

# SUSTAINABLE TECHNOLOGIES

for today and for the future



## CASE STUDY

## Four Decades of Emissions Control

It is 40 years since Johnson Matthey's first autocatalysts rolled off the production line at our Royston plant in the UK. Since then, this technology to control emissions from vehicles has had a major impact on improving air quality around the world, preventing many millions of tonnes of harmful pollutants from entering our air.

Back in the late 1960s scientists at Johnson Matthey were developing platinum group metal catalysts to control gaseous pollutants in chemical and food processing applications. With the Clean Air Act requiring emissions from car exhausts to be reduced by 90%, we switched the focus of our research. By 1972 we had successfully developed and demonstrated the positive benefits of platinum containing catalysts to clean up car exhausts. As a result, catalytic converters containing an emission control catalyst became the preferred technology for reducing car emissions.

From 1975 all new models of car in the US had to be fitted with a catalyst to meet the new legislation so we continued our research to deliver a commercially viable product.

Key scientific developments, including the use of a monolith support and the formulation of an effective catalyst coating, underpinned the successful delivery. By late 1973 Johnson Matthey had completed construction of its first catalyst line in Royston and by the end of April 1974, our first autocatalyst production pieces were being made for Volkswagen. Construction of a very large plant in Pennsylvania followed to enable us to supply the US market. We also invested heavily in testing facilities for evaluating autocatalysts on engines.

Since this pioneering work, Johnson Matthey has continued to invest in research, development, testing and manufacturing facilities all around the world. As legislation continues to tighten globally, we continue to develop more efficient, higher performance emission control catalysts and manufacturing processes.

Today our autocatalysts are fitted to one in three cars around the world and we are a major supplier of catalysts for trucks and buses too. Our emission control catalysts, developed over many decades, exemplify how science and innovation can be applied to create value adding sustainable technologies for today and for the future.

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# 1. OVERVIEW

# Chairman's Statement

## In Summary

- **Underlying earnings per share of 170.6 pence, 16% ahead of last year.**
- **Dividend per share increased by 10% from 57.0 pence to 62.5 pence.**
- **Board succession effectively managed with a number of changes announced during the year.**

**Tim Stevenson**  
Chairman



I am pleased to report that Johnson Matthey performed well in 2013/14. The group has made good progress in all of its main markets, benefiting from our commitment to long term investment in research and development and our strategy of organic growth complemented by targeted acquisitions. As a result, we have seen underlying earnings per share increase by 16% to 170.6 pence.

However, it has not all been plain sailing. The well publicised change to our long term contracts with Anglo American Platinum Limited came into effect on 1st January this year. Whilst this has impacted revenue and profit in our Precious Metal Products Division in the final quarter of the year, and will continue to do so in 2014/15, Johnson Matthey has weathered the change well; the rebasing is understood by our shareholders, the effect on employees has been kept to a minimum and the company's share price has remained robust during 2013/14. The change has released a strategic constraint. It coincided with our review of group strategy towards the end of 2013 and provided an opportunity for Johnson Matthey to think more broadly about how best to apply its expertise. Whilst concluding that our strategy was sound, we considered that going forward we could embrace a wider range of advanced materials and technology and increase our emphasis on collaboration, customer focus and creating value.

A key role of your board is to ensure successful succession planning. This is fundamental to board effectiveness and is integral to the delivery of Johnson Matthey's strategy. During the year we announced a number of executive level changes.

Neil Carson has decided, after a highly successful decade as Chief Executive, to retire in 2014 and in January we announced that Robert MacLeod will succeed Neil as our Chief Executive. Neil has made an outstanding contribution in his 34 years at Johnson Matthey, including as Chief Executive since 2004. He has been the architect of the successful company that is Johnson Matthey today, not only in its financial performance, but also its culture, style, integrity and business approach.

Neil will step down from his role on 5th June 2014 and will retire from the company at the end of September. I'd like to personally thank him for his support and remarkable commitment to the good of our business. On behalf of the board, I wish him all the very best for the future.

The board is extremely pleased to have a very able and natural successor in Robert MacLeod. Robert has served as Group Finance Director alongside Neil, developing a knowledge and experience of Johnson Matthey, its culture and markets. Since joining the company in 2009 Robert has played a key role in the group's strategy and new business development as well as in introducing more robust business processes across the company. My board colleagues and I are confident that Robert will be a highly successful Chief Executive, bringing the ability to combine recent outside experience with an understanding of the legacy he is taking over. This combination will enable him to implement a proven strategy that will deliver further growth.

In addition, I am delighted to welcome Den Jones to Johnson Matthey. Den will succeed Robert as Group Finance Director and joins the board on 5th June 2014. Den joins us from BG Group and brings a blend of strong financial leadership credentials, international experience and highly developed commercial awareness to Johnson Matthey.

In April 2014 we announced that Michael Roney, a non-executive director, Senior Independent Director and Chairman of our Management Development and Remuneration Committee, has decided to retire from the board at the close of our annual general meeting on 23rd July 2014. Michael has been a strong and very effective non-executive director during his seven years of service. His deep commercial experience and pragmatic approach will be much missed by his colleagues on the board and we all wish him well for the future.

Following Michael's retirement, Alan Ferguson, a non-executive director and Chairman of our Audit Committee, will be appointed to the role of Senior Independent Director. Dorothy Thompson, a non-executive director, will be appointed as chair of our Management Development and Remuneration Committee.

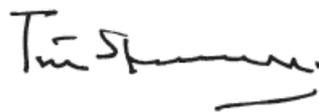
Diversity in the boardroom, in its broadest sense, is vital to ensuring board effectiveness. During the year we welcomed two new members to the board: Odile Desforges, who brings deep experience of the global automotive industry, joined us in July 2013 as a non-executive director and John Walker joined us in October 2013 as Executive Director for Emission Control Technologies, having been with Johnson Matthey since 1984. Both Odile and John have enhanced the board's mix, balance of experience and skills. As we seek to appoint a new non-executive director following Michael's retirement, we are looking closely at how to optimise further the diversity of the board across all areas, including technical experience that is relevant to our Process Technologies Division.

It is Johnson Matthey's people who, more than any other factor, make the company special; investing in their development is without doubt one of the key investments that we can make in the future of our business. We've reviewed our human resources strategy this year and have identified talent management as a key priority. Work is underway to help accelerate the development of our people with increased emphasis on important growth regions for our business.

It is the responsibility of everyone in Johnson Matthey to ensure the safety, health and wellbeing of our colleagues across the globe. This is an area to which the board has given particular and detailed attention over the course of the year. Whilst we have continued to make progress in some areas this year we recognise the need to reinvigorate our approach. Work is underway to refresh our programmes and processes to drive further improvement in performance.

