



Presentation to Analysts / Investors

Johnson Matthey Group Strategy

2nd February 2011



Cautionary Statement

This presentation 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 and sectors in which Johnson Matthey operates. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a wide range of variables which could cause actual results to differ materially from those currently anticipated.



Introduction and Key Strategic Opportunities

Neil Carson
Chief Executive


Johnson Matthey

JM Executive Board

Neil Carson
Chief Executive

Robert MacLeod
Group Finance Director

Larry Pentz
Executive Director
Environmental Technologies

Bill Sandford
Executive Director
Precious Metal Products

Other Senior Management

John Fowler

Division Director
Fine Chemicals

Jack Frost

Director
Fuel Cells

Barry Murrer

Director
Technology Centre

Nick Garner

Group Director
Corporate and
Strategic Development

Geoff Otterman

Division Director
Catalysts, Chemicals
and Refining

John Walker

Division Director
Emission Control
Technologies

Neil Whitley

Division Director
Process Technologies

Ian Godwin

Director
Investor Relations

Sally Jones

Public Relations Manager

Programme

13.30 Introduction and Key Strategic Opportunities **(Neil Carson)**

14.00 Emissions Legislation, Energy Security and a Low Carbon Economy **(Larry Pentz, Jack Frost)**
Coffee break in this session

15.50 Global Drivers for Precious Metal Products **(Bill Sandford)**
Coffee break after this session

16.35 Global Drivers for Fine Chemicals **(John Fowler)**

17.00 Further Growth - R&D Focus **(Robert MacLeod, Barry Murrer)**

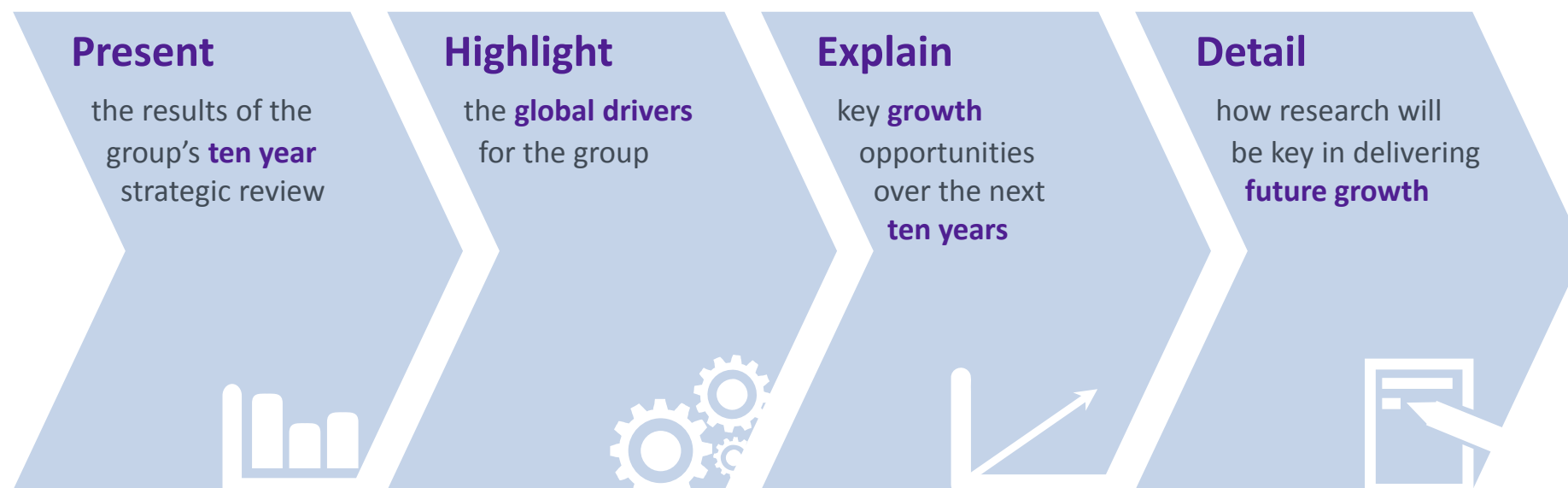
17.25 Summary and Conclusions **(Neil Carson)**

17.40 Q&A

18.10 Drinks Reception **(Restaurant Sauterelle)**

19.00 Dinner

Purpose of the Day

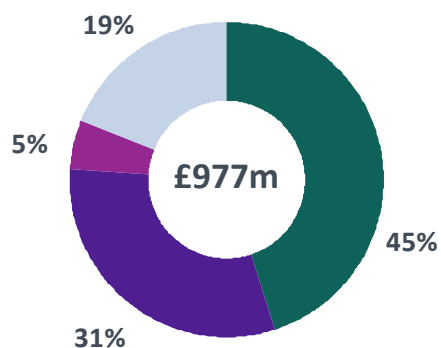


Evolution of the JM Group

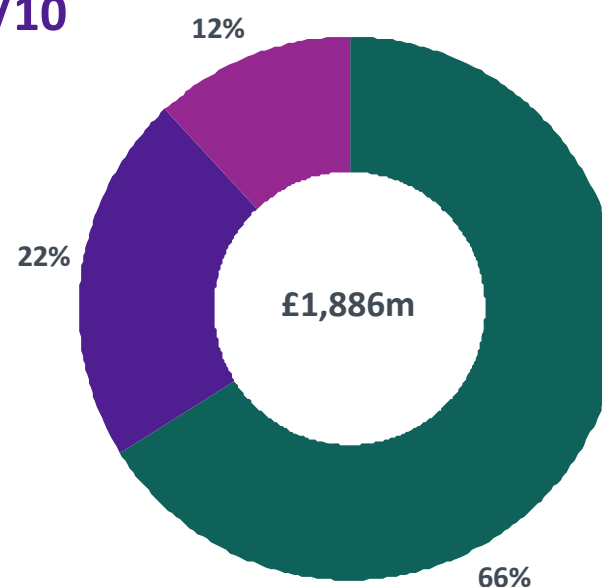
Sales ex pms

Growth in shareholder value from focus on environmental technologies...

2000/01



2009/10



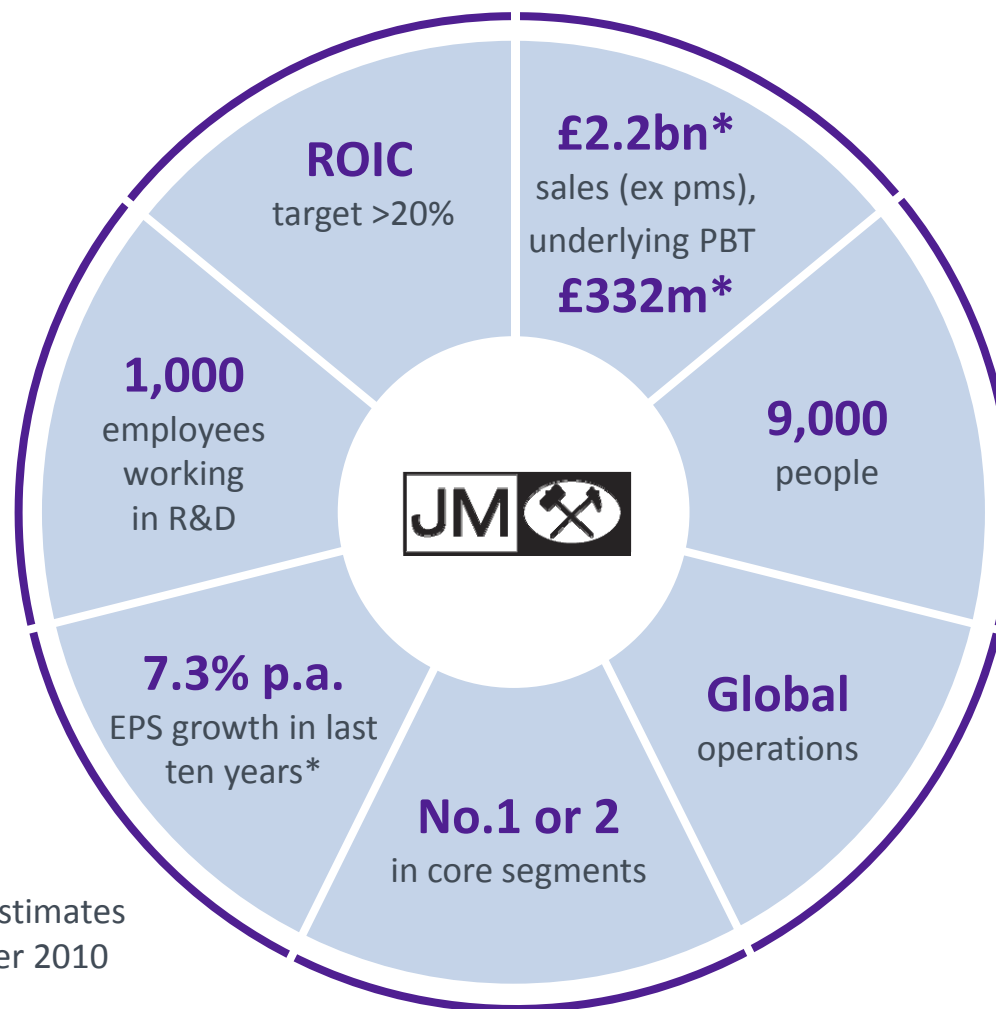
■ Environmental Technologies

■ Precious Metal Products

■ Fine Chemicals

■ Other

Johnson Matthey Today

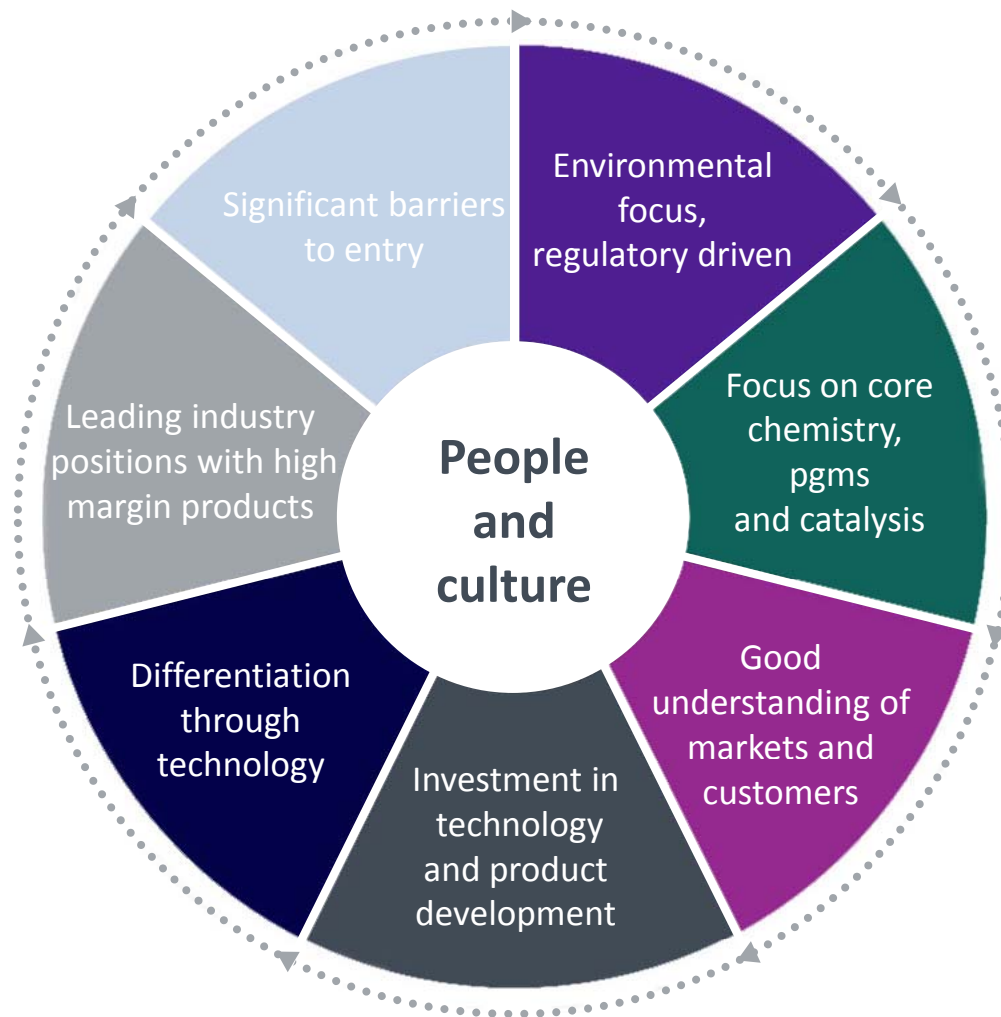


*Based on Vara consensus estimates for 2010/11 of 17th December 2010 (EPS of 113.7p)

JM Attributes

- Common features of a successful **JM business**
- Provides **focus** for future investment
- **Not the sole determinant** of a good JM business

A leading **technology** based company

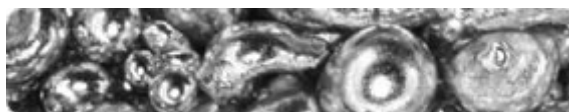


JM's Key Strengths



Expertise in the fundamental science that underpins our technologies

- Catalysis, materials chemistry, nanotechnology, pgms



Deep involvement in and understanding of pgms

- Expertise spanning refining, pgm chemistry, market dynamics



Ability to maximise synergies

- E.g. complementary offering of DPT technologies and JM's process catalysts



Trusted partner with customers, regulators etc.

- Fundamental understanding of what our products do for our customers – enables us to make better products
- Regulatory understanding, materials handling – managing pgms, controlled substances



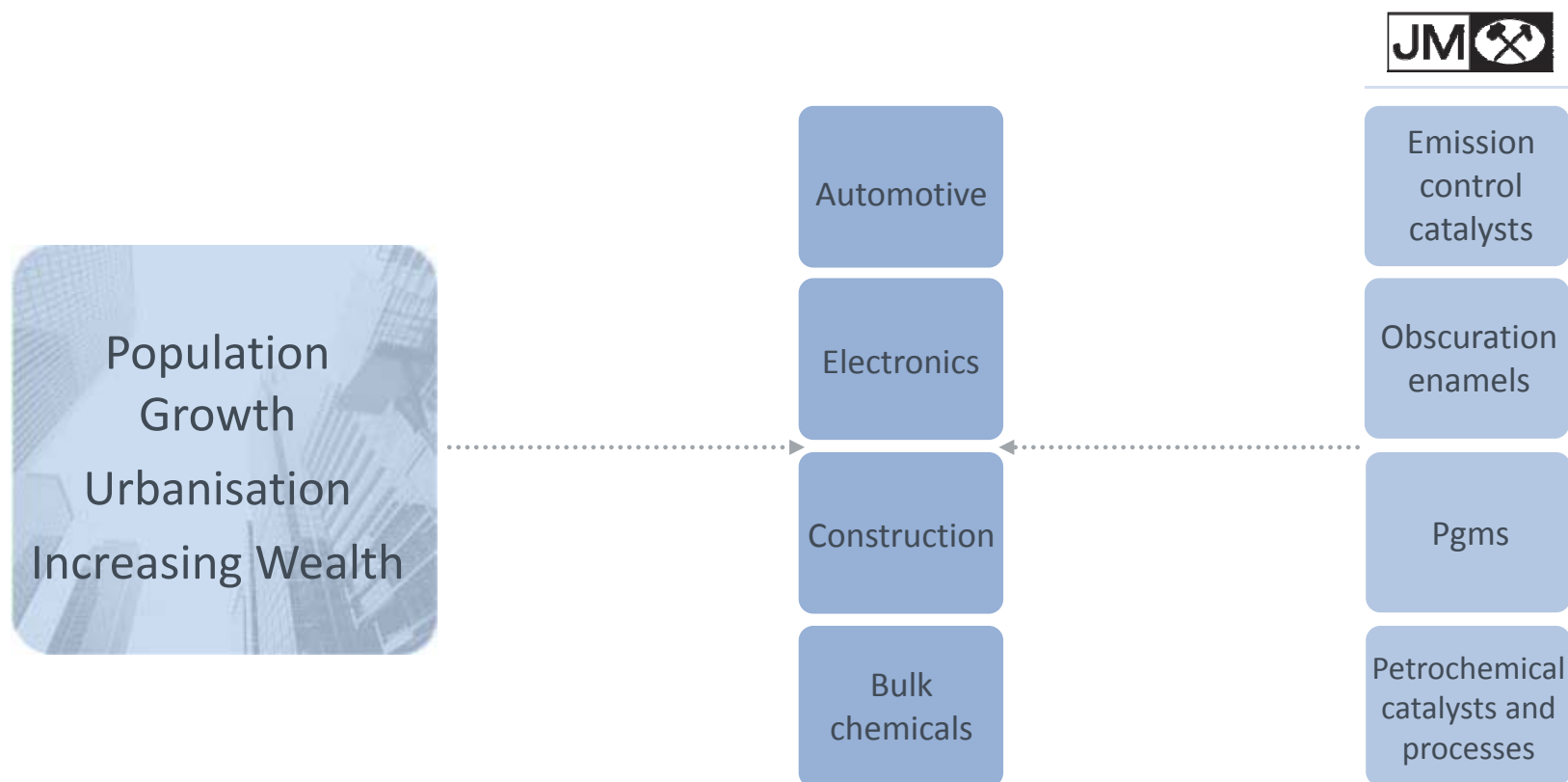
Reputation

Global Drivers Impacting the Chemical Industry*

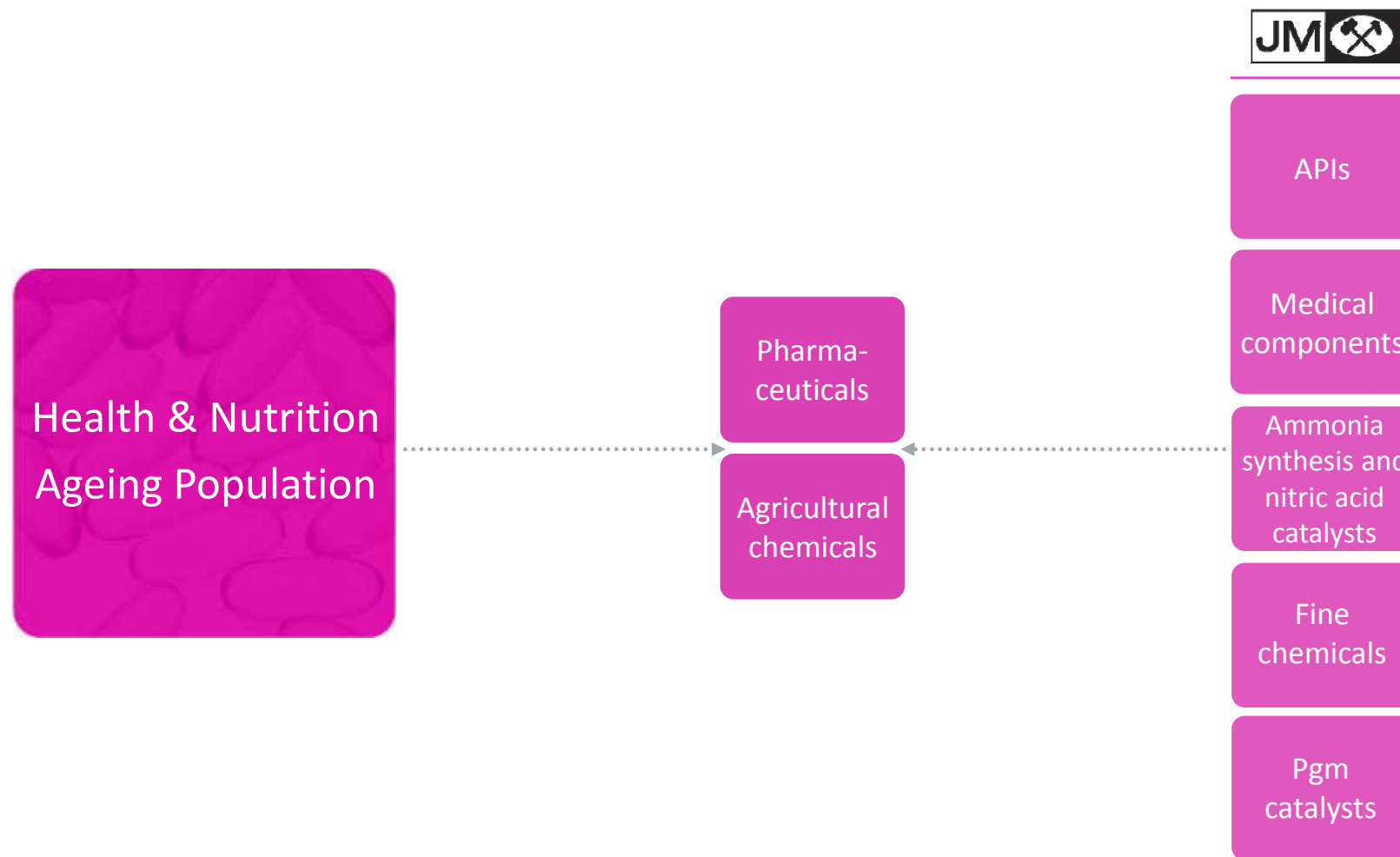


* Based upon key megatrends identified by Goldman Sachs Global Investment Research

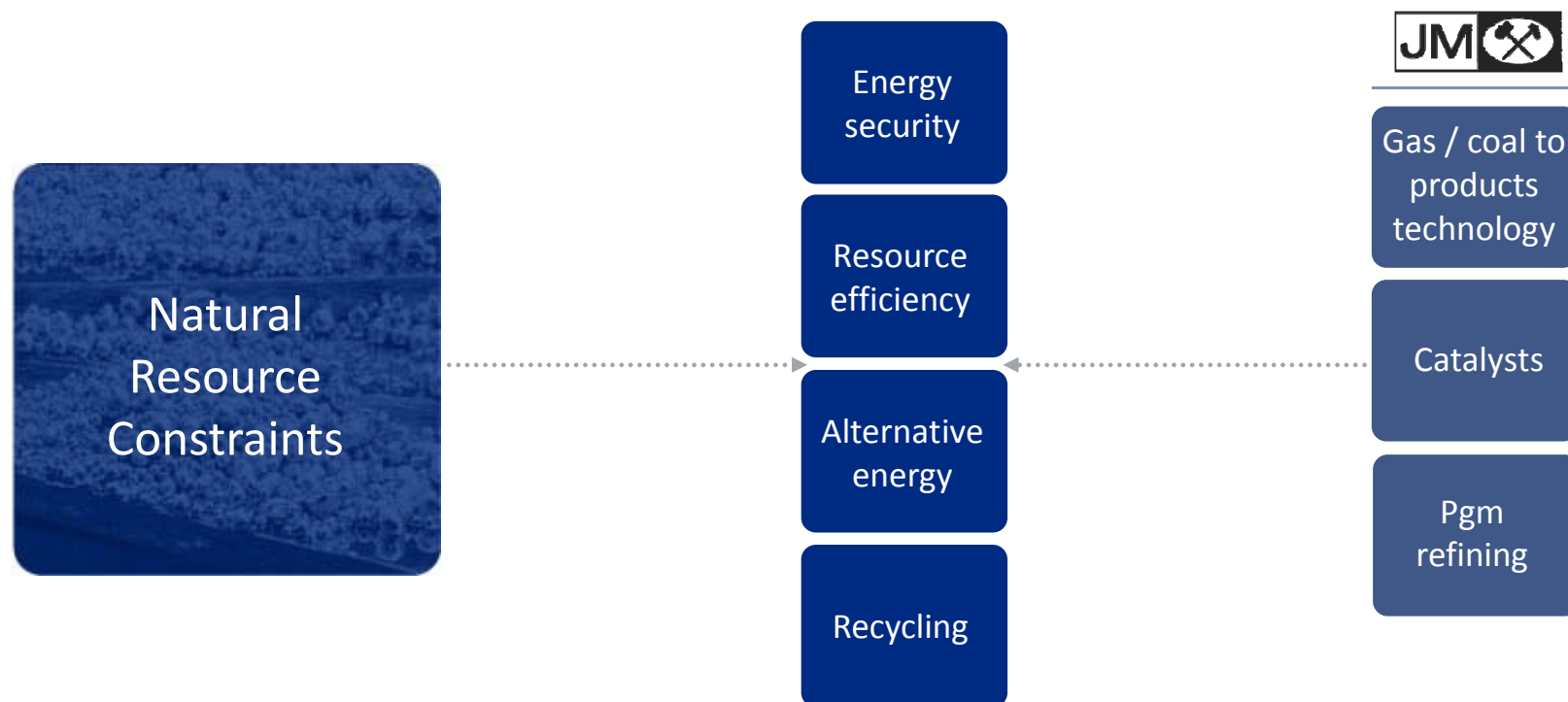
Global Drivers Impacting the Chemical Industry



