOYEE PAY EXPENDITURE
£m

11.0% change

Total employee pay across the Group has increased by 11% to £332.7 million (2015: £299.7 million). This increase was as a result of the decline in the value of sterling against other currencies, with much of the Group's businesses being denominated in non-sterling currencies.

Advisers

Kepler was appointed by the Committee in 2010 as its executive remuneration adviser and was retained during the most recent financial year. In 2016, Kepler, now a brand of Mercer, provided independent advice on performance measurement, the setting of incentive targets, TSR analysis and the structure of long-term incentives, and provided market data in respect of senior executive remuneration and non-executive Director fees. Kepler reports directly to the Chairman of the Remuneration Committee and does not provide any other material services to the Group (nor does Kepler's parent company, Mercer), and is considered to be independent.

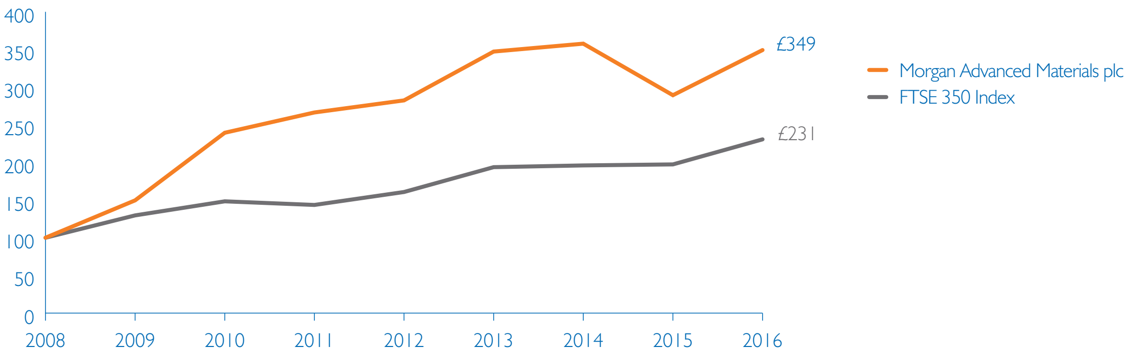
Kepler is a signatory to the Code of Conduct for Remuneration Consultants.

Fees paid during the year to advisers for advice to the Remuneration Committee, charged on a time and materials basis, were as follows:

Adviser	Fees (incl. expenses, excl. VAT)
Kepler	£54,550

Comparison of Company performance

The graph below shows the value, at 31 December 2016, of £100 invested in Morgan Advanced Materials plc's shares on 31 December 2008 compared with the current value of the same amount invested in the FTSE 350 Index. The FTSE 350 Index – of which the Company is a constituent – has been chosen because it is widely followed by the UK's investment community and easily tracked over time.



The table below details the CEO's 'single figure' of remuneration over the same eight-year period.

	2009	2010	2011	2012	2013	2014	2015	2016
CEO	M Robertshaw	M Robertshaw	M Robertshaw	M Robertshaw	M Robertshaw	M Robertshaw	P Raby	P Raby
CEO single figure	£676,512	£1,045,984	£3,371,302	£1,285,556	£648,932	£1,001,448	£788,252	£787,492
Annual bonus (% max)	20%	100%	100%	0%	0%	65%	50%	29.5%[1]
BDSMP vesting (% max)	n/a	0%	60%	100%	0%	0%	n/a	n/a
LTIP vesting (% max)	n/a	0%	100%	50%	0%	0%	n/a	n/a

1. Figure represents percentage achievement of maximum opportunity. Bonus maximum as a % of salary increased to 150% of base salary in 2016 compared to 100% in previous years.

Directors' interests in shares

Shares owned outright

The auditor is required to report on the information in this table.

The shares held by each person who was a Director of Morgan Advanced Materials plc as at 31 December 2016 (together with shares held by their connected persons) in the Ordinary share capital of the Company:

	As at 1 January 2016 or date of joining	As at 31 December 2016 or on leaving	As at 23 February 2017[1]
Executive Directors			
Pete Raby	10,928	11,230	41,438
Peter Turner[2]	–	40,000	40,000
Kevin Dangerfield[3]	289,933	289,933	n/a
Andrew Hosty[4]	138,368	138,368	n/a
Non-executive Directors			
Andrew Shilston	70,000	70,000	70,000
Douglas Caster	–[9]	18,000	18,000
Victoire de Margerie[5]	2,000	2,000	n/a
Helen Bunch[6,9]	–[9]	–[9]	–[9]
Laurence Mulliez[7,9]	–[9]	–[9]	–[9]
Andrew Reynolds Smith[8]	5,000	5,000	n/a
Rob Rowley	–[9]	5,000	5,000

1. The date of this Report.
2. Peter Turner joined the Board on 11 April 2016.
3. Kevin Dangerfield stepped down from the Board on 31 March 2016.
4. Andrew Hosty stepped down from the Board on 8 January 2016.
5. Victoire de Margerie stepped down from the Board on 4 February 2016.
6. Helen Bunch was appointed to the Board on 24 February 2016.
7. Laurence Mulliez was appointed to the Board on 6 May 2016.
8. Andrew Reynolds Smith stepped down from the Board on 6 May 2016.
9. Directors' qualifying shareholding requirement removed when the Company's current Articles of Association were approved by shareholders at the 2013 AGM.

Executive Directors' shareholding guidelines

The table below shows the shareholding of each executive Director against their respective shareholding guideline as at 31 December 2016 or date of leaving.

	Shareholding guideline (% 2016 salary)	Shares owned outright	Shares subject to performance[1]	Performance-tested but unvested shares	Shares subject to BDSMP deferral[2]	Options vested but unexercised[3]	Current shareholding (% 2016 salary)[4]	Guideline met?
Pete Raby[5]	200%	41,438	428,261	57,175	–	–	25%	Building
Peter Turner[6]	200%	40,000	239,209	–	–	–	30%	Building
Kevin Dangerfield[7]	100%	289,933	–	–	7,830	3,515	210%	Yes
Andrew Hosty[8]	100%	138,368	228,377	134,405	3,961	3,653	92%	No

1. 2015 and 2016 LTIP and LTIP-CSOP awards.
2. Estimated net number of shares voluntarily deferred under the BDSMP.
3. Options granted under the Sharesave scheme for Pete Raby.
4. Based on an executive Director's 2016 salary and the share price at 31 December 2016, comprising shares owned outright and shares subject to deferral.
5. Pete Raby joined the Board on 1 August 2015. His performance-tested but unvested share award relates to the recruitment share award made on 3 August 2015.
6. Peter Turner joined the Board on 11 April 2016.
7. Kevin Dangerfield stepped down from the Board on 31 March 2016.
8. Andrew Hosty stepped down from the Board on 8 January 2016.

Unless otherwise stated, figures given in the tables on pages 88 to 90 are for shares or interests in shares.

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Pete Raby

The auditor is required to report on the information in this table.

LTIP

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to performance conditions	2015	127,543	–	–	–	127,543	344.98p	–	01.01.15 – 31.12.17
	2015 Funding	8,696	–	–	–	8,696	344.98p	–	01.01.15 – 31.12.17
	2016	–	292,022	–	–	292,022	241.42p	–	01.01.16 – 31.12.18

Share options

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to performance conditions	2015 LTIP-CSOP	8,696	–	–	–	8,696	344.98p	–	01.01.15 – 31.12.17
Subject to continued service only	2016 Sharesave	–	3,862	–	–	3,862	233.00p	–	01.12.16 – 30.11.19

Recruitment award

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to continued service only	2015 – Tranche 1	57,176	–	–[1]	–	57,176	349.80p	286.85p	–
	2015 – Tranche 2	57,175	–	–	–	57,175	349.80p	–	–

Total interests in share plans

As at 1 January 2016	As at 31 December 2016
259,286[2]	555,170[2]

1. Tranche 1 of the recruitment award to Pete Raby was subsequently released on 3 January 2017.
2. Includes a funding award of 8,696 shares to be used to the extent required to pay the exercise price arising on exercise of the CSOP and therefore not transferable to Pete Raby.

Peter Turner[1]

The auditor is required to report on the information in this table.

LTIP

Status at 31 December 2016	Plan	As at 11 April 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to performance conditions	2016	–	226,783	–	–	226,783	241.42p	–	01.01.16 – 31.12.18
	2016 Funding	–	12,426	–	–	12,426	241.42p	–	01.01.16 – 31.12.18

Share options

Status at 31 December 2016	Plan	As at 11 April 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to performance conditions	2016 LTIP-CSOP	–	12,426	–	–	12,426	241.42p	–	01.01.16 – 31.12.18

Total interests in share plans

As at 11 April 2016	As at 31 December 2016
–	251,635[2]

1. Peter Turner joined the Board on 11 April 2016.
2. Includes a funding award of 12,426 shares to be used to the extent required to pay the exercise price arising on exercise of the CSOP and therefore not transferable to Peter Turner.

Kevin Dangerfield[1]

The auditor is required to report on the information in this table.

LTIP

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
No further performance conditions, lapsed	2013	100,147	–	–	100,147	–	279.06p	–	01.01.13 – 31.12.15
	2013 Funding	1,981	–	–	1,981	–	279.06p	–	01.01.13 – 31.12.15
Subject to performance conditions	2014	81,436	–	–	81,436	–	338.34p	–	01.01.14 – 31.12.16
	2014 Funding	7,232	–	–	7,232	–	338.34p	–	01.01.14 – 31.12.16
	2015	95,715	–	–	95,715	–	329.10p	–	01.01.15 – 31.12.17

Bonus Deferral Share Matching Plan

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
Subject to performance conditions	2015 Investment	14,755	–	14,755	–	–	347.50p	237.70p	01.01.15 – 31.12.17
	2015 Matching	44,325	–	–	44,325	–	347.50p	–	
	2015 Dividends[2]	–	538	538	–	–	Various[3]	237.70p	

Share options

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
No further performance conditions, lapsed	2013 LTIP CSOP	1,981	–	–	1,981	–	279.06p	–	01.01.13 – 31.12.15
Subject to performance conditions	2014 LTIP-CSOP	7,232	–	–	7,232	–	338.34p	–	01.01.14 – 31.12.16
Subject to continued service only	2014 Sharesave	3,515	–	–	3,515	–	256.00p	–	01.12.14 – 30.11.17

Total interests in share plans

As at 1 January 2016	As at 31 December 2016
358,339[4]	–

1. Kevin Dangerfield left the Group on 31 March 2016.
2. Dividend shares received on 2015 investment shares.
3. The price used for BDSMP dividend shares is the closing price of one Morgan Advanced Materials plc ordinary share trading on the London Stock Exchange on the dividend payment date.
4. Includes a funding award of 9,213 shares to be used to the extent required to pay the exercise price arising on exercise of the CSOP and therefore not transferable to Kevin Dangerfield.

REMUNERATION REPORT
continued

Andrew Hosty[1]

The auditor is required to report on the information in this table.

LTIP

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
No further performance conditions, lapsed	2013	101,233	–	–	101,233	–	279.06p	–	01.01.13 – 31.12.15
	2013 Funding	10,750	–	–	10,750	–	279.06p	–	01.01.13 – 31.12.15
Subject to performance conditions	2014	93,101	–	–	31,034	62,067	338.34p	–	01.01.14 – 31.12.16
	2015	95,715	–	–	63,810	31,905	329.10p	–	01.01.15 – 31.12.17

Bonus Deferral Share Matching Plan

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
No further performance conditions, lapsed	2013 Investment	7,474	–	7,474	–	–	286.40p	277.00p	01.01.13 – 31.12.15
	2013 Matching	22,422	–	–	22,422	–	286.40p	–	
	2013 Dividends[2]	–	809	809	–	–	Various[3]	277.00p	

Share options

Status at 31 December 2016	Plan	As at 1 January 2016	Allocations during the year	Released during the year	Lapsed during the year	As at 31 December 2016	Market price at date of allocation	Market price on date of release	Performance period
No further performance conditions, lapsed	2013 LTIP-CSOP	10,750	–	–	10,750	–	279.06p	–	01.01.13 – 31.12.15
Subject to continued service only	2014 Sharesave	2,812	–	–	–	2,812	256.00p	–	01.12.14 – 30.11.17

Total interests in share plans

As at 1 January 2016	As at 31 December 2016
344,257[4]	96,784

1. Andrew Hosty left the Group on 8 January 2016.
2. Dividend shares received on 2013 Investment shares.
3. The price used for BDSMP dividend shares is the closing price of one Morgan Advanced Materials plc ordinary share trading on the London Stock Exchange on the dividend payment date.
4. Includes a funding award of 10,750 shares to be used to the extent required to pay the exercise price arising on exercise of the CSOP and therefore not transferable to Andrew Hosty.

Details of plans

LTIP

Plan	Details
2014 – 2016	Awards granted to executive Directors in 2014 are subject to relative TSR, EPS and ROCE*. The EPS target (applying to a third of each award) requires three-year EPS growth above a threshold of 8% pa of that element to vest, commencing at 30% vesting for that element, and rising to full vesting for EPS growth of 15% pa or higher. The TSR target (applying to another third of each award) requires Morgan Advanced Materials' three-year TSR performance to rank at median against the FTSE All-Share Industrials Index for 30% of that element to vest, rising to full vesting if Morgan Advanced Materials' TSR ranks at or above the upper quartile against the companies in this Index. The ROCE* element has been set for a 33–37% pa range, vesting on a straight-line basis, with 30% of the measure vesting at the 33% threshold. ROCE* is measured in the final year of the performance period. The 2015 awards were on the same basis as the 2014 awards described above, except that the EPS target range was 6% – 15% pa and the ROCE* target range was 27% – 33% in the final year of the performance period. The 2016 awards were on the same basis as the 2015 awards described above, except that the EPS target range was 4% – 11% pa, the ROCE* target remained at 27% – 33% but with vesting at threshold for each element reduced from 30% to 25%. The TSR element was extended to include two comparator groups as detailed earlier in this Report with vesting at threshold also reduced to 25% of that element.

Bonus Deferral Matching Plan

Plan	Details
2015	Deferral of bonus on a gross basis. Matching awards granted to executive Directors in 2015 are subject to three-year EPS growth. The EPS target requires three-year EPS growth above a threshold of 8% pa before any matching, 12% pa for a 1x match, 16% pa for a 2x match, and 20% pa or higher for a 3x match. There is straight-line vesting between these points. There were no further awards made under the Bonus Deferral Matching Plan after 2015.

Share options

Plan	Details
LTIP – CSOP	LTIP 2014: For the former CFO the award was structured as an Approved Performance Share Plan (APSP) and comprised three elements: (i) HMRC-approved options (CSOP) over shares to the value of up to £30,000 with an exercise price of 338.34 pence per share; (ii) an LTIP award in the form of a conditional award of free shares to the value of the remainder of the award above this limit; and (iii) a funding award, also in the form of a conditional award of free shares, over such numbers of shares whose value at exercise at the approved option equals up to £30,000. For the COO, the 2014 award was structured as an LTIP award in the form of a conditional award of free shares. The provisions of these CSOP options, funding awards and LTIP awards was linked so that the maximum aggregate number of shares that could be acquired on exercise of LTIP and CSOP awards (the funding award being used to pay the exercise price arising on exercise of the CSOP) was limited to that number of shares that had a market value on the date of the awards equal to 100% of Kevin Dangerfield's 2013 base salary. Vested funding awards were not transferable to the participant. LTIP 2015: The CEO's award was structured as an APSP, as described above. Awards to other executive Directors were structured as an LTIP award in the form of a conditional award of free shares. LTIP 2016: The CFO's award was structured as an APSP, as described above. The award to the CEO was structured as an LTIP award in the form of a conditional award of free shares.
2014 Sharesave 2015 Sharesave 2016 Sharesave	HMRC-approved all-employee Sharesave scheme. Exercise price set at 20% discount to share price on date of grant. Options vest after three years of continuous service and must be exercised within six months of vesting. Details of options held by Directors under Sharesave are outlined in the individual Director shareholding tables above.

Other transactions involving Directors are set out in note 26 (Related Parties) to the financial statements.

This Report was approved by the Board on 23 February 2017.

Signed on behalf of the Board

DOUGLAS CASTER
CHAIRMAN OF THE REMUNERATION COMMITTEE

OTHER DISCLOSURES

The Directors' Report is required to be produced by law. The Financial Conduct Authority (FCA)'s Disclosure Guidance and Transparency Rules (DTRs) and Listing Rules (LRs) also require the Company to make certain disclosures.

Pages 52 to 95 inclusive (together with the sections of the Annual Report incorporated by reference) constitute a Directors' Report that has been drawn up and presented in accordance with applicable law, and the liabilities of the Directors in connection with that Report are subject to the limitations and restrictions provided by that law.

The Company

Legal form of the Company

Morgan Advanced Materials plc is a company incorporated in England and Wales with company number 286773.

Name change

The Company changed its name to Morgan Advanced Materials plc (from The Morgan Crucible Company plc) on 27 March 2013.

Annual General Meeting

The Company's 2017 AGM will be held on Friday 5 May 2017 at the offices of Addleshaw Goddard LLP, Milton Gate, 60 Chiswell Street, London EC1Y 4AG. A circular incorporating the Notice of AGM accompanies this Annual Report.

Statutory disclosures

Amendment of the Articles of Association

The Company's constitution, known as the Articles of Association (the 'Articles'), is essentially a contract between the Company and its shareholders, governing many aspects of the management of the Company. It deals with matters such as the rights of shareholders, the appointment and removal of Directors, the conduct of the Board and general meetings and communications by the Company.

The Articles may be amended by special resolution of the Company's shareholders and are available on the Company's website at **www.morganadvancedmaterials.com**.

Appointment and replacement of Directors

The Articles provide that the Company may by ordinary resolution at a general meeting appoint any person to act as a Director, provided that notice is given of the resolution identifying the proposed person by name and that the Company receives written confirmation of that person's willingness to act as Director if he or she has not been recommended by the Board. The Articles also empower the Board to appoint as a Director any person who is willing to act as such. The maximum possible number of Directors under the Articles is 15. The Articles provide that the Company may by special resolution, or by ordinary resolution of which special notice is given, remove any Director before the expiration of his or her period of office. The Articles also set out the circumstances in which a Director shall vacate office. The Articles require that at each annual general meeting any Director who was appointed after the previous annual general meeting must be proposed for election by the shareholders. Additionally, any other Director who has not been elected or re-elected at one of the previous two annual general meetings must be proposed for re-election by the shareholders. The Articles also allow the Board to select any other Director to be proposed for re-election. In each case, the rules apply to Directors who were acting as Directors on a specific date selected by the Board. This is a date not more than 14 days before, and no later than, the date of the notice of the annual general meeting.

Notwithstanding the provisions of the Articles, all the Directors will stand for election or re-election on an annual basis in compliance with the provisions of the UK Corporate Governance Code. Details of the career history of Directors in post as at the date of this Report, and the Board Committees on which they serve, can be found on pages 54 and 55.

Results and dividends

The total profit (profit attributable to owners of the parent and non-controlling interests) for the year ended 31 December 2016 was £58.5 million (2015: £38.1 million). Profit before taxation for the same period was £87.9 million (2015: £59.0 million). Revenue was £989.2 million (2015: £911.8 million) and operating profit was £107.3 million (2015: £82.9 million). Basic earnings per share* from continuing operations was 18.4 pence (2015: 11.9 pence). Capital and reserves at the end of the year were £164.7 million (2015: £186.4 million). The total profit of £52.3 million will be transferred to equity.

The Directors recommend the payment of a final dividend at the rate of 7.0 pence per share on the Ordinary share capital of the Company, payable on 26 May 2017 to shareholders on the register at the close of business on 5 May 2017. Together with the interim dividend of 4.0 pence per share paid on 25 November 2016, this final dividend, if approved by shareholders, brings the total distribution for the year to 11.0 pence per share (2015: 11.0 pence).

Directors

All those who served as Directors at any time during the year under review are set out on pages 54 to 55, with the exception of Andrew Hosty, Victoire de Margerie, Kevin Dangerfield and Andrew Reynolds Smith, who resigned from the Board on 8 January 2016, 4 February 2016, 31 March 2016 and 6 May 2016 respectively.

Powers of the Directors

Subject to the Company's Articles, UK legislation and any directions given by special resolution, the business of the Company is managed by the Board, which may exercise all the powers of the Company.

Directors' interests

Details of Directors' interests (and their connected persons' beneficial interests) in the share capital of the Company are listed on page 87.

Directors' indemnities

The Company has entered into separate indemnity deeds with each Director containing qualifying indemnity provisions, as defined in Section 236 of the Companies Act 2006, under which the Company has agreed to indemnify each Director in respect of certain liabilities which may attach to each of them as a Director or as a former Director of the Company or any of its subsidiaries. The indemnity deeds were in force during the financial year to which this Directors' Report relates and are in force as at the date of approval of the Directors' Report.

Information required by LR 9.8.4R
There is no information required to be disclosed under LR 9.8.4R.

Human resources
Details of the Group's human resources policies and employee involvement are set out on pages 49 to 51.

There are no agreements between the Company and its Directors or employees providing for compensation for loss of office or employment (whether through resignation, purported redundancy or otherwise) that occurs because of a takeover bid.

Research and development
During the year, the Group invested £29.2 million (2015: £25.4 million) in research and development. The Group did not capitalise any development costs in 2016 (2015: nil).

Details of the Group's research and development during the year are set out on pages 15 to 17.

Greenhouse gas emissions
Details of the Group's annual greenhouse gas emissions are shown in the Environment, health and safety section on page 48.

Political donations
No political donations have been made. Morgan Advanced Materials plc has a policy of not making donations to any political party, representative or candidate in any part of the world.

Financial instruments
Details of the Group's use of financial instruments, together with information on policies and exposure to price, liquidity, cash flow, credit, interest rate and currency risks, can be found in note 20 on pages 130 to 138. All information detailed in this note is incorporated into the Directors' Report by reference and is deemed to form part of the Directors' Report.

Share capital and related matters
Share capital
The Company's share capital as at 31 December 2016 is set out in note 18 on pages 126 to 128. The Company's Ordinary shares represent 99.85% of the total issued share capital, with the 5.5% Cumulative First Preference shares representing 0.04% and the 5.0% Cumulative Second Preference shares representing 0.11%. The rights and obligations attaching to the Company's Ordinary shares, and restrictions on the transfer of shares in the Company, are set out in the Articles.

Shareholders' rights
The holders of Ordinary shares are entitled: to receive dividends, when declared; to receive the Company's reports and accounts; to attend and speak at general meetings of the Company; to appoint proxies; and to exercise voting rights.

Details of the structure of the Company's Preference share capital and the rights attaching to the Company's Preference shares are set out in note 18 on pages 126 to 128.

No person holds securities in the Company carrying special rights with regard to control of the Company. The Company is not aware of any agreements between holders of securities that may result in restrictions on the transfer of securities or on voting rights.

Share allotment and repurchase authorities
The Directors were granted authority at the 2016 AGM to allot shares in the Company and to grant rights to subscribe for or convert any securities into shares in the Company up to (a) a nominal amount of £23,780,832 and (b) a nominal amount of £47,561,664 in connection with a rights issue (such amount to be reduced by any shares allotted under (a)). This authority is due to lapse at the 2017 AGM. At the 2017 AGM, shareholders will be asked to grant a similar allotment authority.

Two separate special resolutions will also be proposed to renew the Directors' powers to make non-pre-emptive issues for cash up to an aggregate nominal amount representing approximately 5% of the issued share capital as at the last practicable date before the publication of the 2017 Notice of AGM, and an additional 5% of the issued share capital which would be for use only in connection with acquisitions and specified capital investments.

The Directors did not seek an authority at the 2016 AGM to repurchase shares in the capital of the Company. As at 31 December 2016, there was no such authority in place. The Directors will seek authority from shareholders to repurchase shares at the 2017 AGM.

Employee share and share option schemes
The Company operates a number of employee share and share option schemes. One hundred and seven employees hold awards under the Morgan Advanced Materials plc Long-Term Incentive Plan, including share options held under the Approved Performance Share Plan, 14 employees hold awards under the Morgan Advanced Materials Bonus Deferral Share Matching Plan and 544 employees participate in the Company's UK Sharesave scheme. Details of outstanding share awards and share options are given in note 21 on page 146.

All the Company's share schemes contain provisions relating to a change of control. Outstanding options and awards would normally vest and become exercisable on a change of control, subject to being pro-rated for time and to the satisfaction of any performance conditions at that time.

The Trustees of The Morgan General Employee Benefit Trust ('the Trust') have absolute and unfettered discretion in relation to voting any shares held in the Trust at any general meeting. Their policy is not to vote the shares. If any offer is made to shareholders to acquire their shares, the Trustees will have absolute and unfettered discretion on whether to accept or reject the offer in respect of any shares held by them.

OTHER DISCLOSURES
continued

Major shareholdings
As at 31 December 2016, the Company had been notified of the following, in accordance with DTR 5, from holders of notifiable interests representing 3% or more of the issued Ordinary share capital of the Company:

	Number of Ordinary shares	%[1]
Prudential Plc group of companies (M&G)	**28,533,428**	9.99
AXA Investment Managers SA	**23,560,970**	8.63
Ameriprise Financial Inc., and its group	**17,271,161**	6.05
Harris Associates	**14,410,180**	5.04
Black Creek Investment Managers Inc.	**14,246,065**	4.99

1. Percentages are shown as a percentage of the Company's issued share capital as at 31 December 2016, with the exception of AXA Investment Managers SA which is shown as a percentage of the Company's issued share capital at the time the holding was disclosed.

Note: As at 13 March 2017, there were no changes to the substantial shareholdings shown in the above table with the exception of the following: Ameriprise Financials Inc., and its group, which notified the Company on 3 February 2017 that it had decreased its interest to 24,186,489 shares representing 8.48% of the issued share capital; AXA Investment Managers SA, which notified the Company on 2 February 2017 that it had decreased its interest to 22,707,707 shares representing 7.96% of the issued share capital.

Transactions, contractual arrangements and post-balance sheet events

Significant agreements – change of control
The Group has a number of borrowing facilities provided by various financial institutions. The facility agreements generally include change of control provisions which, in the event of a change in ownership of the Company, could result in their renegotiation or withdrawal.

The most significant of such agreements are the UK five-year £200 million multi-currency revolving facility agreement, which was signed on 17 October 2014, and which was undrawn at the end of the year, and the privately placed Note Purchase and Guarantee Agreements signed on 15 December 2007, 30 June 2010, and 27 October 2016, for which the aggregate outstanding loan amounts are USD362 million and €80 million.

There are a number of other agreements that take effect, alter or terminate upon a change of control of the Company following a takeover bid, such as commercial contracts and joint venture agreements. No such individual contract is considered to be significant in terms of its potential impact on the business of the Group as a whole.

Post-balance sheet events
Since the balance sheet date, the Group has announced the following two transactions:

1. The sale of its UK electro-ceramics business was announced on 22 February 2017. The business comprises two sites at Ruabon and Southampton. The transaction is structured as a sale of the business, assets and goodwill for a consideration of £47 million on a cash-free, debt-free basis, payable in cash on completion and subject to customary working capital adjustments. In the year ended 31 December 2016, UK Electro-Ceramics generated an operating profit of £6.2 million on revenues of £22.7 million. Gross assets at 31 December 2016 were £7.0 million. Additionally, the Group will close a small electro-ceramics site in the USA.
2. The sale of its global Rotary Transfer Systems business was announced on 17 February 2017. The business is principally located at two manufacturing sites; Antweiler, Germany, and Chalon, France. The sale values the business at €40 million on a cash-free, debt-free basis, with consideration payable in cash at completion, subject to customary closing working capital adjustments. Completion is subject to customary conditions of closing, including merger clearance in Germany. In the year to 31 December 2016, the Rotary business generated €4.7 million of operating profit on €19.5 million of sales. Gross assets at 31 December 2016 were €7.1 million.

There have been no further material subsequent events.

Reporting, accountability and audit

Statement of Directors' responsibilities
The Directors are responsible for preparing the Annual Report and the Group and parent Company financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare Group and parent Company financial statements for each financial year. Under that law they are required to prepare the Group financial statements in accordance with IFRSs as adopted by the EU and applicable law and have elected to prepare the parent Company financial statements in accordance with UK Accounting Standards and applicable law (UK Generally Accepted Accounting Practice or UK GAAP).

A new UK GAAP accounting framework introduced by the Financial Reporting Council (FRC) became mandatorily effective for the financial statements of UK companies in 2015. Under this framework, the Company is required to prepare its parent Company financial statements on one of the bases permitted by the FRC.

As set out in the 2015 Annual Report, the Company has chosen to adopt FRS 101 *Reduced Disclosure Framework*, which enables the Company to take advantage of the permitted election to utilise the disclosure exemptions allowed under FRS 101. The consolidated financial statements of the Group on pages 100 to 152 are prepared in accordance with EU-adopted International Financial Accounting Standards (IFRSs) and are unaffected by this accounting framework. The Company proposes to continue to adopt the reduced disclosure framework of FRS 101 in its future financial statements.

Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and parent Company and of their profit or loss for that period.

In preparing each of the Group and parent Company financial statements, the Directors are required to:
- Select suitable accounting policies and then apply them consistently.
- Make judgments and estimates that are reasonable and prudent.
- For the Group financial statements, state whether they have been prepared in accordance with IFRSs as adopted by the EU.
- For the parent Company financial statements, state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the parent Company financial statements.
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group and the parent Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the parent Company's transactions and disclose with reasonable accuracy at any time the financial position of the parent Company and enable them to ensure that its financial statements comply with the Companies Act 2006. They have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the Directors are also responsible for preparing a Strategic Report, Directors' Report, Remuneration Report and Corporate Governance Statement that comply with that law and those regulations.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the Company's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

In its reporting to shareholders, the Board is satisfied that the Annual Report and Accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy as required by the Code.

The Directors as at the date of this Report, whose names and functions are set out on pages 54 and 55, confirm that, to the best of their knowledge:

- The Group's financial statements, which have been prepared in accordance with IFRSs as adopted by the EU, give a true and fair view of the assets, liabilities, financial position and profit of the Group; and
- The management report (comprising the Directors' Report and the Strategic Report) includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal risks and uncertainties that it faces.

Scope of the reporting in this Annual Report

The Board has prepared a Strategic Report which provides an overview of the development and performance of the Group's business in the year ended 31 December 2016.

For the purposes of DTR 4.1.5R(2) and DTR 4.1.8, this Directors' Report on pages 52 to 95 and the Strategic Report on pages 10 to 51 comprise the management report, including the sections of the Annual Report and financial statements incorporated by reference.