Over the last 12 months I have had the pleasure of meeting many of our employees around the world and continue to be impressed by their professionalism, competence and the pride they feel in working for Johnson Matthey. On behalf of our stakeholders, I'd like to thank all our people for their hard work and contribution to our performance this year.

And so to conclude, Johnson Matthey has continued to make good progress in building a sustainable business that delivers superior value for its shareholders. The long term drivers for our company remain firmly in place and I am confident that this, together with our robust strategy, should support the continued growth of Johnson Matthey over the years ahead.



**Tim Stevenson**  
Chairman

# Chief Executive's Statement

## In Summary

- **Group performed well in 2013/14.**
- **Sales excluding precious metals up 11% to £3.0 billion.**
- **Underlying profit before tax 12% ahead at £427.3 million.**
- **Strategy review confirmed direction and identified areas of focus.**
- **Continued investment in R&D and expansion of capabilities.**
- **Group remains well positioned to deliver long term growth.**

**Neil Carson**  
Chief Executive



Johnson Matthey performed well in 2013/14, delivering growth through value adding sustainable technologies. The group has made progress this year, not only in its financial results, but across the broader areas of health and safety, environment and governance, and in the social contribution it has made.

We grew our revenue by 4% to £11.2 billion and our sales excluding precious metals (sales) of £3.0 billion were 11% up on last year. Underlying operating profit increased by 13% to £468.9 million and underlying profit before tax grew by a similar amount, up 12% at £427.3 million. Our underlying return on sales remained in line with last year at 15.7% whilst our return on invested capital increased to 20.8% from 19.8% as a result of our higher profitability and good working capital management across the group.

We saw growth in all of our main markets and our Emission Control Technologies Division (ECT), in particular, had a very strong year. The division benefited from growth in all its regions and from the introduction of new legislation to control emissions from heavy duty diesel (HDD) vehicles.

Johnson Matthey has a strong position in HDD catalysts. This is a result of our commitment to invest in R&D in this area many years ahead of the introduction of the first legislation back in 2006. We invested early and, by bringing together our talented people, focusing on R&D, committing to capex at the right time, making targeted acquisitions and building relationships with our customers, we were well positioned to supply the market with high technology solutions to meet the first legislation.

At Johnson Matthey we invest for the long term and the success of the company is founded on this conviction. In addition, the work of our New Businesses Division today will fuel our growth into the future. R&D is where it all begins and we increased our gross R&D spend again this year. We have expanded our central R&D facilities, adding further capability and geographical reach. We have a new centre in South Africa, which is focused on computational modelling, and have recently opened laboratory facilities in Singapore to support Johnson Matthey's expanding Asian businesses.

It is just over three years since we set out our ten year strategy and during the autumn we undertook a detailed review. This proved timely, given the change in our contracts with Anglo American Platinum Limited (Anglo Platinum), and allowed us to consider how best to apply our broad expertise. We concluded that our strategy remained sound and agreed that going forward we could embrace a wider range of advanced materials and technology. We also identified three key areas of focus which will deliver top line growth for the group in the longer term: collaboration; customer focus; and creating value. These areas complement our groupwide Manufacturing Excellence and Sustainability 2017 programmes where we are working to improve profitability and deliver new products and technology. Both programmes have made further progress this year, thanks to the efforts of our employees around the world, and I am pleased to report that this year we have beaten our Sustainability 2017 ambition to double underlying earnings per share – three years ahead of our target date.

The health, safety and wellbeing of our employees are always a priority. Our performance in these areas this year has been steady and so we feel that refreshing our approach is required. We've already started to address this and efforts will continue during the year ahead which I hope will accelerate a reduction in our accident and incident rates.

Johnson Matthey has a proven strategy but making sure our people understand it and how they are contributing to it is something we feel we could do better at as an organisation. Following our strategy review we have developed a more engaging way to help our employees connect with the strategy and this will be introduced across the group from the end of June.

## Outlook

In 2014/15 continued growth across the group will be offset by the adverse impact of the loss of commission revenue from Anglo Platinum, approximately £30 million compared with 2013/14, and by the effect of foreign currency translation which, if today's exchange rates prevail, could reduce reported underlying profit before tax by over £20 million. Consequently, we currently expect that the group's performance in 2014/15 will be broadly in line with 2013/14.

On a reported currency basis the outlook for the divisions is as follows:

### Emission Control Technologies

ECT outperformed the underlying growth rate in many of its markets in 2013/14. The outlook for the division remains positive as it will benefit from the tighter truck legislation in the EU (Euro VI) and China (Euro IV), as well as a recovery in the European car market which appears more positive than in recent years. We therefore expect some further progress from ECT in 2014/15.

### Process Technologies

Performance in our Oil and Gas businesses is expected to be robust, driven primarily by stronger demand from our North American refinery customers. The long term outlook of our Chemicals businesses is also good, but the short term is more dependent upon a small number of high value projects. Whilst we are confident that we are well placed to win our share of new projects, the exact timing of their go ahead is hard to predict. Notwithstanding that, we expect that the division will make progress in 2014/15, but given the size of individual orders, the quarter on quarter performance may be quite variable. The long term drivers for Process Technologies remain positive.

### Precious Metal Products

The performance of Precious Metal Products will be adversely impacted by the expiry of our old Anglo Platinum contracts. Excluding this change, the outlook for the division is steady. Our Platinum Group Metal (Pgm) Refining and Recycling business is currently benefiting from slightly higher precious metal prices and volumes are stable. The outlook for our Manufacturing businesses is mixed, with growth in our medical business expected to offset the weaker industrial markets.

### Fine Chemicals

In Fine Chemicals, we expect steady growth in our Active Pharmaceutical Ingredient (API) Manufacturing business, particularly in the US, some further progress in Catalysis and Chiral Technologies and modest growth in Research Chemicals as its new warehouses become fully operational.

## New Businesses

New Businesses made some progress in 2013/14 but it will take time before this is translated into an operating profit for the division as a whole. In 2014/15, sales will benefit from the acquisition of certain battery material manufacturing assets from A123, but we expect that the level of investment in the division will be similar to 2013/14.

## Closing Remarks

As you will know, I have decided to retire from Johnson Matthey and will step down as Chief Executive on 5th June. Johnson Matthey is a wonderful company full of talented and dedicated people and it has been a real privilege to have been Chief Executive for the last ten years. During that time, the management team and I have continued the transformation of Johnson Matthey into a world leading speciality chemicals company. The business is in excellent shape and I am very pleased to be handing it over to such a competent and able team led by Robert MacLeod, who will make an excellent Chief Executive and under whom the company will continue to thrive.