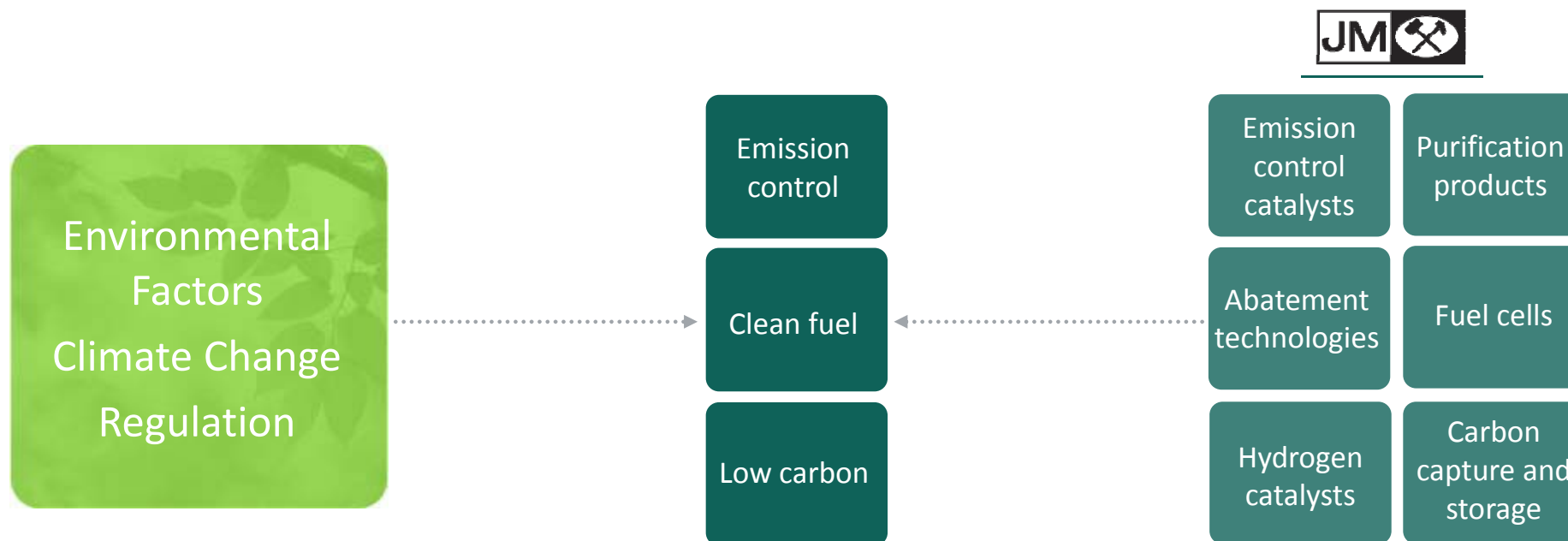
Global Drivers Impacting the Chemical Industry



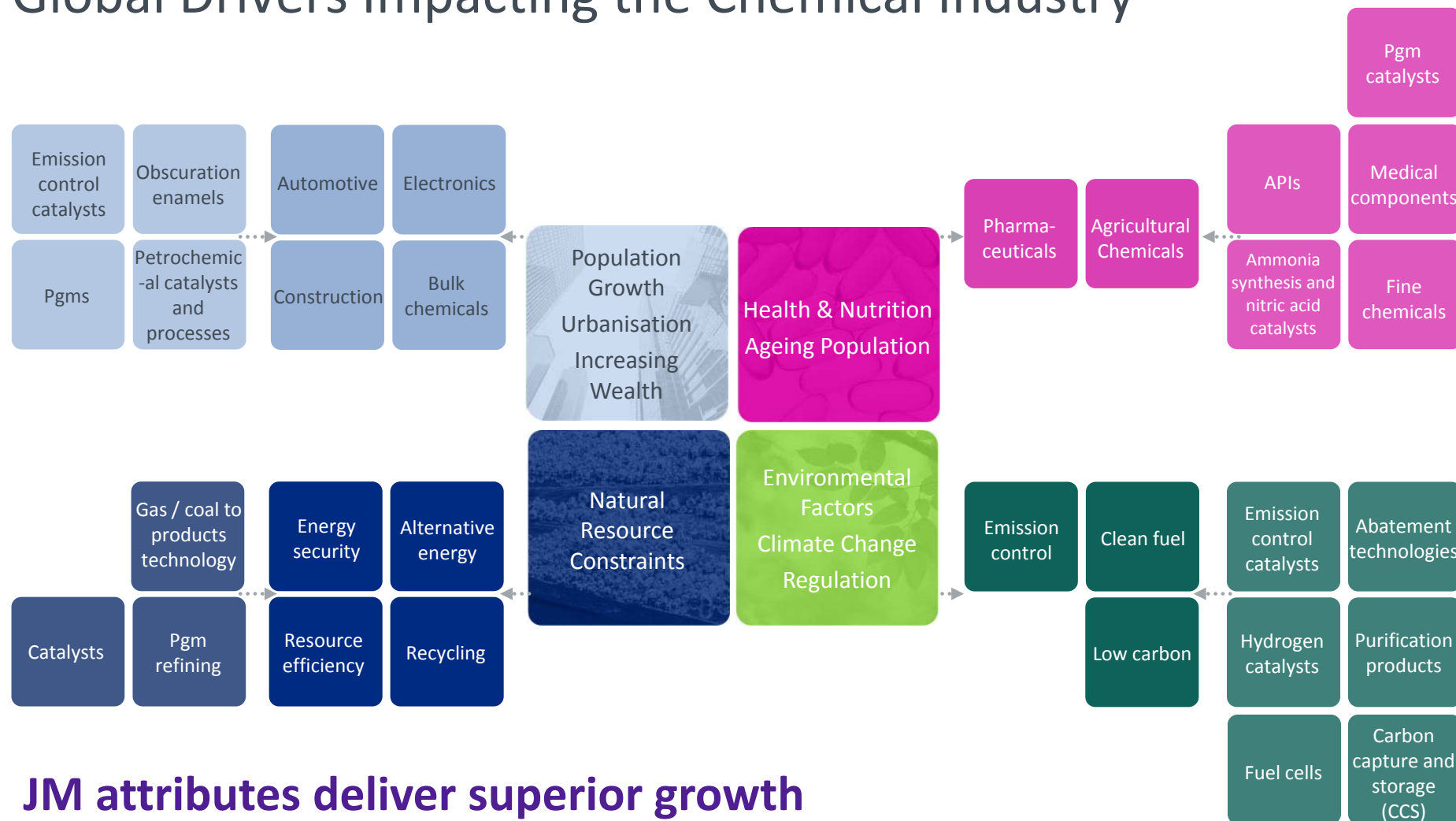
Global Drivers Impacting the Chemical Industry



Global Drivers Impacting the Chemical Industry



Global Drivers Impacting the Chemical Industry



JM attributes deliver superior growth

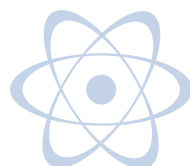
Our Strategy to Deliver Growth in Value

Key Elements Unchanged



Continued core focus on leading edge catalysis driven by:

- Ever improving air quality
- Energy security
- Sustainability
- Development in emerging markets

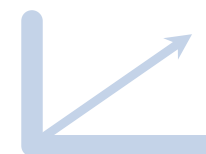


Maintain differentiation through technology

- Enhanced investment in R&D in core markets



Strong position in pgms remains an intrinsic part of group



Primary focus is organic growth

Our Strategy to Deliver Growth in Value

Increased Emphasis on:



Developing new opportunities underpinned by our core chemistry expertise

- Materials science and surface chemistry



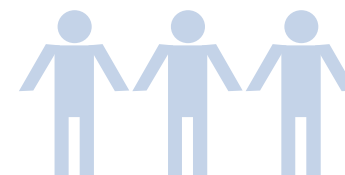
JM attributes

- Provides focus for investment and growing new business



Manufacturing excellence

- High technology, high efficiency



People and culture

- Globalisation drives integration of cultures

Our Strategy – Looking Forward

For first five years:

- Strength in core segments anticipated to deliver **double digit growth** in group sales (ex pms)
 - Higher growth in catalyst segments
 - Mid to high single digit growth in other businesses
- Some **growth** in EBITDA margins (ex substrates)

Looking further ahead:

- Good **opportunities** in existing segments
- Step change in development of fuel cell market
- New **opportunities** through R&D

Our Strategy – Looking Forward

Increase total R&D spend:

Existing businesses

- Up from **£100m** p.a. to **£135m** p.a. to extend technology advantage

Targeting new opportunities

- Initially up to **£5m** p.a.
- New structure in place
- New **£200m** p.a. business in ten years

Capital efficiency remains embedded:

- ROIC target **>20%**
- Net debt (incl. pension) / EBITDA between **1.5 to 2.0** times
- Average capital expenditure **1.2 to 1.3** times depreciation

Our Strategy – Sustainability and Manufacturing Excellence

By 2017:



Achieve carbon neutrality



Achieve zero waste to landfill



Halve key resources consumed per unit of output



Achieve a zero 'greater than three day accidents' safety target



Implement ISO 14001 at all manufacturing sites by 2010



Reduce annual incidence of occupational illness cases by at least 30% by 2013/14

Summary

Strategy review emphasised attributes and strengths of JM

Major global trends provide strong drivers for growth

Key elements of strategy unchanged

Further focus on growth through R&D

Group well positioned for long term growth



Johnson Matthey



Emissions Legislation, Energy Security and a Low Carbon Economy

Larry Pentz

Executive Director, Environmental Technologies


Johnson Matthey

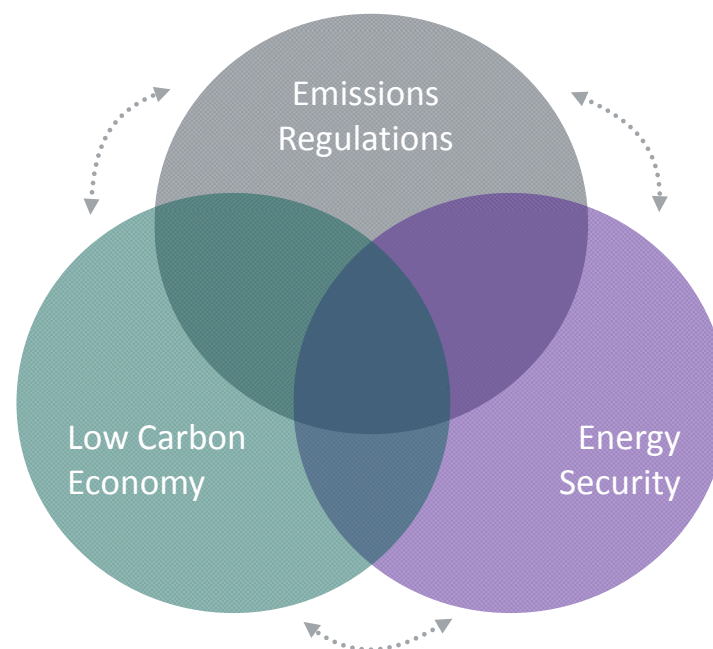
Key Strategic Opportunities – Emissions, Energy and Low Carbon

A convergence of trends supports an environmental strategy...

Global Trends

- Growing population
- Increasing wealth
- Urbanisation
- Global warming
- Shifting energy sources
- Respiratory health concerns

Resulting Focus

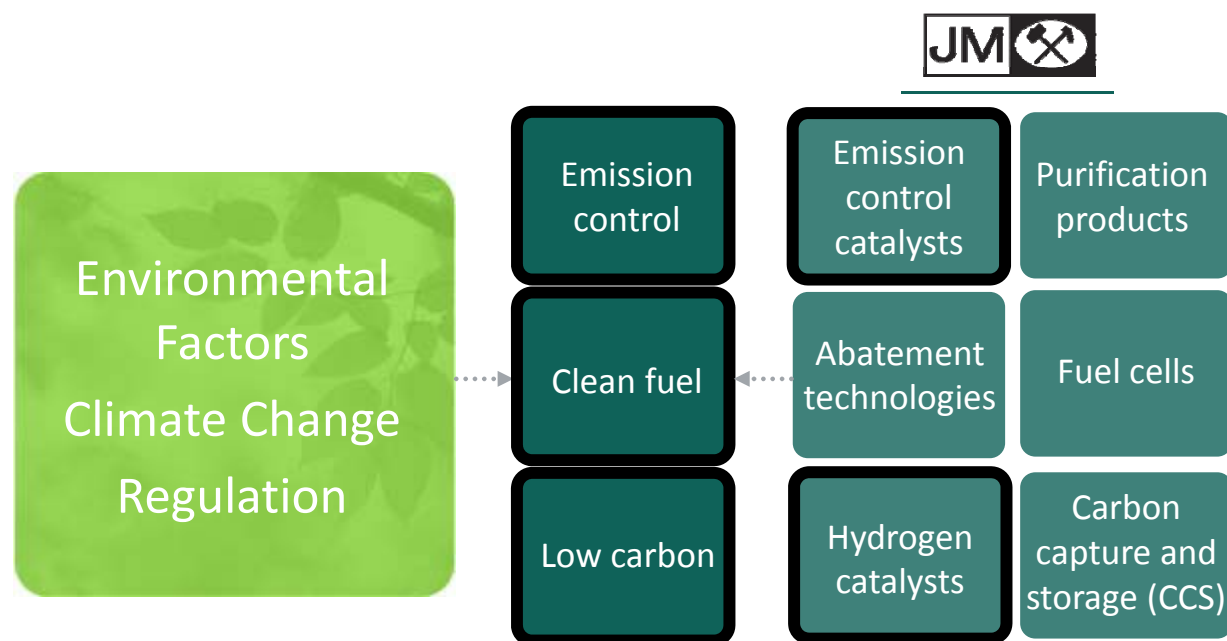


...creating a 'sweet spot' for JM technology



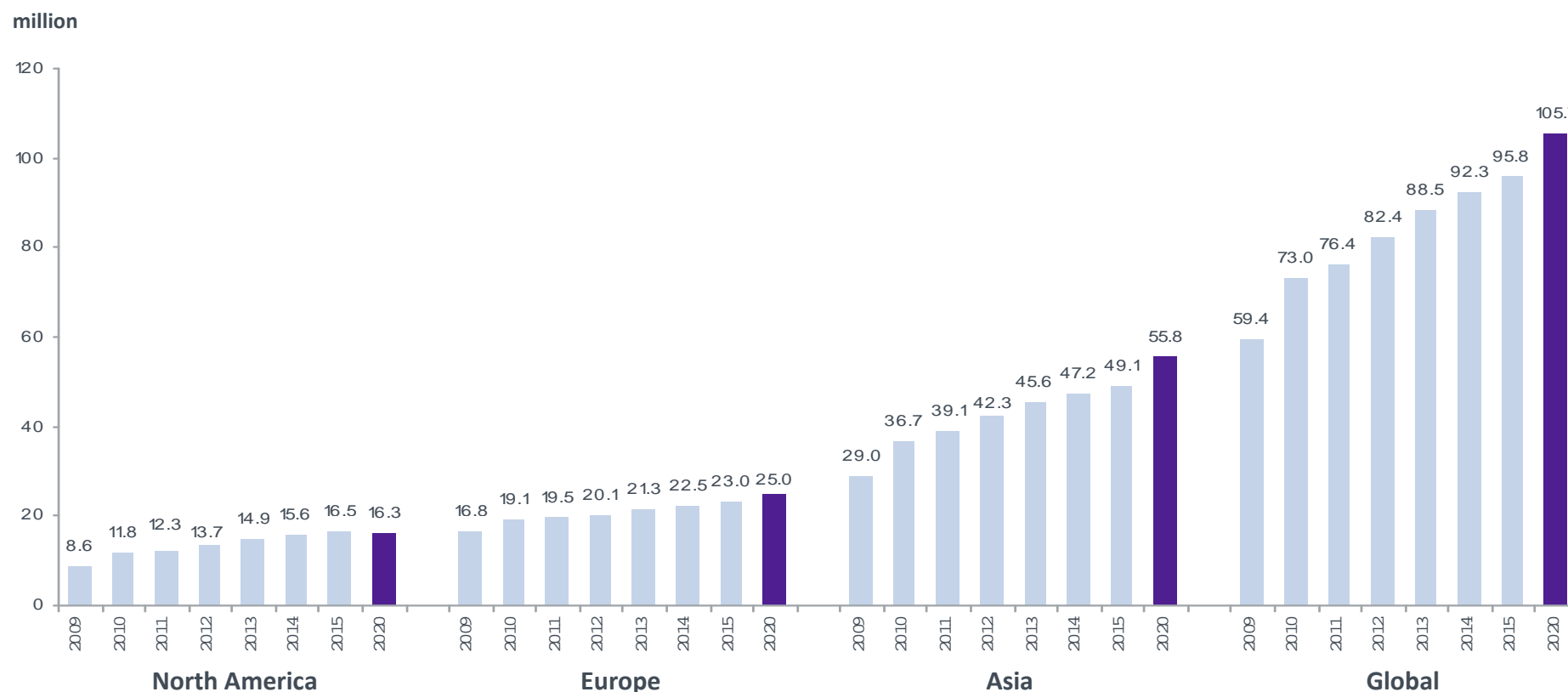
Emissions Regulations

Legislation Drives Growth



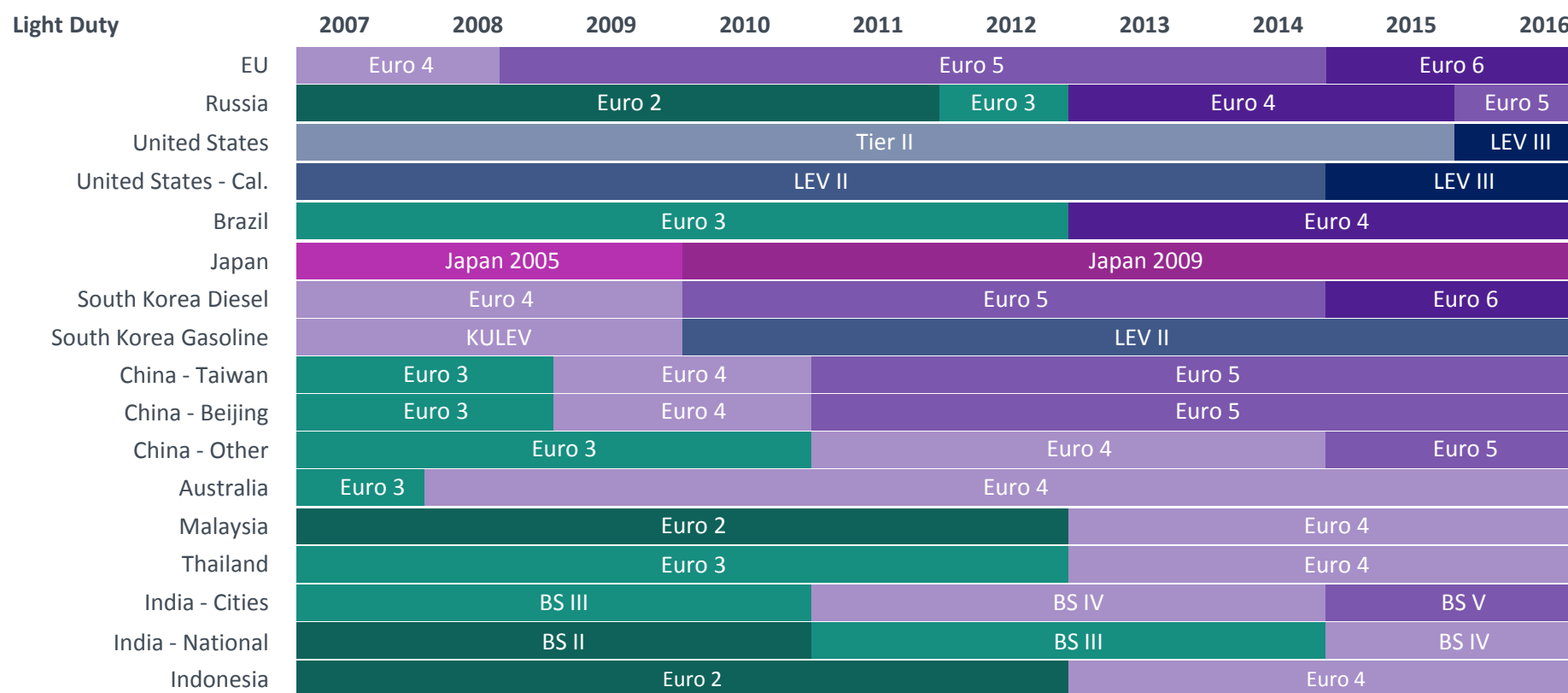
- **~50%** JM sales ex pms driven by legislation
- **Tighter legislation** still to come
- **Substantial growth** over next five years

Light Duty Vehicle Production Continues to Grow, Shift to Asia

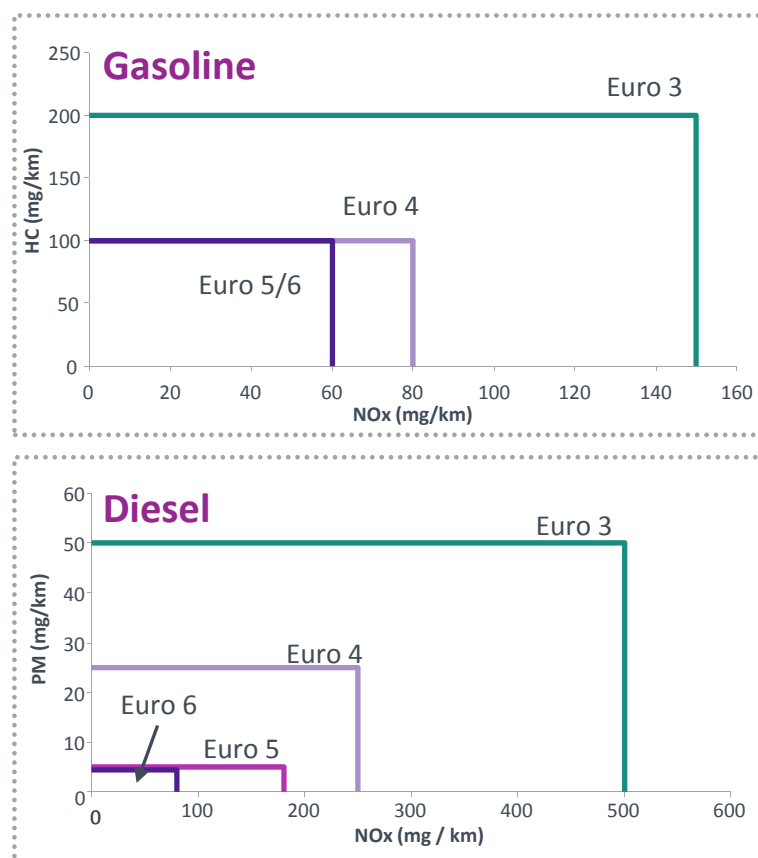


Source: IHS Global Insight (December 2010)

New and Tighter Regulations Across the World



Tighter Regulations Drive Increased Value



- **Lower pollution** levels
- Particulate number legislation
- More stringent **in-use compliance**
- More dynamic test cycle proposed
- Current and future standards for ROW



- Requires improved catalyst technology

OEMs have Options to Achieve Regulations

- Number of catalysts (or volume) / vehicle will vary
- Powertrain vs emission control cost trade off
- Tighter regulations require **improved catalyst** technology
- Lower pgm loading requires **improved catalyst** technology
- Wide range of catalyst value per vehicle



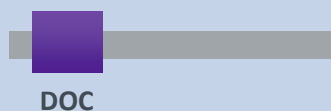
- Ensures continued catalyst value growth

Light Duty Diesel – A European Market

- **Particulate matter** is a major concern
- Potential of markets outside Europe?