Each Director holding office at the date of approval of this Directors' Report confirms that, so far as he or she is aware, there is no relevant audit information of which the Company's auditor is unaware, and that he or she has taken all steps that he or she ought to have taken as a Director to make himself or herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

The Strategic Report, the Directors' Report and the Remuneration Report were approved by the Board on 23 February 2017.

For and on behalf of the Board

PAUL BOULTON
COMPANY SECRETARY & GENERAL COUNSEL

23 February 2017

Morgan Advanced Materials plc
Quadrant, 55-57 High Street
Windsor
Berkshire SL4 1LP
Registered in England, No. 286773

INDEPENDENT AUDITOR'S REPORT
TO THE MEMBERS OF MORGAN ADVANCED MATERIALS PLC ONLY

OPINIONS AND CONCLUSIONS ARISING FROM OUR AUDIT

Our opinion on the financial statements is unmodified

We have audited the financial statements of Morgan Advanced Materials plc for the year ended 31 December 2016 set out on pages 100 to 170. In our opinion:

- the financial statements give a true and fair view of the state of the Group's and of the parent company's affairs as at 31 December 2016 and of the Group's profit and for the year then ended;
- the Group financial statements have been properly prepared in accordance with International Financial Reporting Standards as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with UK Accounting Standards, including FRS 101 Reduced Disclosure Framework; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

Our assessment of risks of material misstatement

In arriving at our audit opinion above on the financial statements the risks of material misstatement, in decreasing order of audit significance, that had the greatest effect on our audit were as follows (unchanged from 2015):

- *Impairment assessment of acquired Customer Relationship Intangible assets (£31.7 million (2015: £30.5 million))*

Refer to page 64 (Audit Committee report), pages 120 to 122 accounting policy note and financial disclosures

The risk: The Group assesses the recoverable value of acquired customer relationships based on the present value of the economic benefits expected to be generated from them. These present value calculations reflect a number of assumptions relating to the forecast cash flows, discount rates and the period that customers are expected to be retained post acquisition ('churn rate'). These assumptions and estimates require judgment and are inherently uncertain. The principal uncertainty in 2016 relates to the churn rate of key customers and therefore the useful lives of those customer relationships. In the current period, the Group has impaired in full the technology intangible asset of £8.5 million associated with Composite & Defence Systems reflecting the uncertain prospects of this business.

Our response: Our audit procedures included challenging the key assumptions (relating to operating cashflows during the projection period, customer churn rates and long term growth rates and discount rates) in the impairment calculations based on externally derived data, our understanding of the status of contractual negotiations with key customers and our assessment of the historical accuracy of the Group's impairment calculations. We tested the principles and mathematical integrity of the Group's discounted cash flow model and assessed the sensitivity of the impairment calculations to changes in the key assumptions. We also assessed the adequacy of the Group's disclosures relating to the intangible asset including the impairment charge recognised in the period.

- *Measurement of tax balances and contingencies (£16.6 million (2015: £14.4 million))*

Refer to page 64 (Audit Committee report), pages 116 to 117 and 124 accounting policy and financial disclosures

The risk: The level of current tax and deferred tax recognised requires judgments as to the likely outcome of decisions to be made by the tax authorities in the numerous various tax jurisdictions around the world in which the Group operates. As a result of the complexities of tax rules on transfer pricing and other tax legislation the accounting for tax exposures is a key audit judgement. There is a risk that the Group's judgements do not adequately reflect the latest available, reliable information or an appropriate application of relevant tax legislation, and that the related tax liabilities are either under or overstated as a result.

Our response: In this area our procedures included the following with the assistance of our own tax specialists: assessed the group's tax positions, examined its correspondence with the relevant tax authorities and its external tax advisors, and analysed and challenged the assumptions used to determine the level of tax provisions using our knowledge and experiences of the application of the international and local legislation by the relevant authorities and courts. We also assessed whether the Group's tax disclosures are appropriate and in accordance with relevant accounting standards.

- *Recognition of Environmental and other provisions and contingent liabilities (£5.6 million (2015: £12.0 million))*

Refer to page 64 (Audit Committee report), page 150 accounting policy and financial disclosures

The risk: Provisions are held in respect of environmental issues and other matters including the settlement of European class actions. The application of accounting standards to determine whether a provision should be recorded and, if so, the amount, is inherently subjective.

Our response: Our audit procedures included a critical assessment of the extent to which the Group's judgements as to whether provisions should be recorded and estimates of the amounts are a balanced assessment of the latest available information and the accuracy and reliability of the sources of that information. We considered the appropriateness of the assumptions by reference to third party confirmations and legal advice, where available, and considered whether our understanding of the business gained throughout the audit process corroborated the provisions recorded, or indicated that further challenge was warranted. We also assessed whether the Group's disclosures about provisions and contingent liabilities and the treatment of movements on provisions in the income statement for the year were appropriate.

→ *Presentation of specific adjusting items (£1.7 million loss pre-tax (2015: £22.1 million))*

Refer to page 64 (Audit Committee report), pages 114 to 116 accounting policy and financial disclosures

The risk: The Group separately presents certain income and expenditure as 'specific adjusting items' on the face of the income statement. 'Specific adjusting items' are not defined by IFRSs as adopted by the European Union, and therefore judgement is required by the directors to identify such items as 'specific adjusting items' in accordance with the Group's accounting policy on a consistent basis. Failure to disclose clearly the nature and impact of material 'specific adjusting items' may distort the reader's view of the financial result in the year.

Our response: Our audit procedures included making enquiries of the directors. We inspected and challenged the nature of items included within 'specific adjusting items' and agreed their respective amounts to supporting documentation, and to third party correspondence where appropriate. We assessed the consistency of the items classified as 'specific adjusting items' year on year and in accordance with the Group's accounting policy; and we considered the adequacy of the Group's disclosures about the items included within this caption in note 6 (specific adjusting items) and the related accounting policies for these categories on page 114.

Our application of materiality and an overview of the scope of our audit

The materiality for the Group financial statements as a whole was set at £3.5 million (2015: £3.5 million), determined with reference to a benchmark of Group profit before taxation, normalised to exclude this year's specific adjusting items as disclosed in note 6, of £89.6 million (2015: £81.1 million), of which it represents 3.9% (2015: 4.3%).

We reported to the Audit Committee any corrected and uncorrected identified misstatements exceeding £0.175 million (2015: £0.175 million), in addition to other identified misstatements that warranted reporting on qualitative grounds.

Of the Group's 110 (2015: 110) reporting components, we subjected 26 (2015: 26) to audits for Group reporting purposes and 11 (2015: 18) to specified risk-focused audit procedures. The latter were not individually financially significant enough to require an audit for group reporting purposes, but did present specific individual risks that needed to be addressed.

The components within the scope of our work accounted for the following percentages of the group's results:

	Number of Components	Group revenue	Group profit before tax	Group total assets
Audits for Group reporting purposes	26	60%	61%	68%
Specific risk focused audit procedures	11	21%	19%	18%
Reviews of financial information (including enquiry)				
Total	**37**	**81%**	**80%**	**86%**
Total (2015)	44	83%	82%	87%

The remaining 19% (2015: 17%) of total group revenue, 20% (2015: 18%) of group profit before tax and 14% (2015: 13%) of total group assets is represented by 73 of reporting components, none of which individually represented more than 5% of any of total group revenue, group profit before tax or total group assets. For these remaining components, we performed analysis at an aggregated group level to re-examine our assessment that there were no significant risks of material misstatement within these.

The Group audit team instructed component auditors as to the significant areas to be covered, including the relevant risks detailed above and the information to be reported back. The Group audit team approved the component materialities, which ranged from £0.1 million to £3.5 million (2015: £0.1 million to £3.5 million) having regard to the mix of size and risk profile of the Group across the components. The work on 36 of the 37 (2015: 43 of 44) components was performed by component auditors and the rest by the Group audit team. The Group audit team performed procedures on the items excluded from normalised group profit before tax.

The Group audit team visited 4 (2015: 5) component locations in the UK, USA, Italy and Brazil (2015: UK, USA, Germany, China and Brazil). Telephone meetings were also held with the auditors and local management at these locations and the majority of the other locations that were not physically visited. At these visits and meetings, the findings reported to the Group audit team were discussed in more detail, and any further work required by the Group audit team was then performed by the component auditor.

INDEPENDENT AUDITOR'S REPORT
TO THE MEMBERS OF MORGAN ADVANCED MATERIALS PLC ONLY
continued

Our opinion on other matters prescribed by the Companies Act 2006 is unmodified

In our opinion:

- the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006; and
- the information given in the Strategic Report and Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Based solely on the work required to be undertaken in the course of the audit of the financial statements and from reading the Strategic report and the Directors' report:

- we have not identified material misstatements in those reports; and
- in our opinion, those reports have been prepared in accordance with the Companies Act 2006.

We have nothing to report on the disclosures of principal risks

Based on the knowledge we acquired during our audit, we have nothing material to add or draw attention to in relation to:

- the directors' viability statement on page 34, concerning the principal risks, their management, and, based on that, the directors' assessment and expectations of the group's continuing in operation over the 3 years to 2019; or
- the disclosures in note 1 of the financial statements concerning the use of the going concern basis of accounting.

We have nothing to report in respect of the matters on which we are required to report by exception

Under ISAs (UK and Ireland) we are required to report to you if, based on the knowledge we acquired during our audit, we have identified other information in the annual report that contains a material inconsistency with either that knowledge or the financial statements, a material misstatement of fact, or that is otherwise misleading.

In particular, we are required to report to you if:

- we have identified material inconsistencies between the knowledge we acquired during our audit and the directors' statement that they consider that the annual report and financial statements taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy; or
- the Report of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Under the Listing Rules we are required to review:

- the directors' statement, in relation to going concern set out on page 34 and the longer-term viability set out on page 34; and
- the part of the Corporate Governance Statement on page 56 relating to the company's compliance with the eleven provisions of the 2014 UK Corporate Governance Code specified for our review.

We have nothing to report in respect of the above responsibilities.

Scope and responsibilities

As explained more fully in the Directors' Responsibilities Statement set out on pages 94-95, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. A description of the scope of an audit of accounts is provided on the Financial Reporting Council's website at **www.frc.org.uk/auditscopeukprivate**. This report is made solely to the Company's members as a body and subject to important explanations and disclaimers regarding our responsibilities, published on our website at **www.kpmg.com/uk/auditscopeukco2014a**, which are incorporated into this report as if set out in full and should be read to provide an understanding of the purpose of this report, the work we have undertaken and the basis of our opinions.

ANTHONY SYKES
SENIOR STATUTORY AUDITOR

for and on behalf of KPMG LLP, Statutory Auditor
Chartered Accountants
15 Canada Square
London E14 5GL
23 February 2017

FINANCIAL STATEMENTS

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CONSOLIDATED INCOME STATEMENT

for the year ended 31 December 2016

	Note	Results before specific adjusting items 2016 £m	Specific adjusting items[1] 2016 £m	Total 2016 £m	Results before specific adjusting items 2015 £m	Specific adjusting items[1] 2015 £m	Total 2015 £m
Revenue	3	**989.2**	**–**	**989.2**	911.8	–	911.8
Operating costs before restructuring costs and other items and amortisation/impairment of intangible assets	4	**(871.3)**	**–**	**(871.3)**	(802.2)	–	(802.2)
Profit from operations before restructuring costs and other items and amortisation/impairment of intangible assets		**117.9**	**–**	**117.9**	109.6	–	109.6
Restructuring costs and other items:							
Restructuring costs	4 & 6	**(1.5)**	**–**	**(1.5)**	(4.1)	(1.5)	(5.6)
Net pension settlement credit		**–**	**6.8**	**6.8**	–	–	–
Business exit costs	6	**–**	**–**	**–**	–	(2.8)	(2.8)
Impairment of property, plant and equipment	6	**–**	**–**	**–**	–	(5.9)	(5.9)
Gain on disposal of properties	4	**0.5**	**–**	**0.5**	0.5	–	0.5
Profit from operations before amortisation/impairment of intangible assets	3	**116.9**	**6.8**	**123.7**	106.0	(10.2)	95.8
Amortisation of intangible assets	4	**(7.9)**	**–**	**(7.9)**	(7.1)	–	(7.1)
Impairment of intangible assets	6	**–**	**(8.5)**	**(8.5)**	–	(5.8)	(5.8)
Operating profit	3	**109.0**	**(1.7)**	**107.3**	98.9	(16.0)	82.9
Finance income		**2.3**	**–**	**2.3**	2.5	–	2.5
Finance expense		**(22.3)**	**–**	**(22.3)**	(20.6)	–	(20.6)
Net financing costs	7	**(20.0)**	**–**	**(20.0)**	(18.1)	–	(18.1)
Loss on disposal of business	6	**–**	**–**	**–**	–	(6.1)	(6.1)
Share of profit of associate (net of income tax)	12	**0.6**	**–**	**0.6**	0.3	–	0.3
Profit before taxation		**89.6**	**(1.7)**	**87.9**	81.1	(22.1)	59.0
Income tax expense	8	**(26.6)**	**(2.8)**	**(29.4)**	(24.2)	3.3	(20.9)
Profit for the period		**63.0**	**(4.5)**	**58.5**	56.9	(18.8)	38.1
Profit for the period attributable to:							
Owners of the parent		**56.8**	**(4.5)**	**52.3**	52.3	(18.4)	33.9
Non-controlling interests		**6.2**	**–**	**6.2**	4.6	(0.4)	4.2
		63.0	**(4.5)**	**58.5**	56.9	(18.8)	38.1
Basic earnings per share	9						
Continuing operations				**18.4p**			11.9p
Diluted earnings per share							
Continuing operations				**18.3p**			11.9p
Dividends							
Interim dividend – pence				**4.00p**			4.00p
– £m				**11.4**			11.4
Proposed final dividend – pence				**7.00p**			7.00p
– £m				**20.0**			20.0

The proposed final dividend is based upon the number of shares outstanding at the balance sheet date.

1. Details of 'specific adjusting items' are given in note 6 to the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
for the year ended 31 December 2016

	Translation reserve £m	Hedging reserve £m	Retained earnings £m	Total parent comprehensive income £m	Non-controlling interests £m	Total comprehensive income £m
2015						
Profit for the period	–	–	33.9	33.9	4.2	38.1
Items that will not be reclassified subsequently to profit or loss:						
Remeasurement gain on defined benefit plans	–	–	1.3	1.3	–	1.3
Tax effect of components of other comprehensive income not reclassified	–	–	(0.9)	(0.9)	–	(0.9)
	–	–	0.4	0.4	–	0.4
Items that may be reclassified subsequently to profit or loss:						
Foreign exchange translation differences	(5.0)	–	–	(5.0)	0.6	(4.4)
Net gain on hedge of net investment in foreign subsidiaries	2.0	–	–	2.0	–	2.0
Cash flow hedges:						
Change in fair value	–	(0.1)	–	(0.1)	–	(0.1)
	(3.0)	(0.1)	–	(3.1)	0.6	(2.5)
Total comprehensive income, net of tax	(3.0)	(0.1)	34.3	31.2	4.8	36.0
2016						
Profit for the period	**–**	**–**	**52.3**	**52.3**	**6.2**	**58.5**
Items that will not be reclassified subsequently to profit or loss:						
Remeasurement loss on defined benefit plans	**–**	**–**	**(68.1)**	**(68.1)**	**–**	**(68.1)**
Tax effect of components of other comprehensive income not reclassified	**–**	**–**	**0.6**	**0.6**	**–**	**0.6**
	–	**–**	**(67.5)**	**(67.5)**	**–**	**(67.5)**
Items that may be reclassified subsequently to profit or loss:						
Foreign exchange translation differences	**37.4**	**–**	**–**	**37.4**	**5.5**	**42.9**
Net loss on hedge of net investment in foreign subsidiaries	**(17.7)**	**–**	**–**	**(17.7)**	**–**	**(17.7)**
Cash flow hedges:						
Change in fair value	**–**	**(3.7)**	**–**	**(3.7)**	**–**	**(3.7)**
Transferred to profit or loss	**–**	**0.8**	**–**	**0.8**	**–**	**0.8**
	19.7	**(2.9)**	**–**	**16.8**	**5.5**	**22.3**
Total comprehensive income, net of tax	**19.7**	**(2.9)**	**(15.2)**	**1.6**	**11.7**	**13.3**

CONSOLIDATED BALANCE SHEET
as at 31 December 2016

	Note	2016 £m	2015 £m
Assets			
Property, plant and equipment	10	**303.7**	256.7
Intangible assets	11	**240.4**	229.8
Investments	12	**6.0**	5.4
Other receivables		**4.7**	5.3
Deferred tax assets	13	**6.1**	4.4
Total non-current assets		**560.9**	501.6
Inventories	14	**148.2**	129.2
Derivative financial assets		**2.1**	2.0
Trade and other receivables	15	**205.7**	174.4
Cash and cash equivalents	16	**122.4**	49.8
Total current assets		**478.4**	355.4
Total assets		**1,039.3**	857.0
Liabilities			
Interest-bearing loans and borrowings	19	**204.0**	257.4
Employee benefits: pensions	21	**271.1**	204.5
Provisions	22	**2.3**	1.6
Non-trade payables	17	**1.8**	0.7
Derivative financial liabilities		**0.3**	–
Deferred tax liabilities	13	**8.3**	2.3
Total non-current liabilities		**487.8**	466.5
Interest-bearing loans and borrowings and bank overdrafts	19	**160.9**	8.4
Trade and other payables	17	**192.5**	168.6
Current tax payable		**16.6**	14.4
Provisions	22	**5.8**	10.4
Derivative financial liabilities		**11.0**	2.3
Total current liabilities		**386.8**	204.1
Total liabilities		**874.6**	670.6
Total net assets		**164.7**	186.4
Equity			
Share capital	18	**71.8**	71.8
Share premium		**111.7**	111.7
Reserves		**46.8**	30.0
Retained earnings		**(109.5)**	(63.7)
Total equity attributable to equity owners of parent Company		**120.8**	149.8
Non-controlling interests		**43.9**	36.6
Total equity		**164.7**	186.4

The financial statements were approved by the Board of Directors on 23 February 2017 and were signed on its behalf by:

PETE RABY
CHIEF EXECUTIVE OFFICER

PETER TURNER
CHIEF FINANCIAL OFFICER

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2016

	Share capital £m	Share premium £m	Translation reserve £m	Hedging reserve £m	Fair value reserve £m	Capital redemption reserve £m	Other reserves £m	Retained earnings £m	Total parent equity £m	Non-controlling interests £m	Total equity £m
Balance at 1 January 2015	71.8	111.7	(13.5)	0.5	(1.0)	35.7	11.4	(65.4)	151.2	36.5	187.7
Profit for the year	–	–	–	–	–	–	–	33.9	33.9	4.2	38.1
Other comprehensive income	–	–	(3.0)	(0.1)	–	–	–	0.4	(2.7)	0.6	(2.1)
Transactions with owners:											
Dividends	–	–	–	–	–	–	–	(31.4)	(31.4)	(3.8)	(35.2)
Equity-settled share-based payment transactions	–	–	–	–	–	–	–	1.7	1.7	–	1.7
Own shares acquired for share incentive schemes	–	–	–	–	–	–	–	(2.9)	(2.9)	–	(2.9)
Adjustment arising from change in non-controlling interest	–	–	–	–	–	–	–	–	–	(0.9)	(0.9)
Balance at 31 December 2015	71.8	111.7	(16.5)	0.4	(1.0)	35.7	11.4	(63.7)	149.8	36.6	186.4
Balance at 1 January 2016	**71.8**	**111.7**	**(16.5)**	**0.4**	**(1.0)**	**35.7**	**11.4**	**(63.7)**	**149.8**	**36.6**	**186.4**
Profit for the year	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**52.3**	**52.3**	**6.2**	**58.5**
Other comprehensive income	**–**	**–**	**19.7**	**(2.9)**	**–**	**–**	**–**	**(67.5)**	**(50.7)**	**5.5**	**(45.2)**
Transactions with owners:											
Dividends	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(31.2)**	**(31.2)**	**(4.4)**	**(35.6)**
Equity-settled share-based payment transactions	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.8**	**0.8**	**–**	**0.8**
Own shares acquired for share incentive schemes	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(0.2)**	**(0.2)**	**–**	**(0.2)**
Balance at 31 December 2016	**71.8**	**111.7**	**3.2**	**(2.5)**	**(1.0)**	**35.7**	**11.4**	**(109.5)**	**120.8**	**43.9**	**164.7**

Details of the reserves are provided in note 18.

CONSOLIDATED STATEMENT OF CASH FLOWS
for the year ended 31 December 2016

	Note	2016 £m	2015[1] £m
Operating activities			
Profit for the period		**58.5**	38.1
Adjustments for:			
Depreciation	4	**29.5**	27.1
Amortisation	4	**7.9**	7.1
Net financing costs	7	**20.0**	18.1
Loss on disposal of business	6	**–**	6.1
Share of profit from associate (net of income tax)	12	**(0.6)**	(0.3)
Profit on sale of property, plant and equipment		**(0.4)**	(0.4)
Income tax expense	8	**29.4**	20.9
Non-cash operating costs relating to restructuring	4	**–**	0.2
Non-cash specific adjusting items included in operating profit		**1.1**	15.5
Equity-settled share-based payment expenses	4	**0.8**	1.4
Cash generated from operations before changes in working capital and provisions		**146.2**	133.8
(Increase)/decrease in trade and other receivables		**(6.1)**	15.5
Decrease/(increase) in inventories		**1.4**	(4.7)
(Decrease)/increase in trade and other payables		**(0.1)**	5.7[1]
Decrease in provisions		**(5.2)**	(3.4)
Payments to defined benefit pension plans		**(14.5)**	(13.0)
Cash generated from operations		**121.7**	133.9
Interest paid		**(15.3)**	(13.4)
Income tax paid		**(22.2)**	(29.9)
Net cash from operating activities		**84.2**	90.6
Investing activities			
Purchase of property, plant and equipment		**(39.5)**	(63.5)
Forward contracts used in net investment hedging		**(12.3)**	4.9
Purchase of investments		**(1.0)**	–
Proceeds from sale of property, plant and equipment		**1.1**	0.8
Loan repaid by associate		**2.1**	–
Interest received		**2.2**	2.2
Loan made to purchaser of business		**–**	(1.5)
Disposal of subsidiaries, net of cash disposed		**–**	(0.1)
Investment made by non-controlling interests		**–**	0.5
Net cash from investing activities		**(47.4)**	(56.7)
Financing activities			
Purchase of own shares for share incentive schemes		**(0.2)**	(2.9)
Net increase/(decrease) in borrowings	16	**63.4**	(8.5)
Payment of finance lease liabilities	16	**(0.3)**	(0.2)
Dividends paid – to external plc shareholders		**(31.4)**	(31.4)
Proceeds from unclaimed dividends		**0.2**	–
Dividends paid to non-controlling interests		**(4.4)**	(3.8)[1]
Net cash from financing activities		**27.3**	(46.8)
Net increase in cash and cash equivalents		**64.1**	(12.9)
Cash and cash equivalents at start of period		**49.8**	63.0
Effect of exchange rate fluctuations on cash held		**8.5**	(0.3)
Cash and cash equivalents at period end	16	**122.4**	49.8

1. 2015 has been re-presented for the reclassification of £3.8 million of dividends paid to non-controlling interests from '(Decrease)/increase in trade and other payables' to 'Dividends paid to non-controlling interests'.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS

Accounting policies

Morgan Advanced Materials plc (the 'Company') is a company incorporated in the UK under the Companies Act. The address of the registered office is given in 'Shareholder information' on page 174. The principal activities of the Company and its subsidiaries and the nature of the Group's operations are set out in the Strategic Report on pages 10 to 51.

The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the 'Group'), and include the Group's interest in associates. The parent Company financial statements present information about the Company as a separate entity and not about its Group. These consolidated financial statements have been drawn up to 31 December 2016. The Group maintains a 12-month calendar fiscal year ending on 31 December.

The Group financial statements have been prepared and approved by the Directors in accordance with International Financial Reporting Standards as adopted by the EU ('adopted IFRSs'). The Company has elected to prepare its parent Company financial statements in accordance with Financial Reporting Standard 101 *Reduced Disclosure Framework*; these are presented on pages 153 to 170.

Where possible the Group has set out individual accounting policies in the note to the consolidated financial statements most relevant to that accounting policy, including for property, plant and equipment, intangible assets and specific adjusting items.

Except for the changes set out in the Adoption of new and revised Standards section, the accounting policies set out below have been applied consistently to all periods presented in these Group financial statements.

(a) Measurement convention

The financial statements are prepared on the historical cost basis except that the following assets and liabilities are stated at their fair value: derivative financial instruments and financial instruments available-for-sale.

(b) Functional and presentation currency

The Group financial statements are presented in pounds sterling, which is the Company's functional currency.

(c) Basis of consolidation

(i) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

(ii) Acquisitions

Business combinations are accounted for using the acquisition method as at the acquisition date, which is the date on which control is transferred to the Group. The Group measures goodwill as the acquisition-date fair value of the consideration transferred, including the amount of any non-controlling interest in the acquiree, less the net of the acquisition-date fair values of the identifiable assets acquired and liabilities assumed, including contingent liabilities as required by IFRS 3.

Consideration transferred includes the fair values of assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, equity interests issued by the Group, contingent consideration, and share-based payment awards of the acquiree that are replaced in the business combination. Any contingent consideration payable is recognised at fair value at the acquisition date. Subsequent changes to the fair value of contingent consideration that is not classified as equity is recognised in the income statement.

Transaction costs that the Group incurs in connection with a business combination, such as finder's fees, legal fees, due diligence fees and other professional and consulting fees, are expensed as incurred.

(iii) Associates

Associates are those entities in which the Company has significant influence, but not control, over the financial and operating policies. Significant influence is presumed to exist when the Group holds between 20% and 50% of the voting power of another entity. Associates are accounted for using the equity method and are initially recognised at cost.

(iv) Transactions eliminated on consolidation

Intra-group balances and any unrealised gains and losses or income and expenses arising from intra-group transactions are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with associates are eliminated against the investment to the extent of the Group's interest in the associate. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

1. ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS continued

(d) Foreign currency

(i) Foreign currency transactions

Transactions in foreign currencies are translated at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated to pounds sterling at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the income statement. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are translated to pounds sterling at foreign exchange rates ruling at the dates the fair value was determined.

(ii) Financial statements of foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on consolidation, are translated to pounds sterling at foreign exchange rates ruling at the balance sheet date. The revenues and expenses of foreign operations are translated to pounds sterling at an average rate for the period where this approximates to the foreign exchange rates ruling at the dates of the transactions. Foreign exchange differences arising on retranslation since the adoption of IFRS are recognised directly in other comprehensive income.

(e) Impairment

The carrying amounts of the Group's assets, other than deferred tax assets, are reviewed at each balance sheet date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amount is estimated (see (i) below).

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the income statement.

Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units (group of units) and then to reduce the carrying amount of the other assets in the unit (group of units) on a pro-rata basis.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in other comprehensive income and there is objective evidence that the asset is permanently impaired, the cumulative loss that had been recognised directly in other comprehensive income is recognised in profit or loss. A significant or prolonged decline in an available-for-sale financial asset's fair value below its cost is objective evidence of impairment. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

(i) Calculation of recoverable amount

The recoverable amount of the Group's investments in receivables carried at amortised cost is calculated as the present value of estimated future cash flows, discounted at the original effective interest rate (ie the effective interest rate computed at initial recognition of these financial assets). Receivables with a short duration are not discounted. The recoverable amount of other assets is the greater of their fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

(ii) Reversals of impairment

An impairment loss in respect of a receivable carried at amortised cost and other assets not listed below is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised.

An impairment loss in respect of an investment in an equity instrument classified as available-for-sale is not reversed through profit or loss. If the fair value of a debt instrument classified as available-for-sale increases and the increase can be objectively related to an event occurring after the impairment loss was recognised in profit or loss, the impairment loss will be reversed, with the amount of the reversal recognised in profit or loss.

An impairment loss in respect of goodwill is not reversed.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(f) Revenue

Revenue from the sale of goods in the course of ordinary activities is measured at the fair value of the consideration received or receivable, net of returns, trade discounts and volume rebates. Revenue is recognised when the significant risks and rewards of ownership have been transferred to the customer, recovery of the consideration is probable, the associated costs and possible return of goods can be estimated reliably, there is no continuing management involvement with the goods, and the amount of revenue can be measured reliably. If it is probable that discounts will be granted and the amount can be measured reliably, then the discount is recognised as a reduction of revenue as the sales are recognised.

(g) Dividends

Dividends payable are recognised as a liability in the period in which they are declared and approved.

1. ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS continued

(h) Research and development

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in the income statement as an expense as incurred.

Expenditure on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, is capitalised if the product or process is technically and commercially feasible and the Group has sufficient resources to complete development, use and sale of products or processes. The majority of the expenditure that the Group classifies as research and development relates to a gradual evolution of materials, products and processes over time through the activities of the Group's technology and application engineering teams, and can be characterised as incremental in nature, and is therefore not capitalised. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Capitalised development expenditure is stated at cost less accumulated amortisation and impairment losses. Other development expenditure is recognised in the income statement as an expense as incurred.

Accounting estimates and judgments

Judgments made by the Directors in the application of these accounting policies that have a significant effect on the financial statements and estimates with a significant risk of material adjustment in the next year are discussed below.

Management discussed with the Audit Committee the development, selection and disclosure of the Group's critical accounting policies and estimates and the application of these policies and estimates. The following accounting estimates are subject to significant uncertainty:

Recognition of identifiable intangible assets and goodwill

Note 11 contains information about intangible assets recognised on acquisition in prior years. These primarily relate to technology and trademarks and customer relationships, which are supported by long-term relationships with key customers. The determination of the fair value of these intangible assets on initial recognition involves the use of estimates and assumptions, including expectations about future cash flows, discount rates and the lives of the intangible assets following purchase.

The Group has estimated that the customer relationships have an economic life of 15-20 years. Such methods require the use of estimates which may produce results that are different from actual future outcomes.

Impairment of intangible assets and goodwill

The Group tests annually whether goodwill has suffered any impairment. This process relies on the use of estimates of the future profitability and cash flows of its cash-generating units which may differ from the actual results delivered. In addition, the Group reviews whether identified intangible assets have suffered any impairment. Note 11 contains information about the assumptions relating to goodwill impairment tests, including a sensitivity analysis.