As Johnson Matthey approaches its 3rd century of operation, the company continues to apply its expertise in advanced materials and technology to innovate and improve solutions for customers in new and existing markets. It is committed to investing in R&D, its manufacturing capabilities and the development of its people to support the future growth of the group. The long term drivers remain in place and Johnson Matthey is well positioned to deliver growth for its shareholders through the creation of value adding sustainable technologies.



**Neil Carson**  
Chief Executive

# Our Business

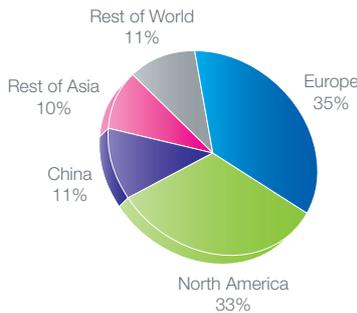
## → KEY FACTS

**Johnson Matthey** is a leading speciality chemicals company. We have operations in over 30 countries and employ around 12,000 people worldwide.

We are organised into five global divisions:

- **Emission Control Technologies**  
Read more on pages 26 to 29
- **Process Technologies**  
Read more on pages 30 to 33
- **Precious Metal Products**  
Read more on pages 34 to 37
- **Fine Chemicals**  
Read more on pages 38 to 40
- **New Businesses**  
Read more on pages 41 to 43

### Sales by Region



## 21%

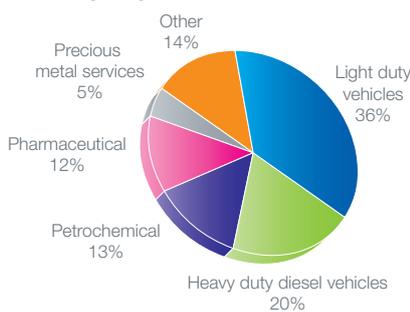
Sales in Asia in 2013/14.

### → A Truly Global Company

Johnson Matthey sells its products globally which provides stability in times of regional market uncertainty. Year on year we are increasing our sales to developing markets and expanding our operations to support this global growth.

Read more on pages 24 to 43.

### Sales by Key Market



## 20%

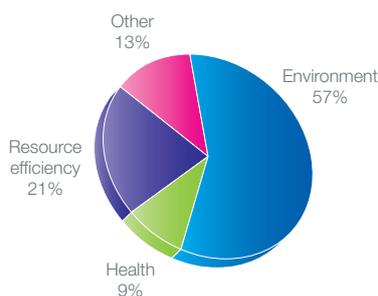
Growth in heavy duty diesel catalyst sales in 2013/14.

### → Focused on Key Markets

Johnson Matthey is focused on its key markets where we can innovate and improve solutions for our customers through applying our expertise in advanced materials and technology. This enables us to differentiate ourselves from our competitors and achieve leading industry positions with high margin products.

Read more on pages 24 to 43.

### Sales by Area of Beneficial Impact



## 87%

Sales from products providing sustainability benefits in 2013/14.

### → A Leader in Sustainable Technologies

Johnson Matthey is focused on developing value adding sustainable technologies to our customers and to society. Today, some 87% of the group's sales represent products and services which provide sustainability benefits i.e. through the positive impact they have on the environment, resource efficiency or human health.

Read more on pages 5, 23, 51, 61, 69, 75, 129 and 181.

# → WHAT WE DO

## AT JOHNSON MATTHEY

**WE ALWAYS AIM TO...** deliver what we promise.

We work together, applying our expertise in advanced materials and technology to innovate and improve solutions that:

- **are valued by our customers;**
- **optimise the use of natural resources; and**
- **enhance the quality of life for the people of the world, both for today and for the future.**

### Delivering what we Promise

Whether it's dealing with customers, shareholders or each other, we take pride in delivering what we promise. Integrity is one of our core values which we have built upon since the company's foundation in 1817.

### Working Together

In Johnson Matthey we have around 12,000 people working in different fields and it's their contribution across a variety of functions that makes us indispensable to our customers. We need to continue to work smarter, closer and more collaboratively to ensure our organisation is fit for the future.

### Experts in Advanced Materials and Technology

Whether it is harnessing chemical properties at an atomic scale or applying our engineering skills to create new solutions, developing advanced materials and technology is what we do best. We continue to invest in R&D to make sure we stay ahead of the game.

### Innovating and Improving Solutions

Johnson Matthey is in the business of developing new solutions for our customers. We also apply our innovative approach to improve the performance of the products we already have and to optimise the way we manufacture them. This is how we can continue to offer our customers real differentiation in the marketplace.

### Valued by our Customers

We always want to deliver the best solution we can for our customers. It has been in our DNA since the beginning. But 'the best' can mean different things in different markets for different customers. To remain competitive we need to look consistently to add value for our customers by understanding what 'the best' looks like for each and every market they are working in – and then delivering it.

### Optimise the use of Natural Resources

We utilise our expertise to promote the most efficient use of the world's natural resources. We apply this to the way we run our own facilities and through the action of our products and services at our customers' operations.

### Enhancing Quality of Life

Our goal at Johnson Matthey is to grow our business – but to grow it sustainably. As a leader in sustainable technologies, we are proud of the fact that many of our products enhance the quality of life for millions of people around the world. In our 3rd century we will continue to strive to do the right thing by the planet – and improve the lives of the people and communities we share it with.

## 1. Overview

# Building Our 3rd Century

## OUR BUSINESS MODEL...

is to create value from applying our expertise in advanced materials and technology to innovate and improve solutions that are valued by our customers, optimise the use of natural resources and enhance quality of life.

### There are three inputs to our business model:

- Our people
- Our operations
- Innovation

These align with the nine aspects of our strategy (page 14) and support the long term creation of value adding sustainable technologies.