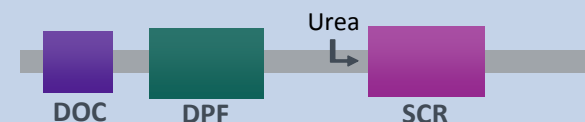
- Tightening regulations add additional catalysts:



Euro 4:
Oxidation catalyst (DOC)



Euro 5:
DOC plus diesel particulate filter (DPF)



Euro 6:
DOC + DPF plus NO_x control

Additional Greenhouse Gas Regulations Provide Further Opportunities

- CO₂ – a new pollutant
- A product of combustion
- Cannot be catalytically transformed
- Can be reduced by:
 - Consumer decisions – smaller powered engines
 - **Powertrain development**

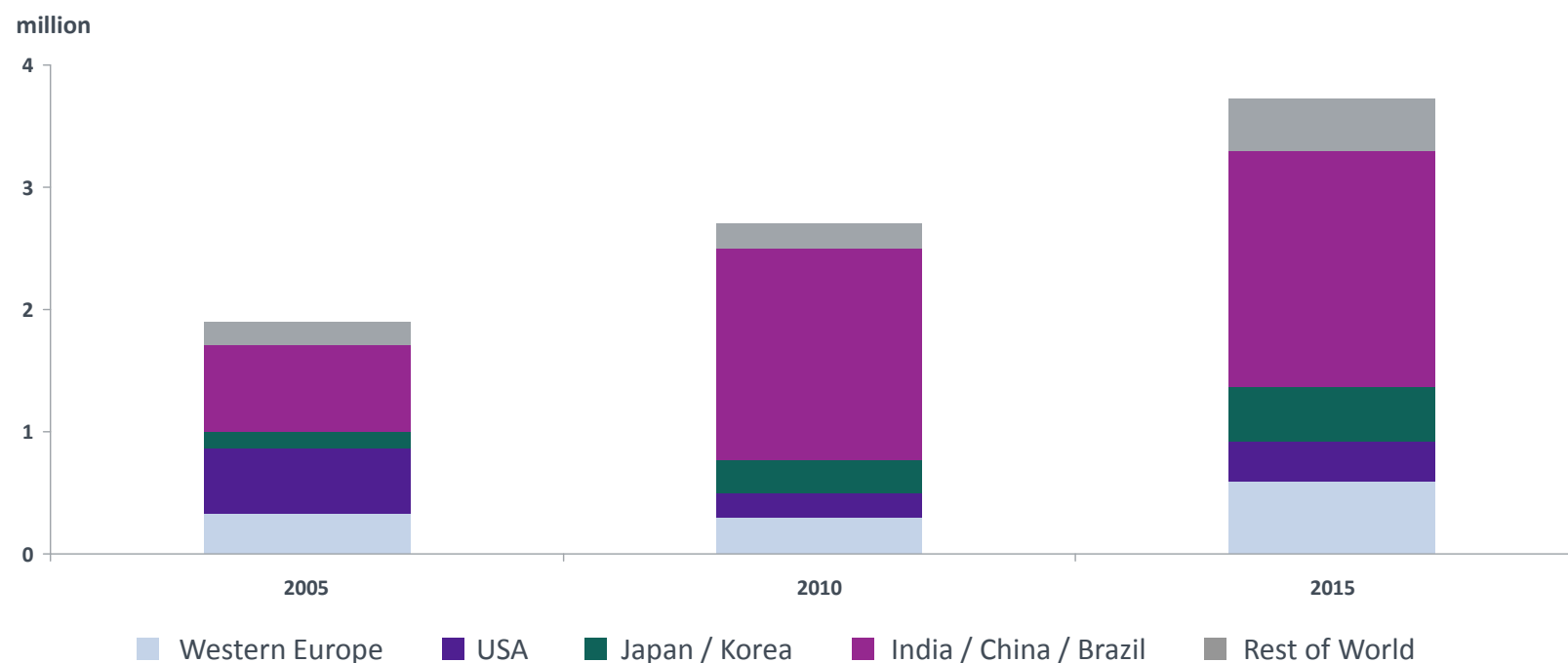


- Will require emission control modifications
- Net benefit in catalyst value

Powertrain Development	Additional Catalyst Value
Smaller powered engines	X
Hybrid	✓
Direct injection	✓
Turbocharging	✓
Start / stop	✓
New engine technologies	✓
Electric vehicles	X

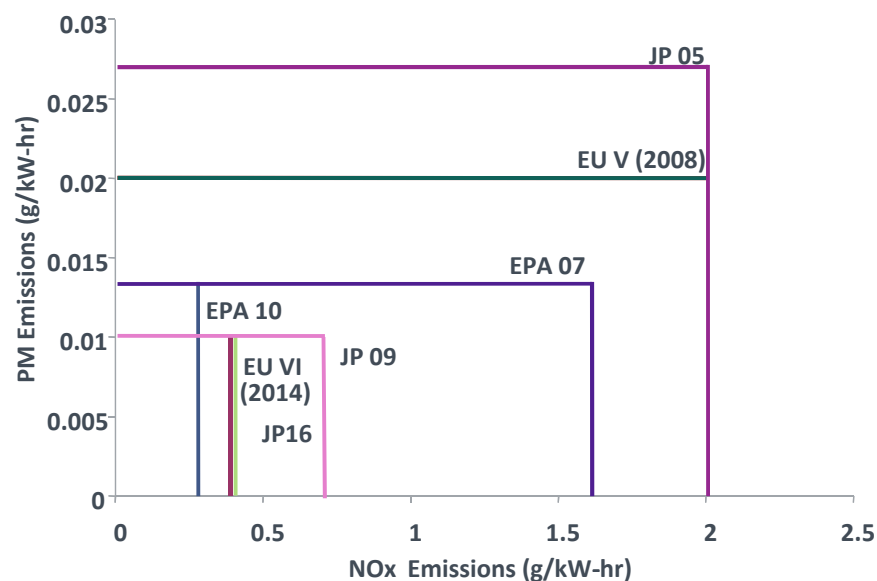
Heavy Duty Vehicle Volumes Will Grow But with Annual Volatility

No. of Vehicles (>6t)



Source: JD Power and IHS Automotive

Tighter Regulations – New Countries, Additional Vehicles



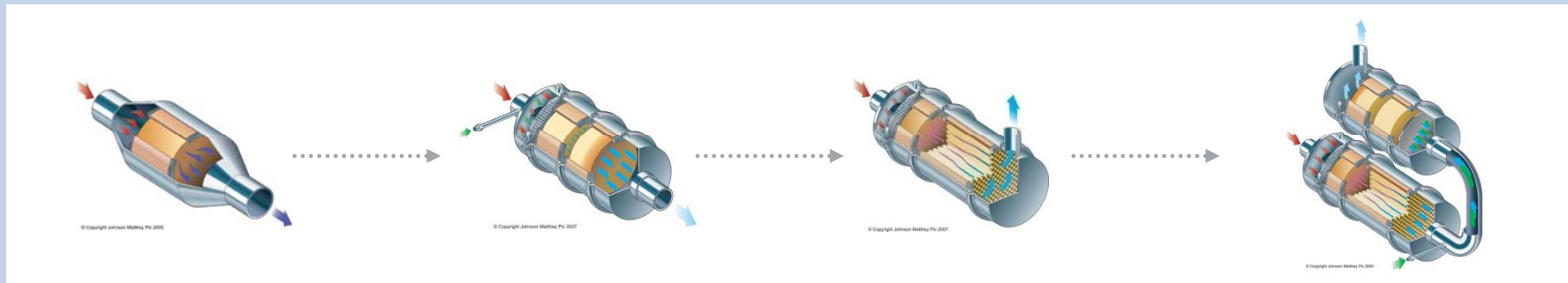
	New Models	All Models
Europe		
Euro IV	01-Oct-05	01-Oct-06
Euro V	01-Oct-08	01-Oct-09
Euro VI	31-Dec-12	31-Dec-13
United States		
US 2007		01-Jan-07
US 2010		01-Jan-10
US 2014?		01-Jan-14
Japan		
New Long Term		01-Oct-05
Post New Long Term		01-Oct-09
JP16		01-Oct-16
China		
Beijing – Euro V		2012
Rest of country – Euro IV		2013
India		
BS IV – Major cities		2010
BS IV – Nationwide		2014
South Korea		
Euro V	01-Jul-09	01-Jul-10
Russia		
Euro IV	01-Jan-10	01-Jan-12
Brazil		
Euro V		2012

Increased Value with Tightening Regulations

- Engine management and emission control trade offs



- Alternative choices but increasing catalyst value per vehicle



DOC

US 04
Retrofit
Tier 4A

SCR

Euro IV
Euro V
Tier 4A

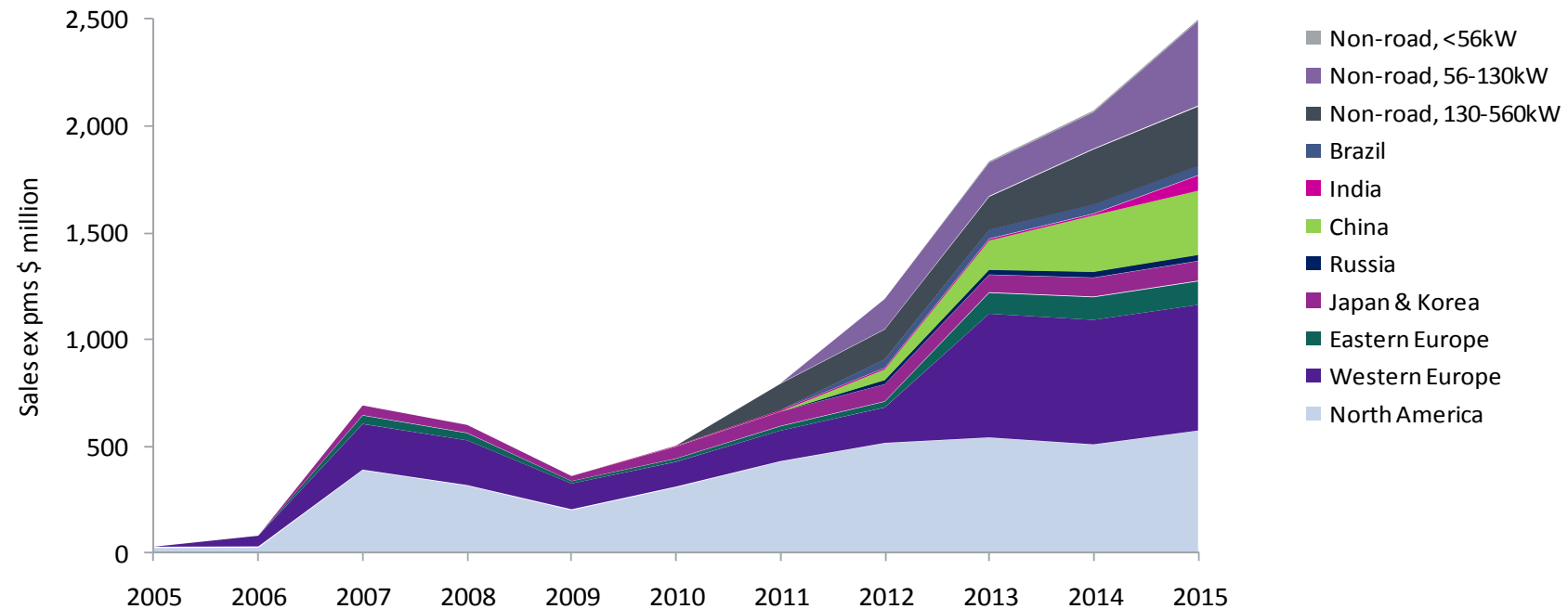
CRT®/CCRT®

US 07
Tier 4A

SCRT®

US 2010
Euro VI

A \$2.5bn Market by the end of 2015



Source: JD Power and JM estimates

Technology Investment to Keep Pace with Growth

R&D dimensions:

- 5% sales ex pms
- Eight R&D facilities
- 50 test cells globally
- 500 R&D people (11% of ECT)

Investment in:

- Applied research in materials
- Catalyst formulation design
- OEM specific application development
- Manufacturing techniques

Development of:

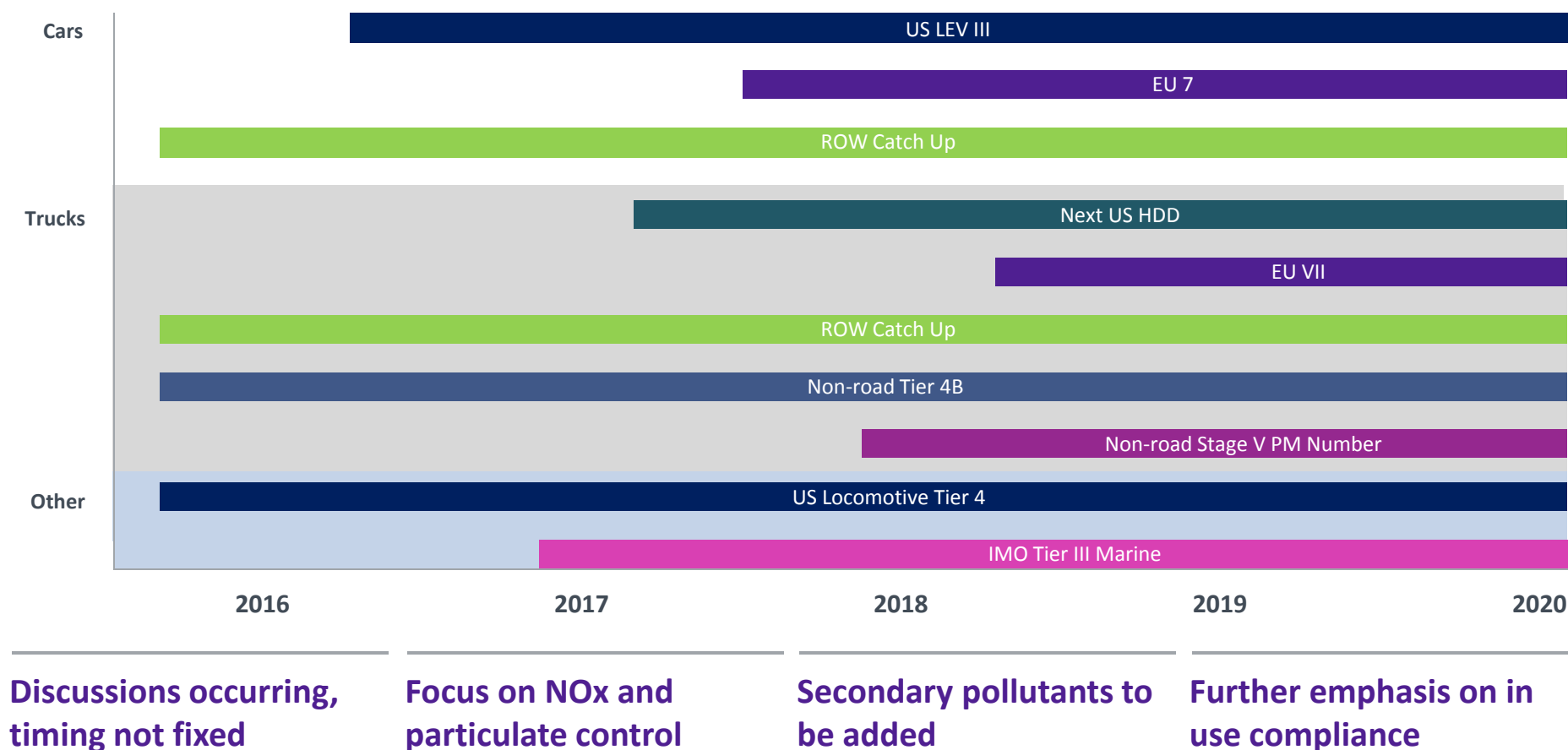
More efficient catalysts

Lower pgm usage

Combination of technologies

Greater focus on 'in-use' emissions

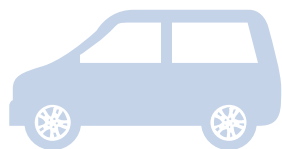
Emissions Regulations – Further Tightening to Come



Emissions Regulations – Opportunities for Process Technologies



Global tightening of sulphur levels in fuels



Methanol substitution in transportation fuels

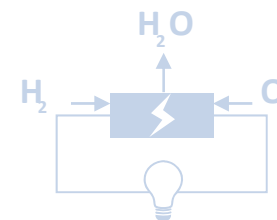


Alternative fuel mandates

- Biofuels, natural gas, GTL diesel etc.



Oil refining discharge limits e.g. SO_x, NO_x, Hg



And for fuel cells – zero emission vehicle requirements

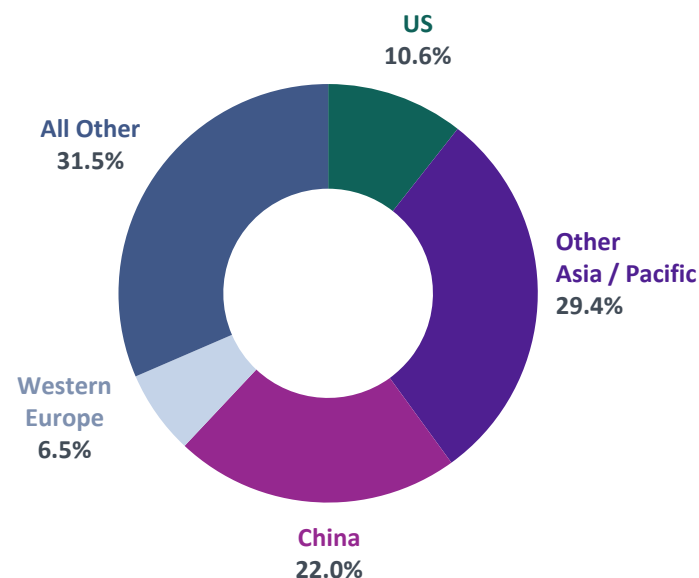
Tightening Regulations Drives Hydrogen Market

- Low sulphur fuel, heavier oil, diesel demand drive hydrogen
- Hydrogen demand increases, particularly in Asia
- Hydrogen installed catalyst market of **\$800m** – averages **\$200m** p.a.
- Expect hydrogen market growth of 6 to 8% p.a. over next five years



- 35% average market share today
- Strong presence in Asia
- Good relationships with major industrial gas suppliers

Share of Market Growth by Region (72.7 billion cubic meters)



Source: Freedonia Group Inc.

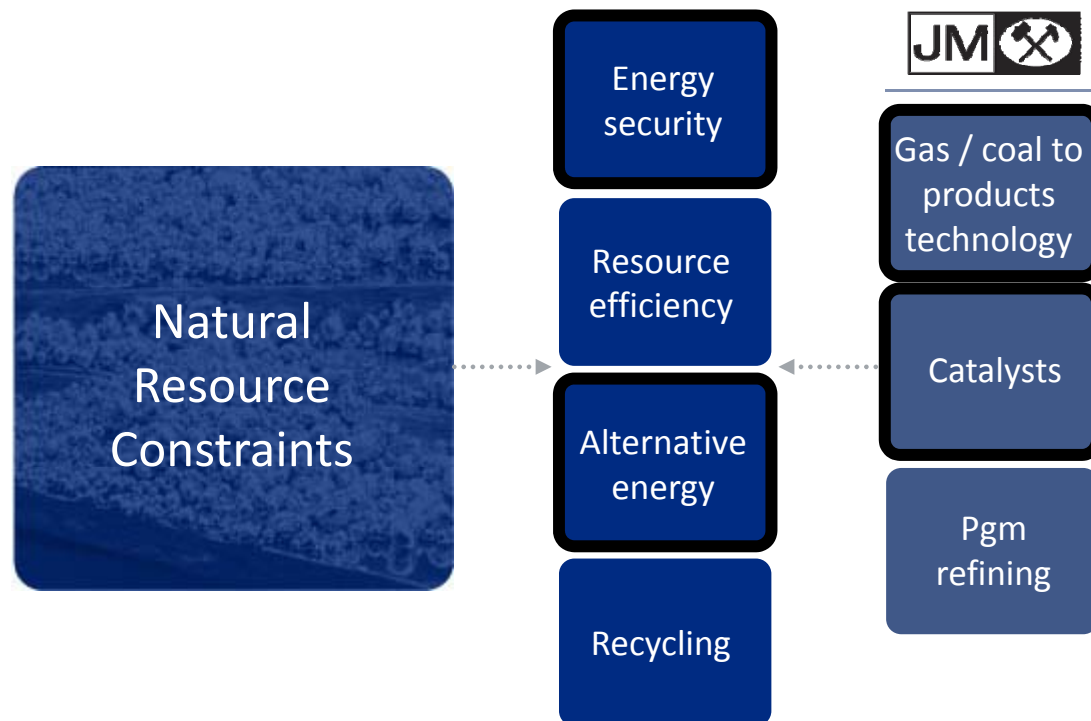
Emissions Regulations – Summary

- Legislation drives **growth**
- Vehicle volumes expected to be up in both light and heavy duty vehicles
- Fuel efficiency requirements offer **new opportunities**
- Tighter legislation provides **added value** for JM
- **Substantial growth** over next **five years**



Energy Security

Opportunities in Energy Drive Growth



- **~10%** JM sales driven by natural resource utilisation
- **Energy security** concerns result in increased interest in coal / gas to products
- **Double digit** sales growth over next five years

More Value from Coal

- Coal is an abundant and key strategic resource
- Primarily used to produce electricity and for industrial consumption
- Energy consumption **growing in China**
- Power generation technology **improving**

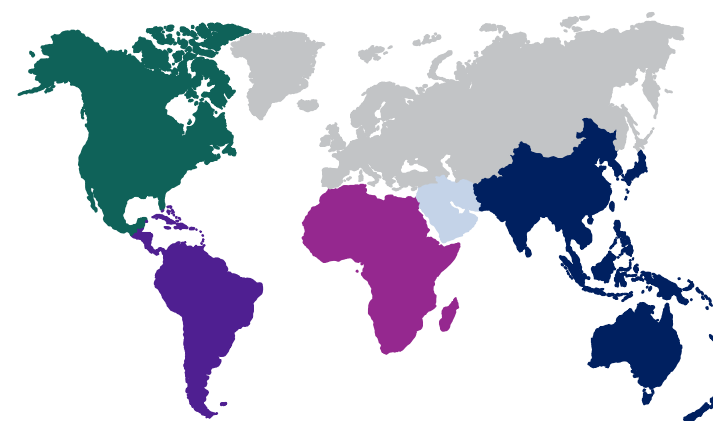


- New processes use coal as substitute for natural gas and oil

Proved Reserves at end 2009

(Thousand million tonnes)

(anthracite and bituminous coal shown in brackets)



Middle East	1.4 (1.4)
S. and Cent. America	15.0 (7.0)
Africa	32.0 (31.8)
North America	246.1 (113.3)
Asia Pacific	259.3 (155.8)
Europe and Eurasia	272.2 (102.0)

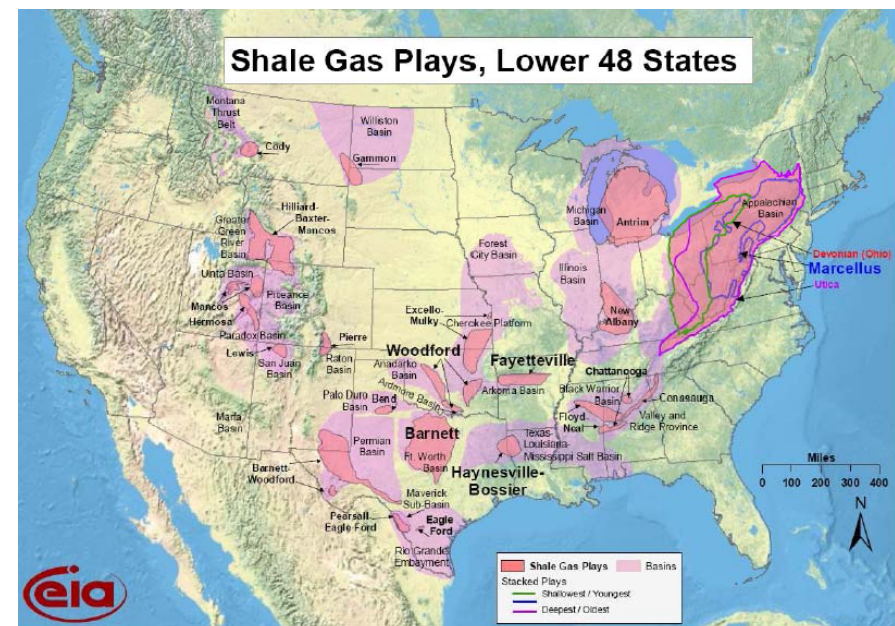
Source: BP Statistical Review of World Energy 2010

Increase in Useable Natural Gas Reserves

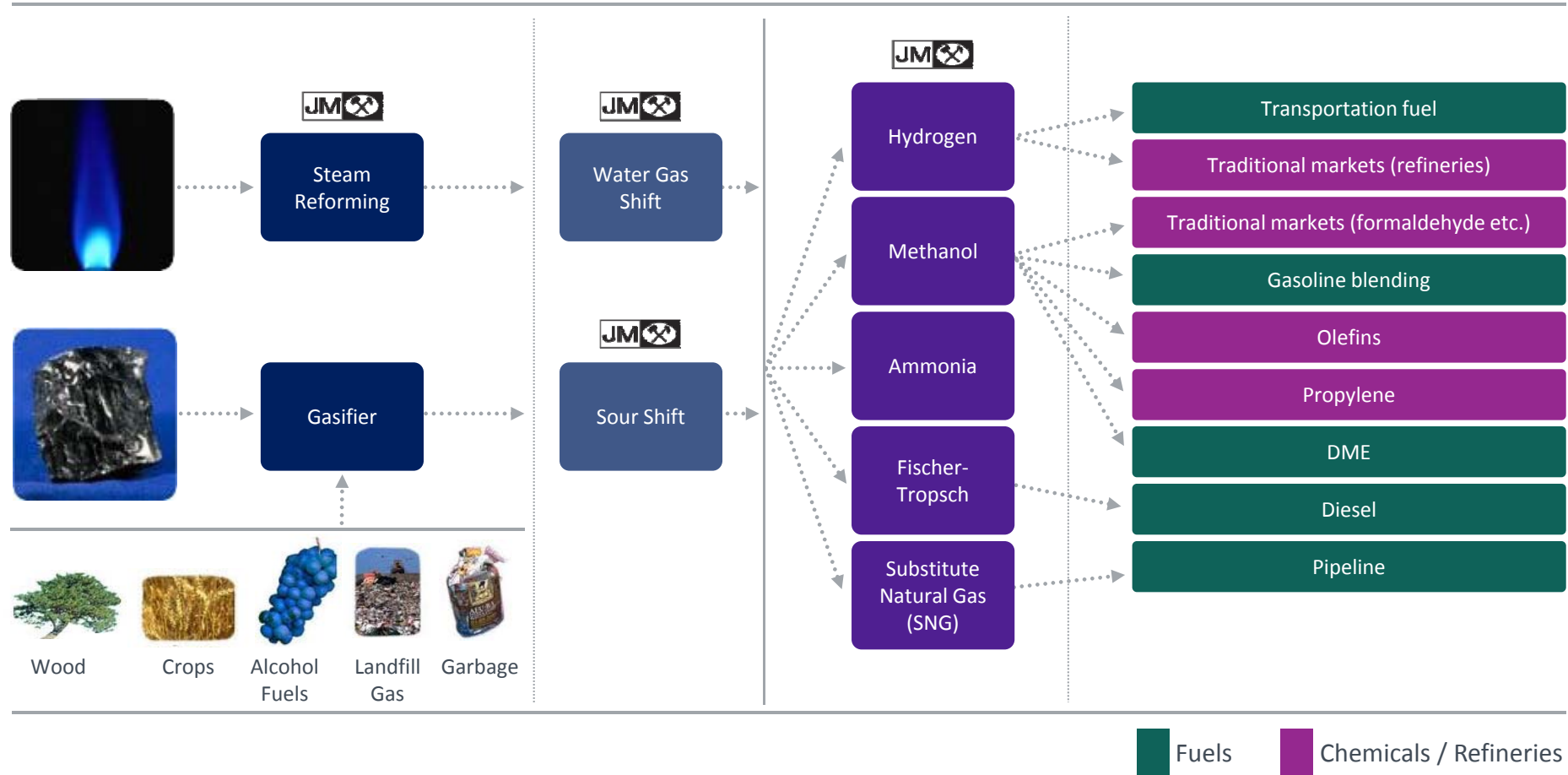
- Rapid deployment of **new** drilling technique
- Projected shale gas will supply **40%** of US gas by **2020**
- Shale formations found around the world
- Improved natural gas transport infrastructure
- Gas pricing decoupled from oil



- Growth potential as a feedstock for chemicals and fuels



Coal, Gas and Biomass to Products



Alternative to Oil Based Feedstocks

- Substitute for transportation fuels
- Alternative routes to petrochemical products
- Trade off between financial cost and reduced imports



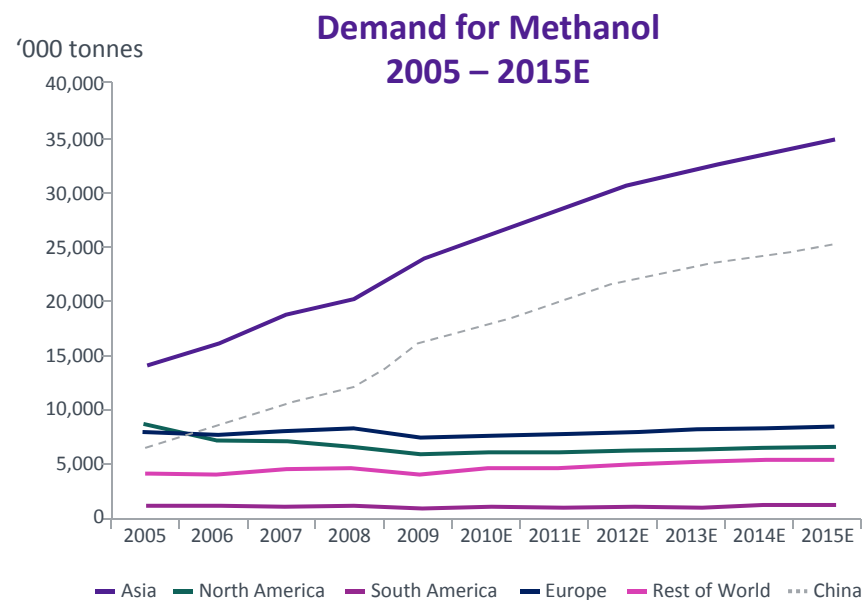
- Development and growth of process technology and catalysts

Methanol Demand Remains Significant in China

- Shift towards **energy**
- Fuel blending – M5, M15, M85, M100
- Methanol to Olefins now proven (Shenhua)
- Global methanol installed catalyst market of **\$400m** – averages **\$100m** p.a.