Specific adjusting items

The Group separately presents specific adjusting items in the consolidated income statement which, in the Directors' judgment, need to be disclosed separately by virtue of their size and incidence in order for users of the consolidated financial statements to obtain a proper understanding of the financial information and the underlying performance of the business. These include the financial effect of items which occur infrequently, such as major individual restructuring projects. Determining whether an item is part of specific adjusting items requires judgment as to whether it meets the Group's definition as detailed in the accounting policy.

Provisions

Note 22 contains information about provisions. Provisions for closure and restructuring costs, environmental issues and settlement of litigation are judgmental by their nature. Amounts provided are the Group's best estimate of exposure based on currently available information.

Taxation

The level of current tax and deferred tax recognised is dependent on the tax rates in effect at the balance sheet date, and on subjective judgments as to the outcome of decisions to be made by the tax authorities in the various tax jurisdictions around the world in which the Group operates. Deferred tax assets are recognised based on management's assessment of the extent to which they are recoverable.

The Group periodically assesses its liabilities and contingencies for all tax years open to audit based on the latest information available. The Group records its best estimate of these tax liabilities, including related interest charges. Whilst management believes it has adequately provided for the probable outcome of these matters, future results may include adjustments to these estimated tax liabilities and the final outcome of tax examinations may result in a materially different outcome than that assumed in the tax liabilities. Provisions are made against individual exposures taking into account the specific circumstances of each case, including the strengths of technical arguments, past experience with tax authorities, recent case law or rulings on similar issues and external advice received.

Credit risk

Note 20 contains information about the Group's exposure to credit risk, including a sensitivity analysis. The Group establishes both specific and general allowances for impairment losses against receivables. The general loss allowance is estimated based on historical data of payment statistics for similar financial assets.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

1. ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS continued

Pension assumptions

The principal actuarial assumptions applied to pensions are shown in note 21, including a sensitivity analysis. The actuarial evaluation of pension assets and liabilities is based on assumptions in respect of inflation, future salary increases, discount rates, returns on investments and mortality rates. Relatively small changes in the assumptions underlying the actuarial valuations of pension schemes can have a significant impact on the net pension liability included in the balance sheet.

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position are set out in the Strategic Report on pages 10 to 51. The financial position of the Group, its cash flows, liquidity position and borrowing facilities, are described earlier in the Group Financial Review. In addition, note 20 includes the Group's policies and processes for managing financial risk; details of its financial instruments and hedging activities; and its exposures to credit risk and liquidity risk.

The Group meets its day-to-day working capital requirements through local banking arrangements underpinned by the Group's £200 million unsecured multi-currency revolving credit facility maturing October 2019. The Group's forecasts and projections, taking account of reasonably possible changes in trading performance and exchange rates, show the Group operating comfortably within its debt financial covenants for the next 12 months.

The current economic climate continues to have an impact on the Group, its customers and its suppliers. The Board fully recognises the challenges that lie ahead but, after making enquiries, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report and Accounts.

Non-GAAP measures

Where non-GAAP measures have been referenced these have been identified by an asterisk (*) where they appear in this Report.

Adoption of new and revised Standards

The Group did not adopt any new and revised Standards during the year ended 31 December 2016.

New standards and interpretations

A number of new Standards, amendments to Standards and interpretations have been issued but are not yet effective, and have not been applied in preparing the Group's financial statements. Those which may be relevant to the Group are set out below. The Group has not applied these Standards early.

IFRS 15 *Revenue from Contracts with Customers* is effective for periods beginning on or after 1 January 2018 and introduces a new revenue recognition model that requires the transaction price receivable from customers to be allocated between the Group's performance obligations under contracts on a relative stand-alone selling price basis.

The Group is systematically reviewing its customer contracts and its data capture systems capability across the six global business units to assess the impact of the new Standard and ensure compliance.

Based on the Group's review, it is anticipated that there are no significant impacts to the Group as a result of the new Standard. Thermal Ceramics customers receive a combination of goods and services, we anticipate that the timing of revenue recognition on these could change under IFRS 15.

IFRS 9 *Financial Instruments* is effective for periods beginning on or after 1 January 2018 and reduces the number of primary measurement categories for financial assets to two: amortised cost and fair value.

IFRS 16 *Leases* is effective for periods beginning on or after 1 January 2019 and introduces a single, on-balance sheet accounting model that is similar to current finance lease accounting. The impact of IFRS 16 *Leases* is not currently known or reasonably estimable.

2. ACQUISITIONS AND DISPOSALS

2016

During 2016 the Group disposed of its remaining 28.77% shareholding in Assam Carbon Products Limited for nil consideration. This shareholding was held at nil value and, as a result, there is no profit or loss on disposal. There were no other acquisitions or disposals during 2016.

2015

There were no acquisitions made during 2015. On 30 January 2015, the Group disposed of its Thermal Ceramics business in Wissembourg, France. The assets and liabilities disposed of were classified as held for sale as at 31 December 2014, as described in note 6 in the Annual Report 2014.

Wissembourg assets and liabilities disposed	30 January 2015 £m
Property, plant and equipment	2.5
Intangible assets	0.1
Inventories	1.9
Total assets classified as held for sale	4.5
Trade and other payables	0.6
Employee benefits	0.7
Total liabilities classified as held for sale	1.3
Net assets of disposal group	3.2
Deferred consideration	3.2

The Group incurred a £1.9 million impairment loss in relation to Wissembourg in 2014 and incurred a loss on the disposal of Wissembourg of £6.1 million in 2015. The Group made a loan of £1.5 million to the purchasers of the Wissembourg business. This is shown in 'Loan made to purchaser of business' in the consolidated statement of cash flows during 2015.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

3. SEGMENT REPORTING

Accounting policies

The Group reports as two Divisions and six global business units, which have been identified as the Group's reportable operating segments, as detailed on page 13. These have been identified on the basis of internal management reporting information that is regularly reviewed by the Group's Board of Directors (the Chief Operating Decision Maker) in order to allocate resources and assess performance.

Segment results, assets and liabilities include items directly attributable to a segment as well as those that can be allocated on a reasonable basis. Unallocated items comprise mainly investments and related income, loans and borrowings and related expenses, corporate assets and head office expenses, and income tax assets and liabilities.

The information presented below represents the operating segments of the Group.

	Thermal Ceramics		Molten Metal Systems		**Thermal Products Division**		Electrical Carbon	
	2016 £m	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m
Revenue from external customers	**413.3**	372.4	**43.5**	39.7	**456.8**	412.1	**156.2**	145.6
Divisional EBITA*	**55.0**	55.2	**6.7**	5.3	**61.7**	60.5	**19.7**	19.3
Corporate costs								
Group EBITA*								
Restructuring costs and other items	**0.1**	(0.1)	**–**	–	**0.1**	(0.1)	**(0.1)**	(0.7)
Group headline operating profit*								
Amortisation of intangible assets	**(1.5)**	(1.8)	**(0.1)**	(0.2)	**(1.6)**	(2.0)	**(0.4)**	(0.3)
Operating profit before specific adjusting items								
Specific adjusting items included in operating profit[1]	**–**	(2.8)	**–**	–	**–**	(2.8)	**–**	(3.9)
Operating profit/(loss)	**53.6**	50.5	**6.6**	5.1	**60.2**	55.6	**19.2**	14.4
Finance income								
Finance expense								
Loss on disposal of business								
Share of profit of associate (net of income tax)								
Profit before taxation								
Segment assets	**417.8**	359.4	**42.2**	38.1	**460.0**	397.5	**154.9**	132.4
Segment liabilities	**88.5**	74.6	**7.5**	7.0	**96.0**	81.6	**30.0**	27.4
Segment capital expenditure	**17.7**	24.4	**2.1**	2.3	**19.8**	26.7	**8.3**	19.8
Segment depreciation	**10.8**	9.7	**1.7**	1.5	**12.5**	11.2	**4.9**	4.5

1. Details of specific adjusting items are given in note 6 to the financial statements.
2. The table above shows restated comparative figures for the operating segments for 2015. The restatements reflect the impact of the changes the Group made to its internal organisation during 2016, which caused the composition of its reportable segments to change.

3. SEGMENT REPORTING continued

During 2016 the Group recognised impairment losses totalling £8.5 million in the Composites and Defence Systems reportable operating segment, which has been recognised in the 'Impairment of intangible assets' line of the income statement. During 2015 the Group recognised impairment losses totalling £12.4 million, of which £3.5 million in the Seals and Bearings reportable operating segment and £2.4 million in the Electrical Carbon reportable operating segment, which has been recognised in the 'Impairment of property, plant and equipment' line of the income statement, £5.8 million in the Composite and Defence Systems reportable operating segment, which has been recognised in the 'Impairment of intangible assets' line of the income statement and further impairment losses totalling £0.7 million in the Electrical Carbon reportable operating segment, which has been recognised in 'Restructuring costs' line of the income statement. See notes 6, 10 and 11 for further details.

In 2016 all restructuring costs are included in results before specific adjusting items. See note 4 for further details. In 2015, the Group incurred £1.5 million of restructuring costs in specific adjusting items in the Electrical Carbon reportable operating segment. See note 6 for further details.

Seals and Bearings		Technical Ceramics		**Carbon and Technical Ceramics Division**		Composites and Defence Systems		**Segment totals**		Corporate costs		**Group**	
2016 £m	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m	**2016 £m**	2015[2] £m
97.7	88.6	**248.1**	237.8	**502.0**	472.0	**30.4**	27.7	**989.2**	911.8			**989.2**	911.8
14.2	9.9	**26.6**	26.1	**60.5**	55.3	**1.1**	(1.0)	**123.3**	114.8			**123.3**	114.8
										(5.4)	(5.2)	**(5.4)**	(5.2)
												117.9	109.6
0.1	(0.7)	**–**	(0.4)	**–**	(1.8)	**0.1**	(0.3)	**0.2**	(2.2)	**(1.2)**	(1.4)	**(1.0)**	(3.6)
												116.9	106.0
(0.3)	(0.2)	**(4.2)**	(2.7)	**(4.9)**	(3.2)	**(1.4)**	(1.9)	**(7.9)**	(7.1)	**–**	–	**(7.9)**	(7.1)
												109.0	98.9
–	(3.5)	**–**	–	**–**	(7.4)	**(8.5)**	(5.8)	**(8.5)**	(16.0)	**6.8**	–	**(1.7)**	(16.0)
14.0	5.5	**22.4**	23.0	**55.6**	42.9	**(8.7)**	(9.0)	**107.1**	89.5	**0.2**	(6.6)	**107.3**	82.9
												2.3	2.5
												(22.3)	(20.6)
												–	(6.1)
												0.6	0.3
												87.9	59.0
86.1	74.0	**188.1**	169.4	**429.1**	375.8	**15.8**	22.6	**904.9**	795.9	**134.4**	61.1	**1,039.3**	857.0
18.2	16.0	**37.0**	35.0	**85.2**	78.4	**7.9**	9.4	**189.1**	169.4	**685.5**	501.2	**874.6**	670.6
4.4	5.8	**6.5**	10.7	**19.2**	36.3	**0.5**	0.5	**39.5**	63.5	**–**	–	**39.5**	63.5
4.3	4.1	**7.3**	6.9	**16.5**	15.5	**0.5**	0.4	**29.5**	27.1	**–**	–	**29.5**	27.1

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

3. SEGMENT REPORTING continued

	Revenue from external customers		Non-current assets (excluding tax and financial instruments)	
	2016 £m	2015 £m	**2016 £m**	2015 £m
USA	**342.5**	323.8	**215.0**	186.5
China	**82.9**	75.7	**66.1**	56.8
Germany	**74.5**	64.6	**50.5**	44.5
UK (the Group's country of domicile)	**67.6**	64.0	**120.6**	129.7
France	**31.2**	29.9	**14.9**	17.3
Other Asia, Australasia, Middle East and Africa	**186.2**	162.9	**50.8**	30.4
Other Europe	**140.8**	130.8	**21.3**	18.4
Other North America	**31.6**	32.2	**5.6**	5.4
South America	**31.9**	27.9	**10.0**	8.2
	989.2	911.8	**554.8**	497.2

Revenue from external customers is based on geographic location of the end-customer. Segment assets are based on geographical location of the assets. No customer represents greater than 10% of revenue.

Segment revenue by product

	2016 £m	2015 £m
Industrial	**449.2**	398.3
Transportation	**214.3**	197.9
Petrochemical	**84.2**	79.5
Energy	**66.2**	61.7
Security and defence	**62.6**	58.6
Electronics	**57.2**	63.7
Healthcare	**55.5**	52.1
	989.2	911.8

Intercompany sales to other segments

	Thermal Ceramics		Molten Metal Systems		**Thermal Products Division**		Electrical Carbon		Seals and Bearings		Technical Ceramics		**Carbon and Technical Ceramics Division**		Composites and Defence Systems	
	2016 £m	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m	**2016 £m**	2015[1] £m
Intercompany sales to other segments	**0.1**	0.3	**0.1**	0.1	**0.2**	0.4	**1.0**	0.8	**0.4**	0.5	**0.2**	0.3	**1.6**	1.6	**–**	–

1. The table above shows restated comparative figures for the operating segments for 2015. The restatements reflect the impact of the changes the Group made to its internal organisation during 2016, which caused the composition of its reportable segments to change.

4. OPERATING COSTS BEFORE SPECIFIC ADJUSTING ITEMS

	Note	2016 £m	2015 £m
Change in stocks of finished goods and work in progress		**3.0**	4.3
Raw materials and consumables		**236.0**	219.0
Other external charges		**160.9**	153.9
Total		**399.9**	377.2
Employee costs:			
Wages and salaries		**267.4**	237.6
Equity-settled share-based payments	21	**0.8**	1.4
Social security costs		**49.0**	46.4
Pension costs	21	**15.5**	14.3
Total		**332.7**	299.7
Depreciation	10	**29.5**	27.1
Rentals under operating leases:			
Hire of plant and machinery		**3.7**	3.4
Other operating leases		**7.5**	7.2
Total		**11.2**	10.6
Other operating charges and income:			
Net foreign exchange (gains)/losses		**(2.9)**	0.1
Other operating income and charges		**100.9**	87.5
Total		**98.0**	87.6
Total operating costs before restructuring costs, other items and amortisation of intangible assets		**871.3**	802.2
Restructuring costs and other items:			
Employment termination costs		**1.1**	3.1
Write-off of assets		**–**	0.2
Other reorganisation, rationalisation and closure costs		**0.4**	0.8
Profit on disposal of properties		**(0.5)**	(0.5)
Total		**1.0**	3.6
Amortisation of intangible assets	11	**7.9**	7.1
Total operating costs before specific adjusting items		**880.2**	812.9

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

4. OPERATING COSTS BEFORE SPECIFIC ADJUSTING ITEMS continued

The following costs are included in total operating costs before specific adjusting items in the table above:

1. Research and development

The Group recognised £29.2 million in expense in respect of research and development (2015: £25.4 million). These costs are included in employee costs and other operating charges in the above table.

2. Audit and non-audit fees

A summary of the audit and non-audit fees in respect of services provided by the auditor charged to operating profit in the year ended 31 December 2016 is set out below:

	2016 £m	2015 £m
Fees payable to the Company's auditor for the audit of the Company's annual accounts	**0.4**	0.4
Fees payable to the Company's auditor and its associates for other services:		
the auditing of accounts of any subsidiaries of the Company	**1.7**	1.5
audit-related services	**0.1**	–
taxation compliance services	**0.1**	0.2
other non-audit services	**0.1**	0.1
	2.4	2.2

5. STAFF NUMBERS

The average number of persons employed by the Group (including Directors) during the year, analysed by reporting segment, was as follows:

	Number of employees	
	2016	2015[1]
Reportable operating segments		
Thermal Ceramics	**2,800**	2,900
Molten Metal Systems	**500**	500
Thermal Products Division	**3,300**	3,400
Electrical Carbon	**1,600**	1,600
Seals and Bearings	**1,100**	1,200
Technical Ceramics	**2,600**	2,500
Carbon and Technical Ceramics Division	**5,300**	5,300
Composites and Defence Systems	**200**	200
Segment totals	**8,800**	8,900
Corporate (UK and North America)	**50**	50
Group	**8,850**	8,950

1. The table above shows restated comparative figures for the operating segments for 2015. The restatements reflect the impact of the Group's move from a regional to a global business unit structure during 2016, which caused the composition of its reportable segments to change.

Average employee numbers have been rounded to the nearest 10.

6. SPECIFIC ADJUSTING ITEMS

Accounting policies

The Group separately presents specific adjusting items in the consolidated income statement which, in the Directors' judgment, need to be disclosed separately by virtue of their size and incidence in order for users of the consolidated financial statements to obtain a proper understanding of the financial information and the underlying performance of the business. These include the financial effect of items which occur infrequently, such as major individual restructuring projects.

In 2016 and 2015 restructuring costs related to a major individual project, net pension settlement credit, business exit costs, impairment of plant, property and equipment, impairment of intangible assets and net loss on disposal of businesses are included as specific adjusting items as they meet these criteria.

6. SPECIFIC ADJUSTING ITEMS continued

	2016 £m	2015 £m
Specific adjusting items:		
Restructuring costs	–	1.5
Net pension settlement credit	(6.8)	–
Business exit costs	–	2.8
Impairment of property, plant and equipment	–	5.9
Impairment of intangible assets	8.5	5.8
Net loss on disposal of businesses	–	6.1
Total specific adjusting items before income tax charge/(credit)	1.7	22.1
Income tax charge/(credit) from specific adjusting items	2.8	(3.3)
Total specific adjusting items after income tax charge/(credit)	4.5	18.8

2016

Net pension settlement credit

The Group has completed the final termination and payment of all earned benefits for one of its North American defined benefit plans.

The Group has also completed a one-time lump-sum cash out payment to certain former, deferred and vested employees of the Morgan US Employees' Retirement Plan in settlement of the benefits promised by the Group.

As a result of these changes the Group has recognised a net pension settlement credit of £6.8 million, after deduction of transaction costs. An income tax charge of £2.8 million was recognised in respect of the net pension settlement credit.

Impairment of intangible assets

As a result of the continued reduction in demand in the defence market, a review of the carrying value of the remaining intangible assets of Composites and Defence Systems resulted in an impairment charge of £8.5 million, relating to a full impairment of the Composites and Defence Systems technology intangible asset. This impairment was calculated by looking at the fair value of the assets less cost of disposal. Refer to note 11 for more details of the impairment charge.

2015

Restructuring costs

As reported in 2014, the strategic objective to drive the performance of the Electrical Carbon and Seals and Bearings businesses to mid-teen margins and beyond resulted in the Group undertaking a significant rationalisation of the carbon material footprint. This started in 2014 with the downsizing of activities at the Swansea, UK site. This footprint rationalisation continued in 2015 with the decision to cease and the announcement of the cessation of carbon material manufacturing at the Shanghai, China site. These operations will be consolidated into other Group locations, mainly the USA. This decision resulted in a charge of £1.5 million in 2015, £0.7 million of which related to the impairment loss on plant and equipment and the balance to site clean-up costs and other write-offs. An income tax credit of £0.2 million was recognised in respect of these restructuring costs.

Business exit costs

The business exit costs in the year relate to the deconsolidation of Morgan Thermal Ceramics Sukhoy Log Limited Liability Company ('Sukhoy') and the subsequent remeasurement to fair value of the retained investment.

In April 2006 the Group acquired a 51% shareholding in Sukhoy, a fibre business based near Yekaterinburg, Russia. The results and assets of Sukhoy were previously consolidated on the basis that the Group was satisfied that it exercised management control. During 2015 there was a deterioration in the relationship between Morgan and the minority partner, exacerbated by the increasingly difficult market conditions in Russia. As a result, it became clear to the Group towards the end of 2015 that it no longer had effective control of the business and that it was no longer appropriate to consolidate. Based on the recent financial performance and the Group's view of the future prospects of the business it was concluded that the value of the Group's investment in Sukhoy was nil. As a result the Group has recognised a £2.8 million charge in business exit costs in the 2015 accounts.

Impairment of property, plant and equipment

The impairment of property, plant and equipment in 2015 was as a result of a review of the carrying value of assets that support the Group's North America vehicle and personal protection and high-temperature furnace-lining businesses. Both of these businesses saw significant growth and investment in previous years but more recently they had been in decline. The Group compared its expected future cash flows from these businesses with the book value of the property, plant and equipment dedicated to them and determined that a total impairment charge of £5.9 million was required. An income tax credit of £2.1 million was recognised in respect of the impairment charge. The £5.9 million of impairment loss forms part of the total plant and equipment impairment loss of £6.6 million, as shown in note 10.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

6. SPECIFIC ADJUSTING ITEMS continued

Impairment of intangible assets
As a result of the continued reduction in demand on Composites and Defence Systems from the UK Ministry of Defence, the review of the carrying value of the remaining intangible assets of Composites and Defence Systems resulted in a further impairment charge of £5.8 million, relating to a full impairment of the customer relationships. Following this impairment charge, the carrying value of the Composites and Defence Systems intangibles was £9.8 million, all in respect of technology. This was supported by the current expectations of the future trading performance of the Composites and Defence Systems business. An income tax credit of £1.0 million was recognised in respect of the impairment charge. Refer to note 11 for more details of the impairment charge.

Loss on disposal of business
As reported in the 2014 Annual Report and Accounts, on 30 January 2015 the Group completed the sale of a Thermal Ceramics business in Wissembourg, France. This business manufactures low-temperature fibre boards used mainly in the building industry. The Group incurred a loss on the disposal of this business of £6.1 million in 2015, in addition to the £1.9 million of business exit costs recognised in the 2014 accounts.

7. NET FINANCE INCOME AND EXPENSE

Accounting policies
Net financing costs comprise interest payable on borrowings calculated using the effective interest rate method, interest receivable on funds invested, gains and losses on hedging instruments that are recognised in the income statement, net interest on IAS 19 pension assets and interest on IAS 19 obligations. Interest income is recognised in the income statement as it accrues, using the effective interest method.

Borrowing costs (interest and other costs) are capitalised when they are incurred on raising specific funds to finance a major capital project which will be a significant productive asset, or to the extent that funds borrowed generally are used for the purposes of obtaining a qualifying asset.

	2016 £m	2015 £m
Recognised in profit or loss		
Amounts derived from financial instruments	**0.3**	1.0
Interest income on bank deposits measured at amortised cost	**2.0**	1.5
Finance income	**2.3**	2.5
Interest expense on financial liabilities measured at amortised cost	**(15.2)**	(13.7)
Net interest on IAS 19 obligations	**(7.1)**	(6.9)
Finance expense	**(22.3)**	(20.6)
Net financing costs recognised in profit or loss	**(20.0)**	(18.1)
Recognised directly in equity		
Cash flow hedges:		
Effective portion of changes in fair value of cash flow hedges	**(3.7)**	(0.1)
Transferred to profit or loss	**0.8**	–
Effective portion of change in fair value of net investment hedge	**(17.7)**	2.0
Foreign currency translation differences for foreign operations	**37.4**	(5.0)
	16.8	(3.1)

8. TAXATION – INCOME TAX EXPENSE

Accounting policies
Income tax on the profit or loss for the year comprises current and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised directly in other comprehensive income, in which case it is recognised in other comprehensive income.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill, the initial recognition of assets or liabilities that affect neither accounting nor taxable profit, and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

8. TAXATION – INCOME TAX EXPENSE continued

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Taxation – income tax expense
Recognised in the income statement

	2016 £m	2015 £m
Current tax		
Current year	**27.8**	22.2
Adjustments for prior years	**(3.3)**	(4.9)
	24.5	17.3
Deferred tax		
Current year	**1.6**	1.7
Adjustments for prior years	**3.3**	1.9
	4.9	3.6
Total income tax expense in income statement	**29.4**	20.9

Reconciliation of effective tax rate

	2016 £m	2016 %	2015 £m	2015 %
Profit before tax	**87.9**		59.0	
Income tax using the domestic corporation tax rate	**17.6**	**20.0**	11.9	20.2
Effect of different tax rates in other jurisdictions	**8.8**	**10.0**	6.9	11.7
Local taxes including withholding tax suffered	**3.3**	**3.7**	3.1	5.3
Permanent differences	**1.5**	**1.7**	1.6	2.7
Movements related to unrecognised temporary differences	**(1.5)**	**(1.7)**	1.6	2.7
Adjustments in respect of prior years	**–**	**–**	(3.0)	(5.1)
Other	**(0.3)**	**(0.3)**	(1.2)	(2.0)
	29.4	**33.4**	20.9	35.5

	2016	2015
Income tax recognised directly in equity		
Tax effect on components of other comprehensive income:		
Deferred tax associated with defined benefit schemes and share schemes	**(0.6)**	0.9
Total tax recognised directly in equity	**(0.6)**	0.9

The effective rate of tax before specific adjusting items is 29.7% (2015: 29.8%).

The prior year adjustments in 2016 principally relate to the true-up of tax provisions to tax returns and includes the release of a tax provision whilst the prior year adjustments in 2015 are mainly in respect of true-up of tax provisions to tax returns and settlement of tax audits.

9. EARNINGS PER SHARE

The calculation of basic/diluted earnings per share from continuing operations at 31 December 2016 was based on the net profit attributable to equity shareholders of £52.3 million (2015: £33.9 million, 2014: £7.8 million), and a weighted average number of shares outstanding during the year of 284.9 million (2015 and 2014: 285.1 million). The calculation of the weighted average number of shares excludes the shares held by The Morgan General Employee Benefit Trust, on which the dividends are waived.

Headline earnings per ordinary share* is defined as operating profit adjusted to exclude specific adjusting items and amortisation of intangible assets, plus share of profit of associate less net financing costs, income tax expense and non-controlling interests, divided by the weighted average number of ordinary shares during the period. This measure of earnings is shown because the Directors consider that it gives a better indication of headline performance.

The diluted earnings per share calculation takes into account the dilutive effect of share incentives. The diluted, weighted average number of shares is 285.1 million (2015: 285.5 million, 2014: 285.6 million). Diluted earnings per share is 18.3 pence (2015: 11.9 pence, 2014: 2.7 pence).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

9. EARNINGS PER SHARE continued

	2016 £m	2015 £m	2014 £m
Profit for the period attributable to equity shareholders	**52.3**	33.9	7.8
Specific adjusting items	**1.7**	22.1	51.9
Amortisation of intangible assets	**7.9**	7.1	8.2
Tax effect of the above	**2.8**	(3.3)	(5.5)
Non-controlling interests' share of the above adjustments	**–**	(0.4)	0.6
Adjusted profit for the period	**64.7**	59.4	63.0

	2016 Pence	2015 Pence	2014 Pence
Earnings per ordinary share	**18.4p**	11.9p	2.7p
Specific adjusting items	**0.6p**	7.7p	18.2p
Amortisation of intangible assets	**2.7p**	2.5p	2.9p
Tax effect of the above	**1.0p**	(1.2)p	(1.9)p
Non-controlling interests' share of the above adjustments	**–**	(0.1)p	0.2p
Headline earnings per share*	**22.7p**	20.8p	22.1p

10. PROPERTY, PLANT AND EQUIPMENT

Accounting policies

(i) Owned assets

Items of property, plant and equipment are stated at cost, or at deemed cost, less accumulated depreciation (see below) and impairment losses. The cost of self-constructed assets includes the cost of materials, direct labour, and an appropriate proportion of production overheads.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Gains and losses on the disposal of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of the asset. Gains and losses on the disposal of property are recognised in 'Restructuring costs and other items' in the income statement. Gains and losses on the disposal of plant and equipment are recognised in 'Operating costs before restructuring costs, other items and amortisation of intangible assets' in the income statement.

(ii) Leased assets

Leases under the terms of which the Group assumes substantially all the risks and rewards of ownership are classified as finance leases. Leased assets acquired by way of a finance lease are stated at an amount equal to the lower of their fair value and the present value of the minimum lease payments at inception of the lease, less accumulated depreciation and impairment losses.

(iii) Depreciation

Depreciation is charged to the income statement on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Land is not depreciated. Depreciation methods, useful lives and residual values are reviewed at each balance sheet date. The estimated useful lives are as follows:

Buildings	50 years
Plant and equipment and fixtures	3-20 years

10. PROPERTY, PLANT AND EQUIPMENT continued

	Land and buildings £m	Plant and equipment and fixtures £m	Total £m
Cost			
Balance at 1 January 2015	154.0	544.9	698.9
Additions	18.6	39.4	58.0
Disposals	(3.7)	(14.3)	(18.0)
Effect of movement in foreign exchange	0.4	5.9	6.3
Balance at 31 December 2015	169.3	575.9	745.2
Balance at 1 January 2016	**169.3**	**575.9**	**745.2**
Additions	**5.9**	**33.0**	**38.9**
Disposals	**(1.2)**	**(12.1)**	**(13.3)**
Transfers between categories	**2.9**	**(2.9)**	**–**
Effect of movement in foreign exchange	**25.7**	**91.2**	**116.9**
Balance at 31 December 2016	**202.6**	**685.1**	**887.7**
Depreciation and impairment losses			
Balance at 1 January 2015	60.9	397.0	457.9
Depreciation charge for the year	4.7	22.4	27.1
Impairment loss	7.4	6.6	14.0
Disposals	(2.3)	(13.4)	(15.7)
Effect of movement in foreign exchange	0.8	4.4	5.2
Balance at 31 December 2015	71.5	417.0	488.5
Balance at 1 January 2016	**71.5**	**417.0**	**488.5**
Depreciation charge for the year	**5.0**	**24.5**	**29.5**
Disposals	**(0.8)**	**(11.3)**	**(12.1)**
Transfers between categories	**0.5**	**(0.5)**	**–**
Effect of movement in foreign exchange	**11.7**	**66.4**	**78.1**
Balance at 31 December 2016	**87.9**	**496.1**	**584.0**
Carrying amounts			
At 1 January 2015	93.1	147.9	241.0
At 31 December 2015	97.8	158.9	256.7
At 31 December 2016	**114.7**	**189.0**	**303.7**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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10. PROPERTY, PLANT AND EQUIPMENT continued

Assets pledged as security for liabilities

At 31 December 2016 no assets (2015: £nil) are subject to registered debentures to secure bank loans and other liabilities (see note 19). There were no borrowings drawn on these debentures (2015: £nil).