### → Our People

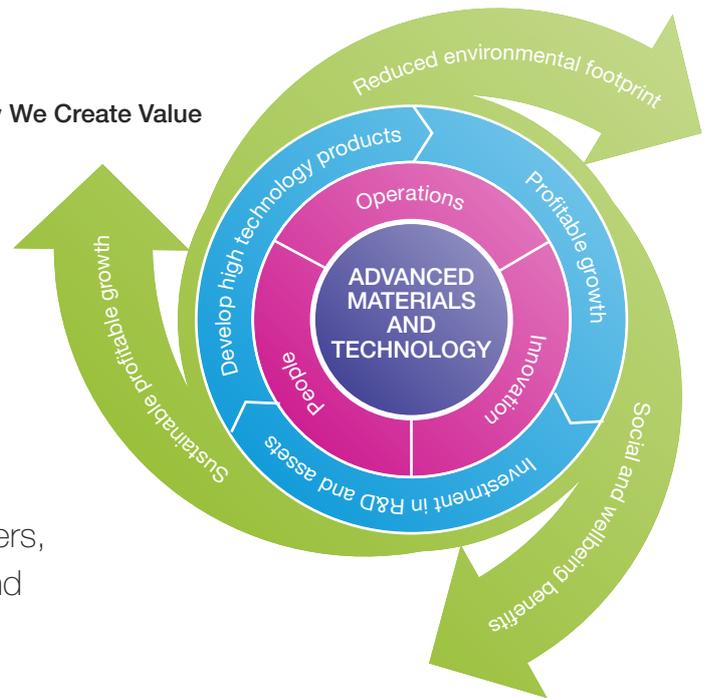
We rely on the ability of our people to innovate and to collaborate with each other and our customers to develop and bring value adding sustainable technologies to market. We hire the best people with the right skills and support them with a culture that engenders innovation and encourages them to develop and grow. Our people are motivated by working for a company that is 'doing the right thing' – and this is an important differentiator in attracting and retaining top talent in an increasingly diverse business.

### → Our Operations

Around three quarters of the value we create comes from physical products, such as our emission control catalysts or active pharmaceutical ingredients, which we manufacture at our facilities around the world.

Efficient and responsible manufacturing is critical to our economic and environmental performance and we have programmes in place to optimise our operations. Our Manufacturing Excellence programme is driving efficiency improvements and innovation in manufacturing. This is complemented by Sustainability 2017 which is focused on reducing emissions and minimising resource use. We invest in our manufacturing capacity to ensure we can meet customer demand and have the ability to flex our cost base if our markets slow. We demand high returns from our investments, with a target of at least 20%, which drives continued improvement in operational efficiency.

### How We Create Value



Approximately one quarter of the value we create comes from the provision of specialist services such as the refining and recycling of precious metals, process technology used to design chemical plants or diagnostics that improve efficiency in the oil and gas industry. Collaboration and strong relationships with our customers are crucial in providing a high quality tailored service. Know-how and a strong reputation underpin success and we perpetually build on these through continued investment in R&D and our people.

### → Innovation

Innovation fuels the continuous development of new and higher performance products and this, together with our know-how in advanced materials and, where appropriate, intellectual property protection, underpins our ability to maintain technology leadership positions. We partner with our customers, industry experts and academics to spark further ideas. Innovation isn't just confined to new product development; it is harnessed throughout our business processes. Our values encourage collaboration and innovation amongst our people, whilst continued investment in R&D provides them with the infrastructure and resources to realise the potential of their innovative ideas.

### The outputs of our model are threefold:

- Sustainable profitable growth
- Reduced environmental footprint – of our customers' operations, as well as our own
- Social and wellbeing benefits – from the action of our products

These all directly align with our vision and support our strategy.



## OUR VISION...

At Johnson Matthey it is our vision to build our 3rd century through value adding sustainable technologies.

In our **1st century** we built a reputation, not just for expertise in precious metals, but for real **integrity**, and for being a company our **customers could trust**.

In our **2nd century** we developed our **expertise** in the engineering and refining of metals. We also began our **environmental journey** – a journey that continues to this day.

For our **3rd century**, we have developed a business model and strategy that, when underpinned by our company values, will drive our next century of growth.

## OUR VALUES...

Our values highlight what is important to us, what makes us distinctive and what it's like to work at Johnson Matthey. They describe how we do things when we are at our best.

### Integrity

#### *Doing the right thing is important to us*

At Johnson Matthey we are proud of our reputation for integrity, built over 200 years, and as our business grows we will continue to follow our predecessors' honest, safe and successful way of working.

### Ability and Innovation

#### *We seek and value talented people*

We need talented people to deliver the scientific, technical and business innovations that continue to fuel our growth. We develop and draw on each other's talents and collaborate to create value for ourselves and our stakeholders.

### Recognition and Development

#### *Anyone from anywhere can progress*

We want to ensure that doing a good job and delivering results with a commitment to our company values are recognised and rewarded, whoever you are and wherever you are in the company. We provide opportunities for personal growth and career development in a successful company.

### Freedom to Act

#### *Anyone with a good business case can realise their ideas*

We genuinely give people the freedom to take action, obtain resources and implement ideas. This helps the company, and our people, grow through encouraging innovation and leadership. We trust and respect each other's judgment and expertise and support those who act and deliver.

### The Best of Big and Small

#### *We have big company resources but apply small company methods*

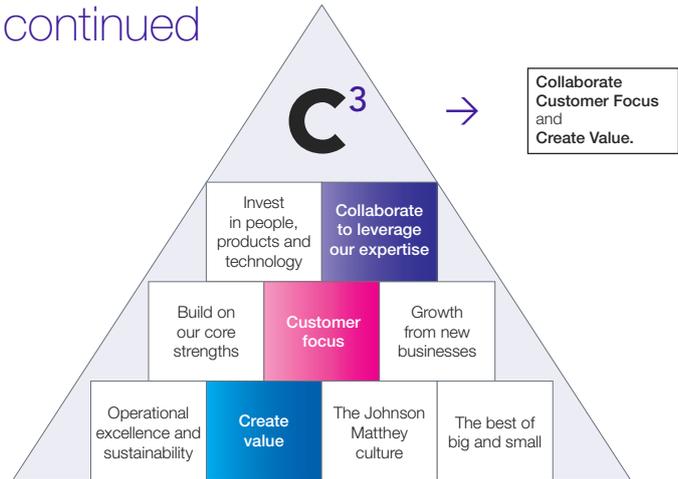
We keep it simple, straightforward and personal, but have the stability and support that comes with being a successful global organisation. We treat our customers as people and they find us easy to work with.

## 1. Overview

## Building Our 3rd Century continued

## OUR STRATEGY...

Our '3C' strategy will enable us to build our 3rd century of value adding sustainable technologies. In doing this we are focusing on three powerful themes: Collaborate, Customer Focus and Create Value.



## WE HAVE NINE BUILDING BLOCKS THAT MAKE UP OUR STRATEGY PYRAMID:

## → INVEST IN PEOPLE, PRODUCTS AND TECHNOLOGY

Invest in our people to develop the best talent across our business; also invest in our products and technology. In doing this we can differentiate ourselves from our competitors.

## → COLLABORATE TO LEVERAGE OUR EXPERTISE

Collaborate more, for smarter, closer working, with even greater flexibility so we can better leverage our expertise across the company.

## → BUILD ON OUR CORE STRENGTHS

Build on our core strengths in advanced materials and technology to develop the next generation of sustainable technologies.

## → CUSTOMER FOCUS

Focus on our customers. Target those who value technology and ensure we select attractive markets with strong external drivers.