- 45% average market share today
- China focusing on larger more efficient plants
- Well positioned with new market leading JM Apico catalyst and technology

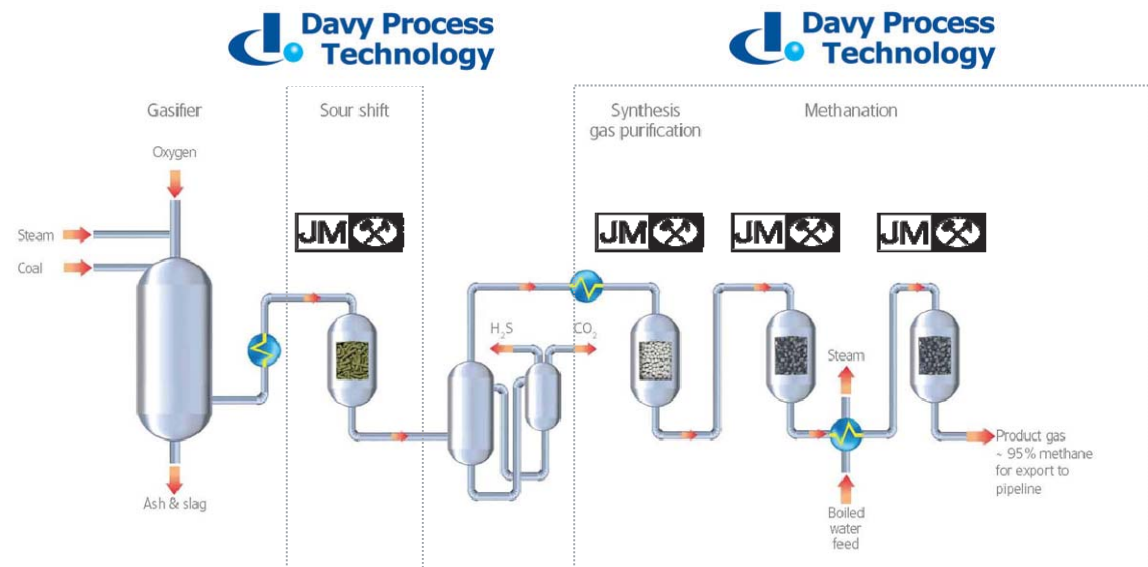


Coal to Substitute Natural Gas (SNG)

- China is short of natural gas
- SNG can utilise natural gas pipeline infrastructure
- Potential outside of China – **US, Korea**



- Initial licensing and catalyst sales
- Catalyst replacement beyond
- JM awarded four projects to date (three in 2010/11)



Energy Security Drives Growth for Process Technologies

- Coal to substitute natural gas (SNG)
- Coal to methanol
- Coal / gas to liquids and compact GTL
- Increased gas processing and purification
- Biomass conversion



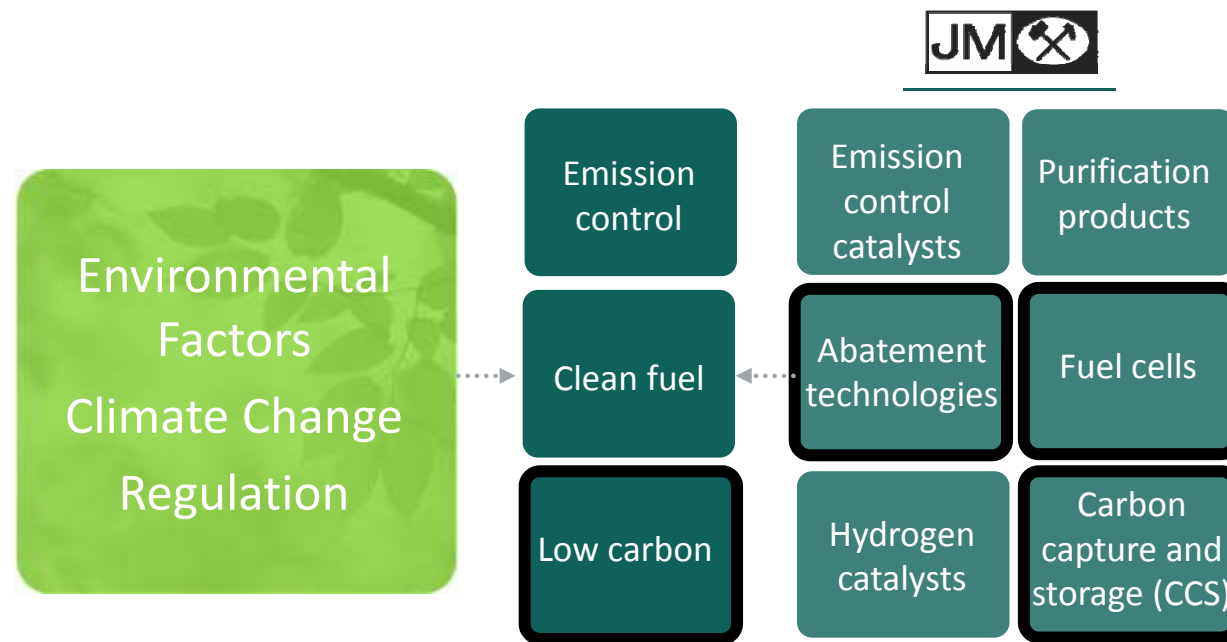
- Double digit growth over next five years





Low Carbon Economy

New Opportunities from a Low Carbon Economy



- Developing markets – some **early commercialisation**
- Technologies play to JM's strengths
- Potentially **large markets** e.g. fuel cells

Low Carbon Economy

JM has a range of core technologies which will develop over the next five years...



Energy and resource efficiency

- Advanced gas heated reformer
- Process and catalyst improvements
- Fuel cell vehicles



Carbon capture and storage

- Syngas technology for precombustion and capture



Greenhouse gas abatement

- New markets for N₂O abatement catalyst
- Coal methane abatement technology



Renewable and low carbon energy technologies

- Advanced biofuels technology and catalysts
- Silver inks for photovoltaics
- Fuel cells for CHP applications

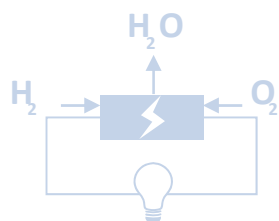


The Low Carbon Economy – Fuel Cells

Jack Frost
Director, Fuel Cells


Johnson Matthey

Fuel Cells



Fuel cells

- A **clean efficient electricity** generation technology
- Central to the development of the low carbon economy, **reducing urban emissions** and providing energy diversity and security
- **Good fit with JM core skills** in catalysis, technology and precious metals and with our strategic focus

JM and fuel cells

- Targeted the key catalytic components of the fuel cell – the **membrane electrode assembly (MEA)** as our primary product
- **Strong parallels** with our vehicle emission control catalysis business

Fuel cells and cars

- Electric cars **set to grow** in importance driven by:
 - Zero emission regulations
 - Decarbonisation of the transport sector
 - Energy security

The Nature of Electric Cars



Electric cars

- **Quiet, very efficient** and non-polluting at the point of use
- Electricity can be produced from a variety of fuels including **low carbon fuels**



Batteries are an important technology for electric cars but...

- Limited range, heavy, long refuelling times



Consensus¹ that electric vehicle fleet will be a combination of...

- Plug in hybrid electric vehicles (PHEV) with an internal combustion engine (ICE)
- Battery electric vehicles (BEV)
- Fuel cell electric vehicles (FCEV)



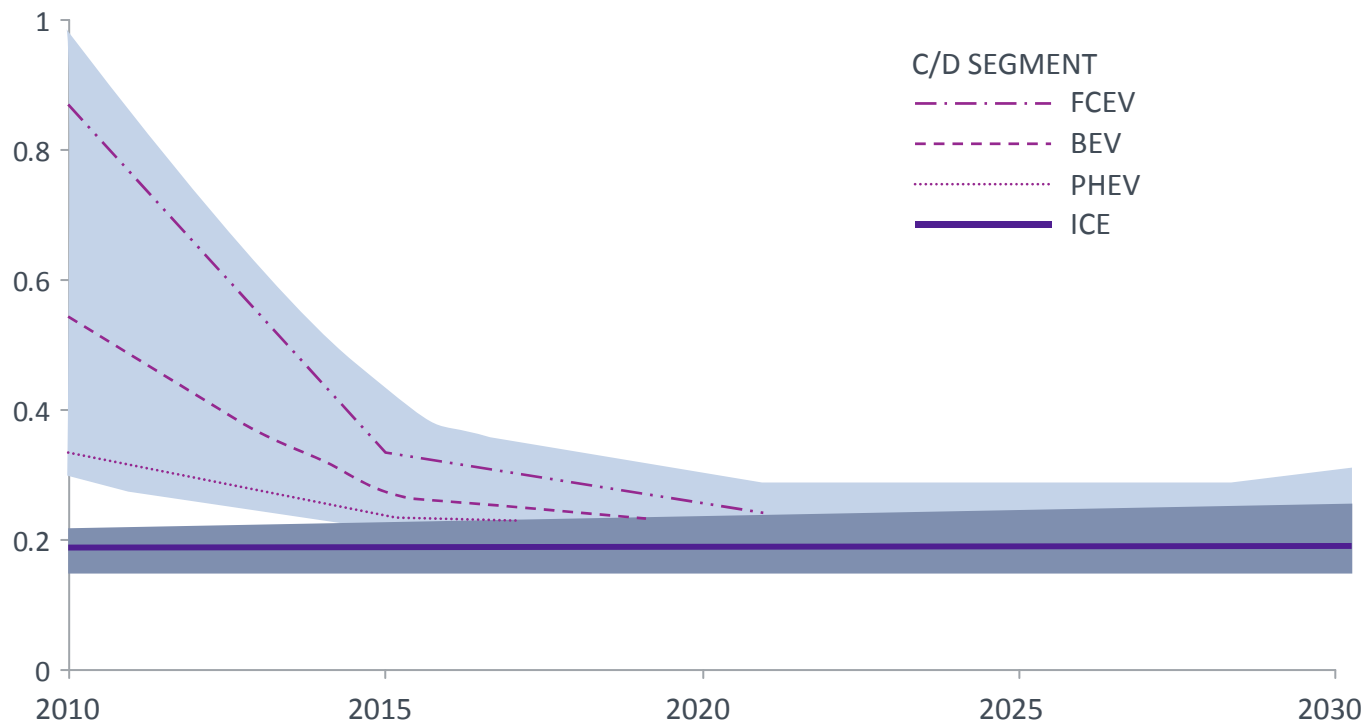
Hydrogen supply infrastructure

- **Cheaper** than a battery charging infrastructure
- Only a small fraction (5%) of the total cost of ownership of a FCEV

¹ A portfolio of power trains for Europe – a fact based study, McKinsey 2010
http://www.iphe.net/docs/Resources/Power_trains_for_Europe.pdf

Power Train Costs Converge Rapidly

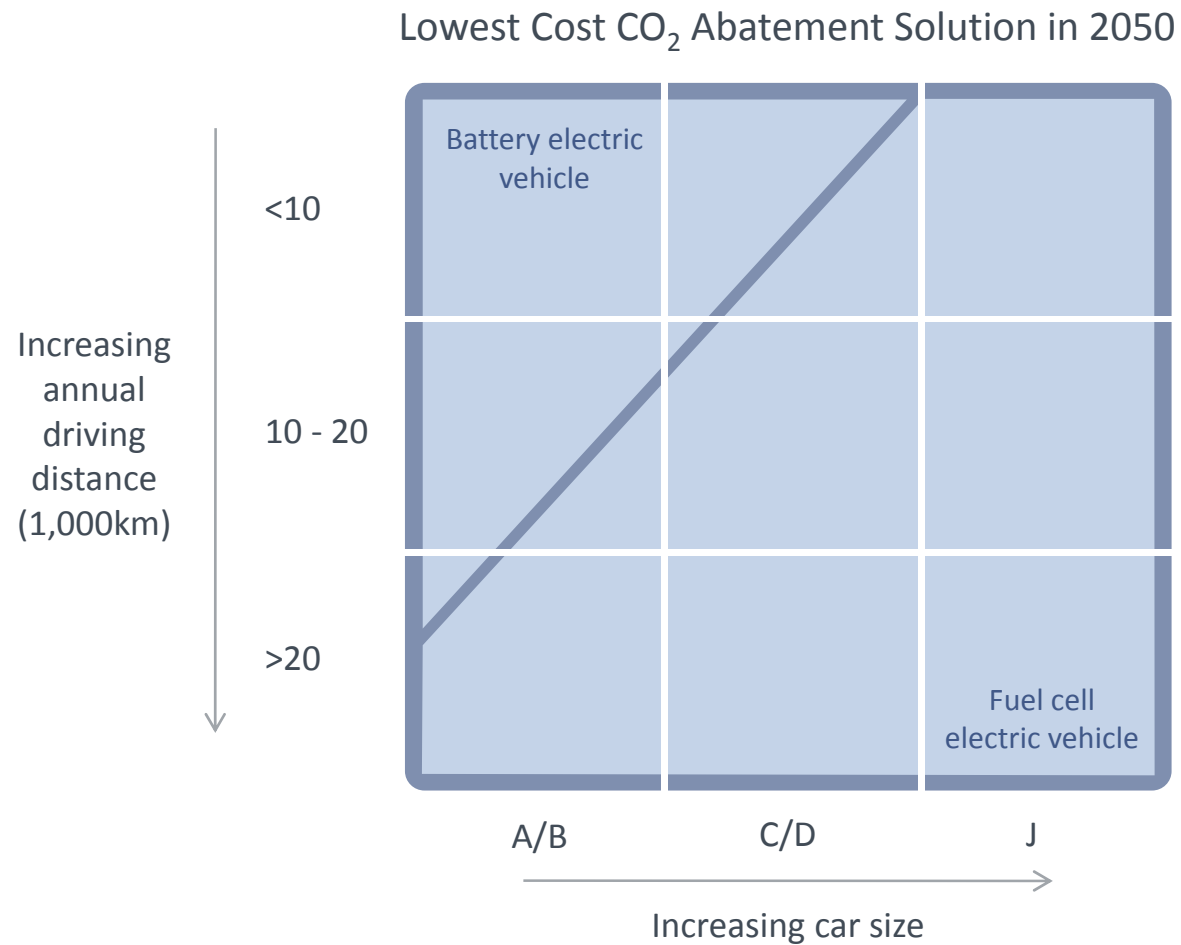
Total Cost of Ownership – excluding tax
EUR/km



Ranges based on data variance and sensitivities (fossil fuel prices varied by +/- 50%; learning rates varied by +/- 50%)

Source: McKinsey

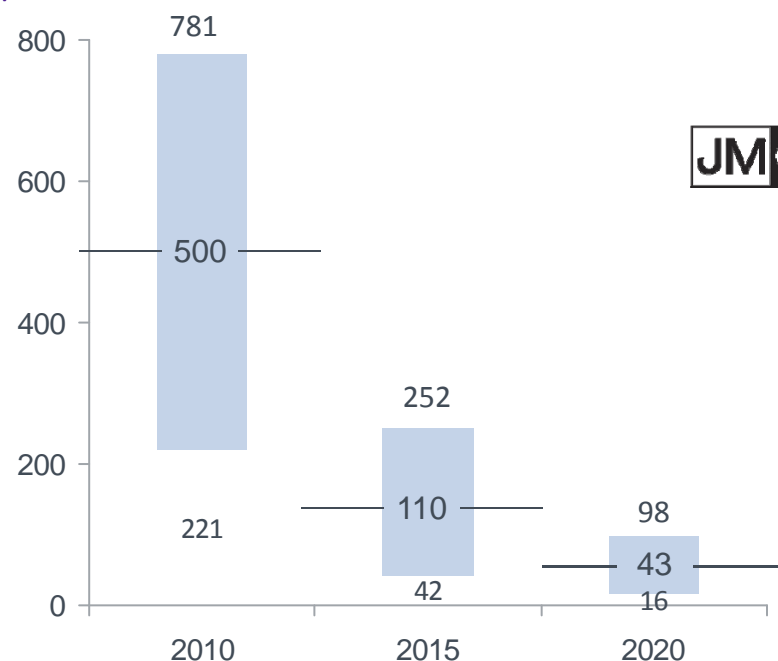
Fuel Cells for Larger Cars and Longer Journeys



Source: McKinsey

Fuel Cell Costs – McKinsey 2010

Fuel cell stack cost
EUR/kW



FCEV units
(installed
cumulative
number)

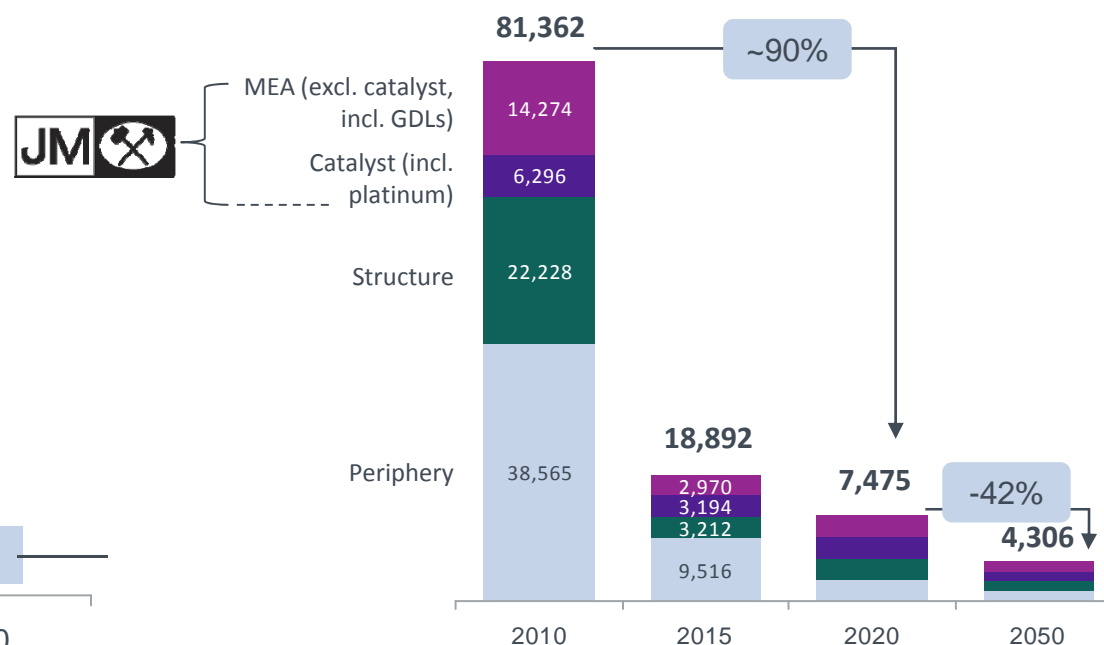
~1,000

~100,000

~1,000,000

1 million cars = ~0.1% of global car fleet

EUR per fuel system
C/D segment

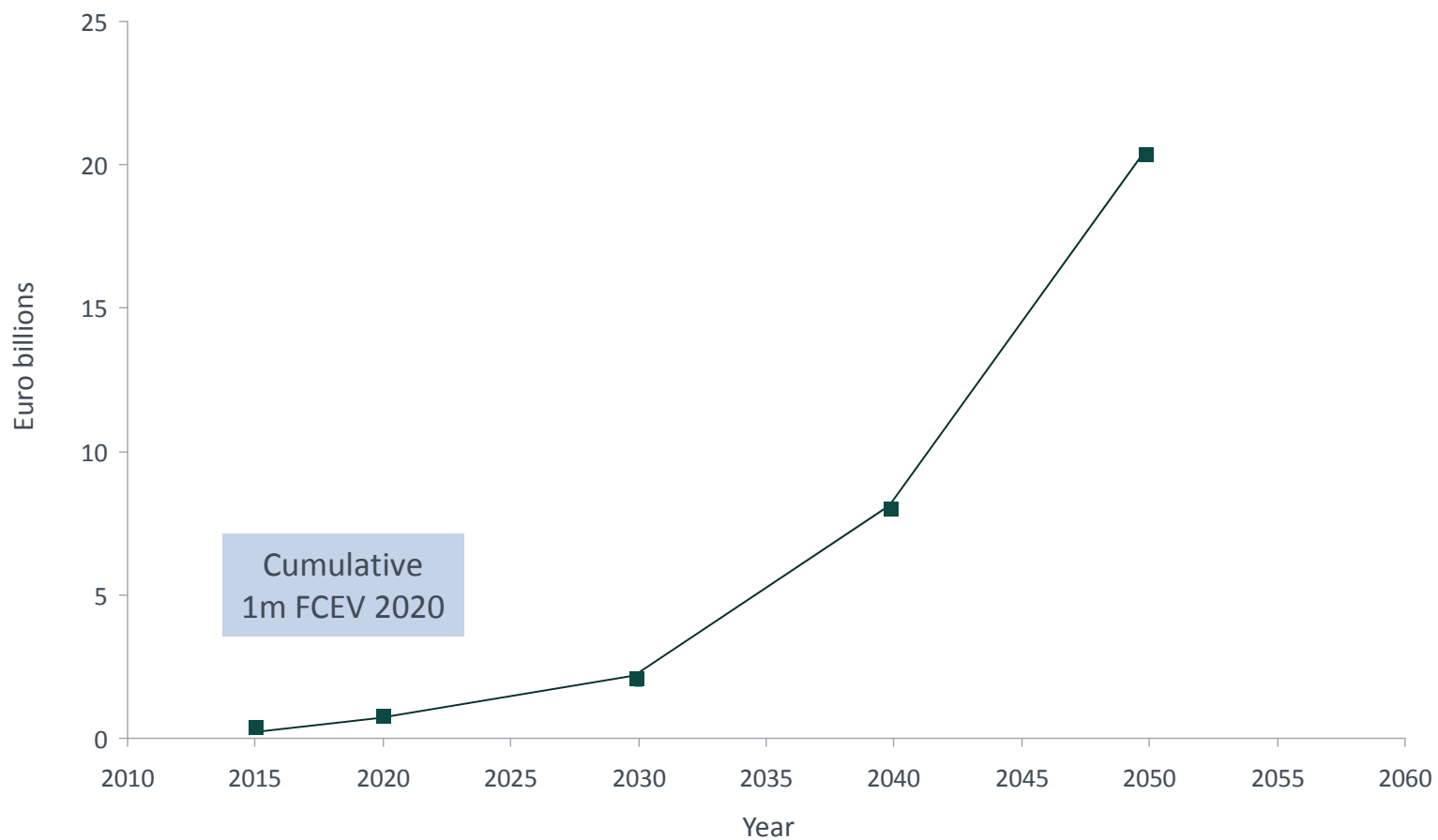


FC stack lifetime ('000km)	115	180	247	290
Platinum use (g/kW)	0.93	0.44	0.24	0.11
Ø Fuel cell stack cost EUR/kW	500	110	43	
Min	221	42	16	
Max	781	252	98	

Source: McKinsey

Size of Merchant MEA Car Market

Value of Car MEA Market (ex pms)



Source: McKinsey

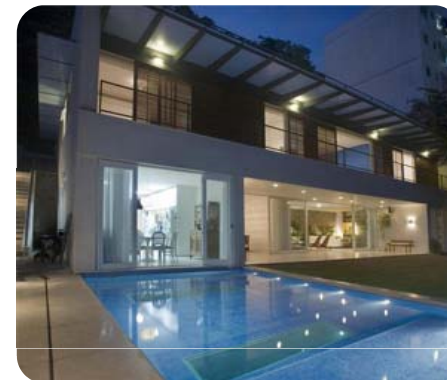
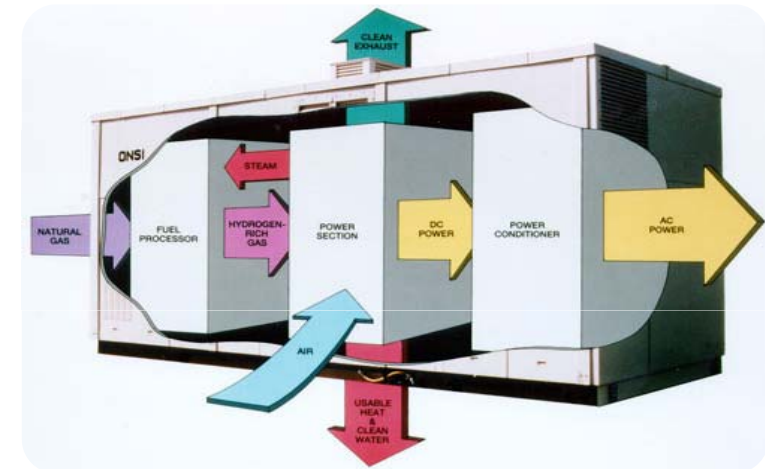
What is JM doing about this Opportunity?