In March 2015, Morgan acquired the freehold of the Morgan Electrical Carbon site in Swansea, UK. The terms of the agreement to acquire the site had been agreed and committed to at the time of signing the financial statements for the year ended 31 December 2014 and a provision was recorded, in Closure and restructuring provisions, to reflect the difference between the purchase price and the expected site value. With the actual purchase of the site taking place in 2015, the cost of the freehold has been recorded as an addition to Land and buildings and an impairment loss recorded to bring the value down to the expected net realisable value, with the offsetting release from the provision.

During the year ended 31 December 2015 the Group recognised impairment losses in relation to plant and equipment and fixtures totalling £3.5 million in the Seals and Bearings reportable operating segment and £2.4 million in the Electrical Carbon reportable operating segment, which has been recognised in the 'Impairment of property, plant and equipment' line of the income statement, and further impairment losses totalling £0.7 million in the Electrical Carbon reportable operating segment, which has been recognised in 'restructuring costs' line of the income statement. See note 6 for further details.

11. INTANGIBLE ASSETS

Accounting policies

(i) Goodwill

All business combinations are accounted for by applying the purchase method. Goodwill represents the difference between the cost of the acquisition and the fair value of assets, liabilities and contingent liabilities acquired.

Goodwill is allocated to cash-generating units and is tested annually for impairment.

(ii) Research and development

See note 1.

(iii) Other intangible assets

Other intangible assets that are acquired by the Group are stated at cost less accumulated amortisation (see below) and impairment losses.

(iv) Amortisation

Amortisation is charged to the income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Goodwill and intangible assets with an indefinite useful life are systematically tested for impairment at each balance sheet date. Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

Capitalised development costs	3 years
Computer software	3-10 years
Customer relationships	15-20 years
Technology and trademarks	15-20 years
Order book	Amortised over the period in which the associated orders are fulfilled

11. INTANGIBLE ASSETS continued

Intangible assets

	Goodwill £m	Order book £m	Customer relationships £m	Technology and trademarks £m	Capitalised development costs £m	Computer software £m	Total £m
Cost							
Balance at 1 January 2015	191.9	0.2	78.7	23.1	0.6	16.1	310.6
Additions (externally purchased)	–	–	–	–	–	4.6	4.6
Disposals	–	–	(2.1)	(1.6)	–	(0.8)	(4.5)
Effect of movement in foreign exchange	1.7	–	2.1	(0.2)	–	0.1	3.7
Balance at 31 December 2015	193.6	0.2	78.7	21.3	0.6	20.0	314.4
Balance at 1 January 2016	**193.6**	**0.2**	**78.7**	**21.3**	**0.6**	**20.0**	**314.4**
Additions (externally purchased)	**–**	**–**	**–**	**–**	**–**	**3.0**	**3.0**
Disposals	**–**	**(0.2)**	**–**	**–**	**–**	**(0.1)**	**(0.3)**
Effect of movement in foreign exchange	**17.0**	**–**	**10.6**	**0.5**	**0.2**	**2.7**	**31.0**
Balance at 31 December 2016	**210.6**	**–**	**89.3**	**21.8**	**0.8**	**25.6**	**348.1**
Amortisation and impairment losses							
Balance at 1 January 2015	16.4	0.2	40.0	8.2	0.6	9.9	75.3
Amortisation charge for the year	–	–	3.7	1.7	–	1.7	7.1
Impairment losses for the year	–	–	5.8	–	–	–	5.8
Disposals	–	–	(2.0)	(1.5)	–	(0.8)	(4.3)
Effect of movement in foreign exchange	–	–	0.7	–	–	–	0.7
Balance at 31 December 2015	16.4	0.2	48.2	8.4	0.6	10.8	84.6
Balance at 1 January 2016	**16.4**	**0.2**	**48.2**	**8.4**	**0.6**	**10.8**	**84.6**
Amortisation charge for the year	**–**	**–**	**4.3**	**1.4**	**–**	**2.2**	**7.9**
Impairment losses for the year	**–**	**–**	**–**	**8.5**	**–**	**–**	**8.5**
Disposals	**–**	**(0.2)**	**–**	**–**	**–**	**(0.1)**	**(0.3)**
Effects of movement in foreign exchange	**–**	**–**	**5.1**	**0.1**	**0.2**	**1.6**	**7.0**
Balance at 31 December 2016	**16.4**	**–**	**57.6**	**18.4**	**0.8**	**14.5**	**107.7**
Carrying amounts							
At 1 January 2015	175.5	–	38.7	14.9	–	6.2	235.3
At 31 December 2015	177.2	–	30.5	12.9	–	9.2	229.8
At 31 December 2016	**194.2**	**–**	**31.7**	**3.4**	**–**	**11.1**	**240.4**

Included in customer relationships is an asset with a net book value of £26.9 million at 31 December 2016 recognised in relation to the acquisition of the Technical Ceramics businesses of Carpenter Technology Corporation in 2008. The remaining amortisation period on this asset is seven years.

Impairment test for cash-generating units containing goodwill

In accordance with the requirements of IAS 36 *Impairment of Assets*, goodwill is allocated to the Group's cash-generating units that are expected to benefit from the synergies of the business combination that gave rise to the goodwill.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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11. INTANGIBLE ASSETS continued

The table below shows restated comparative figures for the cash-generating units for the year ended 31 December 2015. The restatements reflect the impact of the changes the Group made to its internal organisation during 2016, which cause the composition of its cash-generating units to change.

Goodwill is attributed to each cash-generating unit as follows:

	2016 £m	2015 Restated £m
Thermal Ceramics	**94.8**	86.7
Molten Metal Systems	**10.1**	9.2
Electrical Carbon	**32.9**	30.1
Seals and Bearings	**16.5**	15.0
Technical Ceramics	**39.9**	36.2
Composites and Defence Systems	**–**	–
	194.2	177.2

Each cash-generating unit is assessed for impairment annually and whenever there is an indication of impairment.

As part of the annual impairment test review the carrying value of goodwill has been assessed with reference to its value in use, reflecting the projected discounted cash flows of each cash-generating unit to which goodwill has been allocated.

The key assumptions used in determining value in use relate to growth rates and discount rates.

The cash flow projections in year one are based on budgeted operating cash flow projections in year one. The key assumptions that underpin these cash flow projections relate to sales and operating margins, which are based on past experience, taking into account the effect of known or likely changes in market or operating conditions.

Growth rates for the period not covered by budgets are 2018: 0.5%, 2019: 1.0%, 2020: 1.5% and 2020: 2.2%. A 2.2% growth rate has been used to calculate a terminal value. These growth rates reflect the products, industries and countries in which the operating segments operate. These medium- to long-term growth rates have been reviewed by management during 2016 and are considered to be appropriate.

In 2016, the Group has used the following pre-tax discount rates for calculating the terminal value of each of the cash-generating units: Thermal Ceramics: 12.4%, Molten Metal Systems: 12.3%, Electrical Carbon: 12.5%, Seals and Bearings: 12.5%, Technical Ceramics 12.9% and Composites and Defence Systems: 10.9%. These discount rates have been used as the Group believes they suitably approximate the rates used by end-market participants.

The Directors have considered the following individual sensitivities and are confident that no impairment would arise for each of the Thermal Ceramics, Molten Metal Systems, Electrical Carbon, Seals and Bearings and Technical Ceramics cash-generating units in any one of the following three circumstances:

- if the pre-tax discount rate was increased to 15%; or
- if no growth was assumed for years two to five and in the calculation of terminal value; or
- if the cash flow projections of all businesses were reduced by 24%.

During 2016 the Group recognised an impairment loss of £8.5 million on technology and trademark intangible assets in relation to the Composites and Defence Systems cash-generating unit, as a result of the continued reduction in demand in the defence market. During 2015 the Group recognised an impairment loss of £5.8 million on customer relationships in relation to the Composites and Defence Systems cash-generating unit, as a result of the continued reduction in demand from the UK Ministry of Defence. Further details of these impairments are given in note 6.

12. INVESTMENTS

Accounting policies

Investments in debt and equity securities

Investments in debt and equity securities held by the Group are classified as being available-for-sale and are stated at fair value, with any resultant gain or loss being recognised directly in other comprehensive income (in the fair value reserve), except for impairment losses and, in the case of monetary items such as debt securities, foreign exchange gains and losses. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

	2016 £m	2015 £m
Non-current investments		
Equity securities available-for-sale	**0.5**	0.5
Investment in associates	**5.5**	4.9
	6.0	5.4

Equity securities available-for-sale

The equity securities available-for-sale represent an investment in a mutual fund. A 10% increase in the unit price would increase the fair value of the investments by £nil (2015: £nil).

Investment in associates

Details of the Group's material associate at the end of the reporting period are as follows:

			Proportion of ownership interest/ voting rights held by the Group	
Name of associate	Principal activity	Place of incorporation and principal place of business	**2016**	2015
Jemmtec Limited	Manufacture of fired refractory shapes	United Kingdom	**35%**	35%

The above associate has been accounted for using the equity method in these consolidated financial statements.

The Group did not receive dividends from any of its associates during 2016 and 2015.

During 2016 Jemmtec Limited repaid the £2.2 million loan that had been made to it by the Group.

Summarised financial information in respect of the Group's material associate is set out below. The summarised financial information below has been prepared in accordance with IFRSs (adjusted by the Group for equity accounting purposes).

	Jemmtec Limited	
	2016 £m	2015 £m
Current assets	**7.6**	6.1
Non-current assets	**9.6**	10.0
Current liabilities	**3.9**	2.7
Non-current liabilities	**0.5**	2.7
Revenue	**13.0**	12.5
Profit from continuing operations	**1.9**	0.9

Reconciliation of the above summarised financial information to the carrying amount of the interest recognised in the Group's consolidated financial statements:

	2016 £m	2015 £m
Net assets of associate	**12.7**	10.7
Proportion of the Group's ownership interest in the associate	**4.4**	3.7
Goodwill	**0.2**	0.2
Carrying amount of the Group's interest in the associate	**4.6**	3.9

In 2016 the aggregate of the Group's share of net loss and total comprehensive income for associates that are not individually material was £0.1 million (2015: £nil). The carrying value included in investment in associates in relation to associates that are not individually material was £0.9 million (2015: £1.0 million).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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13. RECOGNISED DEFERRED TAX ASSETS AND LIABILITIES

Deferred tax assets and liabilities are attributable to the following:

	Assets 2016 £m	Assets 2015 £m	**Liabilities 2016 £m**	Liabilities 2015 £m	**Net 2016 £m**	Net 2015 £m
Property, plant and equipment	**–**	–	**(25.2)**	(18.0)	**(25.2)**	(18.0)
Intangible assets	**–**	–	**(13.2)**	(13.9)	**(13.2)**	(13.9)
Employee benefits	**25.3**	26.6	**–**	–	**25.3**	26.6
Provisions	**7.2**	5.5	**–**	–	**7.2**	5.5
Tax value of loss carried forward recognised	**2.1**	0.9	**–**	–	**2.1**	0.9
Other items	**1.6**	1.0	**–**	–	**1.6**	1.0
Offset	**(30.1)**	(29.6)	**30.1**	29.6	**–**	–
	6.1	4.4	**(8.3)**	(2.3)	**(2.2)**	2.1

Unrecognised deferred tax assets

Deferred tax assets have not been recognised in respect of the following items:

	2016 £m	2015 £m
UK pension deficit	**180.5**	117.3
Tax losses	**94.2**	102.7
Capital losses	**79.0**	79.0
Other deductible temporary differences	**46.5**	30.4
	400.2	329.4

Deferred tax assets have not been recognised in relation to these temporary differences due to uncertainty surrounding future utilisation. Based on current tax legislation the tax losses will not expire.

Movements in temporary differences during the year

	Balance 31 December 2014 £m	On acquisition £m	Recognised in income £m	Recognised directly in equity £m	Balance 31 December 2015 £m	**Recognised in income £m**	**Recognised directly in equity £m**	**Balance 31 December 2016 £m**
Property, plant and equipment	(17.6)	–	(0.4)	–	(18.0)	**(7.2)**	**–**	**(25.2)**
Intangible assets	(15.8)	–	1.9	–	(13.9)	**0.7**	**–**	**(13.2)**
Employee benefits	29.4	–	(1.9)	(0.9)	26.6	**(1.9)**	**0.6**	**25.3**
Provisions	7.6	–	(2.1)	–	5.5	**1.7**	**–**	**7.2**
Tax value of loss carried forward recognised	1.0	–	(0.1)	–	0.9	**1.2**	**–**	**2.1**
Others	1.5	–	(1.0)	0.5	1.0	**0.6**	**–**	**1.6**
	6.1	–	(3.6)	(0.4)	2.1	**(4.9)**	**0.6**	**(2.2)**

Deferred income tax of £2.6 million is provided on the potential unremitted earnings of overseas subsidiary undertakings.

14. INVENTORIES

Accounting policies

Inventories are stated at the lower of cost and net realisable value. Net realisable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses.

The cost of inventories is based on the first-in-first-out principle and includes expenditure incurred in acquiring the inventories and bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of overheads based on normal operating capacity.

Inventories

	2016 £m	2015 £m
Raw materials and consumables	**39.7**	37.0
Work in progress	**46.2**	36.4
Finished goods	**62.3**	55.8
	148.2	129.2

The Group holds consignment inventory amounting to £15.2 million (2015: £13.7 million) which is not reflected in the balance sheet. The majority of this balance is for precious metals, which are held on consignment by a subsidiary and for which it is invoiced only when the material is required.

In 2016 provisions of £3.4 million were made against inventories and recognised in operating costs (2015: £3.3 million). In 2015 £0.2 million was also recognised in business exit costs within specific adjusting items (see note 6).

15. TRADE AND OTHER RECEIVABLES

Accounting policies

Trade and other receivables are initially stated at their fair value and subsequently measured at amortised cost less impairment losses.

Trade and other receivables

	2016 £m	2015 £m
Current		
Trade receivables due from associate	**–**	1.3
Other trade receivables	**184.5**	154.6
Trade receivables	**184.5**	155.9
Loan made to associate	**–**	1.8
Other non-trade receivables and prepayments	**21.2**	16.7
	205.7	174.4

The Group's exposure to credit and currency risks related to trade and other receivables is disclosed in note 20.

16. CASH AND CASH EQUIVALENTS

Accounting policies

Cash and cash equivalents comprise cash balances and call deposits. Short-term deposits include demand deposits and short–term highly liquid investments with maturities of three months or less that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose of the Group statement of cash flows.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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16. CASH AND CASH EQUIVALENTS continued

Cash and cash equivalents

	2016 £m	2015 £m
Bank balances	**61.4**	38.8
Cash deposits	**61.0**	11.0
Cash and cash equivalents	**122.4**	49.8

Reconciliation of cash and cash equivalents to net debt*

	2016 £m	2015 £m
Opening borrowings	**(265.8)**	(270.0)
Net (increase)/decrease in borrowings[1]	**(63.4)**	8.5
Payment of finance lease liabilities	**0.3**	0.2
Effect of movements in foreign exchange on borrowings	**(36.0)**	(4.5)
Closing borrowings	**(364.9)**	(265.8)
Cash and cash equivalents	**122.4**	49.8
Closing net debt*	**(242.5)**	(216.0)

17. TRADE AND OTHER PAYABLES

Accounting policies

Trade and other payables are initially stated at their fair value and subsequently measured at amortised cost.

Trade and other payables

	2016 £m	2015 £m
Non-current		
Trade and non-trade payables	**1.8**	0.7
Current		
Trade payables due to associate	**0.2**	0.5
Other trade payables	**100.3**	95.6
Non-trade payables and accrued expenses	**92.0**	72.5
	192.5	168.6

18. CAPITAL AND RESERVES

Accounting policies

(i) Ordinary share capital
Ordinary shares are classified as equity.

(ii) Preference share capital
Preference share capital is classified as equity if it is non-redeemable and any dividends are discretionary, or is redeemable but only at the Company's option. Dividends on Preference share capital classified as equity are recognised as distributions within equity.

(iii) Repurchase of share capital and own shares held by The Morgan General Employee Benefit Trust ('the Trust')
When share capital recognised as equity is repurchased, the amount of the consideration paid, which includes directly attributable costs, is net of any tax effects, and is recognised as a deduction from equity. Repurchased shares and the purchase of own shares by the Trust are presented as a deduction from total equity.

18. CAPITAL AND RESERVES continued

Translation reserve

The translation reserve comprises all foreign exchange differences arising from the translation of the financial statements of foreign operations, as well as from the translation of liabilities that hedge the Company's net investment in a foreign subsidiary and forward contracts used for net investment hedging.

Hedging reserve

The hedging reserve comprises the effective portion of the cumulative net change in the fair value of cash flow hedging instruments related to hedged transactions that have not yet occurred.

Fair value reserve

The fair value reserve includes the cumulative net change in the fair value of available-for-sale investments until the investment is derecognised.

Capital redemption reserve

The capital redemption reserve arose when the Company redeemed Preference shares wholly out of distributable profits.

Other reserves

The other reserves include the £10.8 million increase in the year ended 3 January 2010 in the fair value of the Group's original 49% interest in Clearpower Limited from the date of its original acquisition to 5 January 2009 excluding goodwill and to the extent not previously recognised as the Group's share of the results of Clearpower Limited.

Retained earnings

The Company has acquired own shares to satisfy the requirements of the various share option incentive schemes. At 31 December 2016 623,127 shares were held by The Morgan General Employee Benefit Trust and are treated as a deduction from equity (2015: 375,203). Nil treasury shares were held by the Company (2015: nil). All rights conferred by those shares are suspended until they are reissued.

Dividends

The following ordinary dividends were declared and paid by the Company:

	Per share		Total	
	2016 Pence	2015 Pence	**2016 £m**	2015 £m
2014 final	**–**	7.00	**–**	20.0
2015 interim	**–**	4.00	**–**	11.4
2015 final	**7.00**	–	**20.0**	–
2016 interim	**4.00**	–	**11.4**	–
Total	**11.00**	11.00	**31.4**	31.4

In addition to the above, the Company also declared and paid dividends on the 5.5% Cumulative First Preference shares and 5.0% Cumulative Second Preference shares.

After 31 December 2016 the following dividends were proposed by the Directors for 2016. These dividends have not been provided for and there are no income tax consequences.

	£m
7.0 pence per qualifying ordinary share	20.0
5.5% Cumulative First Preference shares	–
5.0% Cumulative Second Preference shares	–
	20.0

The proposed 2016 final dividend is based upon the number of shares outstanding at the balance sheet date.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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18. CAPITAL AND RESERVES continued

Called-up share capital

	2016 £m	2015 £m
Equity share capital		
Fully paid: 285,369,988 (2015: 285,369,988) issued ordinary shares of 25 pence each	**71.4**	71.4
	71.4	71.4
Preference share capital		
125,327 issued 5.5% Cumulative First Preference shares of £1 each, fully paid	**0.1**	0.1
311,954 issued 5.0% Cumulative Second Preference shares of £1 each, fully paid	**0.3**	0.3
Total Preference share capital	**0.4**	0.4
Total share capital	**71.8**	71.8

Number of shares in issue

	Ordinary shares		Preference shares	
	2016	2015	**2016**	2015
In issue at beginning and end of period	**285,369,988**	285,369,988	**437,281**	437,281

As at the date of this Report 285,369,988 ordinary shares have been issued (2015: 285,369,988).

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

Details of options outstanding in respect of ordinary shares are given in note 21.

The 5.5% Cumulative First Preference shares of £1 each and the 5.0% Cumulative Second Preference shares of £1 each confer on the holders thereof the right to receive a cumulative preferential dividend at the rate of 5.5% and 5.0% respectively, calculated up to 30 June and 31 December respectively in every year. The First and Second Cumulative Preference shares shall not entitle the holders thereof to attend or vote at any general meeting unless either:

(i) the meeting is convened to consider any resolutions for reducing the capital, or authorising any issue of debentures or debenture stock, or increasing the borrowing powers of the Board under the Articles of Association of the Company, or winding up, or sanctioning a sale of the undertaking, or altering the Articles in any manner affecting their respective interests, or any other resolutions directly altering their respective rights and privileges; or

(ii) at the date of the notice convening the general meeting the Preference dividend is upwards of one month in arrears from the payment date of any half-yearly instalment.

On a return of capital on a winding-up the assets of the Company available for distribution shall be applied:

First, in payment to the holders of the First Preference shares of the amounts paid up on such shares, together with interest at the rate of 5.5% pa.

Second, in payment to the holders of the Second Preference shares of the amounts paid up on such shares, together with interest at the rate of 5.0% pa.

Third, in repaying the capital paid up or credited as paid up on the ordinary shares.

Fourth, any surplus shall be distributed rateably amongst the holders of the ordinary shares in proportion to the nominal amount paid up on their respective holdings of shares in the Company.

19. INTEREST-BEARING LOANS AND BORROWINGS

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings which are measured at amortised cost. For more information about the Group's exposure to interest rate and foreign currency risk, see note 20.

Accounting policies

Interest-bearing loans and borrowings

Interest-bearing loans and borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing loans and borrowings are stated at amortised cost with any difference between cost and redemption value being recognised in the income statement over the period of the borrowings on an effective interest basis.

Finance lease payments

Leases where the Group assumes substantially all of the risks and rewards of ownership are classified as finance leases as if the asset had been purchased outright. Assets acquired under finance leases are recognised as assets of the Group and the capital elements of the leasing commitments are shown as obligations in creditors. Depreciation is charged on a basis consistent with similar owned assets or over the lease term if shorter. Minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability. The finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Borrowing facilities and liquidity

All of the Group's borrowing facilities are arranged by Group Treasury with Morgan Advanced Materials plc as the principal obligor. In a few cases operating subsidiaries have external borrowings but these are supervised and controlled centrally. Group Treasury seeks to obtain certainty of access to funding in the amounts, diversity of maturities and diversity of counterparties as required to support the Group's medium-term financing requirements and to minimise the impact of poor credit market conditions.

Interest-bearing loans, borrowings and overdrafts

	2016 £m	2015 £m
Non-current liabilities		
Senior Notes	**203.3**	184.6
Bank and other loans	**0.2**	72.2
Obligations under finance leases	**0.5**	0.6
	204.0	257.4
Current liabilities		
Senior Notes	**159.3**	–
Bank and other loans	**1.2**	8.0
Obligations under finance leases	**0.4**	0.4
	160.9	8.4

In October 2016 the Group completed a new US private placement amounting to $112 million and €£60 million. Further details of this and the terms and conditions of outstanding loans, including the new debt, are given in note 20 in the Liquidity risk section.

Finance lease liabilities

Finance lease liabilities are payable as follows:

	Minimum lease payments 2016 £m	**Interest 2016 £m**	**Principal 2016 £m**	Minimum lease payments 2015 £m	Interest 2015 £m	Principal 2015 £m
Less than one year	**0.4**	**–**	**0.4**	0.4	–	0.4
Between one and five years	**0.5**	**0.1**	**0.4**	0.7	0.1	0.6
	0.9	**0.1**	**0.8**	1.1	0.1	1.0

In 2016 bank and other loans did not include any loans secured on the assets of the Group (2015: £nil).

As at 31 December 2016 the Group had available headroom under the bank syndication of £200.0 million (2015: £128.0 million).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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20. FINANCIAL RISK MANAGEMENT

This note presents information about the Group's exposure to a variety of financial risks: credit risk, liquidity risk and market risk, and the Group's management of capital. Further quantitative disclosures are included throughout these consolidated financial statements.

Accounting policies

Classification of financial instruments issued by the Group

Financial instruments issued by the Group are treated as equity (ie forming part of shareholders' funds) only to the extent that they meet the following two conditions:

(i) they include no contractual obligations upon the Group to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Group; and

(ii) where the instrument will or may be settled in the Company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the Company's own equity instruments or is a derivative that will be settled by the Company exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the Company's own shares, the amounts presented in these financial statements for called-up share capital and share premium account exclude amounts in relation to those shares.

Finance payments associated with financial liabilities are dealt with as part of finance expenses. Finance payments associated with financial instruments that are classified in equity are dividends and are recorded directly in equity.

Financial risk management and Treasury Policy

Group Treasury works within a framework of policies and procedures approved by the Audit Committee. It acts as a service to Morgan Advanced Materials' businesses, not as a profit centre, and manages and controls risk in the treasury environment through the establishment of such procedures. Group Treasury seeks to align treasury goals, objectives and philosophy to those of the Group. It is responsible for all of the Group's funding, liquidity, cash management, interest rate risk, foreign exchange risk and other treasury business. As part of the policies and procedures, there is strict control over the use of financial instruments to hedge foreign currencies and interest rates. Speculative trading in derivatives and other financial instruments is not permitted.

Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations. The Group is exposed to credit risk on financial instruments such as liquid assets, derivative assets and trade receivables.

The carrying amount of financial assets represents the maximum credit exposure. The maximum exposure to credit risk at the reporting date was:

	Carrying amount	
	2016 £m	2015 £m
Available-for-sale financial assets	**0.5**	0.5
Trade and other receivables	**184.5**	155.9
Cash and cash equivalents	**122.4**	49.8
Derivatives	**2.1**	2.0
	309.5	208.2

Available-for-sale financial assets

The Group limits its exposure to credit risk by only investing in liquid securities and only with counterparties that have a sound credit rating. Given these high credit ratings, management does not expect any counterparty to fail to meet its obligations.

20. FINANCIAL RISK MANAGEMENT continued

Trade and other receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. The demographics of the Group's customer base, including the default risk of the industries and countries in which customers operate, has less influence on credit risk.

Management has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis. Credit evaluations are performed on all customers requiring credit over a certain amount. The Group does not require collateral in respect of financial assets.

The Group serves thousands of customers. Many of these have purchased the same product for several years and in some cases decades. Others have modified and enhanced designs or adopted the same components into new products, extending the lifecycle of the components that the Group supplies. The Group's level of customer retention is very high, particularly with its major accounts, and, although the top 20 ranking will alter from year to year, many of the names remain consistent over time.

The Group establishes an allowance for impairment that represents its estimate of incurred losses in respect of trade and other receivables and investments.

The ageing of trade receivables at the reporting date was:

	Gross 2016 £m	**Impairment 2016 £m**	Gross 2015 £m	Impairment 2015 £m
Not past due	**153.1**	**(1.2)**	122.4	(0.6)
Past due 0-30 days	**21.1**	**(0.3)**	20.9	(0.3)
Past due 31-60 days	**4.7**	**(0.2)**	5.1	(0.1)
Past due 61-90 days	**2.7**	**(0.1)**	5.0	(2.4)
Past due more than 90 days	**18.4**	**(13.7)**	15.9	(10.0)
	200.0	**(15.5)**	169.3	(13.4)

The only movement in the allowance for impairment in respect of trade receivables was an increase of £2.1 million (2015: increase of £1.2 million).

A specific impairment allowance may be created in respect of an individual trade receivable for which full recovery is doubtful. As at 31 December 2016 and 31 December 2015 there were no specific impairment allowances that were significant to the Group.

The allowances in the accounts in respect of trade receivables are used to record impairment losses unless the Group is satisfied that no recovery of the amount owing is possible; at the point the amount is considered irrecoverable it is written off against the financial asset directly.

Cash, cash equivalents and derivatives

Cash balances held by companies representing over 75% of the Group's revenue are managed centrally through a number of pooling arrangements. Credit risk is managed by investing liquid assets and acquiring derivatives in a diversified way from high-credit-quality financial institutions. Counterparties are reviewed through the use of rating agencies, systemic risk considerations and through regular review of the financial press.

Liquidity and funding risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by cash. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions.

The Group seeks a balance between certainty of funding and a flexible, cost-effective borrowing structure. The policy is to ensure that the Group has sufficient borrowings and committed facilities to meet its medium-term financing requirements.

In October 2016 the Group completed a new US private placement amounting to $112 million and €60 million. The new debt extends the Group's debt maturity profile and the proceeds will be used for repayment of the Notes falling due in 2017.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

20. FINANCIAL RISK MANAGEMENT continued

The following are the undiscounted contracted maturities of financial liabilities, including interest payments:

	2016							
	Effective interest rate	**Year of maturity**	**Carrying amount £m**	**Contractual cash flows £m**	**Less than 1 year £m**	**1-2 years £m**	**2-5 years £m**	**More than 5 years £m**
Non-derivative financial liabilities								
4.32% Euro Senior Notes 2017	**4.32%**	**2017**	**17.3**	**17.6**	**17.6**	**–**	**–**	**–**
6.12% US Dollar Senior Notes 2017	**6.12%**	**2017**	**142.1**	**150.5**	**150.5**	**–**	**–**	**–**
6.26% US Dollar Senior Notes 2019	**6.26%**	**2019**	**60.8**	**72.2**	**3.8**	**3.8**	**64.6**	**–**
1.18% Euro Senior Notes 2023	**1.18%**	**2023**	**21.3**	**23.1**	**0.3**	**0.3**	**0.8**	**21.7**
3.17% US Dollar Senior Notes 2023	**3.17%**	**2023**	**12.2**	**14.9**	**0.4**	**0.4**	**1.1**	**13.0**
1.55% Euro Senior Notes 2026	**1.55%**	**2026**	**21.4**	**24.7**	**0.3**	**0.3**	**1.0**	**23.1**
3.37% US Dollar Senior Notes 2026	**3.37%**	**2026**	**79.0**	**105.1**	**2.6**	**2.6**	**7.9**	**92.0**
1.74% Euro Senior Notes 2028	**1.74%**	**2028**	**8.6**	**10.3**	**0.1**	**0.1**	**0.4**	**9.7**
Bank and other loans		**up to 2019**	**1.3**	**1.4**	**1.3**	**0.1**	**–**	**–**
Obligations under finance leases	**4.56%**	**up to 2019**	**0.9**	**1.0**	**0.4**	**0.5**	**0.1**	**–**
Trade and other payables			**100.5**	**100.5**	**100.5**	**–**	**–**	**–**
Derivative financial liabilities								
Forward exchange contracts as cash flow hedges			**4.1**	**4.1**	**3.7**	**0.4**	**–**	**–**
Forward exchange contracts as fair value hedges			**5.5**	**5.5**	**5.5**	**–**	**–**	**–**
Forward exchange contracts as net investment hedges			**1.7**	**1.7**	**1.7**	**–**	**–**	**–**
			476.7	**532.6**	**288.7**	**8.5**	**75.9**	**159.5**

	2015							
	Effective interest rate	Year of maturity	Carrying amount £m	Contractual cash flows £m	Less than 1 year £m	1-2 years £m	2-5 years £m	More than 5 years £m
Non-derivative financial liabilities								
4.32% Euro Senior Notes 2017	4.32%	2017	14.9	15.9	0.7	15.2	–	–
6.12% US Dollar Senior Notes 2017	6.12%	2017	118.8	133.3	7.3	126.0	–	–
6.26% US Dollar Senior Notes 2019	6.26%	2019	50.9	63.6	3.1	3.2	57.3	–
Bank and other loans		up to 2019	80.2	80.2	8.0	0.6	71.6	
Obligations under finance leases	4.56%	up to 2019	1.0	1.1	0.4	0.3	0.4	–
Trade and other payables			96.1	96.1	96.1	–	–	–
Derivative financial liabilities			0.6	0.6	0.5	0.1	–	–
Forward exchange contracts as cash flow hedges			0.7	0.7	0.1	0.6	–	–
Forward exchange contracts as fair value hedges			1.0	1.0	0.8	0.2	–	–
Forward exchange contracts as net investment hedges			–	–	–	–	–	–
			364.2	392.5	117.0	146.2	129.3	–

20. FINANCIAL RISK MANAGEMENT continued

Cash flows associated with derivatives that are cash flow hedges

The following table indicates the periods in which cash flows associated with cash flow hedges are expected to occur. This is matched with the periods in which cash flows associated with cash flow hedges are expected to impact profit or loss.