## → GROWTH FROM NEW BUSINESSES

Develop new businesses that fit our technology competences and can provide the next material growth engines for the group.

## → OPERATIONAL EXCELLENCE AND SUSTAINABILITY

Be the best we can be, pursuing operational excellence and sustainable business practices to enhance our operations, keep our people safe, protect our reputation and make a positive contribution to the world around us.

## → CREATE VALUE

Create value from strategic investments that accelerate and enhance our growth.

## → THE JOHNSON MATTHEY CULTURE

Evolve our culture through living our values by applying what has made us successful and unique in the past to the challenges of today's complex and global marketplace.

## → BEST OF BIG AND SMALL

Marry our 'small company' flexibility with our 'large company' global strengths to ensure we can be both nimble and competitive as we continue to grow.



## Johnson Matthey's Technology Competences

### Applying Our Expertise in Advanced Materials and Technology to Innovate and Improve Solutions

Johnson Matthey provides solutions to difficult real life problems for our customers and, in most cases, we achieve this through the design and application of **advanced materials**. Not all of our products are materials, but most of our businesses supply products that contain or incorporate an advanced material in some way, whether it is a powdered or coated catalyst, a coated component or a fully functional device. So designing advanced materials is at the centre of much of what we do.

Whatever the material, the ability to develop and supply the best performing product comes from being able to design at the molecular or atomic scale exactly what we want and then manufacture it at scale. **Synthetic chemistry** is a core competence for Johnson Matthey and we excel in both organic and inorganic chemistry and in the application of predictive computational **modelling** to accelerate the evaluation of new structures. We also have an unrivalled knowledge of **platinum group metal (pgm) chemistry** and a deep understanding of **surface science**, particularly of the properties of coatings and coated surfaces.

We need to be able to verify that what we have made is what we wanted. Evaluating materials, once synthesised, is critical and Johnson Matthey has world leading characterisation and analytical capabilities and experts to support this.

# Research and Development

## CONTINUED INVESTMENT IN R&D UNDERPINS THE FUTURE GROWTH OF JOHNSON MATTHEY.

It is this investment, together with our ability to recruit the most talented and creative scientists, that will ensure we maintain the expertise and leadership in advanced materials that drive the development of value adding sustainable technologies and improved manufacturing processes.

Around 1,400 of our employees work in R&D representing around 12% of the total workforce and include many highly skilled scientists and engineers. Around 80% of our R&D staff work within the group's divisions in dedicated R&D and technical centres around the world. In our divisions, work is mainly focused on delivery of shorter term business specific projects or to address particular market developments or customer needs.

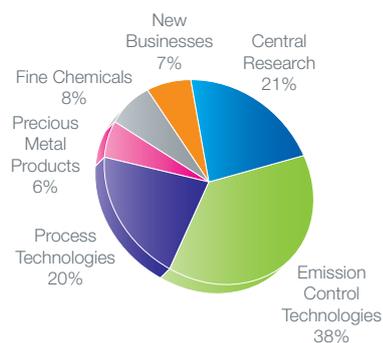
Alongside these activities, Johnson Matthey also has central capability on strategic R&D, located at five technology centres, which works on behalf of all of the group's businesses.

We maintain a close link between our central R&D activities and the development work carried out directly by our divisions. This interaction is key in ensuring the rapid transfer of technology to support the continued development of innovative new products and services for our customers.

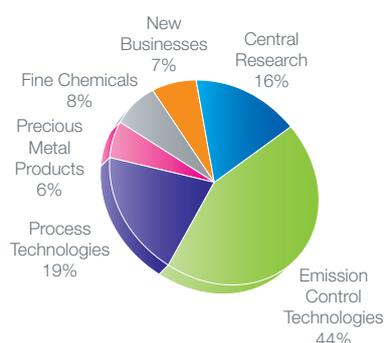
In 2013/14 Johnson Matthey increased its gross investment in R&D by 12% to £152.3 million.

➔ Read more on R&D at Johnson Matthey at [www.matthey.com/innovation](http://www.matthey.com/innovation).

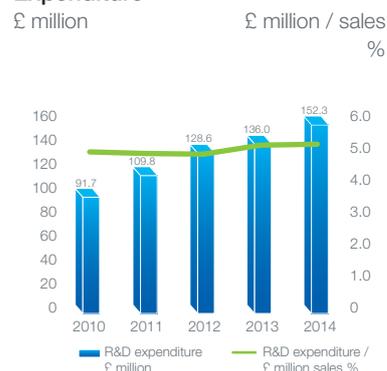
### Research and Development Employees



### Distribution of Research and Development Expenditure



### Research and Development Expenditure



The materials we make not only have a specific chemical structure, they also have defined functionalities – it's what they do that gives them value rather than what they are chemically. Designing functional materials requires **specialist technology expertise** and a good understanding of applied disciplines such as catalysis, electrochemistry and pharmacology.

The performance of a functional material is affected hugely by the environment that the material sees during its life. A key skill of ours is that of taking a material and customising and **integrating it into a specific application** based upon the environment in which it will operate. This involves a deep understanding of how the material will interact with its environment, including with other components in the system, and the conditions (such as the temperature and / or pressure) that it will see during its lifetime.

Longevity and life of the material are vital too and we typically need to provide our customers with data that proves the durability or performance of our products over their design life. Many of our products last for years and so our ability to design and carry out accelerated lifetime **testing** and, critically, to interpret the results is a key strength. The results from real life testing are used to inform and refine the overall design of new materials as part of our development processes.

Once we have optimised a material and proven it as a prototype we need to be able to **manufacture it at scale** for our customers. This could be anything from a few kilograms through to thousands of tonnes of a material, or hundreds through to millions of units of a discrete component or system. Taking prototypes rapidly into full scale production and maintaining functionality and system behaviour is another critical element of the mix. Understanding scale up requirements often informs the whole process, right back to the initial material design.

Many disciplines contribute to successful manufacturing scale up and our understanding of how to generate defined surface structures is a particular strength of Johnson Matthey. Our ability to design **coatings**, such as catalyst washcoats and inks, that self assemble into the required structure during manufacture, underpins many of our businesses.

Completing the cycle is our ability to **characterise** production of both our final product and the manufacturing process used to make it, and is a key requirement for a materials supplier.

Each competence contributes to the process of developing and supplying advanced and highly functional materials and technology that give the best performance in specific applications. These competences are interconnected and knowledge from each informs the others. It is the combination of these skills and capabilities which we believe sets Johnson Matthey's technology apart from that of our competitors.