- Fuel cell technology **investment**
- Catalysis technology is **critical**
- **Participation** in early fuel cell markets
- Provides **revenue** and **learning** by doing
- In the **next decade** many of these markets are as large as cars



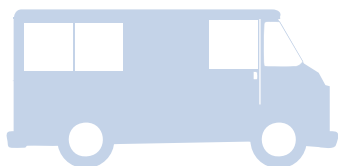
Today's Markets – Stationary CHP

- Hydrogen generated in-situ using a range of **fuels**: natural gas, renewable gas etc.
- Enables clean, quiet, **pollution free power** generation on a scale from 1kW to MWs
- Large units for combined **heat** and **power** for hospitals, hotels and banks. Commercial sales in the US and Korea
- Fuel cells can be **scaled** to give power to individual houses (or smaller offices, clinics etc.)
- Large **government funded** programmes underway in Japan and Korea
- **First** commercial **sales** underway in US
 - Large homes in California with expensive electricity
- Forecast a **rapid expansion** into worldwide markets as costs reduce



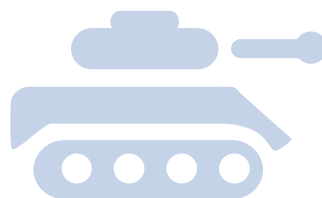
Markets – Direct Methanol (DMFC)

Readily available fuel, especially at small scale enabling commercial portable devices now



Leisure

- Recreational vehicles, leisure craft, remote cabins
- Dissatisfaction with batteries, solar and wind
- Noise and pollution of IC generators



Military

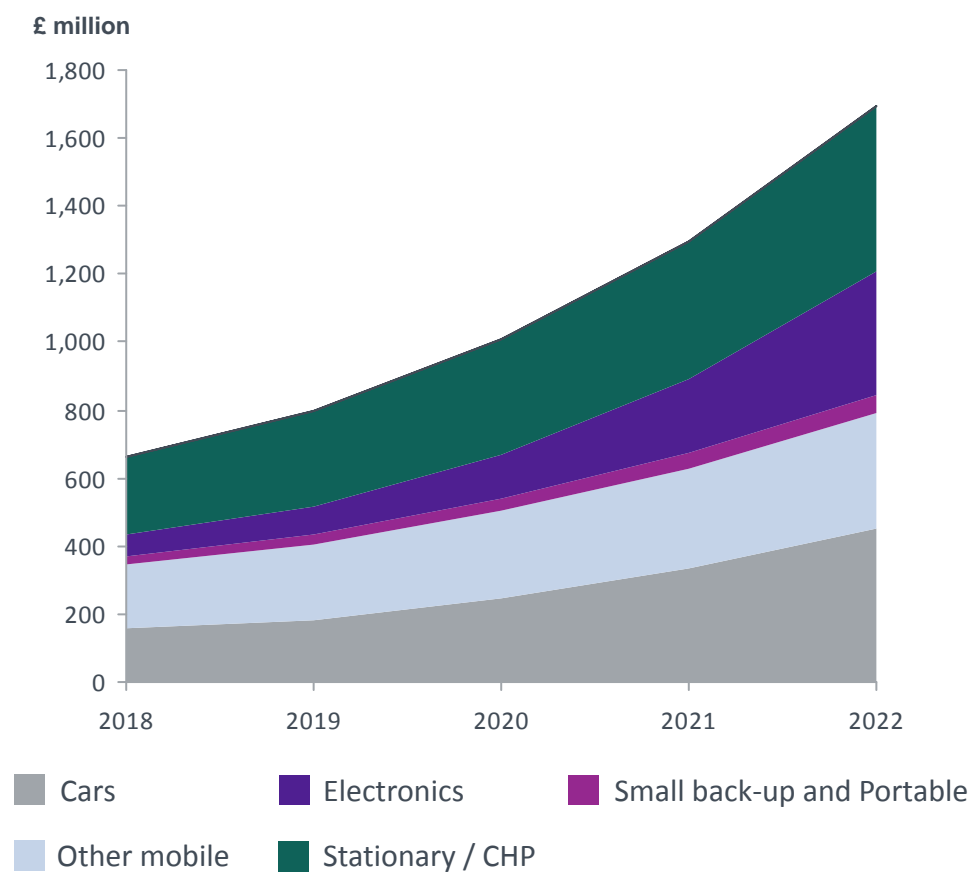
- Infantry men, unmanned craft
- US infantryman carries >20kg batteries
- Low weight, long run times, fast 'recharging'



Electronics

- Near term – stand alone chargers offering mains autonomy
- Possible future products have significant potential
- Battery / fuel cell hybrid laptops, portable electronics, cellphones

The Fuel Cell MEA business in 2020



MEA market size >£1 billion
excluding pgm

Cars are important... but so are other markets

All markets **growing rapidly**
supported by global trends and
advancing technology

JM positioned to participate in each
of these markets



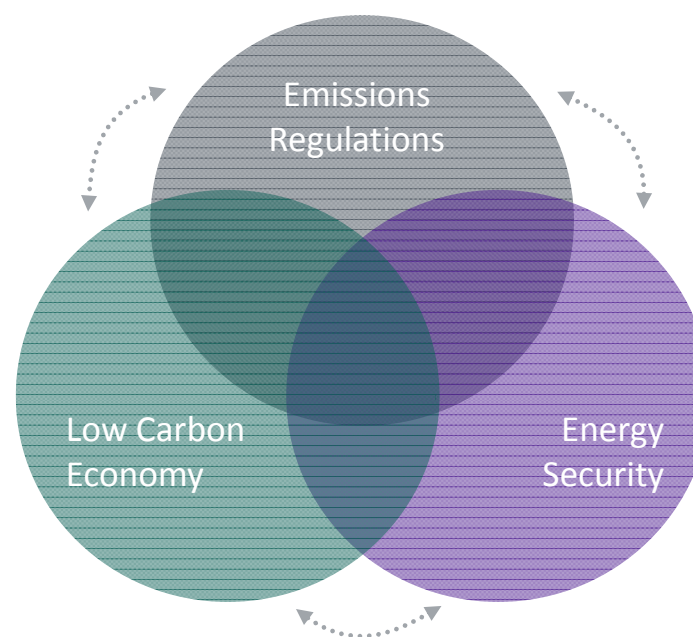
Johnson Matthey

Key Strategic Opportunities – Emissions, Energy and Low Carbon

- **Emissions regulations** – a growing global vehicle market with tightening regulations
- **Energy security** – strong interest to get more value from coal and natural gas
- **Low carbon** – desire to stabilise CO₂ in the atmosphere using novel low carbon technologies



- All require high technology catalytic solutions
- JM well placed
- Significant growth potential





Johnson Matthey



Global Drivers for Precious Metal Products

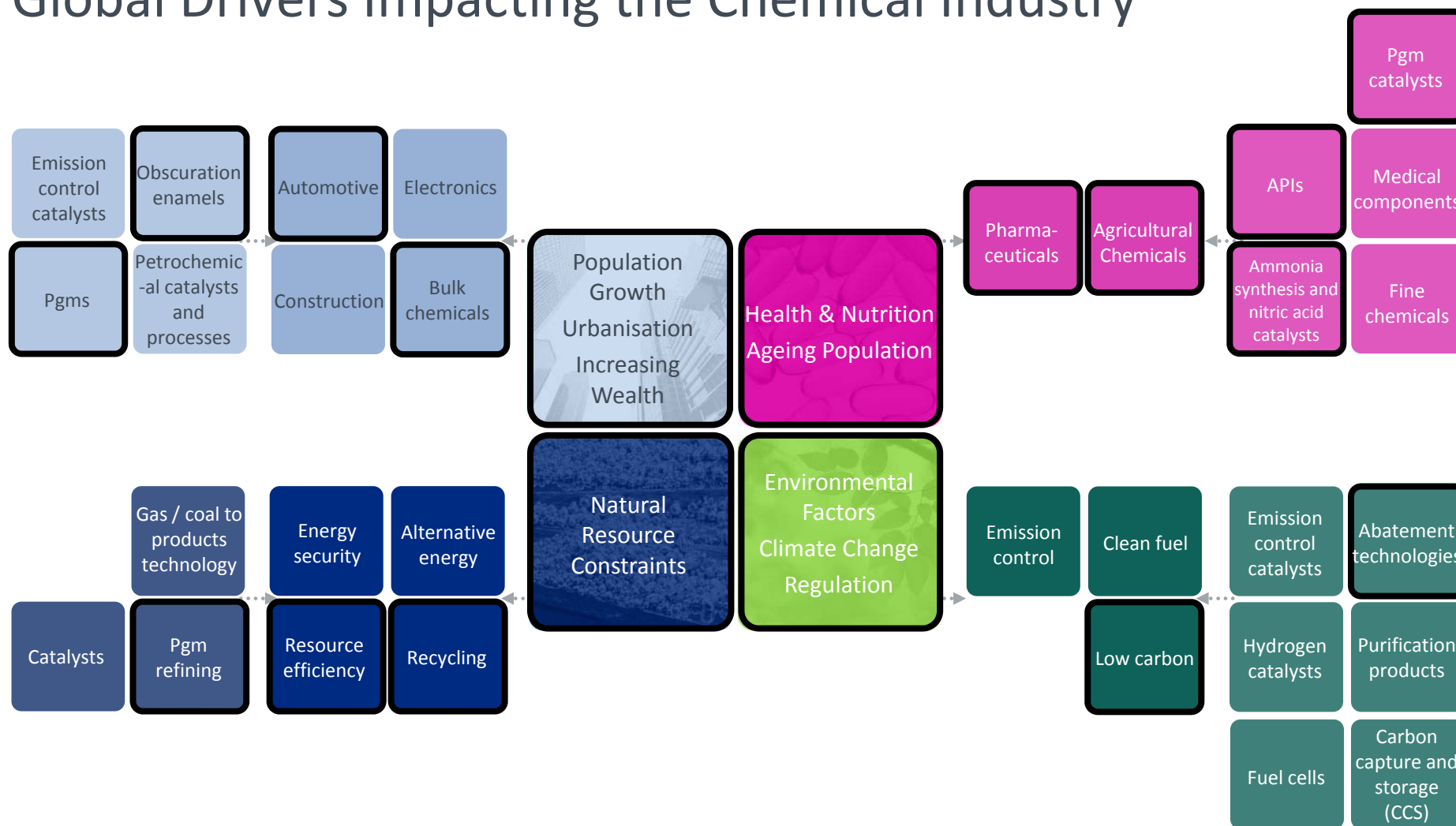
Bill Sandford

Executive Director, Precious Metal Products



Johnson Matthey

Global Drivers Impacting the Chemical Industry



Sales Excluding Precious Metals

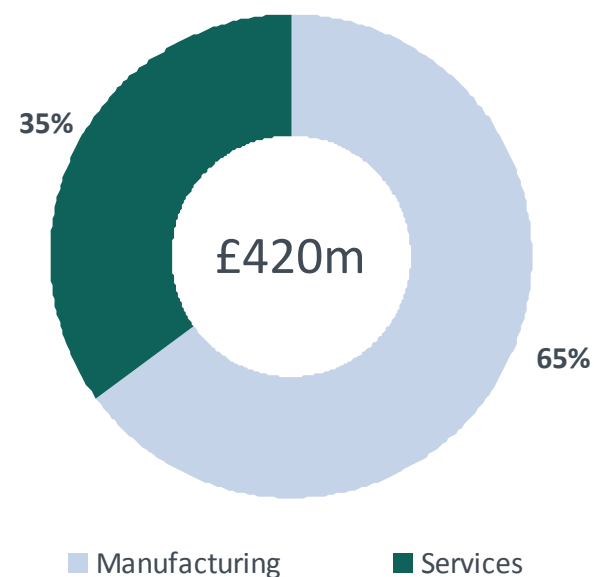
Manufacturing

- Noble Metals
- Colour Technologies
- Catalysts and Chemicals

Precious Metal Services

- Pgm trading and marketing
- Precious metal refining

2009/10



Our Manufacturing Businesses

Account for 65% or ~£270m of division's sales ex pms

- A **wide range** of products / applications
- **19** manufacturing sites worldwide
- **Investing** in manufacturing excellence / product innovation
- All businesses have **good ROIC**
- Some mature products with limited growth potential...
- ...other products impacted by global drivers have **good growth potential**

Global Drivers

Manufacturing Businesses

Global Drivers

Ageing Population

Climate Change

Nutrition

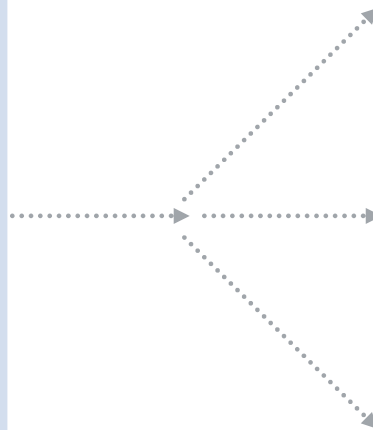
Growing Wealth

End Uses

Automotive

Nutrition

Healthcare



Automotive

Products

- Glass obscuration enamels
- Conductive tracks

- Pgm alloys
- Pgm wire / powder

- Pgm salts

- Base metal catalysts

End Uses

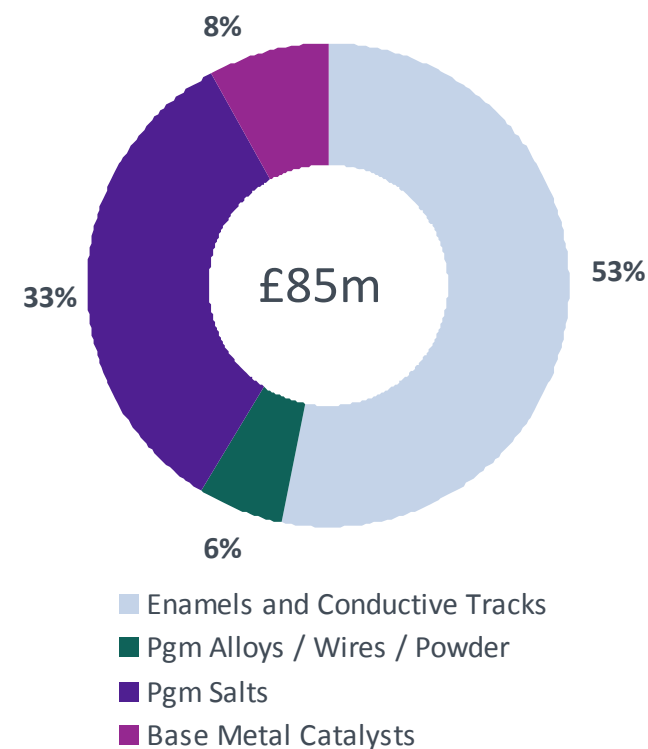
- Auto glass protection
- Heated rear glass

- Spark plug tips
- Engine sensors

- Autocatalysts

- Plastics / polymers

Sales by Product Group



Automotive

Accounts for £85m (31%) sales ex pms

Pgm salts sold to internal (ECT) and external customers

All other products sold to external customers

Asia biggest growth area

CAGR 10% sales ex pms



Nutrition

Products

- Pgm catalysts
- Base metal catalysts

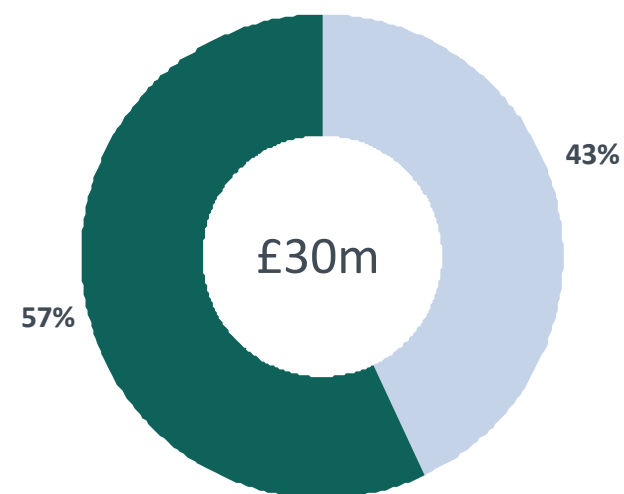
- Nickel catalysts
- Pgm scavenger

End Uses

- Fertilisers
- N₂O abatement

- Edible oils / sweeteners
- Food spoilage inhibitor

Sales by Product Group



■ Fertilisers ■ Catalysts / Scavengers

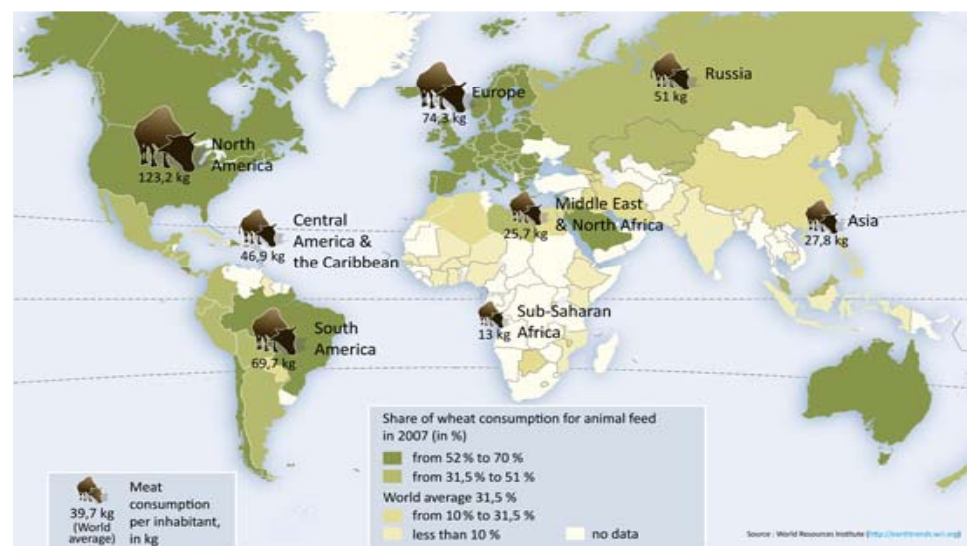
Accounts for £30m (11%) sales ex pms

>10% CAGR sales ex pms

Nutrition

Fertiliser use driven by population growth

- **Growing wealth** drives meat consumption
- Fertiliser demand expected to grow strongly in Asia
- By-product N_2O , powerful GHG (310 times CO_2)
- **Strong growth** for N_2O abatement but depends on Kyoto replacement, cap and trade etc.



Johnson Matthey has leading share in fertiliser and N_2O catalysts

Nutrition

e+™ Ethylene Scavenger

- Recently developed in collaboration with Anglo Platinum
- Huge amount of fruit **destroyed** due to over ripening
- Climacteric fruit emit ethylene on ripening
- **e+™ postpones ripening process**



Health and Personal Care

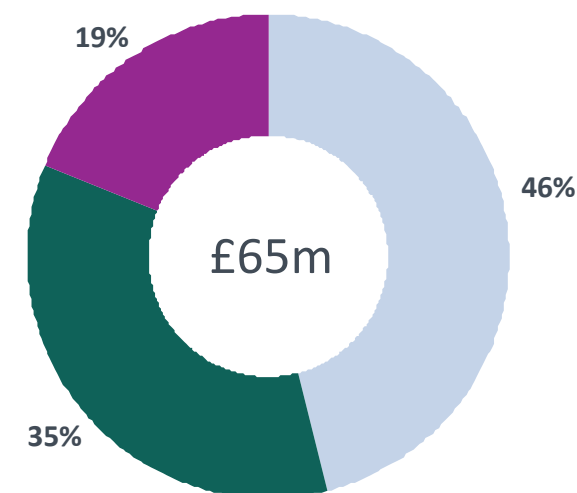
Products

- Pt alloys
- Pgm catalysts
- Base metal catalysts

End Uses

- Medical device components
- Eyecare
- Pharma APIs
- Personal care items

Sales by Product Group



- Pt Alloys
- Pgm Catalysts
- Base Metal Catalysts

Accounts for £65m (24%) sales ex pms

Health and Personal Care

Demand for medical products driven by growing population...

- ...and also **ageing** population in **wealthy** countries
- **Largest market** for medical devices is USA
 - Other markets growing quickly
- Demand for **APIs** largely in West
 - Demand and manufacturing moving East
- CAGR **9%** sales ex pms



Precious Metal Services

Accounts for 35% or £150m of division's sales ex pms

- Pgm trading and marketing
- Precious metal refining

Provides service to Johnson Matthey group and its customers

- **65%** of group sales are pgm based

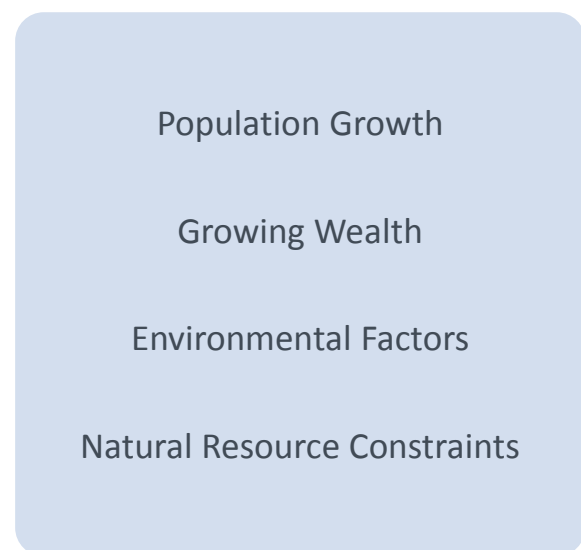
Volume growth will (largely) reflect growth in market / Johnson Matthey group sales