	Carrying amount £m	Contractual cash flows £m	Less than 1 year £m	1-2 years £m	2-5 years £m	More than 5 years £m
Forward exchange contracts – Assets	**0.8**	**88.5**	**69.7**	**15.6**	**3.2**	**–**
Forward exchange contracts – Liabilities	**(4.1)**	**(91.5)**	**(72.9)**	**(15.4)**	**(3.2)**	**–**
Total 2016	**(3.3)**	**(3.0)**	**(3.2)**	**0.2**	**0.0**	**–**
Forward exchange contracts – Assets	1.2	54.7	52.1	2.6	–	–
Forward exchange contracts – Liabilities	(0.6)	(53.9)	(51.2)	(2.7)	–	–
Total 2015	0.6	0.8	0.9	(0.1)	–	–

Market risk

Market risk is the risk that changes in market prices, such as interest rates, foreign exchange rates and equity prices, will affect the Group's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return on risk.

The Group buys and sells derivatives in the ordinary course of business for hedging purposes, and also incurs financial liabilities, in order to manage market risks. All such transactions are carried out in accordance with the Treasury Policy, which has been approved by the Audit Committee. Generally the Group seeks to apply hedge accounting in order to manage volatility in profit or loss.

Interest rate risk

The Group seeks to reduce the volatility in its interest charge caused by rate fluctuations. This is achieved through a combination of fixed rate debt and interest rate swaps. The proportions of fixed and floating rate debt are determined having regard to a number of factors, including prevailing market conditions, interest rate cycle, the Group's interest cover and leverage position and any perceived correlation between business performance and rates.

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

	Fixed rate instruments carrying amount		Variable rate instruments carrying amount	
	2016 £m	2015 £m	**2016 £m**	2015 £m
Financial assets	**–**	–	**164.1**	49.8
Financial liabilities	**(413.6)**	(226.9)	**(0.8)**	(40.3)
	(413.6)	(226.9)	**163.3**	9.5

The currency equivalent of £208.2 million of fixed rate financial instruments matures within one year in exchange for variable rate instruments.

The fixed rate financial liabilities predominantly comprise the currency equivalent of £362.7 million (2015: £184.6 million) of Senior Notes as well as the currency equivalent of £47.0 million (2015: £40.5 million) of euro payables under cross-currency swaps at a negative rate of 0.15%. The average cost of the Group's fixed rate instruments is 4.1% (2015: 4.9%).

An increase of 100 basis points in interest rates on the variable element of the Group's net debt* at the reporting date would have increased profit by £1.6 million (2015: £0.1 million). A decrease of 100 basis points would have decreased profit by £0.7 million (2015: increase £0.3 million). This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

Foreign currency risk

Due to the international reach of the Group, currency transaction exposures exist. The Group has a policy in place to hedge all material firm commitments and a large proportion of highly probable forecast foreign currency exposures in respect of sales and purchases over the following 12 months, and achieves this through the use of the forward foreign exchange markets. A significant proportion of the forward exchange contracts have maturities of less than one year after the balance sheet date. The Group continues its practice of not hedging income statement translation exposure.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

20. FINANCIAL RISK MANAGEMENT continued

There are exchange control restrictions which affect the ability of a small number of the Group's subsidiaries to transfer funds to the Group. The Group does not believe such restrictions have had or will have any material adverse impact on the Group as a whole or the ability of the Group to meet its cash flow requirements.

The table below shows the Group's currency exposures, being exposures on currency transactions that give rise to net currency gains and losses recognised in the income statement. Such exposures comprise the monetary assets and liabilities of the Group that are not denominated in the functional currency of the operating company involved, other than certain non-GBP borrowings treated as hedges of net investments in overseas entities.

	2016			2015		
Functional currency of Group operations	**GBP £m**	**USD £m**	**Euro £m**	GBP £m	USD £m	Euro £m
Trade receivables	**1.7**	**0.7**	**2.6**	1.8	7.6	9.8
Cash and cash equivalents	**0.8**	**47.8**	**3.4**	1.0	3.3	(2.9)
Trade payables	**(1.9)**	**(6.9)**	**(6.1)**	(1.3)	(8.7)	(2.1)
Borrowings not designated as net investment hedges	**–**	**(39.3)**	**(0.9)**	–	–	–
Net balance sheet exposure	**0.6**	**2.3**	**(1.0)**	1.5	2.2	4.8

The amounts shown in the table take into account the effect of the forward contracts entered into to manage these currency exposures.

In respect of other monetary assets and liabilities held in currencies other than the currency of the reporting unit, the Group ensures that the net exposure is kept to an acceptable level, by buying or selling foreign currencies at spot rates where necessary to address short-term imbalances.

The Group classifies its forward exchange contracts hedging forecasted transactions as cash flow hedges and states them at fair value. The fair value of forward exchange contracts used as hedges of forecasted transactions at 31 December 2016 was a liability of £3.3 million (2015: asset of £0.6 million).

The contractual cash flows associated with the forward exchange contracts that are designated as cash flow hedges are shown in the section on liquidity risk. The impact on profit or loss is expected to occur at the same time as the associated cash flows.

Currency translation risks are controlled centrally. To defend against the impact of a permanent reduction in the value of its overseas net assets through currency depreciation, the Group seeks to match the currency of financial liabilities with the currency in which the net assets are denominated. This is achieved by raising funds in different currencies and through the use of hedging instruments such as swaps, and is implemented only to the extent that the Group's gearing covenant under the terms of its loan documents, as well as its facility headroom, are likely to remain comfortably within limits. In this way, the currency of the Group's financial liabilities becomes more aligned to the currency of the trading cash flows that service them.

The Group's currency split of total borrowings after the impact of net investment hedges was as follows:

	2016 £m	2015 £m
GBP	**(0.5)**	(39.2)
USD	**294.0**	186.7
Euro	**70.2**	57.3
Chinese renminbi	**0.6**	31.7
Japanese yen	**–**	15.2
Other	**0.6**	8.6
	364.9	260.3

The Group's sensitivity to changes in foreign exchange rates on financial assets and liabilities as at 31 December 2016 is as follows:

Based upon the currency profile of the Group's net financial assets and liabilities, if GBP had strengthened by 10%, reported net financial liabilities would have decreased by £28.5 million (2015: £20.9 million). Conversely, if GBP had weakened by 10%, reported net financial liabilities would have increased by £34.1 million (2015: £25.1 million). Assuming the change occurred on the balance sheet date, there would be no impact on reported profit, as either the net financial liabilities are in the same currency as that of the respective Group entity, or the change would be offset by an equal and opposite change in the foreign currency monetary items in the Group's holding company.

20. FINANCIAL RISK MANAGEMENT continued

The amounts generated from the sensitivity analysis are forward-looking estimates of market risk assuming certain adverse market conditions occur. Actual results in the future may differ materially from those projected results due to developments. The impact of a weakening in GBP on the Group's financial assets and liabilities would be more than offset in equity and income by its impact on the Group's overseas net assets and earnings respectively.

Exchange rates

The principal exchange rates used in the translation of the results of overseas subsidiaries were as follows:

	2016 Closing rate	**2016 Average rate**	2015 Closing rate	2015 Average rate
GBP to:				
USD	**1.23**	**1.35**	1.47	1.53
Euro	**1.17**	**1.22**	1.36	1.38

For illustrative purposes, the table below provides details of the impact on 2016 revenue, Group EBITA® and profit before tax if the actual reported results, calculated using 2016 average exchange rates, were restated for GBP weakening by 10 cents against USD in isolation and 10 cents against the Euro in isolation:

	2016 Revenue £m	**2016 Group EBITA® £m**	**2016 Profit before tax £m**	2015 Revenue £m	2015 Group EBITA® £m	2015 Profit before tax £m
Increase in Revenue/Group EBITA®/Profit before tax if:						
GBP weakens by 10c against USD in isolation	**29.0**	**3.7**	**2.2**	24.3	2.6	1.6
GBP weakens by 10c against the Euro in isolation	**20.6**	**2.8**	**2.7**	16.1	1.8	1.8

Other market price risk

Equity price risk arises from available-for-sale equity securities held for meeting partially the unfunded portion of the Group's defined benefit pension obligations. The primary goal of the Group's investment strategy is to maximise returns in order to meet partially the Group's unfunded defined benefit obligations.

Capital management

The Board's policy is to maintain a strong capital base (total equity) so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board uses a number of measures, identified as key performance indicators (KPIs), to ensure the continued success of the Group.

The Board encourages employees of the Group to hold the Company's ordinary shares. The Group operates a number of employee share and share option schemes. From time to time the Company purchases its own shares on the market; the timing of these purchases depends on market prices. Primarily the shares are intended to be used for issuing shares under the Group's various share option incentive schemes.

The Board seeks to maintain a balance between the advantages and security afforded by a sound capital position, and the higher returns that might be possible with higher levels of borrowings.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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20. FINANCIAL RISK MANAGEMENT continued

The Group monitors capital using the following indicators:

Debt to adjusted capital

	2016 £m	2015 £m
Total interest-bearing loans and borrowings	**364.9**	259.4
Less: cash and cash equivalents and overdrafts	**(122.4)**	(43.4)
Net debt*	**242.5**	216.0
Total equity	**164.7**	186.4
Less: amounts accumulated in equity relating to cash flow hedges	**2.5**	(0.4)
Adjusted capital	**167.2**	186.0
Debt to adjusted capital ratio	**1.5**	1.2

Net debt* to EBITDA*

	2016 £m	2015 £m
Net debt* to EBITDA*	**242.5**	216.0
Operating profit before specific adjusting items, restructuring costs and other items	**110.0**	102.5
Depreciation and amortisation	**37.4**	34.2
EBITDA*	**147.4**	136.7
Net debt* to EBITDA* ratio	**1.6x**	1.6x
Interest cover		
EBITDA*	**147.4**	136.7
Net finance costs (excluding IAS 19 pension charge)	**12.9**	11.2
Interest cover	**11.4x**	12.3x

There were no changes in the Group's approach to capital management during the year.

Neither the Company nor any of its subsidiaries are subject to externally imposed capital requirements.

20. FINANCIAL RISK MANAGEMENT continued

Fair values

The fair values of financial assets and liabilities, together with the carrying amounts shown in the balance sheet, are as follows:

	Carrying amount 2016 £m	**Fair value 2016 £m**	Carrying amount 2015 £m	Fair value 2015 £m
Financial assets and liabilities at amortised cost				
4.32% Euro Senior Notes 2017	**(17.3)**	**(17.5)**	(14.9)	(15.5)
6.12% US Dollar Senior Notes 2017	**(142.1)**	**(146.3)**	(118.8)	(125.5)
6.26% US Dollar Senior Notes 2019	**(60.8)**	**(65.4)**	(50.9)	(56.0)
1.18% Euro Senior Notes 2023	**(21.3)**	**(21.0)**	–	–
3.17% US Dollar Senior Notes 2023	**(12.2)**	**(11.7)**	–	–
1.55% Euro Senior Notes 2026	**(21.4)**	**(20.8)**	–	–
3.37% US Dollar Senior Notes 2026	**(79.0)**	**(73.1)**	–	–
1.74% Euro Senior Notes 2028	**(8.6)**	**(8.3)**	–	–
Bank and other loans	**(1.3)**	**(1.3)**	(80.2)	(80.2)
Obligations under finance leases	**(0.9)**	**(0.9)**	(1.0)	(1.0)
Trade and other payables	**(100.5)**	**(100.5)**	(96.1)	(96.1)
Loans and receivables	**184.5**	**184.5**	155.9	155.9
Cash and cash equivalents	**122.4**	**122.4**	49.8	49.8
	(158.5)	**(159.9)**	(156.2)	(168.6)
Available-for-sale financial instruments				
Available-for-sale financial assets	**0.5**	**0.5**	0.5	0.5
Derivatives and other items at fair value				
Forward exchange contracts used for hedging	**(2.0)**	**(2.0)**	0.5	0.5
Cross-currency swaps used for hedging	**(7.2)**	**(7.2)**	(0.8)	(0.8)
	(167.2)	**(168.6)**	(156.0)	(168.4)

The following summarises the major methods and assumptions used in estimating the fair values of financial instruments reflected in the preceding table.

Equity securities

Fair value is based on quoted market prices at the balance sheet date.

Derivatives

Forward exchange contracts are marked to market either using listed market prices or by discounting the contractual forward price and deducting the current spot rate.

Interest-bearing loans and borrowings

Fair value is calculated based on discounted expected future principal and interest cash flows. The interest rates used to determine the fair value of loans and borrowings are 1.1-4.2% (2015: 1.6-3.5%) and finance leases 4.1% (2015: 4.56%).

Finance lease liabilities

The fair value is estimated as the present value of future cash flows, discounted at market interest rates for homogeneous lease agreements. The estimated fair values reflect changes in interest rates.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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20. FINANCIAL RISK MANAGEMENT continued

Trade and other receivables/payables

For receivables/payables with a remaining life of less than one year, the notional amount is deemed to reflect the fair value. All other receivables/payables are discounted to determine the fair value.

Cash and cash equivalents, trade and other payables and loans and receivables

The Group has disclosed the fair value of cash and cash equivalents, current loans and receivables and current payables at their carrying amount, given their notional amount is deemed to be their fair value.

Fair value hierarchy

The table below analyses financial instruments carried at fair value, by valuation method. The different levels have been defined as follows:

Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (ie as prices) or indirectly (ie derived from prices)

Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

	31 December 2016			31 December 2015		
	Level 1 £m	**Level 2 £m**	**Total £m**	Level 1 £m	Level 2 £m	Total £m
Available-for-sale financial assets	**0.5**	**–**	**0.5**	0.5	–	0.5
Derivative financial assets	**–**	**2.1**	**2.1**	–	2.0	2.0
	0.5	**2.1**	**2.6**	0.5	2.0	2.5
Derivative financial liabilities	**–**	**11.3**	**11.3**	–	(2.3)	(2.3)

The table below analyses financial instruments disclosed at fair value, by valuation method.

	31 December 2016			31 December 2015		
	Level 1 £m	**Level 2 £m**	**Total £m**	Level 1 £m	Level 2 £m	Total £m
4.32% Euro Senior Notes 2017	**–**	**(17.5)**	**(17.5)**	–	(15.5)	(15.5)
6.12% US Dollar Senior Notes 2017	**–**	**(146.3)**	**(146.3)**	–	(125.5)	(125.5)
6.26% US Dollar Senior Notes 2019	**–**	**(65.4)**	**(65.4)**	–	(56.0)	(56.0)
1.18% Euro Senior Notes 2023	**–**	**(21.0)**	**(21.0)**	–	–	–
3.17% US Dollar Senior Notes 2023	**–**	**(11.7)**	**(11.7)**	–	–	–
1.55% Euro Senior Notes 2026	**–**	**(20.8)**	**(20.8)**	–	–	–
3.37% US Dollar Senior Notes 2026	**–**	**(73.1)**	**(73.1)**	–	–	–
1.74% Euro Senior Notes 2028	**–**	**(8.3)**	**(8.3)**	–	–	–
Obligations under finance leases	**–**	**(0.9)**	**(0.9)**	–	(1.0)	(1.0)
	–	**(365.0)**	**(365.0)**	–	(198.0)	(198.0)

There have been no transfers between level 1 and level 2 during 2016 and 2015 and there were no level 3 financial instruments in either 2016 and 2015.

21. EMPLOYEE BENEFITS

Accounting policies

(i) Defined contribution plans

For defined contribution plans, the Group pays contributions to either publicly or privately administered pension insurance plans, and the Group has no further payment obligations once the contributions have been paid. Obligations for contributions to defined contribution pension plans are recognised as an expense in the income statement as incurred.

(ii) Defined benefit plans

A defined benefit plan is any retirement plan which is not a defined contribution plan. Typically, defined benefit plans define an amount of retirement benefit that an employee will receive, usually depending on one or more factors such as age, years of service and earnings.

The Group's net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets is deducted. The discount rate is the yield at the balance sheet date on AA-credit-rated bonds that have maturity dates approximating the terms of the Group's obligations. The calculation is performed by a qualified actuary using the projected unit credit method.

When the calculation results in a benefit to the Group, the recognised asset is limited to the total of the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. An economic benefit is available to the Group if it is realisable during the life of the plan, or on settlement of the plan liabilities. Remeasurement gains and losses, differences between the interest income and actual returns on assets, and the effect of changes in actuarial assumptions, are recognised in full in other comprehensive income in the year in which they arise.

(iii) Long-term service benefits

The Group's net obligation in respect of long-term service benefits, other than pension plans, is the amount of future benefit that employees have earned in return for their service in the current and prior periods. The obligation is calculated using the projected unit credit method, or similar approximation, and is discounted to its present value and the fair value of any related assets is deducted. The discount rate is the yield at the balance sheet date on AA-credit-rated bonds that have maturity dates approximating the terms of the Group's obligations.

(iv) Share-based payment transactions

The grant date fair value of share-based payment awards granted to employees is recognised as an expense, with a corresponding increase in equity, over the period that the employees become unconditionally entitled to the awards. The amount recognised as an expense is adjusted to reflect the actual number of awards for which the related service and non-market performance conditions are met, such that the amount ultimately recognised as an expense is based on the number of awards that meet the related service and non-market performance conditions at the vesting date.

Employee benefits – pensions

The Group operates a number of defined benefit arrangements as well as defined contribution plans. The defined benefit plans are primarily in the UK, USA and Europe and predominantly provide pensions based on service and career-average pay. In addition post-retirement medical plans are operated in the USA.

The Group has considered third-party powers and does not believe the Trustees have any powers that would prevent the Group obtaining a refund of any surplus on wind-up of the Scheme following gradual settlement of the plan obligations. As such the Group's interpretation is that the current version of IFRIC 14 does not have an impact and, as a result, any IAS 19 surplus can be recognised as an asset and it is not necessary to recognise additional liabilities in respect of contribution agreements reached with the pension scheme Trustees.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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21. EMPLOYEE BENEFITS continued

UK Schemes

In the UK, the Group operates two defined benefit pension schemes, the Morgan Pension Scheme and the Morgan Group Senior Staff Pension and Life Assurance Scheme ('the UK Schemes'). The two UK Schemes provide a benefit based upon an employee's total service, and their career average earnings (including allowance for consumer price inflation), although historically benefits were based upon an employee's final salary. Once in payment, pensions receive increases as set out in the rules, at either a fixed level, or in line with the Retail Price Index. The overall duration of the UK Schemes is around 18 years.

The UK Schemes' assets are held in trustee-administered funds which are governed by UK regulations, as is the nature of the relationship between the Group and the Trustees. Responsibility for the governance of the UK Schemes – including investment decisions and contribution schedules – lies with the Board of Trustees which must consult with the Company on such matters. The Board of Trustees must be composed of representatives of the Company, plan participants and an independent trustee, in accordance with the UK Schemes governing documents.

Funding legislation in the UK requires that schemes are fully funded on a scheme-specific basis as measured, and this must be assessed at least every three years. To the extent that there is a deficit against this measure, a payment schedule must be agreed such that the deficit is removed over a reasonable period of time.

The most recent full actuarial valuations of the UK Schemes were undertaken as at March 2013 and resulted in combined assessed deficits of £82 million. On the basis of these full valuations, the Trustees of the UK Schemes, having consulted with the Group, agreed past service deficit recovery payments totalling £7 million a year in 2016/17, increasing at 2.75% pa until 2023, and contributions in respect of future service as accrued. New full valuations are due with effective dates of March 2016 and the outcome of those consultations, which are underway, will determine the Group's future contribution requirements, with any new deficit arising needing to be met through the payment of additional contributions. The Group expects these valuations to have been completed by June 2017.

The UK Schemes were closed to new entrants on 1 August 2011, with any new employees receiving benefits through the Morgan Group Personal Pension Plan, a defined contribution arrangement. The Morgan Group Senior Staff Pension and Life Assurance Scheme was closed to the future accrual of benefits on and with effect from 6 April 2016. Employees active in the Scheme as at that date were enrolled in The Morgan Group Personal Pension Plan, with the option to opt out under relevant UK legislation.

US schemes

In the USA, the Group operates a tax-qualified defined benefit pension scheme ('MUSE DB Scheme'), and a Supplemental Executive Retirement Plan ('SERP') which is not tax-approved. In addition, a further tax-qualified scheme ('MAMAT') was wound up during 2016. The MUSE DB Scheme is frozen, and therefore employees accrue benefits within a 401k arrangement.

The US Schemes provide a benefit based upon an employee's service and earnings. The benefits are level both prior to, and whilst in, payment. Overall, the US Schemes' duration is around 11 years.

The qualified US Schemes' assets are held in a trust separately from the Group's assets. For the SERP the Group holds an asset to meet the obligations however, due to its nature this is accounted for as a Group asset, rather than an asset of the SERP. Responsibility for the governance of the US Schemes, including investment decisions and contribution schedules, lies with a management committee, all of whose members are appointed by the Group.

The funding requirements in the USA, ERISA, require schemes to be fully funded at all times, and if not to target full funding within a period of seven years.

The most recent full actuarial valuation of the US MUSE DB Scheme was undertaken as at 1 January 2016 and the deficit at that date totalled £11.0 million. The Group made a £5.3 million contribution to the Scheme in 2016 and is expected to make contributions of £7.3 million in 2017 and 2018, these amounts being in excess of the minimum required contributions.

In addition to the above, the Group made a contribution of £2.3 million to fund the termination of the MAMAT Scheme and final payment of all earned benefits in June 2016. This resulted in a settlement gain for accounting purposes of £4.3 million. A further settlement gain of £3.2 million arose from the offer of a lump-sum cash payment to 1,226 former employees, deferred and vested members of the MUSE Scheme for which there was a circa 60% take-up. The gains arose as a result of the differential between the value of the liabilities discharged from the plans (on an accounting basis) and the reduction in Scheme assets. The lump sum was not under the original terms of the Scheme.

European schemes

In Europe, the Group operates a number of retirement schemes, with the bulk of the obligations relating to arrangements for employees in Germany. In line with local practice these arrangements are not funded in advance, with benefits being met by the Group as they fall due.

21. EMPLOYEE BENEFITS continued

	2016 UK £m	2016 USA £m	2016 Europe £m	2016 Rest of the World £m	2016 Total £m
Pension plans and employee benefits					
Present value of unfunded defined benefit obligations	–	(9.4)	(35.9)	(2.5)	(47.8)
Present value of funded defined benefit obligations	(588.7)	(146.5)	(2.0)	(9.8)	(747.0)
Fair value of plan assets	408.2	106.9	0.4	8.2	523.7
Net obligations	(180.5)	(49.0)	(37.5)	(4.1)	(271.1)
Movements in present value of defined benefit obligation					
At 1 January 2016	(500.9)	(178.9)	(28.7)	(14.9)	(723.4)
Current service cost	(1.9)	(0.1)	(0.7)	(1.6)	(4.3)
Interest cost	(18.1)	(7.7)	(0.7)	(0.3)	(26.8)
Remeasurement gains/(losses):					
Changes in financial assumptions	14.4	4.4	(0.3)	(2.2)	16.3
Changes in demographic assumptions	(105.6)	(11.2)	(3.8)	–	(120.6)
Experience adjustments on benefit obligations	4.9	4.8	–	–	9.7
Benefits paid	19.2	9.1	1.1	1.6	31.0
Contributions by members	(0.7)	–	–	–	(0.7)
Curtailments and settlements	–	53.4	–	6.4	59.8
Exchange adjustments	–	(29.7)	(4.8)	(1.3)	(35.8)
At 31 December 2016	(588.7)	(155.9)	(37.9)	(12.3)	(794.8)
Movements in fair value of plan assets					
At 1 January 2016	383.5	123.8	0.4	11.2	518.9
Interest on plan assets	14.0	5.4	–	0.3	19.7
Remeasurement gains	21.1	3.4	0.1	2.0	26.6
Contributions by employer	9.0	8.7	1.0	2.1	20.8
Contributions by members	0.7	–	–	–	0.7
Benefits paid	(19.2)	(9.1)	(1.1)	(1.6)	(31.0)
Administrative expenses[1]	(0.9)	–	–	–	(0.9)
Curtailments and settlements	–	(45.9)	–	(6.5)	(52.4)
Exchange adjustments	–	20.6	–	0.7	21.3
At 31 December 2016	408.2	106.9	0.4	8.2	523.7
Actual return on assets	35.1	8.8	0.1	2.3	46.3

Pension plans and employee benefits	2016 UK £m	2016 USA £m	2016 Europe £m	2016 Rest of the World £m	2016 Total £m
Expense recognised in the consolidated income statement					
Current service cost	(1.9)	(0.1)	(0.7)	(1.6)	(4.3)
Administrative expenses[1]	(0.9)	–	–	–	(0.9)
Net interest on net defined benefit liability	(4.1)	(2.3)	(0.7)	–	(7.1)
Gain/(loss) on curtailments and settlements	–	7.5	–	(0.1)	7.4
Total (expense)/income	(6.9)	5.1	(1.4)	(1.7)	(4.9)

1. In 2016, in addition to the above, the Group directly incurred £1.6 million (2015: £1.4 million) of administrative expenses in relation to the USA schemes, which have been recognised in overheads outside of the pension liability.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

21. EMPLOYEE BENEFITS continued

The charge in relation to the Group's defined benefit arrangements, including £1.6 million (2015: £1.4 million) of administrative expenses recognised in overheads outside of the pension liability, is recognised in the following line items in the consolidated income statement:

	2016 £m	2015 £m
Operating costs	**(6.8)**	(6.5)
Net finance expense	**(7.1)**	(6.9)
Total expense before specific adjusting items	**(13.9)**	(13.4)
Net pension settlement credit (within specific adjusting items)	**7.4**	–
Total expense	**(6.5)**	(13.4)

Statement of financial position reconciliation

	2016 £m	2015 £m
At 1 January 2016	**(204.5)**	(211.8)
Pension expense	**(4.9)**	(12.0)
Contributions	**20.8**	19.6
Other comprehensive income	**(68.0)**	1.3
Exchange adjustments	**(14.5)**	(1.6)
At 31 December 2016	**(271.1)**	(204.5)

The Group expects to contribute £24.0 million to these arrangements in 2017.

	UK £m	**USA £m**	**Europe £m**	**Rest of the World £m**	**Total £m**
Estimate of employer contributions to be paid into the plans during the 12-month period beginning 1 January 2017	**12.3**	**8.2**	**1.2**	**2.3**	**24.0**

The fair values of the plan assets were as follows:

	2016 UK £m	**2016 USA £m**	**2016 Europe £m**	**2016 Rest of the World £m**	**2016 Total £m**
Equities and growth assets	**165.6**	**42.4**	**–**	**–**	**208.0**
Bonds and LDI	**42.5**	**42.3**	**–**	**–**	**84.8**
Matching insurance policies	**187.9**	**–**	**0.3**	**5.3**	**193.5**
Other	**12.2**	**22.2**	**0.1**	**2.9**	**37.4**
Total	**408.2**	**106.9**	**0.4**	**8.2**	**523.7**

The assumptions used are best estimate assumptions chosen from a range of possible actuarial assumptions which may not be borne out in practice. The principal assumptions are the discount rate and inflation assumptions which are long-term and measured on external factors, based upon each plan's duration. In addition to these, the mortality assumption in the UK and USA is material to the cost of the promised benefits. In both the UK and Europe, the assumed increases in salaries and pensions in payment are derived from assumed future inflation.

21. EMPLOYEE BENEFITS continued

The rates shown below are single equivalents for the obligations as a whole derived from discounting along the yield curve. In line with IAS 19, in determining the value of the annuity contract held in the UK we have reflected the same methodology as used to value the corresponding obligations, reflecting the actual cashflow profile and duration of the insured obligations, rather than those of the Schemes as a whole.

Actuarial assumptions were:

	2016 UK %	2016 USA %	2016 Europe %	2016 Rest of the World %
Discount rate	**2.62**	**4.16**	**1.60**	**2.90**
Inflation (UK: RPI/CPI)	**3.20/2.10**	**n/a**	**1.70**	**n/a**
Salary increase	**n/a**	**n/a**	**2.20**	**5.00**
Pensions increase	**3.00/3.10/3.70**	**n/a**	**1.70**	**n/a**
Mortality – post-retirement:				
Life expectancy of a male aged 60 in accounting year	**26.8**	**25.1**	**23.7**	**n/a**
Life expectancy of a male aged 60 in accounting year + 20	**28.7**	**26.8**	**26.5**	**n/a**

The actual liability in respect of global employee benefits will not be known until the last payments have been made. In placing a current estimate on the Group's past service benefit obligations, a number of assumptions about the future are required. For defined benefit schemes, the Directors make annual estimates and assumptions in respect of discount rates, future changes in salaries, employee turnover, inflation rates and life expectancy. In making these estimates and assumptions, the Directors consider advice provided by external advisers, such as actuaries.

The accounting assumptions noted above are used to calculate the year-end net pension liability in accordance with the relevant accounting Standard, IAS 19 (revised) *Employee Benefits*. Changes in these assumptions have no impact on the Group's cash payments to their arrangements. The payments due are calculated based on local funding requirements, or in the case of the Group's unfunded arrangements on the incidence of benefit payments falling due.