## 1. Overview

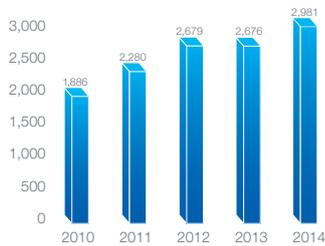
## Group Key Performance Indicators

### JOHNSON MATTHEY USES A RANGE OF KEY PERFORMANCE INDICATORS (KPIs) TO MONITOR THE GROUP'S PERFORMANCE OVER TIME IN LINE WITH ITS STRATEGY.

These include key measures of our financial performance as well as indicators to monitor ongoing investment in facilities and in R&D. In addition, we also use KPIs to track the carbon footprint of our operations and to measure and drive continuous improvement in the safety, wellbeing and development of our people.

→ These principal KPIs, together with the group's performance against them in 2013/14, are described below:

#### Sales Excluding Precious Metals £ million

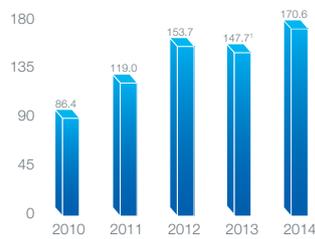


Monitoring sales provides a measure of the growth of the business. In measuring the growth of the group, we focus on sales excluding the value of precious metals because total revenue can be heavily distorted by year on year fluctuations in precious metal prices. In addition, in many cases, variations in the value of the precious metals contained within our products are passed directly on to our customers.

#### Performance in 2013/14

In 2013/14 sales excluding precious metals increased by 11% with particularly good growth in Emission Control Technologies as described in the Financial section on pages 24 to 48.

#### Underlying Earnings per Share pence



<sup>1</sup> Restated (note 40).

Underlying earnings per share is the principal measure used to assess the overall profitability of the group. The following items are excluded from underlying earnings because they can distort the trend in results:

- Amortisation and impairment of intangible assets arising on acquisition of businesses (acquired intangibles).
- Major impairment or restructuring charges.
- Profit or loss on disposal of businesses.
- Tax on the above and major tax items arising from changes in legislation.

#### Performance in 2013/14

This year underlying earnings per share increased by 16% to 170.6 pence supported by the group's strong performance and by a lower effective tax rate for the year. Further details are provided on pages 24 to 48 and a reconciliation from earnings per share is given in note 11 on page 144.

#### Return on Invested Capital %



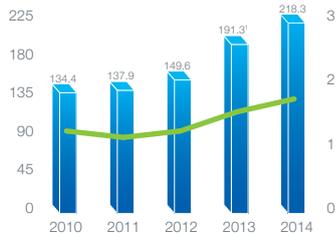
In a business as capital intensive as Johnson Matthey's, profitability alone is a poor measure of performance; it is possible to generate good operating margins but poor value for shareholders if assets are not used efficiently. Return on invested capital (ROIC) is therefore used alongside profit measures to ensure focus upon the efficient use of the group's assets. ROIC is defined for the group as underlying operating profit divided by average capital employed (equity plus net debt). ROIC for individual divisions is calculated using average segmental net assets as the denominator.

#### Performance in 2013/14

The group's ROIC increased from 19.8% to 20.8%. Further details are provided on page 46.

**Capital Expenditure**

£ million capex / depn (times)



<sup>1</sup> Restated.

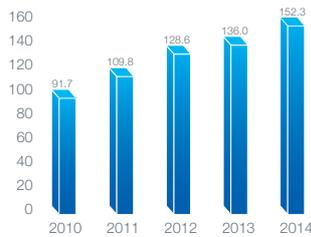
To enable the group to continue to grow, Johnson Matthey invests significant amounts in maintaining and improving our existing plants and in adding new facilities to provide additional capacity where necessary. All new capital expenditure is subject to detailed review to ensure that its investment case passes internal hurdles. Annual capital expenditure is measured as the cost of property, plant and equipment and intangible assets purchased during the year. The ratio of capital expenditure to depreciation gives an indication of the relative level of investment.

**Performance in 2013/14**

In 2013/14 the group's capital expenditure was £218.3 million which represented 1.7 times depreciation (2012/13 1.5).

**Gross Research and Development Expenditure**

£ million



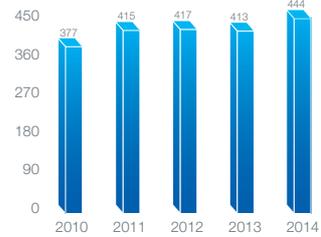
Johnson Matthey's strategy is focused on delivering superior long term growth from value adding sustainable technologies. To maintain our competitive position, we need to keep investing in research and development. Whilst absolute levels of research and development expenditure do not necessarily indicate how successful we are, that success rapidly feeds through to higher sales as lead times in our business can be quite short.

**Performance in 2013/14**

The group increased its research and development expenditure this year by 12% to £152.3 million. Further details of the group's research and development activities are described on page 15, throughout the Strategic Report and on our website.

**Sustainability – Global Warming Potential**

thousand tonnes CO<sub>2</sub> equivalent



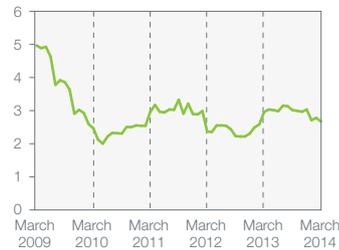
We measure our progress towards reducing the carbon footprint of our operations and improving our energy efficiency by looking at the group's total global warming potential (GWP). Total GWP is based on our direct and indirect energy usage and CO<sub>2</sub> equivalence which provide a strong platform for monitoring the impacts associated with energy use in our operations. We are working to broaden the scope of our GWP measurement to include all aspects of our business and to consider the beneficial impacts of our products and services.

**Performance in 2013/14**

This year the group's GWP increased from 413,000 tonnes to 444,000 tonnes CO<sub>2</sub> equivalent. Further information on the group's GWP is given in the Environment section on pages 70 to 73.

**Safety – Annual Rate of Greater than Three Day Accidents**

per 1,000 employees



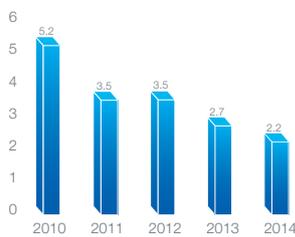
Johnson Matthey is a manufacturing business and a significant proportion of our employees work in production environments with chemicals and process machinery. Rigorous safety systems apply across all facilities and are essential if the group is to avoid accidents which could cause injury to people or damage to our property, both of which can impact the group's performance. We actively manage our safety performance through monitoring the incidence and causes of accidents that result in more than three days' lost time.

**Performance in 2013/14**

The group's annual rate of greater than three day accidents decreased this year to 2.68 per 1,000 employees. Further details of our safety improvement programmes are provided in the Health and Safety section on pages 62 to 67.

