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 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	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	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	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	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

Mitigation:

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

Mitigation:

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

Mitigation:

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.