The sensitivities of the Group's net balance sheet to the principal assumptions are:

	Change in assumption	2016 Increase effect on deficit £m	2015 Increase effect on deficit £m
Discount rate	**Decrease by 0.1%**	**10.8**	9.8
Inflation	**Increase by 0.1%**	**4.7**	4.4
Mortality – post-retirement	**Pensioners live 1 year longer**	**23.4**	17.1
Exchange rates	**GBP weakens against USD by 10%**	**5.4**	6.1
	GBP weakens against EUR by 10%	**4.2**	3.1

These sensitivities have been calculated to show the movement in the net balance sheet in isolation, and assuming no other changes in market conditions at the accounting date. This is unlikely in practice – for example, a change in discount rate is unlikely to occur without any movement in the value of the assets held by the Group's Schemes.

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21. EMPLOYEE BENEFITS continued

Pension plans and employee benefits	2015 UK £m	2015 USA £m	2015 Europe £m	2015 Rest of the World £m	2015 Total £m
Present value of unfunded defined benefit obligations	–	(8.3)	(27.2)	(1.9)	(37.4)
Present value of funded defined benefit obligations	(500.9)	(170.6)	(1.5)	(13.0)	(686.0)
Fair value of plan assets	383.5	123.8	0.4	11.2	518.9
Net obligations	(117.4)	(55.1)	(28.3)	(3.7)	(204.5)
Movements in present value of defined benefit obligation					
At 1 January 2015	(512.4)	(178.8)	(32.1)	(14.0)	(737.3)
Current service cost	(2.5)	–	(0.6)	(1.2)	(4.3)
Interest cost	(18.2)	(7.1)	(0.5)	(0.3)	(26.1)
Remeasurement gains/(losses):					
Changes in financial assumptions	6.7	6.6	1.9	–	15.2
Changes in demographic assumptions	–	–	–	(0.2)	(0.2)
Experience adjustments on benefit obligations	8.8	2.1	(0.2)	0.2	10.9
Benefits paid	17.6	8.3	1.2	0.8	27.9
Contributions by members	(0.9)	–	–	–	(0.9)
Exchange adjustments	–	(10.0)	1.6	(0.2)	(8.6)
At 31 December 2015	(500.9)	(178.9)	(28.7)	(14.9)	(723.4)
Movements in fair value of plan assets					
At 1 January 2015	393.6	120.0	0.5	11.4	525.5
Interest on plan assets	14.1	4.9	–	0.2	19.2
Remeasurement losses	(16.1)	(7.5)	–	(1.0)	(24.6)
Contributions by employer	9.4	7.9	1.1	1.2	19.6
Contributions by members	0.9	–	–	–	0.9
Benefits paid	(17.6)	(8.3)	(1.2)	(0.8)	(27.9)
Administrative expenses	(0.8)	–	–	–	(0.8)
Exchange adjustments	–	6.8	–	0.2	7.0
At 31 December 2015	383.5	123.8	0.4	11.2	518.9
Actual return on assets	(2.0)	(2.6)	–	(0.8)	(5.4)

Pension plans and employee benefits	2015 UK £m	2015 USA £m	2015 Europe £m	2015 Rest of the World £m	2015 Total £m
Expense recognised in the consolidated income statement					
Current service cost and past service cost	(2.5)	–	(0.6)	(1.2)	(4.3)
Administrative expenses	(0.8)	–	–	–	(0.8)
Net interest on net defined benefit liability	(4.1)	(2.2)	(0.5)	(0.1)	(6.9)
Total expense	(7.4)	(2.2)	(1.1)	(1.3)	(12.0)

21. EMPLOYEE BENEFITS continued

Actuarial assumptions were:

	2015 UK %	2015 USA %	2015 Europe %	2015 Rest of the World %
Discount rate	3.70	4.50	2.30	2.90
Inflation (UK: RPI/CPI)	3.00/1.80	n/a	1.70	n/a
Salary increase	n/a	n/a	2.20	5.00
Pensions increase	2.90/3.10/3.70	n/a	1.70	n/a
Mortality – post-retirement:				
Life expectancy of a male aged 60 in accounting year	26.6	26.2	23.6	n/a
Life expectancy of a male aged 60 in accounting year + 20	28.2	28.0	26.4	n/a

Risks

Through its defined benefit pension plans, the Group is exposed to a number of risks, the most significant of which are detailed below.

The balance sheet net pension liability is a snapshot view which can be significantly influenced by short-term market factors.

The calculation of the surplus or deficit depends, therefore, on factors which are beyond the control of the Group – principally the value at the balance sheet date of equity shares in which the Scheme has invested and long-term interest rates which are used to discount future liabilities. The funding of the Scheme is based on long-term trends and assumptions relating to market growth, as advised by qualified actuaries and investment advisers.

Investment returns: The Group's net balance sheet and contribution requirements are heavily dependent upon the return on the assets invested in by the schemes.

Longevity: The cost to the Group of the pensions promised to members is dependent upon the expected term of these payments. To the extent that members live longer than expected this will increase the cost of these arrangements.

Inflation rate risk: In the UK, the pension promises are, in the main, linked to inflation, and higher inflation will lead to higher liabilities.

The above risks have been mitigated for a large proportion of the UK Schemes' pensioner population through the purchase of an insurance policy, the payments from which exactly match the promises made to employees. Remaining investment risks have also been mitigated to some extent by diversification of the return-seeking assets and backing uninsured pensioner liabilities by bonds and swaps.

In addition, the IAS 19 defined benefit obligation is linked to yields on AA-rated corporate bonds; however the majority of the Group's arrangements invest in a number of other assets which will move in a different manner from these bonds. Therefore, changes in market conditions may lead to volatility in the net pension liability on the Group's balance sheet and in other comprehensive income, and to a lesser extent in the IAS 19 pension expense in the Group's income statement.

Defined contribution plans

The Group operates a number of defined contribution pension plans. The total expense relating to these plans in the current year was £8.7 million (2015: £7.8 million). The Group expects to contribute £8.8 million to these arrangements in 2017.

Share-based payments

The Group operates various share option programmes that allow Group employees to acquire shares in the Company. During 2016, awards were made to Executives under the Morgan Advanced Materials plc Long-Term Incentive Plan ('LTIP'). No awards were made under The Morgan Advanced Materials Bonus Deferral Share Matching Plan ('BDSMP'), although awards remained outstanding from prior years. The Company also maintains a UK all-employee Sharesave scheme ('Employee Sharesave Scheme 2004'). The grant date fair value of options granted to employees is recognised as an employee expense, with a corresponding increase in equity, over the period that the employees become unconditionally entitled to the options. The amount recognised as an expense is adjusted to reflect the actual number of share options for which the related service and non-market vesting conditions are met.

The fair values of the options and awards under each scheme have been measured using the following models:

LTIP and BDSMP	Monte Carlo model
Restricted Share Award	Monte Carlo model
Employee Sharesave Scheme 2004	Modified binomial model

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
continued

21. EMPLOYEE BENEFITS continued

The following options and awards were outstanding at 31 December 2016 in respect of ordinary shares:

	Exercise / Award price(s)	Number of shares outstanding	Exercise dates ranging from	to
LTIP	0.00p	3,511,217	28 February 2017	23 May 2026
BDSMP	0.00p-347.50p	508,054	24 March 2017	24 September 2018
Restricted Share Award	0.00p	114,351	31 December 2016	31 December 2017
Employee Sharesave Scheme 2004	233.00p-264.00p	1,462,294	1 December 2016	31 May 2020

Performance metrics for LTIP and BDSMP

The key performance metrics used in the plans are:

Total Shareholder Return ('TSR') – the return (expressed as a percentage) on a notional investment in one share in the Company expressed as follows:

(a) the average share price over the last three months of the performance period; plus (b) the net dividends per share paid during the performance period reinvested in Company shares at the ex-dividend date; divided by (c) the average share price over the three months preceding the performance period.

Earnings Per Share ('EPS') – (for the LTIP and BDSMP) profit before taxation less the charge for non-controlling interests in any financial year of the Group, adjusted by the Remuneration Committee to exclude the effect of amortisation of intangible assets, charges related to IAS 39 *Financial Instruments: Recognition and Measurement* and the effect of any other special items which the Remuneration Committee does not, in its discretion, consider to reflect underlying operating performance, divided by the weighted average number of shares in issue during the relevant financial years (defined on a pre-taxation basis).

Group headline operating profit* – operating profit before specific adjusting items and amortisation of intangible assets. The Remuneration Committee may also make further adjustments to exclude items which it does not, in its discretion, consider to reflect the underlying operating performance of the Group during the relevant financial years.

Group Return on Capital Employed ('ROCE')* – Group headline operating profit*, divided by the sum of working capital and the net book value of property, plant and equipment, and land and buildings at the end of the relevant financial year.

Group average Return on Capital Employed ('ROCE')* – Group headline operating profit*, divided by the average of the working capital and the net book value of property, plant and equipment, and land and buildings at the end of the relevant financial years.

For the TSR elements of the plans, for performance between median and upper quartile, awards are made on a straight-line, pro-rata basis. Similarly for EPS, Group headline operating profit* and Group average ROCE* for performance between the identified trigger points, awards are made on a straight-line, pro-rata basis.

Share Plans Terms and Conditions

Below are the terms and conditions of all awards and grants made that were outstanding on or after 1 January 2016:

Grant date/Employees entitled	Number of instruments granted	Vesting conditions	Contractual life of option
Awards granted to senior employees in 2016 under the LTIP	1,859,775	Three years of service plus satisfaction of performance metrics	3 years
Awards granted to senior employees in 2015 under the BDSMP	499,634	Three years of service plus satisfaction of performance metrics	3 years
Awards granted to senior employees in 2015 under the LTIP	1,168,758	Three years of service plus satisfaction of performance metrics	3 years
Restricted Share Award granted to the Chief Executive Officer in 2015	114,351	Continued employment	2 years 5 months
Awards granted to senior employees in 2014 under the BDSMP	105,726	Three years of service plus satisfaction of performance metrics	3 years
Awards granted to senior employees in 2014 under the LTIP	1,182,302	Three years of service plus satisfaction of performance metrics	3 years
Awards granted to senior employees in 2013 under the BDSMP	194,944	Three years of service plus satisfaction of performance metrics	3 years
Awards granted to senior employees in 2013 under the LTIP	1,332,099	Three years of service plus satisfaction of performance metrics	3 years

21. EMPLOYEE BENEFITS continued

Performance metrics for LTIP

The performance metrics for LTIP awards are set annually. The Company has given an undertaking to shareholders that awards will only vest if there is also an improvement in underlying financial performance. Awards will only vest therefore if the Remuneration Committee is satisfied that the Group's underlying financial performance over the performance period justifies vesting.

2013 and 2014 LTIP awards

For LTIP awards granted to all participants in 2013, the extent to which 33% of the awards vest depends on the Company's TSR ranking against an appropriate comparator group over the period from 1 January 2013 to 31 December 2015. The extent to which 33% of these awards vest depends on the growth in the Company's EPS between the 2012 base financial year and the 2015 financial year. The extent to which 33% vest depends on the Group's average ROCE* for the financial years ending 31 December 2013, 2014 and 2015.

For LTIP awards granted to all participants in 2014, the extent to which 33% of the awards vest depends on the Company's TSR ranking against an appropriate comparator group over the period from 1 January 2014 to 31 December 2016. The extent to which 33% of these awards vest depends on the growth in the Company's EPS between the 2013 base financial year and the 2016 financial year. The extent to which 33% vest depends on the Group's ROCE* for the financial year ending 31 December 2016:

TSR element		**EPS element**		**ROCE* element**	
TSR against FTSE All-Share Industrials Index	**% of award that vests**	**EPS growth**	**% of award that vests**	**ROCE***	**% of award that vests**
Upper quartile	33.33%	15% pa	33.33%	37%	33.33%
Median	10%	8% pa	10%	33%	10%
Below median	Nil	< 8% pa	Nil	< 33%	Nil

2015 LTIP Awards

For LTIP awards granted to all participants in 2015, the extent to which 33% of the awards vest depends on the Company's TSR ranking against an appropriate comparator group over the period from 1 January 2015 to 31 December 2017. The extent to which 33% of these awards vest depends on the growth in the Company's EPS between the 2014 base financial year and the 2017 financial year. The extent to which 33% vest depends on the Group's ROCE* for the financial year ending 31 December 2017:

TSR element		**EPS element**		**ROCE* element**	
TSR against FTSE All-Share Industrials Index	**% of award that vests**	**EPS growth**	**% of award that vests**	**ROCE***	**% of award that vests**
Upper quartile	33.33%	15% pa	33.33%	33%	33.33%
Median	10%	6% pa	10%	27%	10%
Below median	Nil	< 6% pa	Nil	< 27%	Nil

2016 LTIP Awards

For LTIP awards granted to all participants in 2016, the extent to which 33% of the awards vest depends on the Company's TSR ranking against two comparator groups; the FTSE All-Share Industrials Index comprising 118 companies and a bespoke comparator group of 17 industry comparators over the period from 1 January 2016 to 31 December 2018. The extent to which 33% of these awards vest depends on the growth in the Company's EPS between the 2015 base financial year and the 2018 financial year. The extent to which 33% vest depends on the Group's ROCE* for the financial year ending 31 December 2018:

TSR (FTSE All-Share Industrials Index)		**TSR (bespoke comparator group)**		**EPS element**		**ROCE* element**	
TSR against FTSE All-Share Industrials Index	**% of award that vests**	**TSR against Tailored Comparator Group**	**% of award that vests**	**EPS growth**	**% of award that vests**	**ROCE**	**% of award that vests**
Upper quartile	16.67%	Upper quartile	16.67%	11% pa	33.33%	33%	33.33%
Median	4.17%	Median	4.17%	4% pa	8.33%	27%	8.33%
Below median	Nil	Below median	Nil	< 4% pa	Nil	< 27%	Nil

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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21. EMPLOYEE BENEFITS continued

Performance metrics for the BDSMP

The BDSMP was introduced following shareholder approval in 2008.

Under the plan rules, participants may be offered the opportunity to defer up to 75% of their annual bonus on a pre- or post-tax basis into Company shares. Participants must hold the deferred shares for three years to be eligible for a matching award based on the pre-tax value of their deferred shares. Matching shares may be earned at the end of three years in the event that stretching performance metrics have been met. The performance metrics for the BDSMP are set annually.

Under the 2013, 2014 and 2015 grants participants were given the opportunity to defer up to 50% of their bonus under the BDSMP and the performance metrics are based on EPS growth targets relative to the 2011, 2012, 2013 and 2014 base years respectively:

EPS performance	Vesting of matching shares (as multiple of the shares under the deferred award)
20% pa	3x match
16% pa	2x match
12% pa	1x match
8% pa	Nil
< 8% pa	Nil

The BDSMP is no longer offered and therefore no awards were made under the BDSMP in 2016.

Restricted Share Award

On 3 August 2015, an award over 114,351 ordinary 25 pence shares in the Company was made to Pete Raby, Chief Executive Officer. This award was granted in accordance with Listing Rule 9.4.2(2) and was made in recognition of the loss of incentive awards which he forfeited on leaving his former employer. Vesting is subject to Pete Raby not having resigned or been dismissed in specified circumstances. There are no performance conditions attached to this award.

The first tranche of 57,176 shares vested on 31 December 2016. The second tranche of 57,175 shares will vest on 31 December 2017 subject to the conditions stated above.

Employee Sharesave Scheme 2004 terms and conditions

The terms and conditions of awards/grants that were outstanding on or after 1 January 2015 that are not covered in the information above are as follows:

Grant date/Employees entitled	Number of instruments granted	Vesting conditions	Contractual life of option
Options granted to UK employees in 2016 under the Employee Sharesave Scheme 2004	573,247	Three years of service	3 years
Options granted to UK employees in 2015 under the Employee Sharesave Scheme 2004	640,447	Three years of service	3 years
Options granted to UK employees in 2014 under the Employee Sharesave Scheme 2004	404,687	Three years of service	3 years
Options granted to UK employees in 2013 under the Employee Sharesave Scheme 2004	463,394	Three years of service	3 years
Options granted to UK employees in 2012 under the Employee Sharesave Scheme 2004	1,071,868	Three years of service	3 years

Share plans – further details

	Awards made in 2016	
	LTIP 2004	**Employee Sharesave Schemes 2004**
Fair value at measurement date	**109.80-207.40p**	**52.00p**
Share price	**238.60p**	**283.00p**
Exercise price	**n/a**	**233.00p**
Expected volatility (expressed as weighted average volatility used in the model)	**35%**	**35%**
Option life (expressed as weighted average life used in the model)	**3 years**	**3 years**
Expected dividends	**4.6%**	**3.9%**
Risk-free interest rate	**0.6%**	**0.1%**

The expected volatility is based on the historic volatility (calculated based on the weighted average remaining life of the share options) adjusted for any expected changes to future volatility due to publicly available information.

21. EMPLOYEE BENEFITS continued

The numbers and weighted average exercise prices of share options are as follows:

	Weighted average exercise price 31 December 2016	**Number of options 31 December 2016**	Weighted average exercise price 31 December 2015	Number of options 31 December 2015
Outstanding at the beginning of the period	**110.42p**	**5,919,623**	90.24p	6,874,277
Granted during the period	**57.15p**	**2,348,973**	125.42p	2,423,190
Forfeited during the period	**84.90p**	**(838,500)**	165.98p	(248,931)
Exercised during the period	**227.94p**	**(611,779)**	230.10p	(974,584)
Lapsed during the period	**18.51p**	**(1,222,400)**	2.35p	(2,154,329)
Outstanding at the end of the period	**72.11p**	**5,595,917**	110.42p	5,919,623
Exercisable at the end of the period	**172.91p**	**194,327**	211.49p	518,737

The weighted average share price at the date of share options exercised during the period was 241.33 pence (2015: 317.11 pence).

The options outstanding at the year end have an exercise price in the range nil to 347.50 pence.

The fair value of services received in return for share options granted is measured by reference to the fair value of share options granted.

The weighted average fair value of options issued in the period was 138.17 pence (2015: 230.05 pence).

The IFRS 2 fair value charge expensed to the income statement in 2016 was £0.8 million (2015: £1.4 million).

22. PROVISIONS

Accounting policies

A provision is recognised in the balance sheet when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation, and a reliable estimate can be made of the obligation. The best estimate of the expenditure required to settled the present obligation is the amount that an entity would rationally pay to settle the obligation at the end of the reporting period or to transfer it to a third party at that time. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability.

(i) Restructuring

A provision for restructuring is recognised when the Group has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has been announced publicly. Future operating costs are not provided for.

(ii) Onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Group from a contract are lower than the unavoidable cost of meeting its obligations under the contract.

(iii) Environmental

In accordance with the Group's Environmental Policy a provision is recognised for known environmental issues which the Group will rectify over the next few years. In a number of jurisdictions companies have a constructive obligation to remedy any known environmental problems.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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22. PROVISIONS continued

Provisions

	Closure and restructuring provisions £m	Other provisions £m	Environmental provisions £m	Total £m
Balance at 31 December 2015	**6.4**	**4.8**	**0.8**	**12.0**
Provisions made during the year	**1.1**	**2.4**	**0.2**	**3.7**
Provisions used during the year	**(5.5)**	**(1.7)**	**(0.5)**	**(7.7)**
Provisions reversed during the year	**(0.4)**	**(0.2)**	**–**	**(0.6)**
Effect of movements in foreign exchange	**0.1**	**0.5**	**0.1**	**0.7**
Balance at 31 December 2016	**1.7**	**5.8**	**0.6**	**8.1**
Current	**1.0**	**4.4**	**0.4**	**5.8**
Non-current	**0.7**	**1.4**	**0.2**	**2.3**
	1.7	**5.8**	**0.6**	**8.1**

Closure and restructuring provisions are based on the Group's restructuring programmes and represent committed expenditure at the balance sheet date. The amounts provided are based on the costs of terminating relevant contracts, under the contract terms, and management's best estimate of other associated restructuring costs including professional fees, most of which are expected to be incurred over the next year. Due to the nature of the provision for closure and restructuring provisions, the timing of any potential future outflows in respect of these liabilities is uncertain until the restructuring programme is completed. Details of contingent liabilities are given in note 25.

Other provisions relate to a range of items, including long-service costs and legal claims. The amounts provided are based on the best estimate of the probable future costs of these activities; however the final cost will not become known until the activity has been settled. The Group expects to incur most of the liability in less than one year. The principal uncertainties in relation to this provision are until the legal case is resolved, the final costs associated cannot be made for certain. Details of contingent liabilities are given in note 25.

Environmental provisions are for known environmental issues which the Group will rectify over the next few years. In a number of jurisdictions companies have a constructive obligation to remedy any known environmental problems. The amounts provided are based on the best estimate of the costs required to remedy these problems; however the final cost will not become known until the environmental issue is fully resolved. Details of contingent liabilities are given in note 25.

23. OPERATING LEASES

Accounting policies

Operating lease payments
Payments made under operating leases are recognised in the income statement on a straight-line basis over the term of the lease. Lease incentives received are recognised in the income statement as an integral part of the total lease expense.

Leases as lessee
Non-cancellable operating lease rentals are payable as follows:

	2016 £m	2015 £m
Less than one year	**9.4**	8.3
Between one and five years	**25.2**	22.9
More than five years	**29.6**	30.8
	64.2	62.0

The Group leases a number of properties under operating leases of varying duration. In some cases, during the life of the lease, the rental payable is reviewed after a fixed period to reflect market rentals.

Leases as lessor
In 2016 the total of future minimum sub-lease income under non-cancellable sub-leases is £nil million (2015: £nil million).

24. CAPITAL COMMITMENTS

In 2016 commitments for property, plant and equipment and computer software expenditure for which no provision has been made in these accounts amount to £4.4 million (2015: £0.9 million) for the Group.

25. CONTINGENCIES

Subsidiary undertakings within the Group have given unsecured guarantees of £13.2 million (2015: £9.6 million) in the ordinary course of business.

In an international group of companies a variety of claims arise from time to time. Provision has been made in these accounts against those claims which the Directors consider meet the requirements of IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* and are likely to result in significant liabilities.

The Group has been subject to legal claims in a number of countries and has a number of known environmental issues. In some cases it will not be possible to form a view, either because the facts are unclear or because further time is needed to properly assess the merits of the case, and no provisions are held against such cases. The Board, having taken legal advice, is of the opinion that in respect of these claims, where it is possible to form a view, they will not have a material impact on the Group's financial position.

The Group is subject to periodic tax audits by various fiscal authorities covering corporate, employee and sales taxes in the various jurisdictions in which it operates. None of these are currently expected to have a material impact on the Group's financial position. In addition, future changes in legislation, regulation or interpretation could increase the Group's taxes and have an adverse effect on the Group's operating results and financial condition.

26. RELATED PARTIES

Identification of related parties

The Group has related party relationships with its subsidiaries (a list of all related undertakings is shown in note 44), with its associates (see note 12) and with its Directors and executive officers.

Transactions with key management personnel

The Company has written service contracts or letters of appointment with each of its Directors, under which the Directors receive a salary or a fee and other emoluments.

The key management of the Group and parent Company consists of the Board of Directors (including non-executive Directors) and members of the Executive Committee.

The compensation for the executive and non-executive Directors and members of the Executive Committee charged in the year was:

	2016 £m	2015 £m
Short-term employee benefits	**3.6**	3.1
Employer national insurance contributions	**0.6**	0.5
Pension and other post-employment costs	**0.5**	0.5
Share-based payments	**0.5**	0.6
Termination payments	**1.0**	–
Non-executive Directors' fees and benefits	**0.4**	0.4
Total compensation of key management personnel	**6.6**	5.1

Other related party transactions

	2016 £m	2015 £m
Sales to associate	**–**	0.3
Purchases from associate	**1.4**	1.5
Loan made to associate	**–**	1.8
Trade receivables due from associate	**–**	1.3
Trade payables due to associate	**0.2**	0.5

The balances with the Group's associate are shown in note 15 and note 17. In 2016 the Group does not have any trade receivables owed by associates that have been fully provided for (2015: £1.3 million).

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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27. SUBSEQUENT EVENTS

Since the balance sheet date, the Group has announced the following transactions:

On 22 February 2017, the sale of its UK electro-ceramics business, comprising the two sites at Ruabon and Southampton. The transaction is structured as a sale of the business, assets and goodwill for a consideration of £47 million on a cash-free, debt-free basis, payable in cash on completion and subject to customary working capital adjustments. In the year ended 31 December 2016, UK Electro-Ceramics generated an operating profit of £6.2 million on revenues of £22.7 million. Gross assets at 31 December 2016 were £7.0 million.

On 17 February 2017, the sale of its global Rotary transfer Systems business, principally located on two manufacturing sites at Antweiler, Germany and Chalon, France. The sale values the business at €40 million on a cash-free, debt-free basis, with consideration payable in cash at completion, subject to customary closing working capital adjustments. Completion is subject to customary conditions of closing, including merger clearance in Germany. In the year ended 31 December 2016, the Rotary business is generated €4.7 million of operating profit on €19.5 million of revenue. Gross assets at 31 December 2016 were €7.1 million.

There have been no further material subsequent events.

COMPANY BALANCE SHEET
as at 31 December 2016

	Note	2016 £m	2015 £m
Non-current assets			
Intangible assets	30	**0.8**	1.8
Property, plant and equipment	31	**12.8**	12.3
Investments in subsidiary undertakings	32	**762.3**	837.5
Other debtors		**–**	2.3
		775.9	853.9
Current assets			
Debtors – amounts due within one year	33	**54.2**	39.8
Cash and cash equivalents		**65.7**	10.8
		119.9	50.6
Creditors – amounts falling due within one year	34	**69.2**	77.3
Net current assets/(liabilities)		**50.7**	(26.7)
Total assets less current liabilities		**826.6**	827.2
Non-current liabilities			
Creditors – amounts falling due after more than one year	35	**223.2**	218.6
Employee benefits: pensions	37	**51.0**	117.4
Provisions	38	**0.6**	1.9
		274.8	337.9
Net assets		**551.8**	489.3
Capital and reserves			
Equity shareholders' funds			
Share capital	39	**71.4**	71.4
Share premium	40	**111.7**	111.7
Merger reserve	40	**17.0**	17.0
Capital redemption reserve	40	**35.7**	35.7
Retained earnings	40	**315.6**	253.1
		551.4	488.9
Non-equity shareholders' funds			
Share capital	39	**0.4**	0.4
Shareholders' funds		**551.8**	489.3

The financial statements were approved by the Board of Directors on 23 February 2017 and were signed on its behalf by:

PETE RABY
CHIEF EXECUTIVE OFFICER

PETER TURNER
CHIEF FINANCIAL OFFICER

COMPANY STATEMENT OF CHANGES IN EQUITY
for the year ended 31 December 2016

	Called-up share capital £m	Share premium account £m	Merger reserve £m	Capital redemption reserve £m	Profit and loss account £m	Total equity £m
Balance at 1 January 2015	71.4	111.7	17.0	35.7	244.9	480.7
Total comprehensive income for the period						
Profit for the year	–	–	–	–	40.9	40.9
Transactions with owners:						
Dividends	–	–	–	–	(31.4)	(31.4)
Equity-settled share-based payment transactions	–	–	–	–	1.6	1.6
Own shares acquired for share incentive schemes	–	–	–	–	(2.9)	(2.9)
Balance at 31 December 2015	71.4	111.7	17.0	35.7	253.1	488.9
Balance at 1 January 2016	**71.4**	**111.7**	**17.0**	**35.7**	**253.1**	**488.9**
Total comprehensive income for the period						
Profit for the year	**–**	**–**	**–**	**–**	**28.6**	**28.6**
Other comprehensive income	**–**	**–**	**–**	**–**	**64.5**	**64.5**
Transactions with owners:						
Dividends	**–**	**–**	**–**	**–**	**(31.2)**	**(31.2)**
Equity-settled share-based payment transactions	**–**	**–**	**–**	**–**	**0.8**	**0.8**
Own shares acquired for share incentive schemes	**–**	**–**	**–**	**–**	**(0.2)**	**(0.2)**
Balance at 31 December 2016	**71.4**	**111.7**	**17.0**	**35.7**	**315.6**	**551.4**

NOTES TO THE COMPANY BALANCE SHEET

28. ACCOUNTING POLICIES

Basis of preparation

These financial statements were prepared in accordance with Financial Reporting Standard 101 *Reduced Disclosure Framework* ('FRS 101').

In preparing these financial statements, the Company applies the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU ('Adopted IFRSs'), but makes amendments where necessary in order to comply with the Companies Act 2006 and has set out below where advantage of the FRS 101 disclosure exemptions has been taken.

Under Section 408(4) of the Companies Act 2006 the Company is exempt from the requirement to present its own profit and loss account.

In these financial statements, the Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- a cash flow statement and related notes;
- comparative period reconciliations for share capital, tangible fixed assets and intangible assets;
- transactions with wholly owned subsidiaries;
- the effects of new but not yet effective IFRSs;
- the compensation of key management personnel; and
- capital management.

As the consolidated financial statements of Morgan Advanced Materials plc include the equivalent disclosures, the Company has also taken the exemptions under FRS 101 available in respect of the following disclosures:

- IFRS 2 *Share-Based Payments* in respect of Group-settled share-based payments; and
- the disclosures required by IFRS 7 *Financial Instruments Disclosures*.

The Company proposes to continue to adopt the reduced disclosure framework of FRS 101 in its next financial statements.

The accounting policies set out below have, unless otherwise stated, been applied consistently to the period presented in these financial statements.

Measurement convention

The financial statements are prepared on the historical cost basis except that the following assets and liabilities are stated at their fair value – financial instruments classified as fair value through the profit or loss.

Intangible assets

Intangible assets that are acquired by the Company are stated at cost less accumulated amortisation and less accumulated impairment losses.

Amortisation

Amortisation is charged to the income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with an indefinite useful life and goodwill are systematically tested for impairment at each balance sheet date. Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

- Software: 3-7 years

Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and accumulated impairment losses.

Depreciation is charged to the income statement on a straight-line basis over the estimated useful lives of each part of an item of tangible fixed assets. Land is not depreciated. The estimated useful lives are as follows:

- Plant, equipment and fixtures: 3 – 20 years
- Buildings: 50 years

Depreciation methods, useful lives and residual values are reviewed at each balance sheet date.

Foreign currency

Transactions in foreign currencies are translated to the Company's functional currencies at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the income statement except for differences arising on the retranslation of qualifying cash flow hedges, which are recognised in other comprehensive income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the dates the fair value was determined.

NOTES TO THE COMPANY BALANCE SHEET
continued

28. ACCOUNTING POLICIES continued

Expenses

Operating lease payments
Payments made under operating leases are recognised in the income statement on a straight-line basis over the term of the lease. Lease incentives received are recognised in the income statement as an integral part of the total lease expense.

Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the income statement except to the extent that it relates to items recognised directly in equity or other comprehensive income, in which case it is recognised directly in equity or other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

Classification of financial instruments issued by the Company

Financial instruments issued by the Company are treated as equity only to the extent that they meet the following two conditions:

(a) they include no contractual obligations upon the Company to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Company; and

(b) where the instrument will or may be settled in the Company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the Company's own equity instruments or is a derivative that will be settled by the Company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the Company's own shares, the amounts presented in these financial statements for called-up share capital and share premium account exclude amounts in relation to those shares.

Non-derivative financial instruments

Non-derivative financial instruments comprise investments in equity and debt securities, trade and other debtors, cash and cash equivalents, loans and borrowings, and trade and other creditors.

Trade and other debtors
Trade and other debtors are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses.

Trade and other creditors
Trade and other creditors are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest method.

Investments in debt and equity securities
Investments in debt and equity securities held by the Company are classified as being available-for-sale and are stated at fair value, with any resultant gain or loss being recognised directly in equity (in the fair value reserve), except for impairment losses and, in the case of monetary items such as debt securities, foreign exchange gains and losses. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

Investments in subsidiaries are carried at cost less impairment.

Interest-bearing borrowings
Interest-bearing borrowings (which include amounts owed to/by Group undertakings) are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method, less any impairment losses.

28. ACCOUNTING POLICIES continued

Derivative financial instruments and hedging

Derivative financial instruments

Derivative financial instruments are recognised at fair value. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss. However, where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged (see below).

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a recognised asset or liability, or a highly probable forecast transaction, the effective part of any gain or loss on the derivative financial instrument is recognised directly in the hedging reserve. Any ineffective portion of the hedge is recognised immediately in the income statement.

Fair value hedges

Where a derivative financial instrument is designated as a hedge of the variability in fair value of a recognised asset or liability or an unrecognised firm commitment, all changes in the fair value of the derivative are recognised immediately in the income statement. The carrying value of the hedged item is adjusted by the change in fair value that is attributable to the risk being hedged (even if it is normally carried at cost or amortised cost) and any gains or losses on remeasurement are recognised immediately in the income statement (even if those gains would normally be recognised directly in reserves).

Employee benefits

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which the Company pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the income statement in the periods during which services are rendered by employees.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Company's net obligation in respect of defined benefit pension plans and other post-employment benefits is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets (at bid price) and any unrecognised past service costs are deducted. The liability discount rate is the yield at the balance sheet date on AA-credit-rated bonds denominated in the currency of, and having maturity dates approximating to the terms of the Company's obligations. The calculation is performed by a qualified actuary using the projected unit credit method. When the calculation results in a benefit to the Company, the recognised asset is limited to the total of any unrecognised past service costs and the present value of benefits available in the form of any future refunds from the plan, reductions in future contributions to the plan or on settlement of the plan and takes into account the adverse effect of any minimum funding requirements.

Actuarial gains and losses that have arisen since the adoption of FRS 101 are recognised in the period that they occur directly into equity through the statement of comprehensive income.

The Company is the sponsoring and principal employer of two UK defined benefit pension Schemes, the Morgan Pension Scheme and the Morgan Group Senior Staff Pension and Life Assurance Scheme ('the UK Schemes'). The Company also guarantees certain obligations and liabilities to the employees that currently participate in the two UK Schemes.

During 2016 the Company adopted a new policy to allocate costs associated with the UK pension schemes between itself, as Principal Employer, and the various Participating Employers, based on an evaluation of each entity's share of overall Scheme liabilities. This ensures that the pension liability is reflected in the entity that employed the participant. This resulted in a reallocation of £151.5 million of the Schemes' net liabilities to the Participating Employers. Previously all of the Scheme assets and liabilities were recognised on the balance sheet of the Company only. Further details are provided in note 37.

Share-based payment transactions

Share-based payment arrangements in which the Company receives goods or services as consideration for its own equity instruments are accounted for as equity-settled share-based payment transactions, regardless of how the equity instruments are obtained by the Company.

The grant date fair value of share-based payments awards granted to employees is recognised as an employee expense, with a corresponding increase in equity, over the period in which the employees become unconditionally entitled to the awards. The fair value of the awards granted is measured using an option valuation model, taking into account the terms and conditions upon which the awards were granted. The amount recognised as an expense is adjusted to reflect the actual number of awards for which the related service and non-market vesting conditions are expected to be met, such that the amount ultimately recognised as an expense is based on the number of awards that do meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting conditions, the grant date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

NOTES TO THE COMPANY BALANCE SHEET
continued

28. ACCOUNTING POLICIES continued

Share-based payment transactions in which the Company receives goods or services by incurring a liability to transfer cash or other assets that is based on the price of the Company's equity instruments are accounted for as cash-settled share-based payments. The fair value of the amount payable to employees is recognised as an expense, with a corresponding increase in liabilities, over the period in which the employees become unconditionally entitled to payment. The liability is remeasured at each balance sheet date and at settlement date. Any changes in the fair value of the liability are recognised as personnel expense in profit or loss.

Own shares held by The Morgan General Employee Benefit Trust

Transactions of the Group-sponsored Morgan General Employee Benefit Trust are treated as being those of the Company and are therefore reflected in the Company's financial statements. In particular, the Trust's purchases and sales of shares in the Company are debited and credited to equity.

Provisions

A provision is recognised in the balance sheet when the Company has a present legal or constructive obligation as a result of a past event that can be reliably measured, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects risks specific to the liability.

Investments

Investments in subsidiary undertakings, associates and joint ventures are stated at cost less amounts written off unless they are designated as a hedged item in a fair value hedge of foreign currency risk. In this case they are accounted for at historical cost plus a hedging adjustment recognised in profit or loss for the changes in their fair value attributable to the foreign currency exposure from the date the hedge is designated.

Interest-bearing loans and borrowings

Immediately after issue, debt is stated at the fair value of the consideration received. Immediately after issue capital instruments are stated after deduction of issue costs. The finance cost of the debt is allocated to periods over the term of the debt at a constant rate on the carrying amount.

Dividends on shares presented within shareholders' funds

Dividends unpaid at the balance sheet date are only recognised as a liability at that date to the extent that they are appropriately approved and are no longer at the discretion of the Company. Unpaid dividends that do not meet these criteria are disclosed in the notes to the financial statements.

Financial guarantee contracts

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its Group, the Company considers these to be insurance arrangements, and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee, at which point a liability would be recognised.

29. STAFF NUMBERS AND COSTS

The average number of persons employed by the Company (including Directors) during the year was as follows:

	Number of employees	
	2016	2015
Directors and corporate staff	**48**	44

Full details of the Directors' remuneration for the period can be found in the Remuneration Report on pages 70 to 95.

Aggregate employee-related costs was as follows:

	Note	**2016 £m**	2015 £m
Wages and salaries		**8.0**	6.7
Equity-settled share-based payments	21	**0.8**	1.4
Social security costs		**0.9**	0.7
Other pension costs		**0.5**	1.0
		10.2	9.8

In 2016 £0.4 million (2015: £1.1 million) of the equity-settled share-based payments amount was recharged to other Morgan Group companies.

30. INTANGIBLE ASSETS

	Software £m
Cost	
Balance at 1 January 2016	4.5
Additions – externally purchased	0.1
Balance at 31 December 2016	**4.6**
Amortisation	
Balance at 1 January 2016	2.7
Amortisation for the year	1.1
Balance at 31 December 2016	**3.8**
Carrying amounts	
At 31 December 2015	1.8
At 31 December 2016	**0.8**

31. PROPERTY, PLANT AND EQUIPMENT

	Plant, equipment and fixtures £m	Land and buildings £m	Total £m
Cost			
Balance at 1 January 2016	1.1	12.2	13.3
Additions	–	0.6	0.6
Balance at 31 December 2016	**1.1**	**12.8**	**13.9**
Depreciation			
Balance at 1 January 2016	1.0	–	1.0
Depreciation charge for the year	0.1	–	0.1
Balance at 31 December 2016	**1.1**	**–**	**1.1**
Carrying value			
At 31 December 2015	0.1	12.2	12.3
At 31 December 2016	**–**	**12.8**	**12.8**

NOTES TO THE COMPANY BALANCE SHEET
continued

32. INVESTMENT IN SUBSIDIARY UNDERTAKINGS

	Shares in Group undertakings £m	Loans £m	Total £m
Cost			
Balance at 1 January 2016	620.8	364.6	985.4
Additions	0.8	177.2	178.0
Fair value hedge of investments' exposure to foreign currency risk	4.4	–	4.4
Disposals	(111.5)	–	(111.5)
Loan repayments	–	(87.4)	(87.4)
Effect of movement in foreign exchange	–	8.2	8.2
Balance at 31 December 2016	**514.5**	**462.6**	**977.1**
Provisions			
Balance at 1 January 2016	133.6	14.3	147.9
Provided in the year	25.5	41.7	67.2
Disposals	(0.3)	–	(0.3)
Balance at 31 December 2016	**158.8**	**56.0**	**214.8**
Carrying amounts			
At 31 December 2015	487.2	350.3	837.5
At 31 December 2016	**355.7**	**406.6**	**762.3**

Note 44 gives details of the Company's fixed asset investments.

33. DEBTORS

	Note	**2016 £m**	2015 £m
Amounts owed by Group undertakings		**40.6**	32.8
Other debtors		**4.5**	3.6
Derivative financial assets	45	**8.6**	2.9
Prepayments and accrued income		**0.5**	0.5
Due within one year		**54.2**	39.8

34. CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	Note	**2016 £m**	2015 £m
Bank overdrafts	36	**15.0**	53.5
Bank and other loans	36	**17.3**	–
Trade creditors		**2.1**	2.3
Amounts owed to Group undertakings		**14.5**	12.7
Other creditors, including deferred consideration		**1.0**	1.9
Accruals and deferred income		**7.9**	4.1
Derivative financial liabilities	45	**11.4**	2.8
		69.2	77.3

35. CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR

	Note	2016 £m	2015 £m
Amounts payable to Group undertakings		**80.0**	131.3
Bank and other loans	36	**142.5**	86.1
Other creditors		**–**	0.4
Derivative financial liabilities		**0.7**	0.8
		223.2	218.6

36. BORROWINGS

	Note	2016 £m	2015 £m
Creditors: amounts falling due within one year:			
Bank overdrafts	34	**15.0**	53.5
Bank and other loans	34	**17.3**	–
Creditors: amounts falling due after more than one year:			
Bank and other loans	35	**142.5**	86.1
		174.8	139.6

Terms and debt repayment schedule

	Currency	Effective interest rate	Year of maturity	Carrying amount 2016 £m	Fair value 2016 £m	Carrying amount 2015 £m	Fair value 2015 £m
Bank overdrafts	Various	1.70%		**15.0**	**15.0**	53.5	53.5
4.32% Euro Senior Notes 2017	EUR	4.32%	2017	**17.3**	**17.5**	14.9	15.5
1.18% Euro Senior Notes 2023	EUR	1.18%	2023	**21.3**	**21.0**	–	–
3.17% US Dollar Senior Notes 2023	USD	3.17%	2023	**12.2**	**11.7**	–	–
1.55% Euro Senior Notes 2026	EUR	1.55%	2026	**21.4**	**20.8**	–	–
3.37% US Dollar Senior Notes 2026	USD	3.37%	2026	**79.0**	**73.1**	–	–
1.74% Euro Senior Notes 2028	EUR	1.74%	2028	**8.6**	**8.3**	–	–
Syndicated revolving credit facility	GBP	1.16%	2019	**–**	**–**	54.2	54.2
Syndicated revolving credit facility	USD	1.67%	2019	**–**	**–**	17.0	17.0
				174.8	**167.4**	139.6	140.2

In 2016 bank and other loans did not include any loans secured on the assets of the Company (2015: £nil).

37. EMPLOYEE BENEFITS: PENSIONS

The Morgan Pension Scheme and the Morgan Group Senior Staff Pension and Life Assurance Scheme

The Company participates in two defined benefit schemes in the UK. The assets of these schemes are held in separate trustee-administered funds, The Morgan Pension Scheme and the Morgan Group Senior Staff Pension and Life Assurance Scheme. These schemes were closed to new entrants on 1 August 2011, with any new employees receiving benefits through the Morgan Group Personal Pension Plan, a defined contribution arrangement. The Morgan Group Senior Staff Pension and Life Assurance Scheme was closed to the future accrual of benefits on and with effect from 6 April 2016. Employees active in the Scheme as at that date were enrolled in the Morgan Group Personal Pension Plan, with the option to opt out under relevant UK legislation.

During 2016 the Company adopted a new policy to allocate costs associated with the UK pension schemes between itself, as Principal Employer, and the various Participating Employers, based on an evaluation of each entity's share of overall Scheme liabilities. This ensures that the pension liability is reflected in the entity that employed the participant. This resulted in a reallocation of £151.5 million of the Schemes' net liabilities to the Participating Employers. Previously all of the Scheme assets and liabilities were recognised on the balance sheet of the Company only.

NOTES TO THE COMPANY BALANCE SHEET
continued

37. EMPLOYEE BENEFITS: PENSIONS continued

	2016 £m	2015 £m
Pension plans and employee benefits		
Present value of funded defined benefit obligations	**(194.4)**	(500.9)
Fair value of plan assets	**143.4**	383.5
Net obligations	**(51.0)**	(117.4)
Movements in present value of defined benefit obligation		
At 1 January	**(500.9)**	(512.4)
Reallocation of defined benefit obligation	**423.9**	–
Current service cost	**(1.4)**	(2.5)
Interest cost	**(15.1)**	(18.2)
Remeasurement (losses)/gains:		
Changes in financial assumptions	**(32.3)**	6.7
Changes in demographic assumptions	**2.4**	–
Experience adjustments on benefit obligations	**(87.1)**	8.8
Benefits paid	**16.2**	17.6
Contributions by members	**(0.1)**	(0.9)
At 31 December	**(194.4)**	(500.9)
Movements in fair value of plan assets		
At 1 January	**383.5**	393.6
Reallocation of fair value of plan assets	**(272.4)**	–
Interest on plan assets	**11.7**	14.1
Remeasurement gains/(losses)	**30.0**	(16.1)
Contributions by employer	**7.4**	9.4
Contributions by members	**0.1**	0.9
Benefits paid	**(16.2)**	(17.6)
Administrative expenses	**(0.7)**	(0.8)
At 31 December	**143.4**	383.5
Actual return on assets	**41.7**	(2.0)
Pension plans and employee benefits		
Expense recognised in the consolidated income statement		
Current service cost	**(1.4)**	(2.5)
Administrative expenses	**(0.7)**	(0.8)
Net interest on net defined benefit liability	**(3.4)**	(4.1)
Total expense	**(5.5)**	(7.4)

The fair values of the plan assets were as follows:

	£m	£m
Equities and growth assets	**47.9**	161.7
Bonds	**13.5**	31.6
Matching insurance policies	**78.4**	177.1
Other	**3.6**	13.1
Total	**143.4**	383.5

The assumptions used are best estimate assumptions chosen from a range of possible actuarial assumptions which may not be borne out in practice. The principal assumptions are the discount rate and inflation assumptions which are long-term and measured on external factors, based upon each plan's duration. In addition to these, the mortality assumption in the UK is material to the cost of the promised benefits. The assumed increases in salaries and pensions in payment are derived from assumed future inflation.

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37. EMPLOYEE BENEFITS: PENSIONS continued

Principal actuarial assumptions at the year end were as follows:

Assumptions:	2016 %	2015 %
Inflation (RPI & CPI)	**3.20/2.10**	3.00/1.80
Discount rate	**2.62**	3.70
Pensions increase	**3.00/3.10/3.70**	2.90/3.10/3.70
Salary increase	**n/a**	n/a
Mortality – post-retirement:		
Life expectancy of a male aged 60 in accounting year	**26.8 years**	26.6 years
Life expectancy of a male aged 60 in accounting year + 20	**28.7 years**	28.2 years

History of the plans

The history of the plans are as follows:

Balance sheet	2016 £m	2015 £m
Present value of the defined benefit obligation	**(194.4)**	(500.9)
Fair value of plan assets	**143.4**	383.5
Deficit	**(51.0)**	(117.4)

Funding

The most recent full actuarial valuations of the UK Schemes were undertaken as at March 2013 and resulted in combined assessed deficits of £82 million. On the basis of these full valuations, the Trustees of the UK Schemes, having consulted with the Group, agreed past service deficit recovery payments totalling £7 million a year in 2016/17, across all employers, increasing by 2.75% pa until 2023, and contributions in respect of future service as accrued. New full valuations are due with effective dates of March 2016 and the outcome of those consultations, which are underway, will determine the Group's future contribution requirements, with any new deficit arising needing to be met through the payment of additional contributions. The Group expects these valuations to have been completed by June 2017.

Sensitivity analysis

The sensitivities of the Company's net balance sheet to the principal assumptions are:

	Change in assumption	2016 Increase effect £m	2015 Increase effect £m
Discount rate	Decrease by 0.1%	**2.4**	7.0
Inflation	Increase by 0.1%	**1.1**	4.0
Mortality – post-retirement	Pensioners live 1 year longer	**5.1**	12.0

These sensitivities have been calculated to show the movement in the net balance sheet in isolation, and assuming no other changes in market conditions at the accounting date. This is unlikely in practice – for example, a change in discount rate is unlikely to occur without any movement in the value of the assets held by the Company's Schemes.

Defined contribution plans

The Group operates a defined contribution pension plan ('the Morgan Group Personal Pension Plan'). The total Company expense relating to this plan in 2016 was £0.1 million (2015: £0.1 million).

38. PROVISIONS FOR LIABILITIES

	Closure and restructuring provisions £m	Other provisions £m	Total £m
Balance at 31 December 2015	1.2	0.7	1.9
Provisions made during the year	0.5	–	0.5
Provisions used during the year	(1.6)	(0.2)	(1.8)
Balance at 31 December 2016	**0.1**	**0.5**	**0.6**

Closure and restructuring provisions are based on the Company's restructuring programmes and represent committed expenditure at the balance sheet date and are expected to be utilised within one year.

Other provisions relate to legal claims and are based on the Company's assessment of the probable cost of these activities and are expected to be utilised within one year.

NOTES TO THE COMPANY BALANCE SHEET
continued

39. SHARE CAPITAL

	5.5% Cumulative First Preference shares 2016	5.0% Cumulative Second Preference shares 2016	Ordinary shares 2016
In thousands of shares			
On issue at 1 January 2016	**125**	**312**	**285,370**
On issue at 31 December 2016	**125**	**312**	**285,370**

	2016 £m	2015 £m
Allotted, called up and fully paid		
Ordinary shares of 25 pence each	**71.4**	71.4
5.5% Cumulative First Preference shares of £1 each	**0.1**	0.1
5.0% Cumulative Second Preference shares of £1 each	**0.3**	0.3
	71.8	71.8
Shares classified as equity shareholders' funds	**71.4**	71.4
Shares classified as non-equity shareholders' funds	**0.4**	0.4
	71.8	71.8

Refer to note 18 for details of the rights to dividends, voting rights and return of capital relating to the Preference shares.

Dividends payable for the First and Second Preference shares were £22,491 (2015: £22,491) of which £11,245 (2015: £11,245) was outstanding at the balance sheet date.

The 5.5% Cumulative First Preference shares of £1 each and the 5.0% Cumulative Second Preference shares of £1 each confer on the holders thereof the right to receive a cumulative preferential dividend at the rate of 5.5% and 5.0% respectively, calculated up to 30 June and 31 December respectively in every year.

For proposed Ordinary dividends see the consolidated income statement on page 100.

40. SHARE PREMIUM AND RESERVES

	Note	Share premium £m	Merger reserve £m	Capital redemption reserve £m	Profit and loss account £m
At 1 January 2016		111.7	17.0	35.7	253.1
Equity-settled share-based payment transactions		–	–	–	0.8
Dividends		–	–	–	(31.2)
Own shares acquired for share incentive schemes		–	–	–	(0.2)
Allocation of defined benefit plans' assets and liabilities to participating employers	37	–	–	–	151.5
Remeasurement loss on defined benefit plans		–	–	–	(87.0)
Retained profit for the year		–	–	–	28.6
At 31 December 2016		**111.7**	**17.0**	**35.7**	**315.6**

40. SHARE PREMIUM AND RESERVES continued

The merger reserve comprises the balance associated with the premium of shares issued during previous acquisitions. Further details on share premium and reserves are given in note 18.

Capita Trustees Limited administer a Trust in which shares are held to satisfy awards granted under the Company's share plans. The shares are distributed via discretionary settlement governed by the rules of the Trust deed dated 1 March 1996 (as amended).

The total number of own shares held by the Trust at 31 December 2016 was 623,127 (2015: 706,952) and at that date had a market value of £1.8 million (2015: £1.7 million).

In 2016, the amount of reserves of Morgan Advanced Materials plc that may be distributed under Section 831(4) of the Companies Act 2006 was £118.0 million (2015: £116.4 million). This comprises a portion of the profit and loss account.

41. OPERATING LEASES

Non-cancellable operating lease rentals are payable as follows:

	Land and buildings	
	2016 £m	2015 £m
Less than one year	**0.2**	–
Between one and five years	**–**	0.2
	0.2	0.2

In 2016 £0.2 million (2015: £0.2 million) was recognised as an expense in the income statement in respect of operating leases.

42. CONTINGENCIES

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its Group, the Company considers these to be insurance arrangements, and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee, at which point a liability would be recognised.

The Group has been subject to legal claims in a number of countries. In some cases it will not be possible to form a view, either because the facts are unclear or because further time is needed to properly assess the merits of the case, and no provisions are held against such cases. The Board, having taken legal advice, is of the opinion that the remainder of these actions will not have a material impact on the Company's financial position.

There are no other contingent liabilities in the Company as at 31 December 2016.

43. RELATED PARTIES

The Company has related party relationships with its subsidiaries, its associate and its Directors and executive officers. It is exempt from providing information relating to these parties with the exception of transactions with its associate.

	2016 £m	2015 £m
Loan made to associate	**–**	1.8
Other debtors due from associate	**–**	0.2
	–	2.0

The loan made to associate was loaned by the Company to Jemmtec Limited, a company that a wholly owned subsidiary of the Company has a 35% shareholding in. During 2016 Jemmtec Limited repaid the loan.

NOTES TO THE COMPANY BALANCE SHEET
continued

44. FIXED ASSET INVESTMENTS

In accordance with section 409 of the Companies Act 2006, a full list of related undertakings as at 31 December 2016 is disclosed below. Related undertakings include subsidiary undertakings, all significant holdings (being 20% or more interest), associated undertakings, joint ventures and qualifying partnerships. Unless otherwise stated the Group's shareholding represents Ordinary shares held indirectly by the Company.

Name of undertaking	Country of incorporation	Registered office address	% shareholding owned by the Group
Carbo San Luis S.A.[11]	Argentina	Talcahuano 736, 4th Floor, Buenos Aires, C1013AAP, Argentina	84.61%
Morgan Technical Ceramics Australia Pty Ltd	Australia	4 Redwood Drive, Clayton VIC 3168, Australia	100.00%
Morganite Australia Pty Ltd[18]	Australia	Riverwood Business Park, Unit 4, 92-100 Belmore Rd, Riverwood, NSW, 2210, Australia	100.00%
D Brown Carbon (Pty) Ltd	Australia	Unit 4, 92-100 Belmore Road, Riverwood NSW 2210, Australia	100.00%
Morgan Mechanical Carbon Australasia Pty Ltd[1]	Australia	Unit 4, 92-100 Belmore Road, Riverwood NSW 2210, Australia	100.00%
Morganite Brasil Ltda[22]	Brazil	Avenida do Taboao 3265, Taboao, Sao Bernardo do Campo, Sao Paulo, CEP 09656-000, Brazil	100.00%
Morgan Advanced Materials Canada Inc.[15]	Canada	1185 Walkers Line, Burlington ON L7M 1L1, Canada	100.00%
NP Aerospace (Canada) Ltd[14]	Canada	1185 Walkers Line, Burlington ON L7M 1L1, Canada	100.00%
Carbo Chile SA	Chile	Avenida San Eugenio 12462, Sitio 3, Loteo Estrella del Sur, Santiago, Chile	99.99%
Dalian Morgan Ceramics Company Ltd[23]	China	Zhenxing Road, Pulandian Economic Development Zone, Dalian, Liaoning Province, 116200, China	100.00%
Morgan Guangzhou Co Ltd	China	2F Guangye Building, No. 5, No. 3 Minghua Street, Jinxiu Rd. Guangzhou Economic & Technological Development District, Guangdong, 510730, China	100.00%
Morgan Haldenwanger Technical Ceramics (Wuxi) Co. Ltd[23]	China	Dingshu, Yixing City, Jiangsu, 214221, China	100.00%
Morgan Molten Metal Systems (Suzhou) Co. Ltd[1, 19]	China	No. 108 Tongsheng Rd, Shengpu Town, Suzhou Industrial Park, Suzhou, China	100.00%
Morgan Thermal Ceramics(Shanghai) Co., Ltd[1, 23]	China	No. 18, Kang An Road, Kangqiao Industrial Zone, Pudong, Shanghai, China	100.00%
Morgan International Trading (Shanghai) Co. Ltd[1,23]	China	Room 6015, 6F Great Wall building, No.333 Futexiyi Road, Free Trade Zone, Shanghai, China	100.00%
Shanghai Morgan Advanced Material and Technology Co Ltd[1,19]	China	4250 Long Wu Road, Shanghai, 200241, China	100.00%
Jiangsu Morgan Ceramic Core Technology Co., Ltd[22]	China	No. 2 Li Ye Road Binhu District WuXi 214131, China	58.00%
Beijing Morgan Ceramics Co., Ltd[23]	China	Room 601, 6F, Building 17, No.A1 Chaoqian Rd, Changping District, Beijing, 102200, China	100.00%
Morgan AM&T (Shanghai) Co., Ltd[5,22]	China	4250 Long Wu Road, Shanghai, 200241, China	70.00%
Morgan Kailong (Jingmen) Thermal Ceramics Co. Ltd[5, 23]	China	20-1# Quankou Road, Jingmen City, 448032 Hubei Province, China	70.00%
Dalian Morgan Refractories Ltd[5,23]	China	Zhenxing Road, Pulandian Economic Development Zone, Dalian, Liaoning Province, 116200, China	70.00%
Yixing Morgan Thermal Ceramics Co Ltd[6, 23]	China	No. 2 Beidan Road, Taodu Industry Park, Dingshu Town, Yixing City, Jiangsu Province 214222, China	51.00%
Thermal Ceramics de Colombia[9]	Colombia	Calle 18 No 23-31 Bodega 1, Guadalajara de Buga-Valle, AA 5086, Colombia	100.00%
Morgan Carbon France SA	France	6 rue du Reservoir, 68420 Eguisheim, France	100.00%
Thermal Ceramics de France S.A.S.U[19]	France	Centre de Vie BP 75, 3 rue du 18 Juin 1827, 42162 Andrézieux-Boutheon, France	100.00%
Marshall Morganite S.A.	France	99 quai du Dr Dervaux, 92600, Asnieres, France	99.87%
Morgan Thermic SAS	France	17 Rue De Tivoli, 17130, Montendre, France	100.00%
Thermal Ceramics S.A.[10, 19]	France	Centre de Vie BP 75, 3 rue du 18 Juin 1827, 42162 Andrézieux-Boutheon, France	100.00%
Morgan Advanced Materials Haldenwanger GmbH[20]	Germany	Teplitzerstr. 27, 84478, Waldkraiburg, Germany	100.00%
Morgan Electrical Carbon Deutschland GmbH	Germany	Zeppelinstrasse 26, 53424 Remagen, Germany	100.00%
Morgan Thermal Ceramics Deutschland GmbH	Germany	Borsigstrasse 4-6, 21465, Reinbek, Germany	100.00%
Morgan Molten Metal Systems GmbH	Germany	Noltinastrasse 29, 37297, Berkatal-Frankenhain, Germany	100.00%
Morgan Rekofa GmbH	Germany	Bergstrasse 41, 53533, Antweiler, Germany	100.00%