Profitability influenced by pgm prices

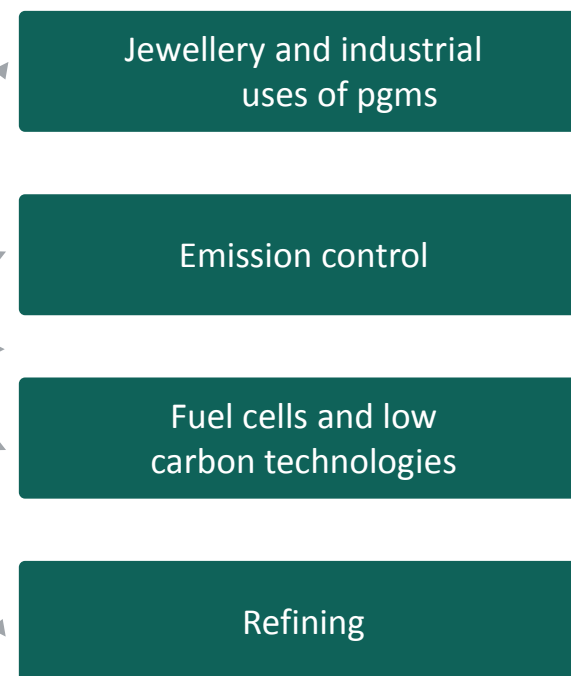
Global Drivers

Precious Metal Services

Global Drivers

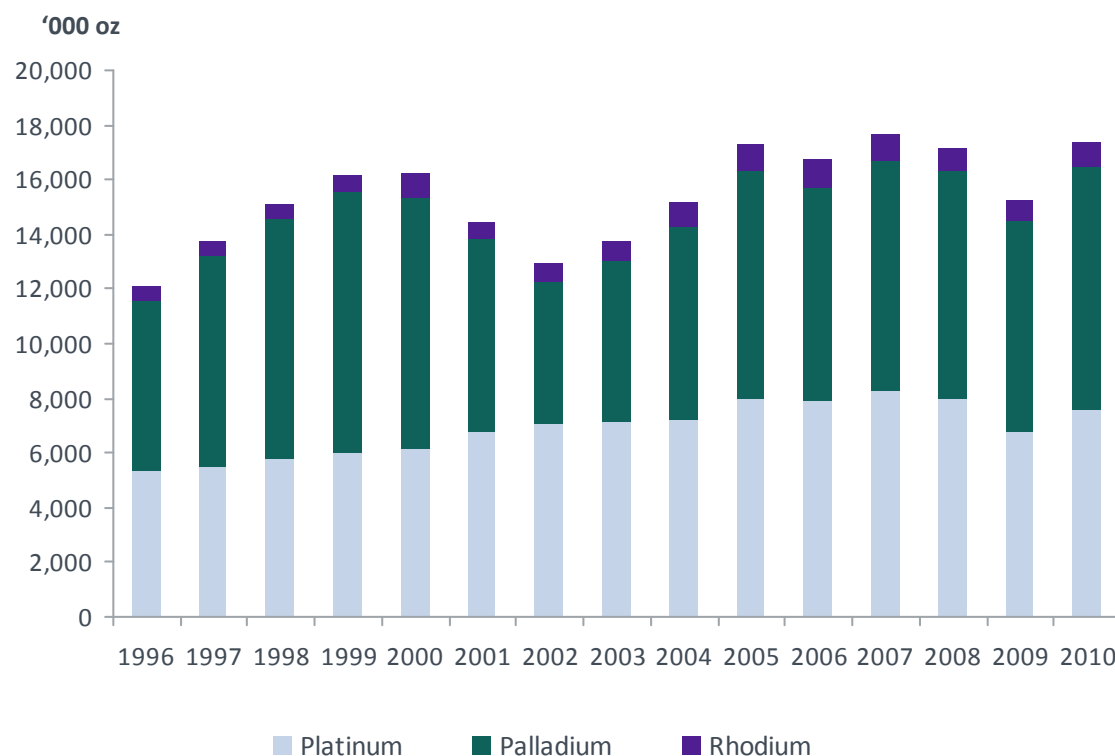


Growing Need for Pgms and Refining



Gross Pgm Demand

1996 - 2010

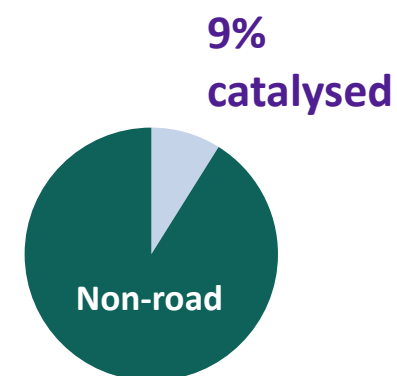
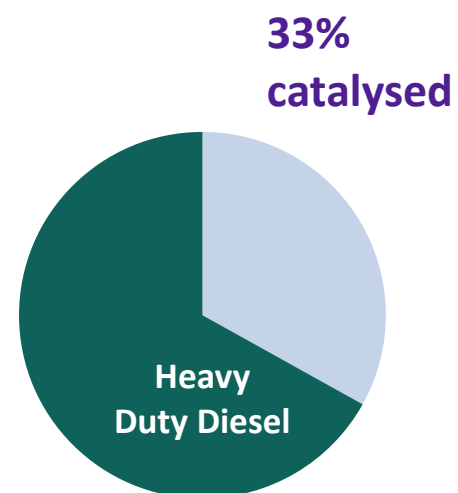
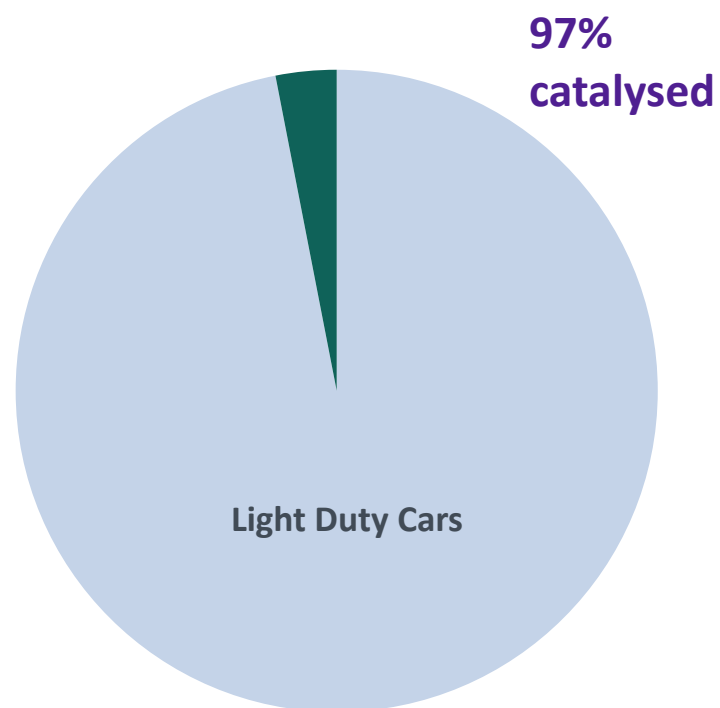


Auto largest sector (51%)

Future growth driven by:

- Population growth
- Wealth growth
- Environmental factors
 - Engine exhaust catalysis
 - Fuel cells

Engine Catalysis



Total Number
of Engines

75m

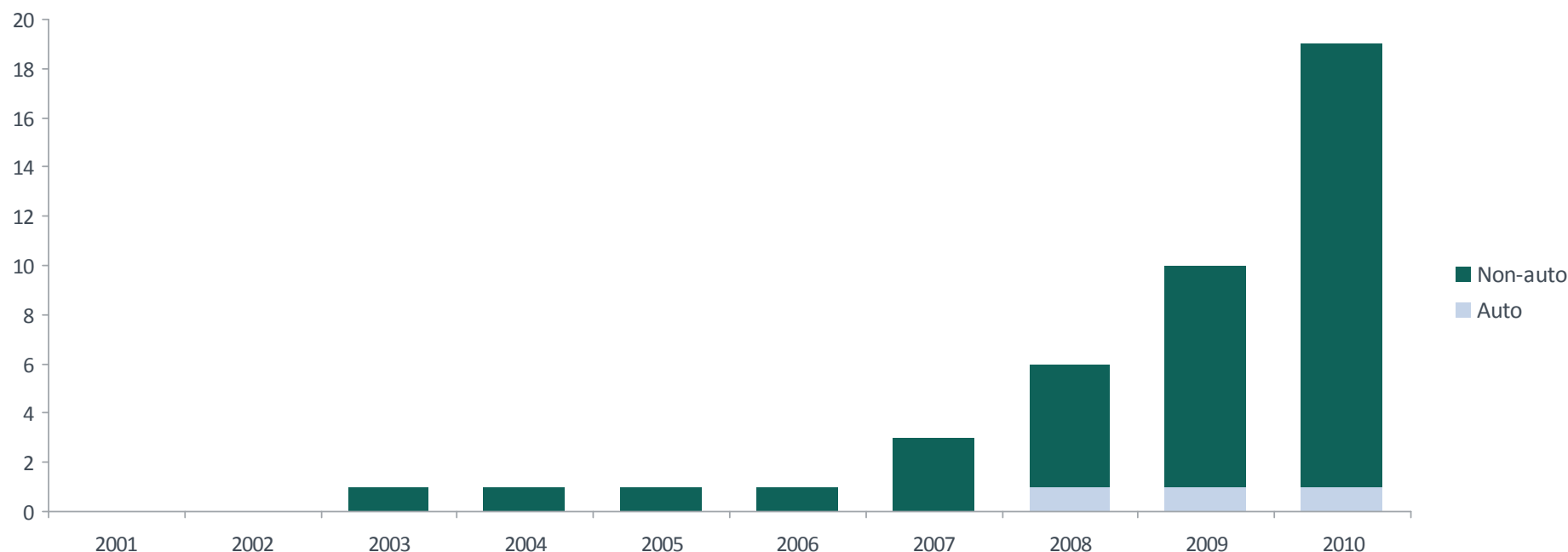
3.5m

2.2m

Pgm Trading and Marketing

Platinum Demand in Fuel Cells 2001 - 2010

Pt ozs '000



Early signs of market traction

Fuel cell loadings* significantly higher than ICE (4-5g):

Pt demand sensitive to fuel cell car penetration

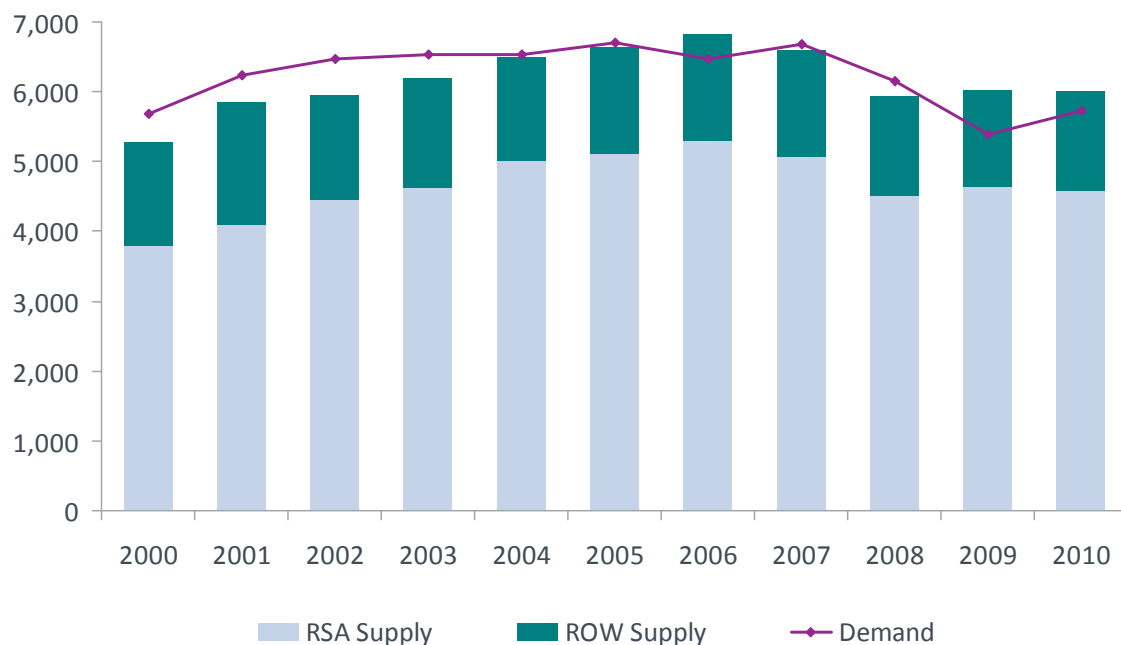
- 84g in 2011
- 40g in 2017
- 22g towards 2050
- 10g beyond 2050

* Based on McKinsey study

Pgm Trading and Marketing

Platinum Supply-Demand

Pt ozs '000



RSA main producer

Significant reserves

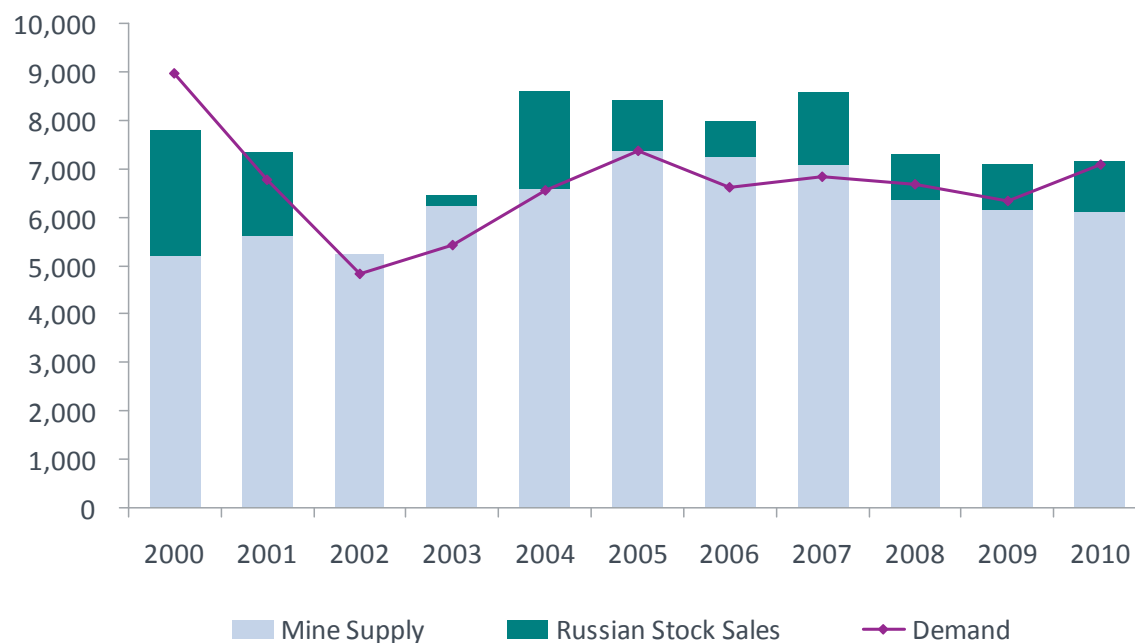
RSA mines having to deal with:

- Higher capex
- Rising operating costs
- New mining legislation

Pgm Trading and Marketing

Palladium Supply-Demand

Pd ozs '000



Russia is largest producer

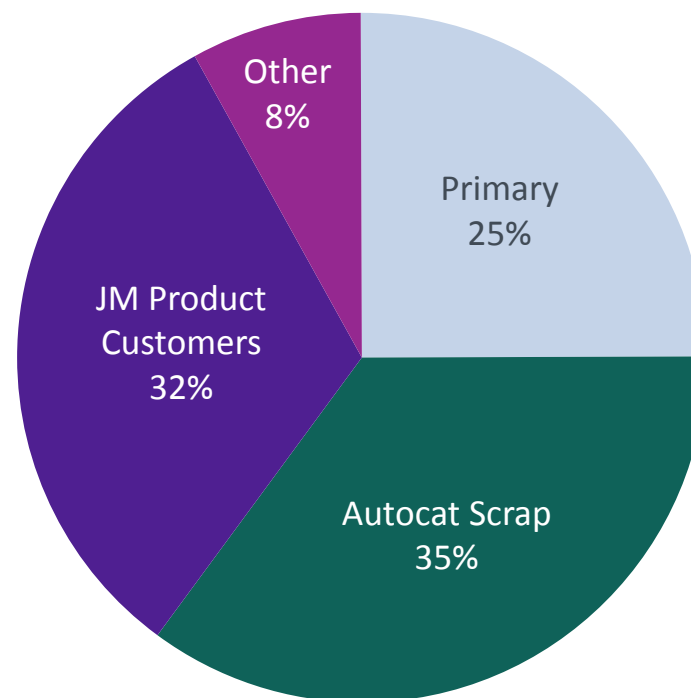
90% of world production is by-product

Supplies supplemented by Russian stock sales... close to exhaustion?

Pgm Refining

“High grade” refineries in UK and USA

- Two **key sectors**
 - JM product customers
 - Autocat recycling
- Profitability strongly influenced by pgm price movements



Outputs: Pt 45t p.a. Pd 50t p.a.

Conclusions

Manufactured Products

- **Key products** with **strong drivers**
 - **Double digit** growth in sales
- Some mature products with limited growth potential
- Average sales ex pms CAGR in **high single digits**

Precious Metal Services

- Global drivers support **growing demand** for pgms
- Volume growth to reflect Johnson Matthey sales / total market
- Profitability impacted by pgm prices



Johnson Matthey



Global Drivers for Fine Chemicals

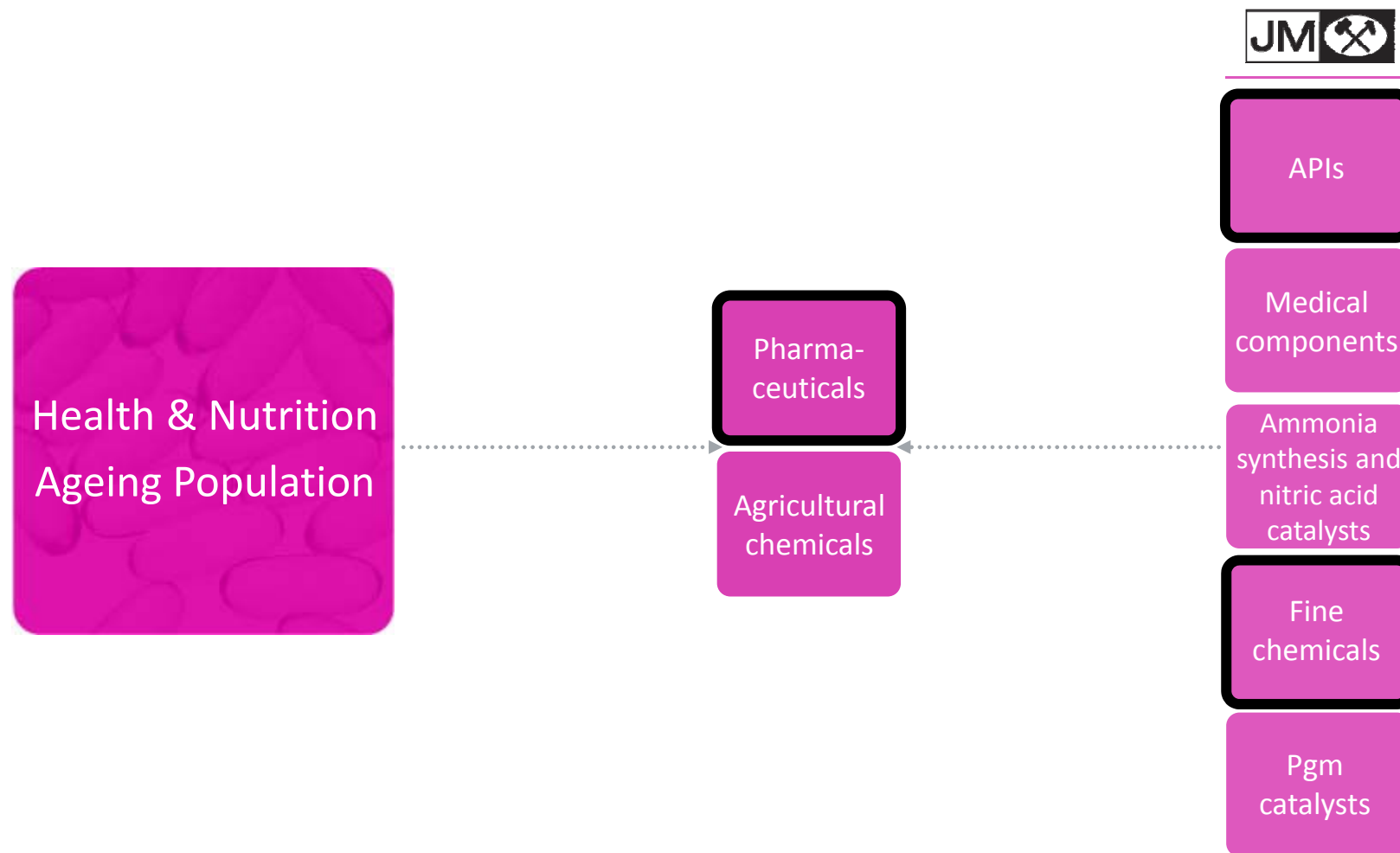
John Fowler

Division Director, Fine Chemicals



Johnson Matthey

Global Drivers Impacting the Chemical Industry



Global Trends Driving Fine Chemicals' Strategy

Global Trends

- Ageing population
- Longer life expectancies
- Economic development (BRIC)
- Expanded access to healthcare
- Drive to lower cost medicines



Resulting In

- Generics will continue to grow double digit over the next ten years
- Emerging markets will see strong growth in pharmaceuticals
- Fine Chemicals' leading global position in narcotic based pain therapy will benefit

Key Business Strengths in Fine Chemicals



Advantage through broad skills in chemistry



Investment in R&D and technology

- Critical mass in API development through Pharma Services



Leading market share in key therapeutic areas

- Pain therapy
- Attention Deficit and Hyperactivity Disorder (ADHD)
- Drug addiction treatment
- Platinum oncologics



Highly regulated markets with significant barriers to entry



Focused niches targeting higher margin APIs, 20%+



Strong customer relationships with both brand and generic companies

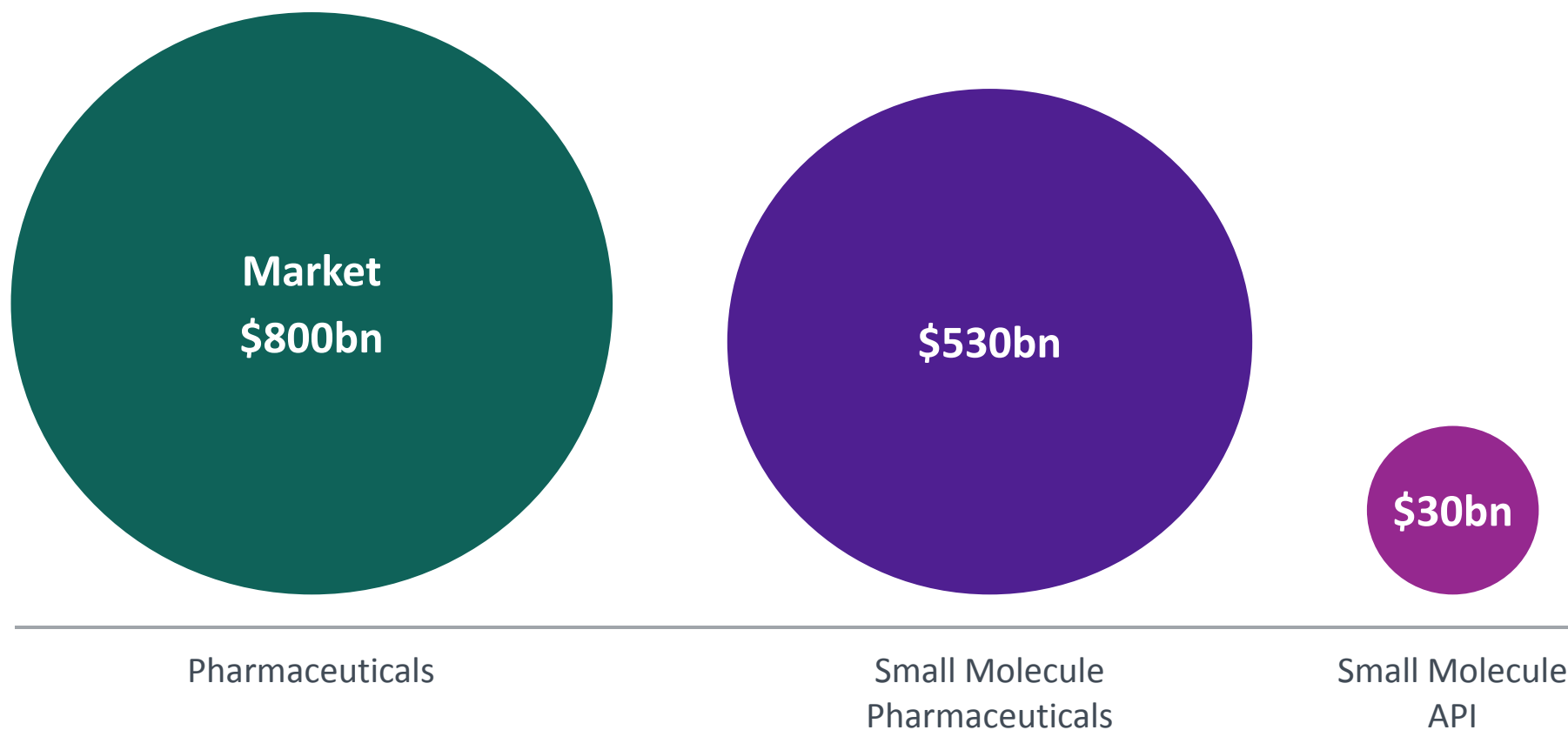


Diverse and flexible manufacturing capability



Outstanding record of regulatory compliance

The Global Pharma Market



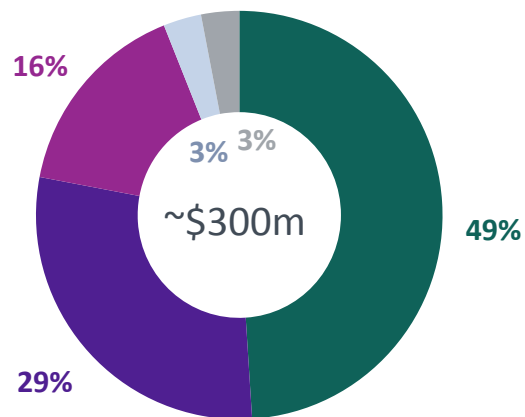
Source: IMS, Datamonitor, Business Insights, Pollak, Kalorama, LCM M&I

Strategic Focus – Niche APIs

Currently compete in circa 10% of global small molecule API market

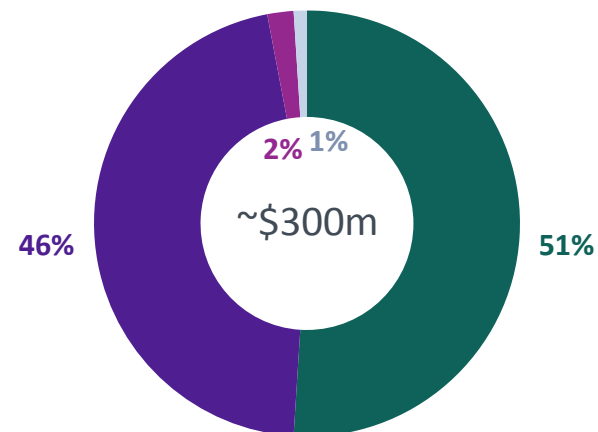
Delivering API sales growth of 9% p.a. over the last five years vs global pharma market growth of 6%

JM API Sales by Market 2010/11 (e)



■ Pain Therapy ■ ADHD ■ Drug Addiction Treatment
■ Oncologics ■ Others

JM API Sales by Region 2010/11 (e)