**Health Management – Annual Incidence of Occupational Illness**

cases per 1,000 employees



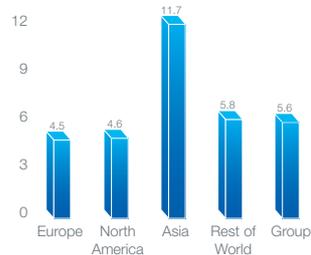
The health and wellbeing of our employees is a priority for Johnson Matthey and we are working hard to minimise workplace related negative health effects. We manage our performance in this area by measuring the number of occupational illness cases arising as a result of exposure to workplace health hazards.

**Performance in 2013/14**

The annual incidence of occupational illness cases reduced this year to 2.2 per 1,000 employees as a result of our initiatives to promote employee wellbeing across the group. Further details are provided in the Health and Safety section on pages 62 to 67.

**Voluntary Employee Turnover**

%



The success of Johnson Matthey is partly dependent upon our ability to attract and retain talented employees. This means that being an attractive employer is a prerequisite in a competitive environment. We monitor our success in retaining our staff using voluntary employee turnover statistics.

**Performance in 2013/14**

In 2013/14 the group's voluntary employee turnover decreased to 5.6% from 6.5% in 2012/13. Further details of our programmes to attract, retain and develop our people are provided in the Social section on pages 52 to 59.

## Risks and Uncertainties

### THE EFFECTIVE IDENTIFICATION AND MANAGEMENT OF RISKS AND OPPORTUNITIES ACROSS THE GROUP ARE INTEGRAL TO THE DELIVERY OF THE GROUP'S STRATEGIC OBJECTIVES.

The group's approach to risk management is aimed at monitoring material issues to enable the early identification of key risks and the taking of action to remove or reduce the likelihood of those risks occurring and their effect. The board has overall responsibility for ensuring that risk is effectively managed across the group and the Audit Committee is responsible for reviewing the effectiveness of the group's system of internal control. This includes the approach to risk management and procedures for the identification, assessment, management, mitigation, reporting of risk and assurance of mitigating actions. The group has a

process in place for the continuous review of its risks. As part of the risk management process, each division reviews its risks and its mitigation strategies and actions and discusses relevant risks with each business as necessary. As part of that process, the most significant risks identified are collated into a Group Risk Register. The Group Risk Register is reviewed by the Chief Executive's Committee (CEC) and the board. Each individual risk is considered, together with the effectiveness of current controls and the status and progression of mitigation actions and plans are monitored.

The diagram on the right outlines our approach to risk management.

The table below sets out what the board believes to be the principal risks and uncertainties facing the group, the mitigating actions for each and an update on any change in the profile of each risk during the course of 2013/14. The board considers that the risk identified last year associated with pension scheme funding has reduced. This has therefore been removed from the principal risks and uncertainties. More detail of the group's pension schemes is included in note 14 on pages 147 to 154.

#### Risk and impact

#### STRATEGIC

Responding to, identifying or capitalising on appropriate new or growth opportunities.

The group's existing activities are well placed to deliver good growth over the coming years. New business areas will help to sustain the group's growth beyond that period.

Failure to identify new business areas or extend the group's portfolio could impact the ability of the group to achieve its strategy and / or maintain growth and / or market share.

Technological change.

Johnson Matthey operates in highly competitive markets in which technology is key to success. Constant product innovation is critical to maintain competitive advantage.

Failure to keep up with changes in the market place and to maintain our technology pipeline could result in a lack of competitive products and erosion of margins and / or loss of market share.

#### MARKET

Responding to changes in global political and economic conditions or future environmental legislation.

The global nature of the group's business exposes it to risk arising from economic, political and legislative change in the countries in which it operates.

Failure to respond to sudden short and medium term changes in the market or economy or a sustained period of economic weakness in our markets could have a material adverse effect on the group's results.

The group has no influence upon changes in inflation, interest rates or other economic factors affecting its business. In addition, the possibility of political unrest and legal or regulatory changes also exists in countries in which the group operates.

Over 50% of the group's sales are driven by environmental legislation, particularly legislation over emissions from light and heavy duty vehicles. Further tightening of global emissions legislation generally requires improved technological solutions and the extension of emissions legislation to new applications can create opportunities for the group.

A curtailment in environmental legislation around the world could limit the group's growth potential and undermine profit margins.

**Overall Board Responsibility for the Management of Risk**



**Mitigation**

**Changes since 2013 annual report**

<ul style="list-style-type: none"> <li>• The group and each business prepares a strategic plan to review demand in existing markets and potential new opportunities. These plans are regularly monitored and challenged.</li> <li>• The group continues to invest in new business development and to identify and convert targets for acquisition.</li> </ul>	<p>No change.</p> <p>We continue to target potential new markets and develop new businesses, both organically and through acquisition. The progress of our new business development activities, including the integration of our battery systems business (formerly Axion), is described on pages 41 to 43.</p>
<ul style="list-style-type: none"> <li>• The group continues to invest in existing and new products and technologies through R&amp;D (including through its technology centres around the world) and as part of our ten year technology plan.</li> <li>• There is constant innovation and development in cooperation with our key customers.</li> <li>• The group invests in its people to ensure that it maintains a high level of relevant scientific expertise.</li> </ul>	<p>No change.</p> <p>Our commitment to innovation, research and development is described throughout this annual report.</p> <p>As set out on page 15 we have a network of technology centres. During the year we established a centre in South Africa and a further new technology centre in Singapore was officially opened in April 2014.</p> <p>We invested £152.3 million in R&amp;D in the year (2012/13 £136.0 million).</p>
<ul style="list-style-type: none"> <li>• The group maintains a balanced portfolio of products and businesses and serves a wide range of diverse customers which reduces the impact of a change to any one market.</li> <li>• Management continuously monitors the performance of our businesses across the world at both business and group level.</li> <li>• Our cost base contains a significant variable element and is flexible to changing political and economic conditions.</li> <li>• Forthcoming changes in emissions legislation are well understood and our products are designed to meet these increased requirements.</li> <li>• Profit margins can be maintained with continuous improvements in technology to reduce the cost and improve the effectiveness of our products.</li> <li>• Regular reviews are undertaken to monitor areas of new potential legislation.</li> <li>• Lobbying activities are undertaken where appropriate to improve the understanding of regulatory and legislative bodies.</li> </ul>	<p>No change.</p> <p>We performed well in 2013/14 and are well positioned to respond to and benefit from legislation changes in both light and heavy duty catalyst markets over the years ahead as detailed on pages 26 to 29.</p>

## 1. Overview

## Risks and Uncertainties continued

## Risk and impact

## OPERATIONAL

Operating safely, including in line with changes in health, safety, environmental and other regulations and standards.