44. FIXED ASSET INVESTMENTS continued

Name of undertaking	Country of incorporation	Registered office address	% shareholding owned by the Group
Morgan Deutschland Holding GmbH	Germany	Zeppelin Straße 26, 53424, Remagen, Germany	100.00%
Porextherm Dämmstoffe GmbH	Germany	Heisinger Str. 8/10, 87437, Kempten (Allgäu), Germany	100.00%
Morgan Holding GmbH	Germany	Zeppelinstrasse 26, 53424, Remagen, Germany	100.00%
The Morgan Crucible Management GmbH	Germany	Zeppelinstrasse 26, 53424, Remagen, Germany	100.00%
Wesgo Ceramics GmbH	Germany	Willi-Grasser-Strasse 11, 91056, Erlangen, Germany	100.00%
Ceramicas Termicas SA	Guatemala	20 cale 18-60 Apartamento 2, Zona 10, Guatemala City, Guatemala	100.00%
Refractarios Multiples SA	Guatemala	Km. 34.5 Carretera al Pacífico, Palín, Escuintla, Guatemala	100.00%
Refractarios Nacionales SA	Guatemala	Km. 34.5 Carretera al Pacífico, Palín, Escuintla, Guatemala	100.00%
Morgan AM&T Hong Kong Company Ltd	Hong Kong	Unit 4-6, 11/F, Siu Wai Industrial Centre, 29-33 Wing Hong S, Cheung Sha Wan, Kowloon, Hong Kong	100.00%
Morgan Materials Hungary LLC[23]	Hungary	Csillagvirág Str. 7, H1106 Budapest, Hungary	100.00%
Morgan Advanced Materials India Private Ltd	India	P-11, Pandav Nagar, Mayur Vihar Phase-1, New Delhi, Delhi, 110091, India	100.00%
Morganite Crucible (India) Ltd	India	B-11, MIDC Industrial Area, Waluj, Aurangabad, 431 136, Maharashtra, India	75.00%
Diamond Crucible Company Ltd	India	B-11, MIDC Industrial Area, Waluj, Aurangabad, 431 136, Maharashtra, India	87.25%
Ciria India Ltd[23]	India	P-11 Pandav Nagar, Mayur Vihar Phase-1, Delhi, 110091, India	70.00%
Murugappa Morgan Thermal Ceramics Ltd[6]	India	'Dare House Complex' Old No: 234 New No: 2 NSC Bose Road, Chennai, 600 001, India	51.00%
Thermal Ceramics Italiana S.R.L.[22]	Italy	Via Vittor Pisani 20, 20124, Milan, Italy	100.00%
Morgan Carbon Italia S.R.L.	Italy	Via Roma, 338, Martinsicuro TE, 64014, Italy	100.00%
Morganite Carbon KK	Japan	30-31 Enoki-Cho, Suita City, Osaka, 564-0053, Japan	100.00%
Shin-Nippon Thermal Ceramics Corporation[7]	Japan	Portus Center Building 12F, 4-45-1 Ebisujimacho, Sakai-ku, Sakai-shi, Osaka 590-0985, Japan	50.00%
Morgan Korea Company Ltd[4, 13]	Korea	46 gil 27, Nongong Jungang Ro, Nongong Eup, Dalsung Gun, Daegu City, Korea	100.00%
Morganite Luxembourg S.A.	Luxembourg	BP 15, Capellen, L 8301, Luxembourg	100.00%
MCE Finance Sarl[1]	Luxembourg	Rue des Trois Cantons, Windhof, Koerich, L-8399, Luxembourg	100.00%
MNA Finance Sarl[1]	Luxembourg	Rue des Trois Cantons, Windhof, Koerich, L-8399, Luxembourg	100.00%
Morgan Carbon (M) Sdn Bhd (in liquidation)	Malaysia	Suite 3.06, 3rd Floor (North Block) The Ampwalk, 218 Jalan Ampang 50450 Kuala Lumpur, Malaysia	100.00%
Grafitos y Maquinados, S.A. de C.V.[1, 24]	Mexico	Cerrada de la Paz No. 101, Col. Industrial La Paz, Pachuca Hidalgo, Mexico	100.00%
Grupo Industrial Morgan, S.A. de C.V.[1, 24]	Mexico	Cerrada de la Paz NO 101, Fraccionamiento Industrial La Paz, Mineral de la Reforma, 42181 Hidalgo, 42092, Mexico	100.00%
Morgan Technical Ceramics S.A. de CV.[24]	Mexico	Av. Fulton No.20, Fracc. Ind. Valle de Oro, San Juan del Rio, Queretaro C.P. 76802, Mexico	100.00%
Morgan Holding Netherlands B.V.	Netherlands	Oude Veiling 3, 1689 AA, Zwaag, The Netherlands	100.00%
Gunac B.V.	Netherlands	Oude Veiling 3, 1689 AA, Zwaag, The Netherlands	100.00%
Morgan Terrassen B.V.	Netherlands	Oude Veiling 3, 1689 AA, Zwaag, The Netherlands	100.00%
Morgan AM&T B.V.	Netherlands	Oude Veiling 3, 1689 AA, Zwaag, The Netherlands	100.00%
Morgan Electro Ceramics B.V. (in liquidation)	Netherlands	Oude Veiling 3, 1689 AA, Zwaag, The Netherlands	100.00%
Thermal Ceramics Benelux B.V.	Netherlands	Tramweg 27, 3255 MB Oude Tonge, The Netherlands	100.00%
Morgan Donald Brown Ltd	New Zealand	c/o KPMG, 18 Viaduct Harbour Avenue, Maritime Square, Auckland 1010, New Zealand	100.00%
Morgan Carbon Polska Sp.zoo	Poland	ul. Iskry 26, 01-472 Warszawa, Poland	100.00%
Thermal Ceramics Polska Sp.zoo	Poland	Towarowa 9, 44-100 Gliwice, Poland	100.00%
Morgan Thermal Ceramics Sukhoy Log LLC[25]	Russia	Russia 624800, Sverdlovsk District, Sukhoi Log, 624800, Ul. Militseyskaya 2	51.00%

NOTES TO THE COMPANY BALANCE SHEET
continued

44. FIXED ASSET INVESTMENTS continued

Name of undertaking	Country of incorporation	Registered office address	% shareholding owned by the Group
Morgan Ceramics Asia Pte. Ltd[1]	Singapore	150 Kampong Ampat, #05-06A, KA Centre, 368324, Singapore	100.00%
Grandtech Industrial Ceramics (Pty) Ltd (in process of de-registration)	South Africa	149 South Rand Road, Tulisa Park, Johannesburg, 2197, South Africa	100.00%
Morganite Ujantshi (Pty) Ltd	South Africa	149 South Rand Road, Tulisa Park, Johannesburg, 2197, South Africa	74.90%
Thermal Ceramics South Africa (Pty) Ltd	South Africa	149 South Rand Road, Tulisa Park, Johannesburg, 2197, South Africa	100.00%
Morganite South Africa (Pty) Ltd	South Africa	149 South Rand Road, Tulisa Park, Johannesburg, 2197, South Africa	100.00%
Thermal Ceramics Espana SL	Spain	c/o Juan Pablo II, no 6, 2, local A, 12003, Castellon, Spain	100.00%
Morganite Espanola S.A.	Spain	Juan Pablo II, 6. 2e Local A, 12003 Castellon, Spain	100.00%
Morgan Matroc S.A. (in liquidation)	Spain	Roger de Lluria 104 5º-2ª., 08037 Barcelona, Spain	100.00%
Morganite National Carbon AG	Switzerland	Steinackerstrasse 34, 8302 Kloten, Switzerland	100.00%
Morgan Advanced Materials (Taiwan) Co. Ltd	Taiwan	25 Hsin-Yeh Street, Hsiao Kang, Kaohsiung, 81208, Taiwan	100.00%
Morganite Thermal Ceramics (Taiwan) Ltd	Taiwan	c/o Baker & McKenzie, 15/f, 168 Tun Hwa North Road, Taipei 105, Taiwan	88.00%
Morgan Holdings (Thailand) Ltd[2]	Thailand	25th Floor Abdulrahim Place, 990 Rama IV Road, Bangkok 10500, Thailand	100.00%
Morgan Technical Ceramics (Thailand) Ltd[2]	Thailand	No. 958 On-nuch Road, Khwaeng Suanluang, Khet Suanluang, Bangkok, 10250, Thailand	100.00%
MKGS Morgan Karbon Grafit Sanayi Anonim Sirketi	Turkey	Osmangazi Mahallesi 2647.Sokak No:27/3 Kıraç Esenyurt Istanbul 34522 Turkey	100.00%
Morgan Advanced Materials Industries Ltd	United Arab Emirates	Plot No. KHIA4 - 07A, Taweelah, Abu Dhabi, United Arab Emirates	100.00%
Morgan Ceramics Middle East FZE	United Arab Emirates	Business Centre 4, 403, Rak Free Trade Zone, PO Box 16426, Ras Al Khaimah, United Arab Emirates	100.00%
NP Aerospace Ltd	United Kingdom	473 Foleshill Road, Coventry, West Midlands, CV6 5AQ, UK	100.00%
Terrassen Holdings Ltd[8]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan Technical Ceramics Ltd	United Kingdom	Morgan Drive, Stourport-on-Severn, Worcestershire, DY13 8DW, UK	100.00%
Morganite Electrical Carbon Ltd	United Kingdom	Upper Fforest Way, Morriston, Swansea, West Glamorgan, SA6 8PP, UK	100.00%
Thermal Ceramics UK Ltd	United Kingdom	Tebay Road, Bromborough, Wirral, CH62 3PH, UK	100.00%
Morganite Special Carbons Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Clearpower Ltd[3, 17]	United Kingdom	473 Foleshill Road, Coventry, Warwickshire, CV6 5AQ, UK	99.01%
Morgan Trans Ltd[6]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	51.00%
MCCo Ltd[7]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Thermal Ceramics Europe Ltd[7]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Thermal Ceramics Ltd[7]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morganite Crucible Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Certech International Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
E/M Coatings Ltd (in liquidation)[1]	United Kingdom	c/o Deloitte & Touche Llp, 1 Woodborough Road, Nottingham, NG1 3FG, UK	100.00%
02047070 Ltd (in liquidation)[7]	United Kingdom	c/o Deloitte & Touche Llp, 1 Woodborough Road, Nottingham, NG1 3FG, UK	100.00%
Morgan Electro Ceramics Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan Europe Holding Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan Holdings Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan North America Holding Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morganite Carbon Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Petty France Investment Nominees Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
The Morgan Crucible Company Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Jemmtec Ltd[16]	United Kingdom	Magma Ceramics, Low Road, Earlsheaton, Dewsbury, West Yorkshire, WF12 8BU, UK	34.96%

44. FIXED ASSET INVESTMENTS continued

Name of undertaking	Country of incorporation	Registered office address	% shareholding owned by the Group
TCG Guardian 1 Ltd	United Kingdom	473 Foleshill Road, Coventry, Warwickshire, CV6 5AQ, UK	100.00%
TCG Guardian 2 Ltd	United Kingdom	473 Foleshill Road, Coventry, Warwickshire, CV6 5AQ, UK	100.00%
MNA Finance Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan Finance Management Ltd	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Morgan European Finance Ltd[1]	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	100.00%
Law Debenture MC Senior Pension Trust Corporation	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	n/a
Morgan Crucible Pension Trustees Ltd	United Kingdom	Quadrant, 55/57 High Street, Windsor, Berkshire, SL4 1LP, UK	n/a
Integrated Survivability Technologies Ltd	United Kingdom	21 Holborn Viaduct, London, EC1A 2DY, UK	50.00%
Certech Inc.[14]	United States	1 Park Place West, Wood-Ridge NJ 07075, USA	100.00%
Graphite Die Mold, Inc.[14]	United States	18 Air Line Park, Durham, Connecticut, 06422-1000, USA	100.00%
Morgan Advanced Ceramics Inc.[14]	United States	2425 Whipple Road, Hayward, CA , 94544, USA	100.00%
Morgan Advanced Materials and Technology Inc.[14]	United States	441 Hall Avenue, St. Marys, Pennsylvania, 15857, USA	100.00%
Morgan Advanced Materials Inc.[14]	United States	4000 West Chase Blvd, Suite 170, Raleigh, North Carolina, 27607, USA	100.00%
Morganite Crucible Inc.[21]	United States	22 N. Plains Industrial Road, Suite 1, Wallingford, Connecticut, 06492, USA	100.00%
Morganite Inc.[14]	United States	4000 West Chase Blvd, Suite 170, Raleigh, North Carolina, 27607, USA	100.00%
Morganite Industries Inc.[12]	United States	4000 West Chase Blvd, Suite 170, Raleigh, North Carolina, 27607, USA	100.00%
National Electrical Carbon Products Inc.[15]	United States	PO Box 1056, 251 Forrester Drive, Greenville, South Carolina, 29602, USA	100.00%
NP Aerospace Inc. (USA)[14]	United States	4000 West Chase Blvd, Suite 170, Raleigh, North Carolina, 27607, USA	100.00%
Thermal Ceramics Inc.[14]	United States	PO Box 923, 2102 Old Savannah Road, Augusta, Georgia, 30906, USA	100.00%
Thermal Ceramics Venezuela CA[23]	Venezuela,	Zona Ind. El Recreo, Av. 87 N° 105-121 Flor Amarillo, Valencia Edo. Carabobo. Zona Postal 2003, Venezuela	100.00%

1. Directly owned by Morgan Advanced Materials plc.
2. 99.98% owned by Morgan Advanced Materials plc.
3. 99% owned by Morgan Advanced Materials plc.
4. 93.19% owned by Morgan Advanced Materials plc.
5. 70% owned by Morgan Advanced Materials plc.
6. 51% owned by Morgan Advanced Materials plc.
7. 50% owned by Morgan Advanced Materials plc.
8. 8.18% owned by Morgan Advanced Materials plc.
9. 4% owned by Morgan Advanced Materials plc.
10. 1.98% owned by Morgan Advanced Materials plc.
11. Ownership held in Class A and Class B Common Stock.
12. Ownership held in Class A, Class B and Class C Common Stock.
13. Ownership held in Common and Preference Shares.
14. Ownership held in Common Stock.
15. Ownership held in Common Stock of no par value.
16. Ownership held in Ordinary A and B Shares.
17. Ownership held in Ordinary A, B, and C and Preference A and B Shares.
18. Ownership held in Ordinary and Non-Cumulative Non-Participating Redeemable Preference Shares.
19. Ownership held in Ordinary Shares of no par value.
20. Ownership held in Partnership Shares.
21. Ownership held in Preferred Stock and no par Common Stock.
22. Ownership held in Quotas.
23. Ownership held in Registered Capital.
24. Ownership held in Series A and Series B.
25. Subsidiary not included in consolidated accounts as the Company does not exercise management control.

NOTES TO THE COMPANY BALANCE SHEET
continued

45. DERIVATIVE FINANCIAL ASSETS AND LIABILITIES

	2016 £m	2015 £m
Derivative financial assets		
Forward foreign exchange contracts non-designated	**8.6**	2.9
	8.6	2.9
Derivative financial liabilities		
Forward foreign exchange contracts non-designated	**(12.1)**	(3.1)
Forward foreign exchange contracts designated as fair value hedges	**–**	(0.5)
	(12.1)	(3.6)

Fair values are measured using a hierarchy where the inputs are:

Level 1 – quoted prices (unadjusted) in active markets for identical assets or liabilities;

Level 2 – inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly;

Level 3 – inputs for the assets or liability that are not based on observable market data (unobservable inputs).

The derivative financial assets and liabilities are all measured using Level 2 inputs. The fair value of forward foreign exchange contracts is estimated by discounting the future cash flows using appropriate market-sourced data at the balance sheet date.

GROUP STATISTICAL INFORMATION

Under adopted IFRSs

	2012 Restated[1] £m	2013 £m	2014 Results before specific adjusting items Restated[2] £m	2015 Results before specific adjusting items £m	**2016 Results before specific adjusting items £m**
Revenue	1,007.5	957.8	921.7	911.8	**989.2**
Profit from operations before restructuring costs, other items and amortisation of intangible assets	120.9	119.0	118.0	109.6	**117.9**
Restructuring costs and other items:					
Restructuring costs	(13.3)	(11.3)	(5.9)	(4.1)	**(1.5)**
Gain on disposal of properties	0.1	0.8	0.3	0.5	**0.5**
Profit from operations before amortisation of intangible assets	107.7	108.5	112.4	106.0	**116.9**
Amortisation of intangible assets	(8.3)	(8.3)	(8.2)	(7.1)	**(7.9)**
Operating profit	99.4	100.2	104.2	98.9	**109.0**
Net financing costs	(22.7)	(23.3)	(20.8)	(18.1)	**(20.0)**
Share of profit of associate (net of income tax)	–	–	–	0.3	**0.6**
Profit before taxation	76.7	76.9	83.4	81.1	**89.6**
Income tax expense	(21.6)	(21.1)	(24.7)	(24.2)	**(26.6)**
Profit after taxation before discontinued operations	55.1	55.8	58.7	56.9	**63.0**
Discontinued operations	21.0	–	–	–	**–**
Profit for the period	76.1	55.8	58.7	56.9	**63.0**
Assets employed					
Property, plant and equipment	245.5	241.4	241.0	256.7	**303.7**
Intangible assets	265.1	249.5	235.3	229.8	**240.4**
Investments and other receivables	10.0	8.0	10.2	10.7	**10.7**
Deferred tax assets	40.6	28.2	8.5	4.4	**6.1**
Net current assets	194.4	132.8	143.2	151.3	**91.6**
Total assets less current liabilities	755.6	659.9	638.2	652.9	**652.5**
Employee benefits	166.8	144.6	211.8	204.5	**271.1**
Provisions and other items	276.7	207.7	236.3	259.7	**208.4**
Deferred tax liabilities	40.5	33.5	2.4	2.3	**8.3**
	271.6	274.1	187.7	186.4	**164.7**
Equity					
Total equity attributable to equity holders of the parent Company	233.8	238.1	151.2	149.8	**120.8**
Non-controlling interests	37.8	36.0	36.5	36.6	**43.9**
Total equity	271.6	274.1	187.7	186.4	**164.7**
Ordinary dividends per share	10.0p	10.5p	10.9p	11.0p	**11.0p**
Basic earnings per share	18.7p	14.8p	2.7p	11.9p	**18.4p**
Diluted earnings per share	18.4p	14.7p	2.7p	11.9p	**18.4p**
Headline earnings per share*	21.7p	21.5p	22.1p	20.8p	**22.7p**
Diluted headline earnings per share*	21.3p	21.4p	22.1p	20.8p	**22.7p**

1. IAS 19 (revised) *Employee Benefits* has been adopted from 2013 onwards, with the 2012 comparatives restated accordingly.
2. 2014 has been restated for the reclassification of deferred tax assets and liabilities. Figures for 2012-13 have not been restated for this change.

OVERVIEW STRATEGIC REPORT GOVERNANCE FINANCIAL STATEMENTS

CAUTIONARY STATEMENT

This document has been prepared for and only for the members of the Company as a body and no other persons. Its purpose is to assist members to assess how the Directors have performed their duties, the Company's strategies and the potential for those strategies to succeed and for no other purpose. Save as would otherwise arise under English law, the Company, its Directors, employees, agents or advisers do not accept or assume responsibility or liability to any third parties to whom this document is shown or into whose hands it may come and any such responsibility or liability is expressly disclaimed.

This document contains forward-looking statements that are subject to risk factors associated with, amongst other things, the economic and business circumstances occurring from time to time in the countries, sectors and markets in which the Group operates. These and other factors could adversely affect the outcome and financial effects of the plans and events described. Forward-looking statements by their nature involve a number of risks, uncertainties and assumptions because they relate to events and/or depend on circumstances that may or may not occur in the future and could cause actual results and outcomes to differ materially from those expressed in or implied by the forward-looking statements.

It is believed that the expectations reflected in these statements are reasonable but they may be affected by a wide range of such variables. No assurances can be given that the forward-looking statements in this document will be realised. The forward-looking statements reflect the knowledge and information available at the date this document was prepared and will not be updated during the year but will be considered in the Annual Report for next year. Nothing in this document should be construed as a profit forecast.

GLOSSARY OF TERMS

Book-to-bill ratio*	The book-to-bill ratio is the ratio of orders received to sales in the period. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 37.
Cash flow from operations*	Cash generated from operations before cash flows from restructuring costs and other items. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 36.
Constant currency	Constant currency revenue and Group headline operating profit are derived by translating the prior year results at current year average exchange rates. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 36.
Corporate costs	Corporate costs consist of the costs of the central head office.
Energy use	Energy from all sources.
Free cash flow before acquisitions and dividends*	Cash generated from operations less net capital expenditure, net interest paid and tax paid. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 36.
Group earnings before interest, tax and amortisation (EBITA)*	EBITA is defined as Group operating profit before specific adjusting items and amortisation of intangible assets. Segment – Divisional and global business unit – EBITA is stated before unallocated corporate costs. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 35.
Group earnings before interest, tax, depreciation and amortisation (EBITDA)*	EBITDA is defined as operating profit before specific adjusting items, amortisation of intangible assets, restructuring costs and other items, and depreciation. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 36.
Group headline operating profit*	Operating profit adjusted to exclude specific adjusting items and amortisation of intangible assets. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 35.
Headline earnings per share (EPS)*	Headline earnings per share is defined as operating profit adjusted to exclude specific adjusting items and amortisation of intangible assets, plus share of profit of associate less net financing costs, income tax expense and non-controlling interests, divided by the weighted average number of ordinary shares during the period. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 37.
Lost time accident (LTA)	Accident which results in one or more days' lost time.
Lost time per LTA	Total time lost due to health and safety in the year divided by the number of lost time accidents reported in the year.
Net debt*	Interest-bearings loans and borrowings and bank overdrafts less cash and cash equivalents. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 36.
Restructuring costs and other items	Include the costs of restructuring activity and gain on disposal of property.
Return on invested capital (ROIC)*	Group headline operating profit (operating profit excluding specific adjusting items and amortisation of intangible assets) divided by the 12-month average adjusted net assets (excludes long term employee benefits, deferred tax assets and liabilities, current tax payable, provisions, cash and cash equivalents and interest-bearing loans and borrowings. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on page 37.
Return on operating capital employed (ROCE)*	Group headline operating profit (operating profit excluding specific adjusting items and amortisation of intangible assets) divided by the sum of working capital as defined below and the net book value property, plant and equipment and land and buildings. Goodwill and other intangible assets are excluded. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on pages 36 and 37.
Revenue growth	Revenue growth is defined as current year revenue translated using current year average exchange rates divided by prior year revenue translated using prior year average exchange rates.
Specific adjusting items	See note 6 to the financial statements for further details
Waste	Hazardous and non-hazardous waste, including recycled material.
Water use/intensity	Water from all sources, including process, irrigation and sanitary use.
Working capital (as used in the ROCE* calculation)	Working capital as used in the calculation of ROCE is the sum of inventories, trade and other receivables, net derivative financial liabilities, net assets classified as held-for-sale, trade and other payables, plus the net of deferred consideration, third-party dividends payable and other sundry items. See Definitions and Reconciliations of Non-GAAP Measures to GAAP Measures on pages 36 and 37.

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SHAREHOLDER INFORMATION

Analysis of Ordinary shareholdings as at 31 December 2016

		Number of holdings	% of total holdings	Number of shares	% of share capital
Size of holding	1-2,000	5,250	76.52	2,641,291	0.93
	2,001-5,000	883	12.87	2,873,565	1.00
	5,001-10,000	302	4.40	2,141,923	0.75
	10,001-50,000	217	3.16	4,718,108	1.65
	50,001-100,000	42	0.61	3,072,290	1.08
	100,001 and above	167	2.44	269,922,811	94.59
		6,861	**100.00**	**285,369,988**	**100.00**
Holding classification	Individuals	6,098	88.88	15,706,973	5.51
	Nominee companies	673	9.81	266,163,055	93.27
	Trusts (pension funds etc)	9	0.13	93,947	0.03
	Others	81	1.18	3,406,013	1.19
		6,861	**100.00**	**285,369,988**	**100.00**

Key dates

5 May 2017 — 2017 Annual General Meeting (AGM).

27 July 2017 — Half-year results announced via the Regulatory News Service and on the Company's website.

In the interests of reducing printing, paper and postage costs and the associated environmental impact, the half-year results have been available online only since 2015.

Dividend payment dates

25 November 2016 — An interim cash dividend of 4.0 pence per Ordinary share of 25 pence each was paid to shareholders registered at the close of business on 4 November 2016.

26 May 2017 — Subject to shareholders' approval at the 2017 AGM, a final cash dividend of 7.0 pence per Ordinary share of 25 pence each will be paid to shareholders registered at the close of business on 5 May 2017.

1 April 2017 and 1 October 2017 — Dividend payment dates in respect of the 5.5% Cumulative First Preference shares of £1 each and the 5.0% Cumulative Second Preference shares of £1 each.

Other information

Capital gains tax — The market values of quoted shares and stocks at 31 March 1982 were:

Ordinary shares of 25 pence each	122.5 pence
5.5% Cumulative First Preference shares of £1 each	30.5 pence
5.0% Cumulative Second Preference shares of £1 each	28.5 pence

For capital gains tax purposes, the cost of Ordinary shares is adjusted to take account of rights issues. Any capital gains arising on disposal will also be adjusted to take account of indexation allowances. Since the adjustments will depend on individual circumstances, shareholders are recommended to consult their professional advisers.

Share price — The price can be obtained on the Company's website: **www.morganadvancedmaterials.com**

ISIN Code — GB0006027295

Ticker symbol — MGAM

Company details

Company name change — The Company changed its name to Morgan Advanced Materials plc (from The Morgan Crucible Company plc) on 27 March 2013.

Following this change, share certificates issued in the name 'The Morgan Crucible Company plc' remain valid (replacement share certificates in the name 'Morgan Advanced Materials plc' were not issued to existing shareholders).

Registered office — Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP Registered in England No. 286773

Telephone: +44 (0)1753 837000 Fax: +44 (0)1753 850872

www.morganadvancedmaterials.com

Website — The Company's website provides information about the Group including the markets in which it operates, its strategy and recent news from the Group. The 'Investors' section is a key source of information for shareholders, containing details of financial results, shareholder meetings and dividends, and providing access to frequently asked questions. Current and past annual, half-year and EHS reports are also available to view and download.

SHAREHOLDER INFORMATION
continued

Company registrars	Capita Asset Services, The Registry, 34 Beckenham Road, Beckenham, Kent BR3 4TU Telephone (in the UK): 0871 664 0300 (calls cost 12 pence per minute plus your phone company's access charge; lines are open Monday – Friday, 9.00am – 5.30pm, excluding public holidays) Telephone (from outside the UK): +44 371 664 0300 Email: shareholderenquiries@capita.co.uk Website: **www.capitaassetservices.com** Shareholders with queries relating to their shareholding should contact Capita directly. Alternatively, shareholders may find the 'Investors' section of our website useful for general enquiries.
Share Portal	The Share Portal is a secure online site where you can manage your shareholding quickly and easily, reducing the need for paperwork and providing 24-hour access for your convenience. Through the Share Portal you can view your holding and get an indicative valuation, change your address, arrange to have dividends paid into your bank account and view your dividend payment history. To register for the Share Portal visit **www.capitashareportal.com**. All you need is your investor code, which can be found on your share certificate or your dividend tax voucher
Dividend payments	You can choose to receive your dividend in a number of ways. Dividends will automatically be paid to you by cheque and sent to your registered address unless you have chosen one of the options below:
Direct payment to your bank	Cash dividends can be paid directly to a UK bank or building society account. This means that your dividend reaches your bank account on the payment date, it is more secure (cheques can sometimes get lost in the post), you don't have the inconvenience of depositing a cheque and cheque fraud is reduced. If you have a UK bank account you can sign up for this service on the Share Portal (by clicking on 'Your dividend options' and following the on-screen instructions) or by contacting Capita.
International payments service	If you live outside the UK, Capita has partnered with Deutsche Bank to provide you with a service that will convert your sterling dividends into your local currency at a competitive rate. You can choose to receive payment directly into your local bank account or, alternatively, you can be sent a currency draft. You can sign up for this service on the Share Portal (by clicking on 'Your dividend options' and following the on-screen instructions) or by contacting Capita. For further information contact Capita by telephone in the UK on 0871 664 0385 (calls cost 12 pence per minute plus your phone company's access charge; lines are open Monday – Friday, 9.00am – 5.30pm, excluding public holidays) or from outside the UK on +44 (0)20 8639 3405, or by email (ips@capita.co.uk).
Multiple accounts on the shareholder register	If a shareholder receives two or more sets of AGM documents, this means that there is more than one account in their name on the shareholder register, perhaps because either the name or the address appears on each account in a slightly different way. If you have multiple accounts and would like them to be combined, please contact Capita Asset Services, as detailed above under the heading 'Company registrars'.
Buying and selling shares	Capita Asset Services provides a simple and competitively priced service to buy and sell shares. There is no need to pre-register and there are no complicated application forms to complete. For more information, visit **www.capitadeal.com** or call +44 (0)371 664 0445. Calls are charged at the standard geographic rate and will vary by provider. Calls outside the UK will be charged at the applicable international rate. Lines are open Monday – Friday, 8.00am – 4.30pm, excluding public holidays. This is not a recommendation to buy and sell shares and this service may not be suitable for all shareholders. The price of shares can go down as well as up and you are not guaranteed to get back the amount you originally invested. Terms, conditions and risks apply. Capita Asset Services is a trading name of Capita IRG Trustees Limited which is authorised and regulated by the Financial Conduct Authority. This service is only available to private shareholders resident in the European Economic Area, the Channel Islands or the Isle of Man.
Donate your shares to charity	If you have only a small number of shares which are uneconomical to sell, you may wish to consider donating them to charity, free of charge, through ShareGift (registered charity 1052686), a charity that specialises in the donation of small, unwanted shareholdings to good causes. You can find out more by visiting **www.sharegift.org.uk** or by telephoning +44 (0)20 7930 3737.
Unsolicited telephone calls and mail	Shareholders in companies may receive unsolicited phone calls or correspondence concerning investment matters. If you are offered unsolicited investment advice, discounted shares, a premium price for shares you own, or free company or research reports, please check the company or person contacting you is properly authorised by the Financial Conduct Authority before getting involved. Further information about what you should do is available on our website in the 'Shareholder Centre' in the 'Investors' section.

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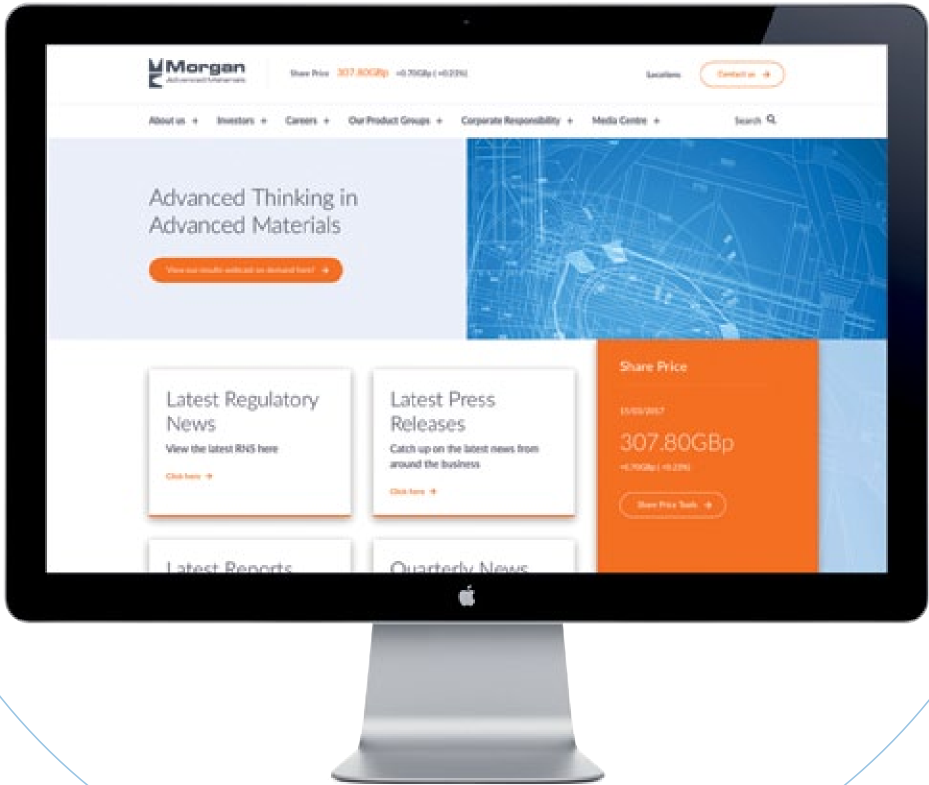
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