■ North America ■ Europe
■ Asia ■ ROW

Strategic Focus – Global Pain Therapy

Significant barriers to entry

- Highly regulated markets
- Tight control over import / export of narcotics

Globally a key therapeutic area

- Codeine third leading therapy class in the US
- Ageing population in the West increasing demand

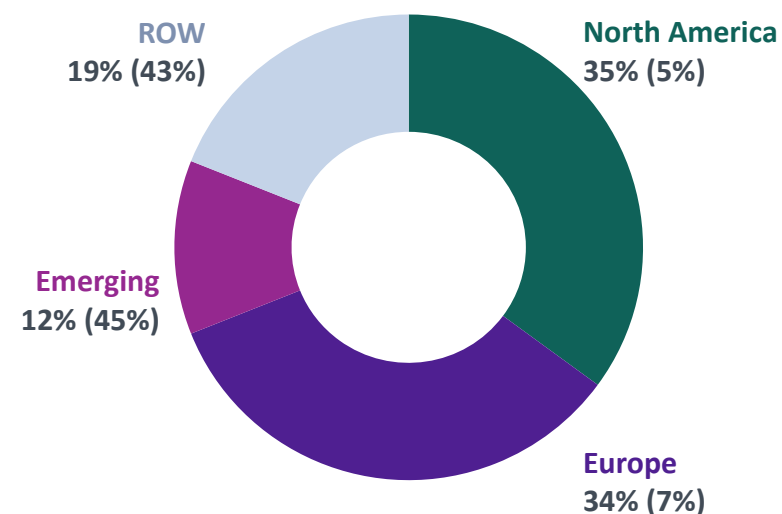
Growth in emerging markets

- Pressure from WHO to make pain medication more freely available

Opiate API market to accelerate from 4% CAGR to 6% over the next ten years

Opiates Consumption 2008 by Region

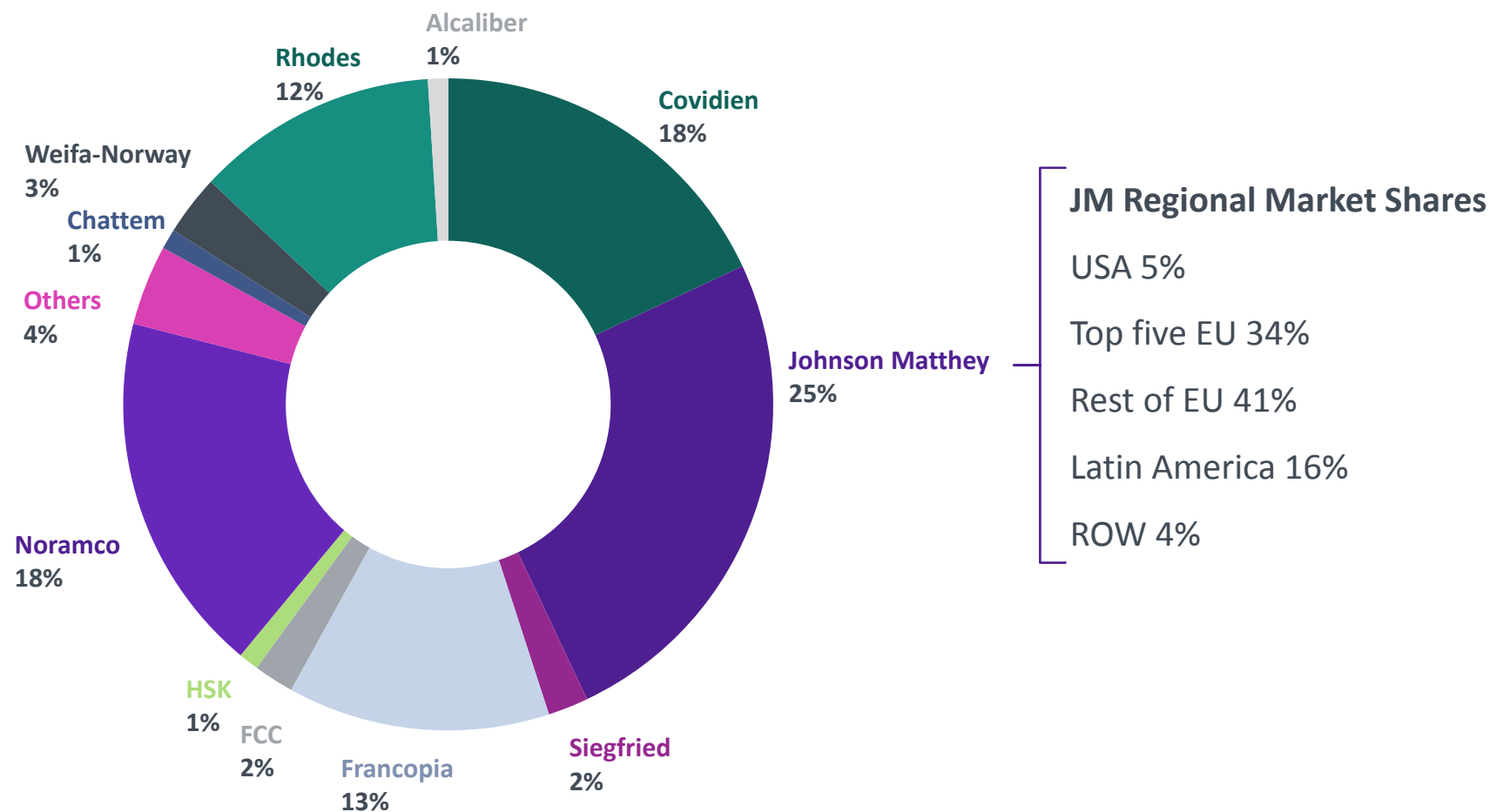
Percentages in parentheses refer to share of global population



Source: INCB, IMS and JM data

Emerging markets are China, India, Brazil, Russia, Mexico, Turkey and South Korea

Global API Market Share by Volume – Opiates



Source: NRM-INCB Annual Report 2009

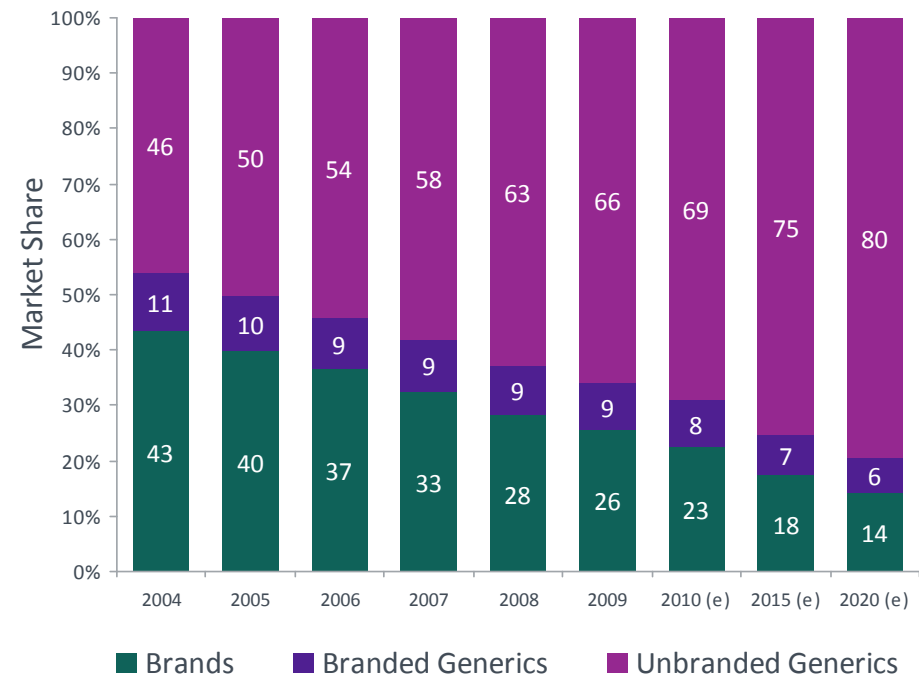
Strategic Focus – Generics

- Leadership in terms of **volume** and **growth**
- Government healthcare **reforms**
- Insurance **bias** towards generic usage
- Current market forecast to **grow** in excess of **10%** p.a.



- Circa 80% of current JM sales to generic markets
- Ability to leverage R&D for first to file opportunities

Total Prescriptions Dispensed (USA)
%

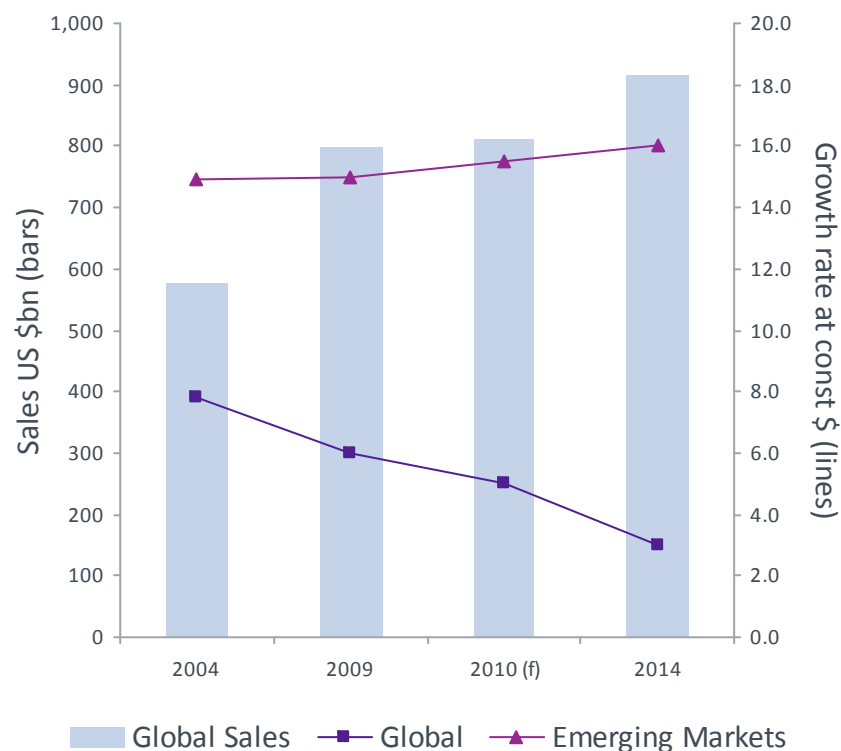


Source: IMS and JM estimates

Strategic Focus – Emerging Markets

- Current CAGR of **15%** is forecast to continue at **similar rates** through to 2014
- Economic development will **drive use of pharmaceuticals**
- Pain therapy is under utilised in emerging markets. Growth forecast at least **15%** CAGR

Global Sales' Trends



Source: IMS Health Market Prognosis, JM estimates

Emerging markets are China, India, Brazil, Russia, Mexico, Turkey, and South Korea

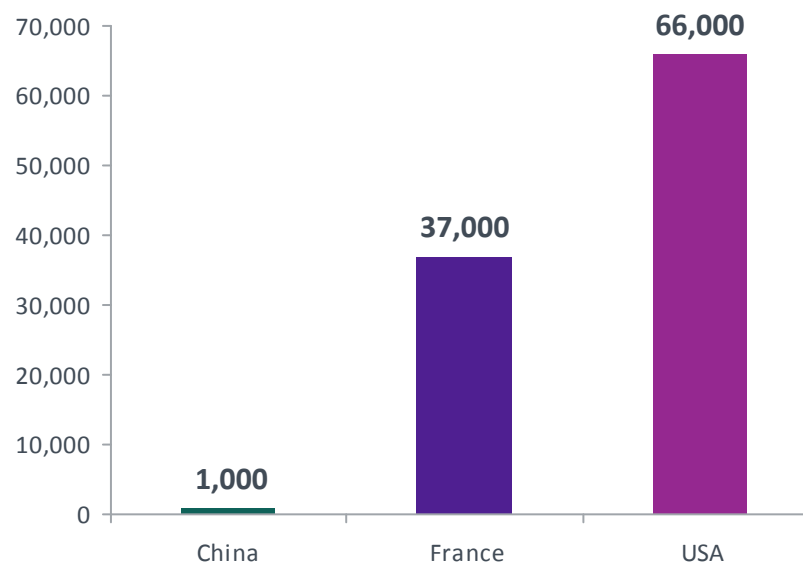
China – Significantly Underserved Narcotics Pain Market

- Only **22** narcotic drugs available in China vs **123** in the West
- Narcotic consumption has more than **tripled over the last five years**, albeit from a low base
- Historical reticence to the use of opiates is **changing**
- China pharmaceutical growth at **20%**



- Hebei Aoxing JV established

Illustrative Morphine Per Capita Consumption Between China and Other Countries
(grams / million population)



Growth Opportunities



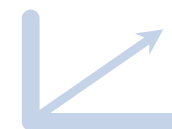
Global market share of opiate APIs

- Ageing population will **drive steady growth** in established markets
- JM's US market share **growing**, capacity in place with acquisition of Riverside plant



Economic development will drive pharma growth in emerging markets

- **Established** Chinese JV with Hebei Aoxing
- Indian narcotic market growing rapidly but access **still limited**



Continued generic growth underpins new API product pipeline

- Several first to file generic opportunities in place with more **being developed**
- High volume, complex APIs and advanced intermediates targeted as a result of **addition of Riverside plant capacity**

Conclusions

Drivers and strategy in place to deliver **future growth**

Cost effective manufacturing and **capacity** in place to meet future demand

Sales growth over the next five to ten years forecast **high single digits**

Critical mass in R&D through our Pharma Services business to **support new products**

Key business strengths aligned with core JM attributes



Johnson Matthey

Q1160

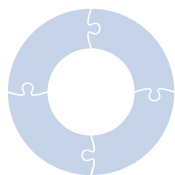


Further Growth – R&D Focus

Robert MacLeod
Group Finance Director


Johnson Matthey

Role of M&A

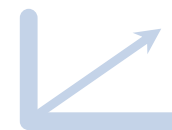


M&A remains an element of our strategy

- Bolt-on acquisitions likely – <£100m



Will constantly review and refine existing portfolio as necessary



Focus is on organic growth

- Scarcity of **large acquisition** candidates
- Leading **market shares** limit our opportunities
- M&A will be used to accelerate **organic growth** strategy

Balance Sheet Structure

- **Target** net debt (inc. post tax pension deficit) / EBITDA: **1.5 to 2.0 times**
- Large working capital swings possible
 - As business grows, requires substantial **working capital**
 - In good times, high working capital exacerbated by higher pgm prices
- Requires relatively conservative balance sheet to **fund growth**
- In tougher times, **balance sheet boosted** by large working capital inflows
- Will address balance sheet **efficiency** as appropriate

Further Growth – R&D Driven

- **Organic growth prospects** in existing businesses are very good
- Strategy process has reconfirmed that R&D is a **key component** of **our strategy** evidenced by:
 - ECT market shares
 - Apico
- Identified opportunity to **further leverage** group's R&D expertise
- **Increasing focus** upon investing in R&D
 - Overall R&D spend up from circa **£100m** to circa **£135m** p.a.
 - Up to £5m p.a. to **target new opportunities** in adjacent markets
- **New structure** and **investment** in place



Research and Development

Barry Murrer

Director, Technology Centre



Johnson Matthey

Overview

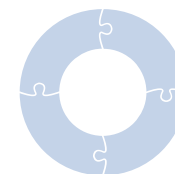


Research gives options for future growth



A key competence is our ability to arrange, control and anchor metals on a nanometre scale

- Arises from our catalysis businesses
- Will be needed in future but...
- It also gives us options to enter related areas



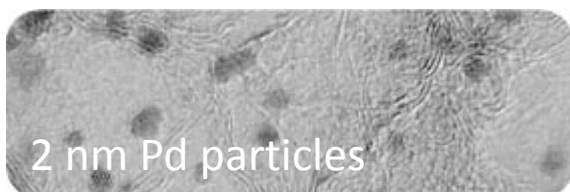
Key abilities strengthened by acquisitions

- E.g. Syntex on base metals
- Intercat for refineries technologies
- X-zymes for enzymic catalysis

Key Competence

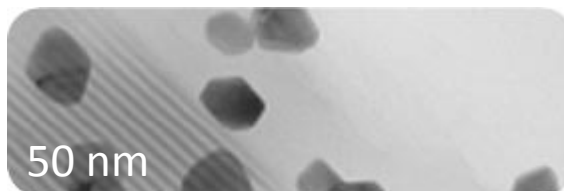
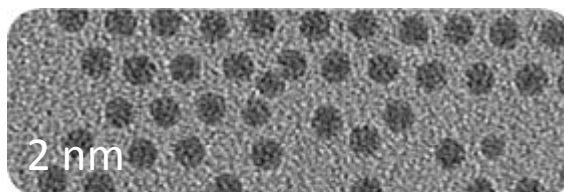
Controlling Materials on a Nanometre Scale

A typical heterogeneous catalyst Pd/C



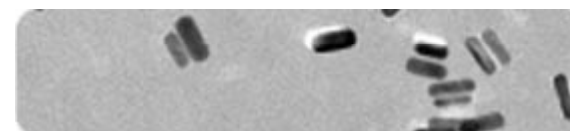
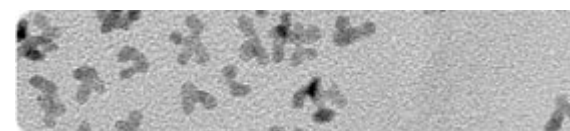
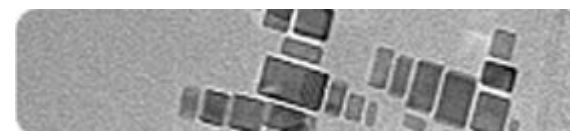
Small anchored particles, highly dispersed, very active, best use of expensive metals

Control of particle size



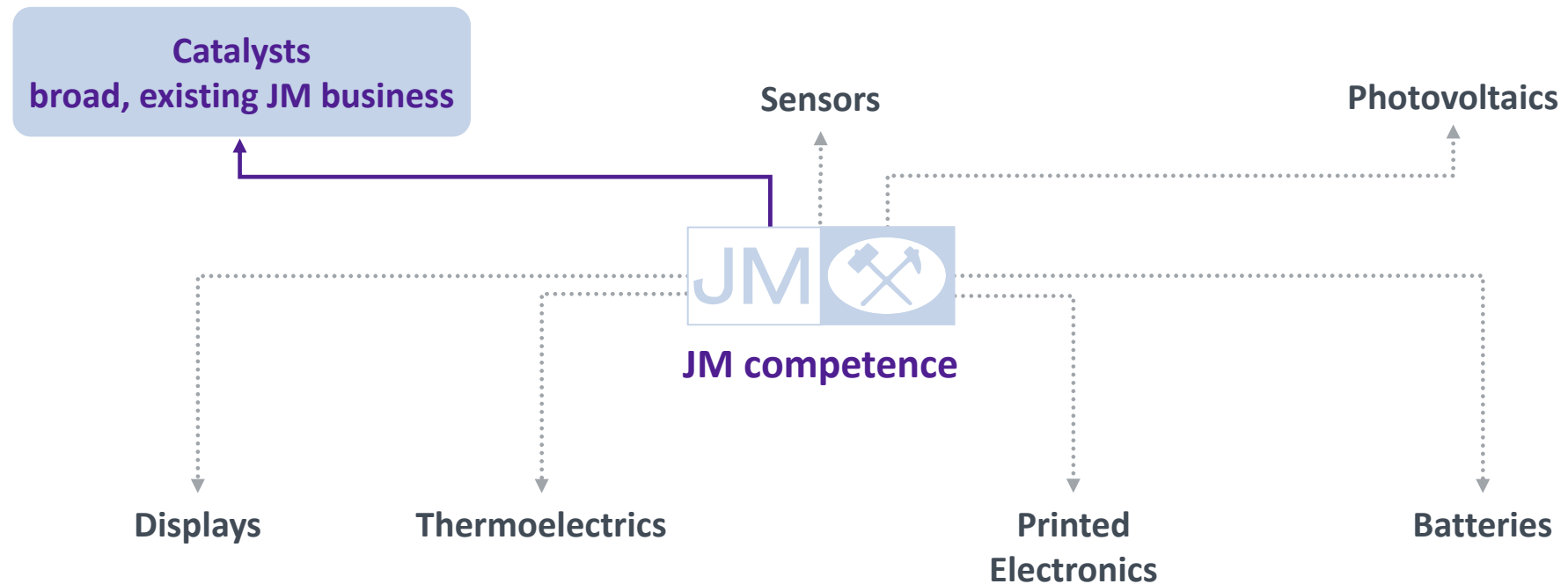
Control of particle size, tunes activity and selectivity

Control of particle shape



New shapes can take us into new applications

Markets from Nanoscale Materials Chemistry

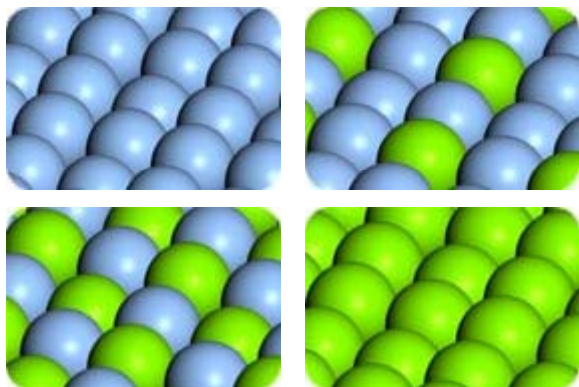
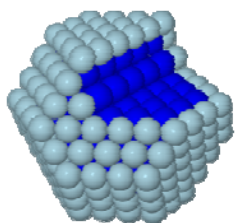


Core competence allows us to grow in existing business but to develop new opportunities

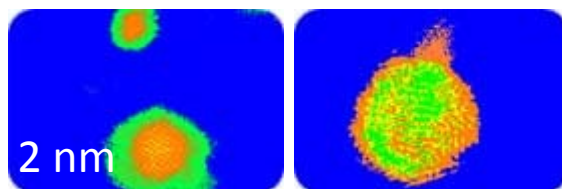
Modelling and Synthesis

Expertise in modelling and synthesis helps us develop materials with better performance

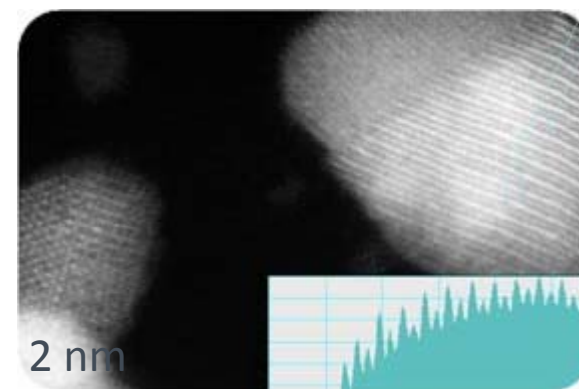
Developing models for core shell nanoparticle activity



Synthesis of Au/Pd and Pd/Au core shell particles



Alternating layers of Pt/Co



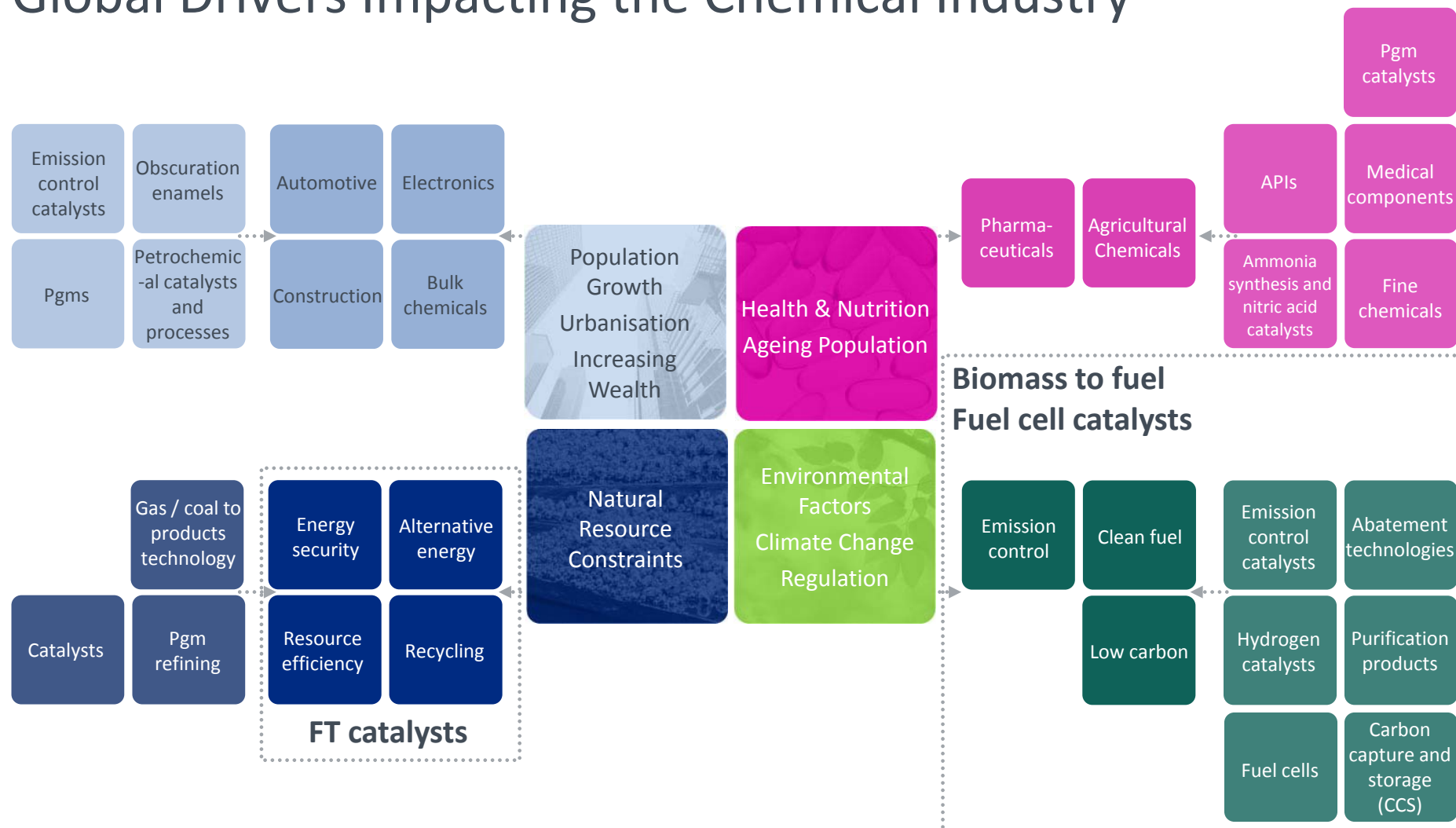
Research Projects Nearing Commercialisation