In common with similar manufacturing companies, the group operates in a challenging safety environment that is subject to numerous health, safety and environmental laws, regulations and standards.

Failure to operate safely and respond to changes made to applicable laws, regulations or standards could adversely impact the group's employees or other stakeholders, our manufacturing capability or the marketability of our products.

Availability of strategic materials.

The group uses many raw materials within its manufacturing processes. Several raw materials are available from only a limited number of countries and / or suppliers.

Disruption to the supply or a change in the group's ability to access sufficient stocks of these raw materials, most notably platinum group metals, rare earth materials or narcotic raw materials, could adversely affect the group's operations. This may be due to increased prices or because our ability to manufacture and supply products to customers may be impacted.

The effective recruitment, retention and development of high quality staff to support the growth of our business.

The group relies upon its ability to recruit, retain and develop employees around the world with the necessary range of skills and experience to meet its stated objectives, including in relation to business growth.

The existing management team has many years of experience at Johnson Matthey, operating in the markets and developing the technologies in which the group maintains a presence.

Ineffective succession on the departure of senior management or the lack of an appropriately skilled workforce could adversely impact the group's ability to perform in line with expectations.

Security of assets.

On any given day the group has significant quantities of high value precious metals or highly regulated substances on site and in transit, the security of which is critical.

A material loss due to a breach in the group's security measures, including theft or fraud, could be significant to the group's performance.

Intellectual property (IP) and know-how.

The group operates in markets in which the generation and application of technology know-how and IP allows an advantage to be maintained. Careful monitoring of competitors' IP is required to ensure that breaches of their rights are not made by the group.

Failure to establish the group's IP rights or to identify third parties' IP rights could undermine the group's competitive advantage particularly given the group's expansion into new markets. Alternatively, not noting the expiration of patents held by third parties could mean the loss of potential business opportunities. Protecting our broader know-how is equally important to ensure that we maintain this advantage.

Systems failure.

The group uses a significant number of complex IT systems in its operational and supporting activities, some of which are starting to see the end of their useful life.

Failure of one or more of our major IT systems over an extended period could impact our ability to manufacture or to report our operational performance.

Failure of significant sites.

While the group operates from a variety of locations, certain sites are critical to the group due to their scale or the specific nature of their production activities.

Failure of one of our critical sites could significantly impact the performance of the group.

## Mitigation

## Changes since 2013 annual report

<ul style="list-style-type: none"> <li>Detailed health, safety and environmental processes are documented in our operating manuals, communicated and reviewed regularly and used as the basis for continuous training and development.</li> <li>Robust maintenance programmes are undertaken in order to ensure that our facilities and assets meet the applicable group and legislative standards.</li> <li>The group carries out regular internal audits to ensure compliance with current group policies and applicable laws, regulations and standards such as ISO 14001 and OHSAS 18001. Our quality standards are also scrutinised externally by customers, suppliers and the relevant authorities.</li> <li>Changes in legislation are carefully monitored and, if required, the composition of our products is amended to comply with the latest legislation.</li> <li>We are committed to proactive communication and to building open relationships with the authorities and relevant legislative bodies, both directly and through the relevant trade associations.</li> </ul>	<p>No change.</p> <p>Our health and safety and environmental performance is described on pages 62 to 67 and 70 to 73 respectively.</p>
<ul style="list-style-type: none"> <li>Although most of the world's platinum is mined in South Africa, the group has access to world markets for platinum and other precious metals and is not dependent on any one source for obtaining supplies.</li> <li>Appropriate sourcing arrangements are in place for other key raw materials to ensure that the group is not dependent on any one supplier.</li> <li>Where possible the group enters into fixed price contracts for key raw materials.</li> <li>We work closely with key suppliers to ensure availability, including through audits, benchmarking and specific risk reviews.</li> <li>We regularly monitor forecast requirements and hold buffer stocks.</li> <li>We look to identify alternative raw materials where appropriate.</li> </ul>	<p>In light of the change in the nature of our contracts with Anglo American Platinum Limited (effective 1st January 2014) and continued labour unrest in South Africa, we have concluded that this risk has increased since last year. We are actively managing this risk, partly through higher metal inventory holdings.</p>
<ul style="list-style-type: none"> <li>Global employee development programmes are in place. These include training of manufacturing leaders to run our operations in a consistent and efficient way.</li> <li>Regular reviews of management succession plans are carried out and are closely monitored by the Nomination Committee and Management Development and Remuneration Committee.</li> <li>Global remuneration policies are in place to ensure appropriate rewards to motivate and retain staff.</li> <li>We undertake a continuous assessment of the skills required within the group and action plans are put in place to address identified gaps.</li> </ul>	<p>Although our senior management succession has been successfully managed, such a change at the top of the group must inherently increase risk.</p>
<ul style="list-style-type: none"> <li>The group has well developed security, assay and other process controls.</li> <li>We complete security checks to safeguard both our tangible and intangible assets.</li> <li>Annual security audits are carried out across the group.</li> <li>Insurance cover is maintained for losses from theft or fraud.</li> </ul>	<p>No change.</p>
<ul style="list-style-type: none"> <li>The group has established policies and procedures for registering patents and for monitoring its existing patent portfolio and those of third parties.</li> <li>We defend infringement claims and challenge new patents where appropriate.</li> <li>We continuously evaluate operating restrictions and opportunities available to us through the use of our IP and know-how.</li> <li>Know-how is protected by non-disclosure agreements and legal measures.</li> <li>We restrict internal and external access to IP and know-how as necessary.</li> <li>We complete security checks to safeguard our intangible assets, including cyber checks.</li> <li>Our investment in technical developments partially mitigates the risks to our IP and know-how.</li> </ul>	<p>No change.</p>
<ul style="list-style-type: none"> <li>We continuously review our IT infrastructure and environment and make short and long term investments where these are deemed necessary and appropriate.</li> <li>We identify and implement other systems based or manual work arounds where these are identified as necessary.</li> <li>IT disaster recovery and general business continuity plans are in place and are regularly tested and reviewed.</li> <li>A number of systems are bespoke to specific businesses or locations which reduces the impact to the group of a failure in any one system.</li> </ul>	<p>There are a number of systems initiatives being undertaken which will result in significant change. We have therefore concluded that the level of associated risk has increased and we are using external expertise to help to mitigate this.</p>
<ul style="list-style-type: none"> <li>Business continuity plans include consideration and testing of circumstances in which alternative back up locations may be required.</li> <li>Capacity and demand planning includes consideration of the site's significance.</li> <li>Given the nature of the group's operating activities, these can be replicated at other locations with reasonable ease and in a short time frame.</li> </ul>	<p>No change.</p>