Biomass to fuel and chemicals

Syngas and Fischer-Tropsch (FT) catalysis – enabling technology for clean and secure fuels

Advanced fuel cell catalysts

Global Drivers Impacting the Chemical Industry



Biomass to Fuels

Feedstocks for Next Generation Biofuels



Waste Cellulose

- E.g. wood processing, agricultural residues



Pyrolysis Oil

- Versatile option for biomass processing



Algae

- High yield, non-food energy source

JM Opportunity

Syngas purification and conversion

**Purification
Deoxygenation
Isomerisation
Cracking**

Triglyceride conversion

Algae to Fuels

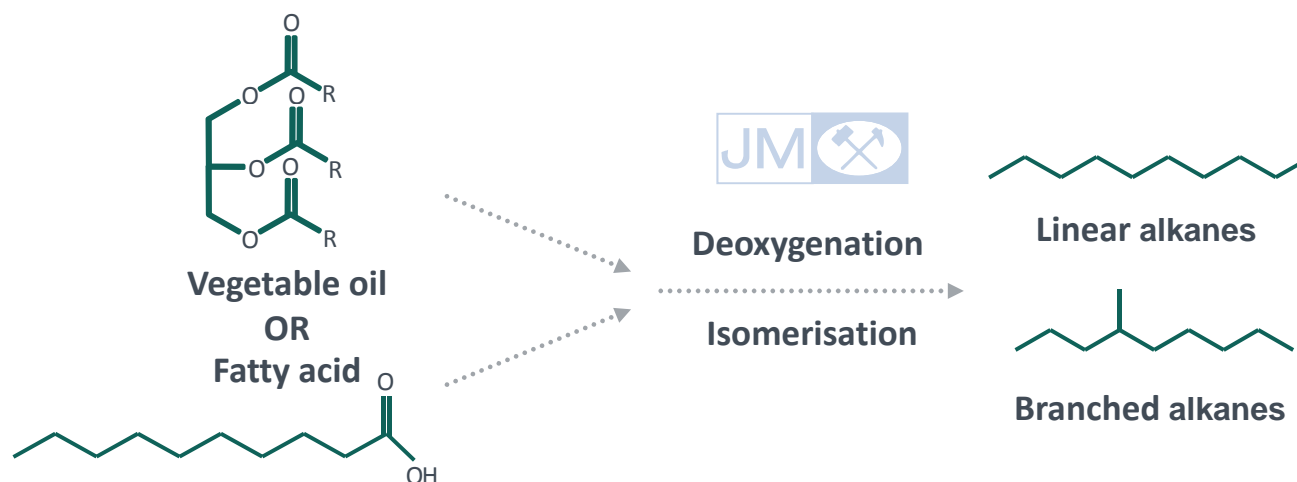
Conversion of Triglycerides

Further develops JM technology developed in DARPA project

- Multifunctional catalysts developed for conversion of methyl esters and acids to hydrocarbon fuels
- Hydrogenation (pgm) centre and zeolite

US Department of Energy Advanced Research Projects Agency (ARPA-E) funding awarded

- Microbial conversion of hydrogen and carbon dioxide into biodiesel
- Three year, \$6m project between Johnson Matthey, OPX-BIO and National Renewable Energy Laboratory

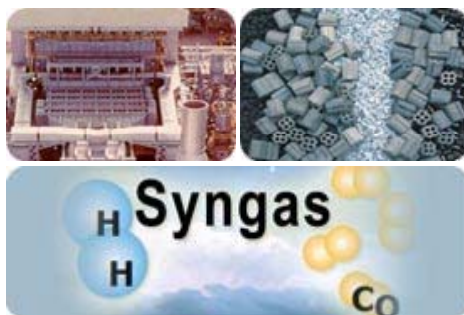


Syngas and FT Catalysis

Clean and Secure Fuels



Purification + Catalysts + Process Technology + Diagnostics + Services



FT Catalysis

Chemicals

Fuels

Syngas and FT Catalysis

Large or Small Scale?



Opportunities are emerging across all scales

- Market drivers are complex and geographical, but real



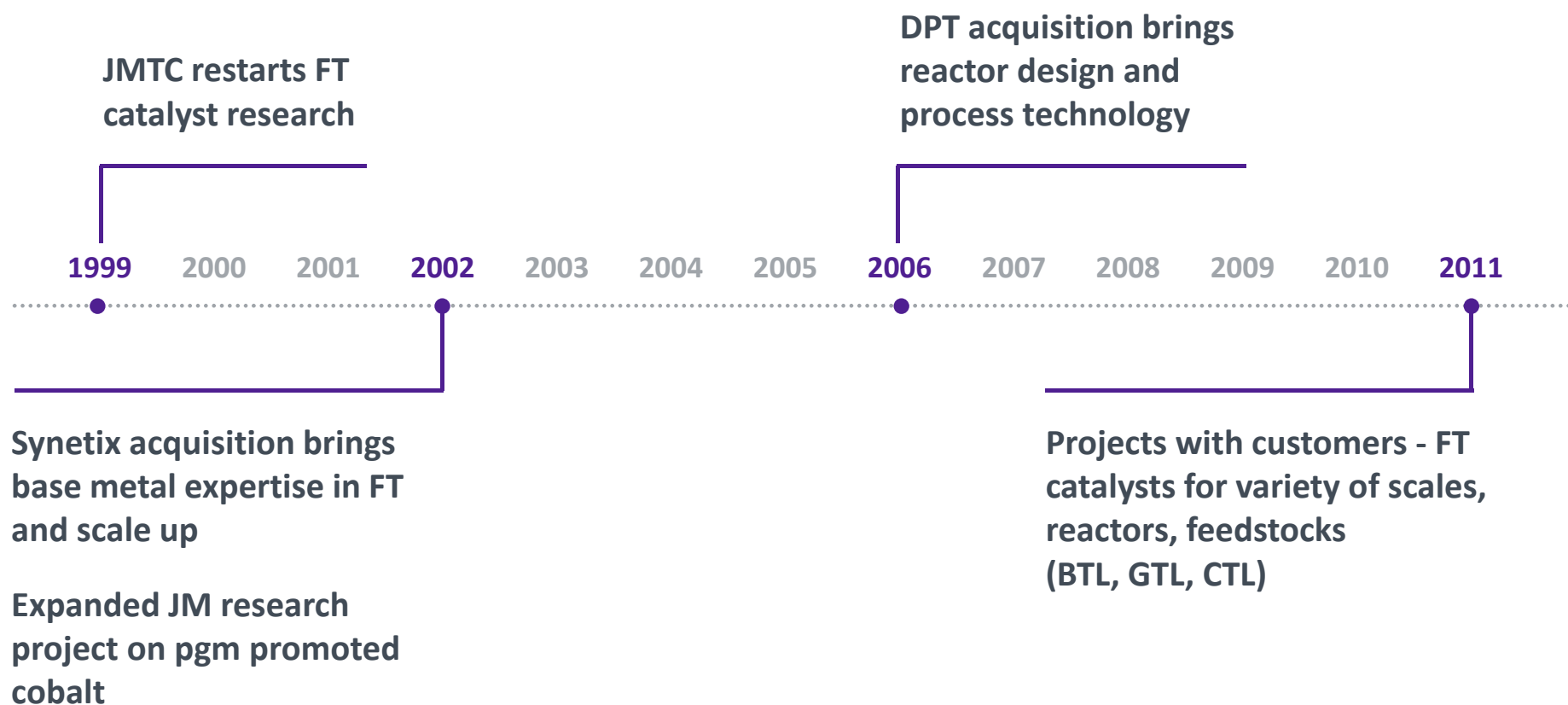
New process technologies => new catalyst solutions

- Advanced reforming / combustion products for distributed syngas
- Tar reforming and sour shift catalysts for bioderived syngas
- Highly active and selective Fischer-Tropsch catalysts



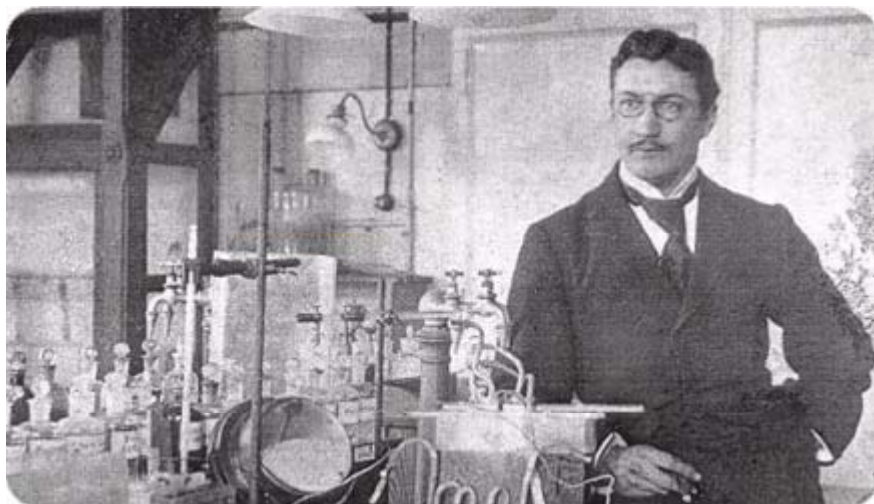
JM optimises the catalyst form to suit the application

FT Catalysis Timelines



Gas to Liquids (GTL)

Fischer-Tropsch Catalyst R&D



Franz Fischer at work in 1918

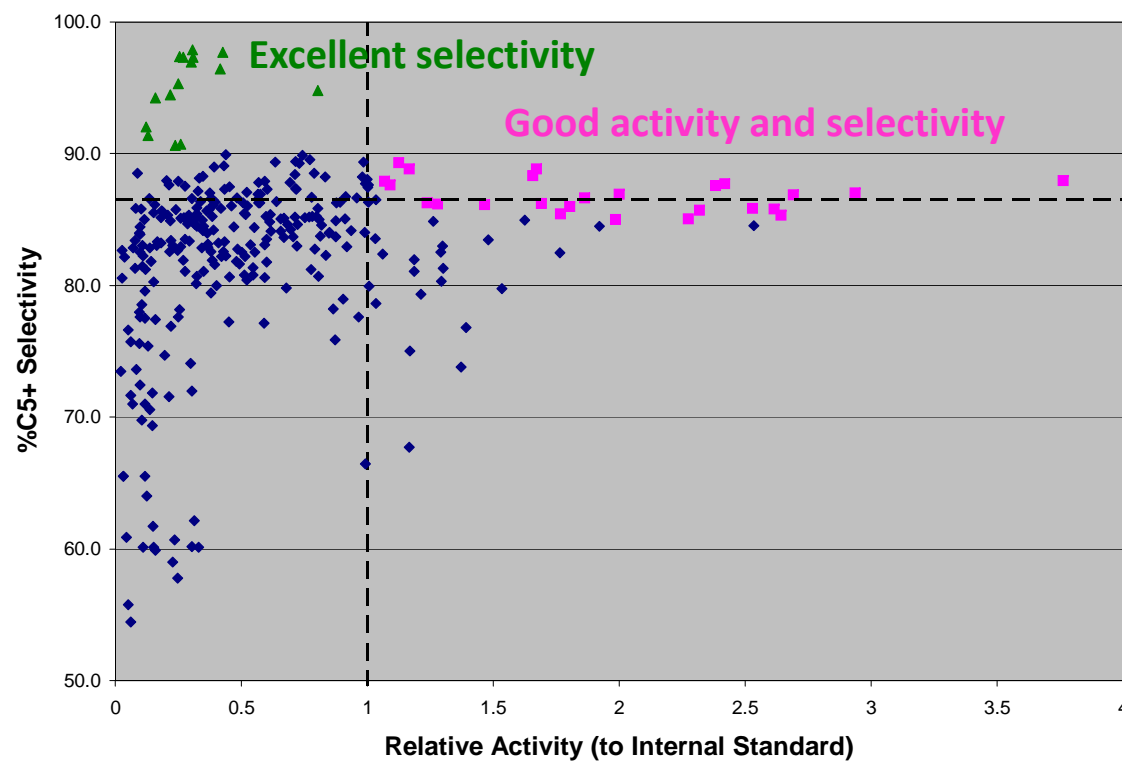


Micro reactors used to simulate large scale FT operating conditions

- High throughput catalyst screening with fully integrated analysis

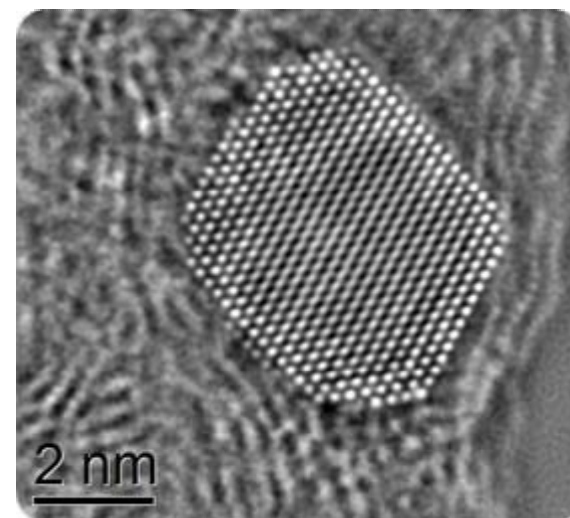
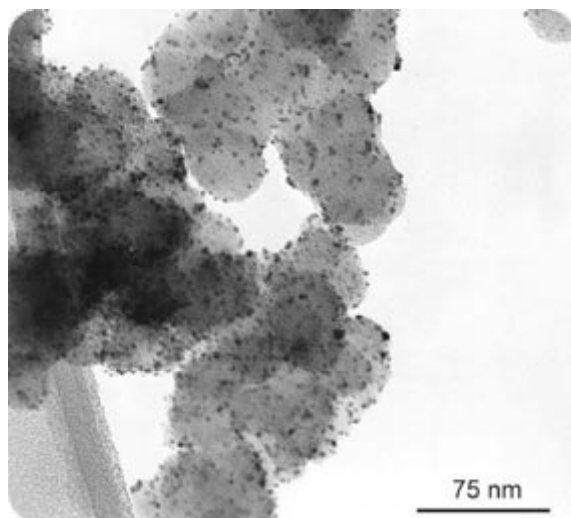
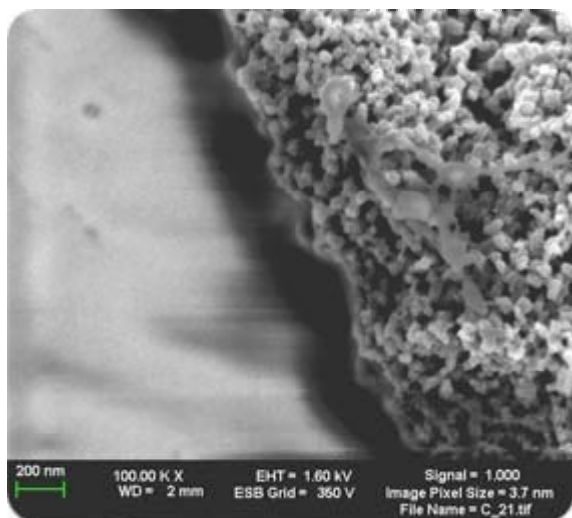
FT Catalyst Progress

FT Conditions: P = 20 bar, H₂/CO = 2, Temperature = 210°C

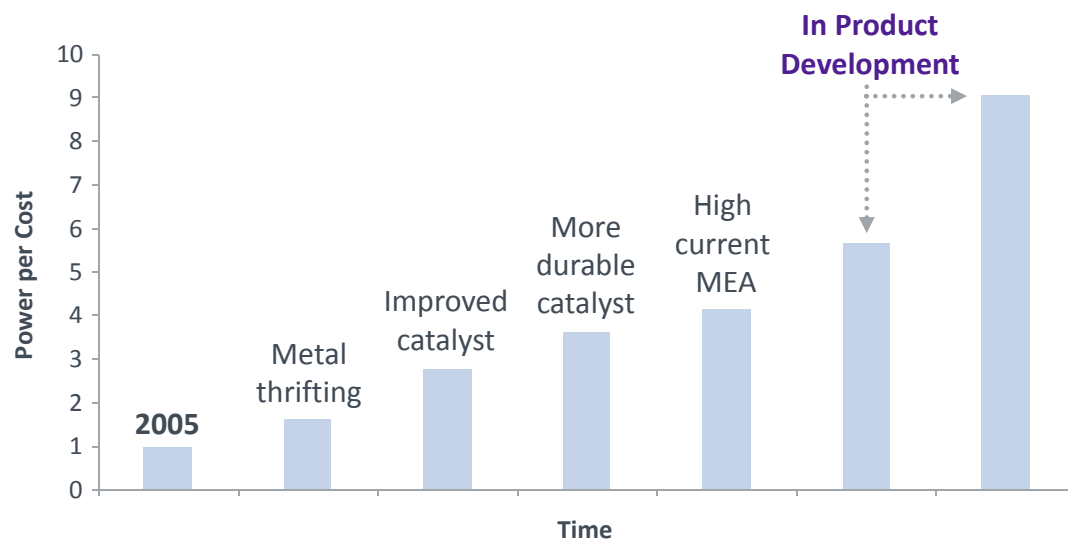


Advanced Fuel Cell Catalysts

Catalyst Layer and Catalyst Structure



Cost-Down and Market Evolution for DMFC Products



Next?

- Bicycles
- Scooters
- Micro-CHP
- Laptops
- Tablet PCs

Leisure



Fork lifts



Chargers



Military



Hand-held





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Conclusions

Many opportunities in adjacent markets

JM attributes provide focus for R&D effort

Increase emphasis on commercialisation

New structure in place and investment budgeted

New business in ten years, sales target circa £200m p.a.



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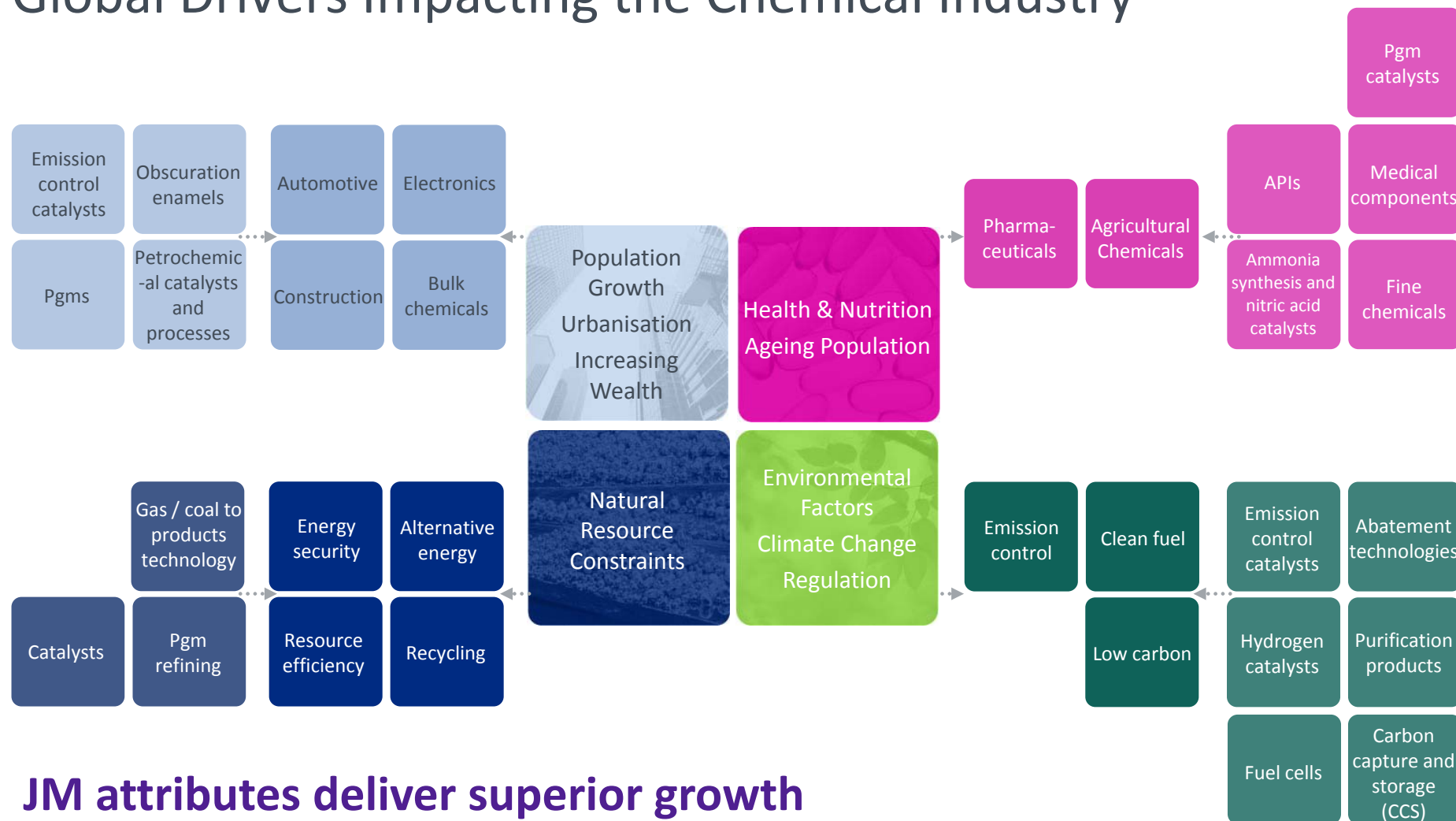


Summary and Conclusions

Neil Carson
Chief Executive


Johnson Matthey

Global Drivers Impacting the Chemical Industry



JM attributes deliver superior growth

Our Strategy in Summary

Key elements unchanged:



Continued focus on leading edge catalysis



Maintain differentiation through technology



Strong position in pgms remains an intrinsic part of group



Primary focus is organic growth

Increased emphasis on:



Developing new opportunities underpinned by core chemistry



JM attributes provide focus for investment



Manufacturing excellence



People and culture

Conclusions

We believe that the strategy is right

Group well positioned for growth in next five years

- **Strong positions** in core markets
- Group anticipated to grow at **double digit rates** with **ROIC >20%**
- Business drivers firmly in place
- Continued **investment** in infrastructure and R&D

Group well positioned for future growth in five years +

- Global drivers show good fit for JM technology
- Strategy in place to **monitor changing landscape**
- Capacity to **invest** to maximise benefit of opportunities
- Proven R&D approach to **deliver** commercial success



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Glossary

ADHD	Attention deficit and hyperactivity disorder	CTL	Coal to liquids
API	Active pharmaceutical ingredient	DARPA	Defense Advanced Research Projects Agency
Apico	Johnson Matthey's new methanol synthesis catalyst	DME	Dimethyl ether
ARPA-E	Advanced Research Projects Agency - Energy	DMFC	Direct methanol fuel cell
Au	Gold	DOC	Diesel oxidation catalyst
BEV	Battery electric vehicle	DPF	Diesel particulate filter
BRIC	Brazil, Russia, India, China	DPT	Davy Process Technology
BTL	Biomass to liquids	e+™	Ethylene scavenger that postpones fresh produce ripening
C	Carbon	EBITDA	Earnings before interest, tax, depreciation and amortisation
CAGR	Compound annual growth rate	ECT	Emission Control Technologies
CCRT®	Coated continuously regenerating trap	EPS	Earnings per share
CCS	Carbon capture and storage	EU	European Union
CHP	Combined heat and power	FCEV	Fuel cell electric vehicle
Co	Cobalt	FT	Fischer-Tropsch
CO	Carbon monoxide	GDL	Gas diffusion layer
CO ₂	Carbon dioxide	GHG	Greenhouse gas
CRT®	Continuously regenerating trap		

Glossary

GTL	Gas to liquids	PBT	Profit before tax
H ₂	Hydrogen	Pd	Palladium
HC	Hydrocarbon	Pgm	Platinum group metal
Hg	Mercury	PHEV	Plug in hybrid electric vehicle
IC	Internal combustion	PM	Particulate matter
ICE	Internal combustion engine	Pms	Precious metals
INCB	International Narcotics Control Board	Pt	Platinum
ISO 14001	Series of standards specifying requirements of an environmental management system	R&D	Research and development
JM	Johnson Matthey	ROIC	Return on invested capital
JMTC	Johnson Matthey Technology Centre	ROW	Rest of the world
JV	Joint venture	RSA	Republic of South Africa
MEA	Membrane electrode assembly	SCR	Selective catalytic reduction
MW	MegaWatt	SCRT®	Selective catalytic reduction + CRT®
N ₂ O	Nitrous oxide	SNG	Substitute natural gas
NOx	Nitrogen oxides	SOx	Oxides of sulphur
OEM	Original equipment manufacturer	Syngas	A mixture of hydrogen and carbon oxides
		WHO	World Health Organization



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