Johnson Matthey

Presentation to

Analysts & Investors

Johnson Matthey

Environmental Catalysts and Technologies

Royston

24th January 2007

Johnson Matthey

Neil Carson

Chief Executive

JM Executive Board

Neil Carson	-	Chief Executive
John Sheldrick	-	Group Finance Director
Larry Pentz	-	Executive Director, ECT
Dr Pelham Hawker	-	Executive Director, PCT and Pharmaceutical Materials
David Morgan	-	Executive Director, Corporate Development, Central Research and Ceramics

Other Senior Management

Paul Framp	-	Managing Director, ECT Europe
Antoine Bordet	-	General Manager, ECT Northern Europe
Dr David Prest	-	Global Director, Heavy Duty Diesel
Simon Christley	-	Division Finance Director, ECT
Dr Martyn Twigg	-	Technology Director, ECT Europe
Ian Godwin	-	Director, Investor Relations
Dr Sally Jones	-	Public Relations Manager

Programme

9.00	Welcome and trading update (Neil Carson)
9.15	Environmental Catalysts and Technologies and the Global Light Duty Market (Larry Pentz)
9.45	Coffee break
10.00	ECT Europe (Paul Framp) and The Diesel Filter Market in Europe (Antoine Bordet)
10.30	Heavy Duty Diesel (Dr David Prest)
11.15	Tour of Autocatalyst Technical Centre
12.15	Tour of Autocatalyst and Catalysed Soot Filter manufacturing facilities
13.15	Lunch and visit wrap up Q&A
14.15	Depart by coach for Royston Station

Current Trading

- Trading in the second half progressing well
- Catalysts Division continues to deliver good growth
- ECT benefiting from increased sales of heavy duty diesel catalysts following the introduction of new emissions regulations in Europe and North America
- PCT has also achieved good growth with strong sales of synthesis gas catalysts and a good contribution from Davy Process Technology
- Precious Metal Products had strong third quarter with continuing favourable conditions in the pgm markets

Current Trading

- Pharmaceutical Materials is also ahead of last year with continued recovery in its US business
- Sale of Ceramics Division agreed for approximately €226 million in cash. The proceeds will be used to buy back shares and fund bolt-on acquisitions
- The disposal of Ceramics will be slightly dilutive to earnings this year and the US dollar has weakened further since our Interim Results
- Despite these adverse effects, the outlook for the year remains encouraging, with growth in earnings per share (excluding the profit on disposal of Ceramics) expected to be slightly better than the 9% achieved in the first half

Johnson Matthey

Johnson Matthey Catalysts

Larry Pentz, Executive Director

Environmental Catalysts and Technologies

ENVIRONMENTAL CATALYSTS AND TECHNOLOGIES

Agenda

- ECT Overview - Larry Pentz
- Global Light Duty Market - Larry Pentz
- European Region - Paul Framp
- The LD Diesel Market in Europe - Antoine Bordet
- Heavy Duty Diesel - David Prest

Environmental Catalysts and Technologies

Organisation

- **Neil Carson**
  CEO
  - Lawrence Pentz
    Executive Director
    ECT
    - Alan Myers
      President
      North American Region
    - John Walker
      Managing Director
      Asian Region
    - Paul Framp
      Managing Director
      European Region
      - Antoine Bordet
        General Manager
        Northern Europe
      - Martyn Twigg
        Technology Director
        European Region
    - David Prest
      Director
      Global Heavy Duty Diesel
    - Simon Christley
      Finance Director
      ECT

Markets and Products

Markets

LIGHT DUTY APPLICATIONS

- petrol OEMs (Original Equipment Manufacturers)
- diesel OEMs
- aftermarket

HEAVY DUTY DIESEL APPLICATIONS

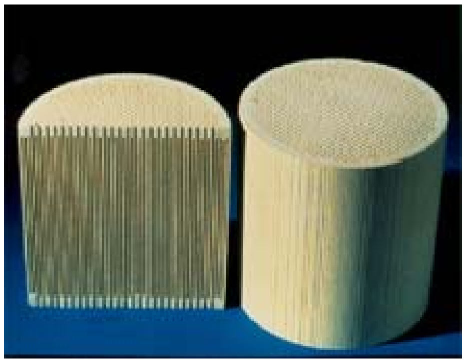
- OEMs
- retrofit

STATIONARY SOURCE EMISSIONS CONTROL

- power industry
- process industry
- internal combustion engine converters

Markets and Products

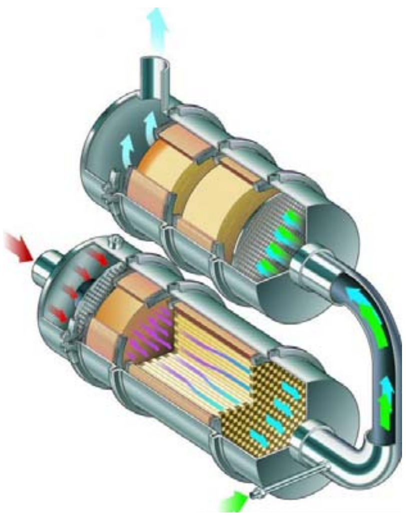
Products



- Flow through components
  - three way catalyst (TWC)
  - diesel oxidation catalyst (DOC)
  - selective catalytic reduction (SCR)
  - NOx absorber catalyst (NAC)

Particulate filters

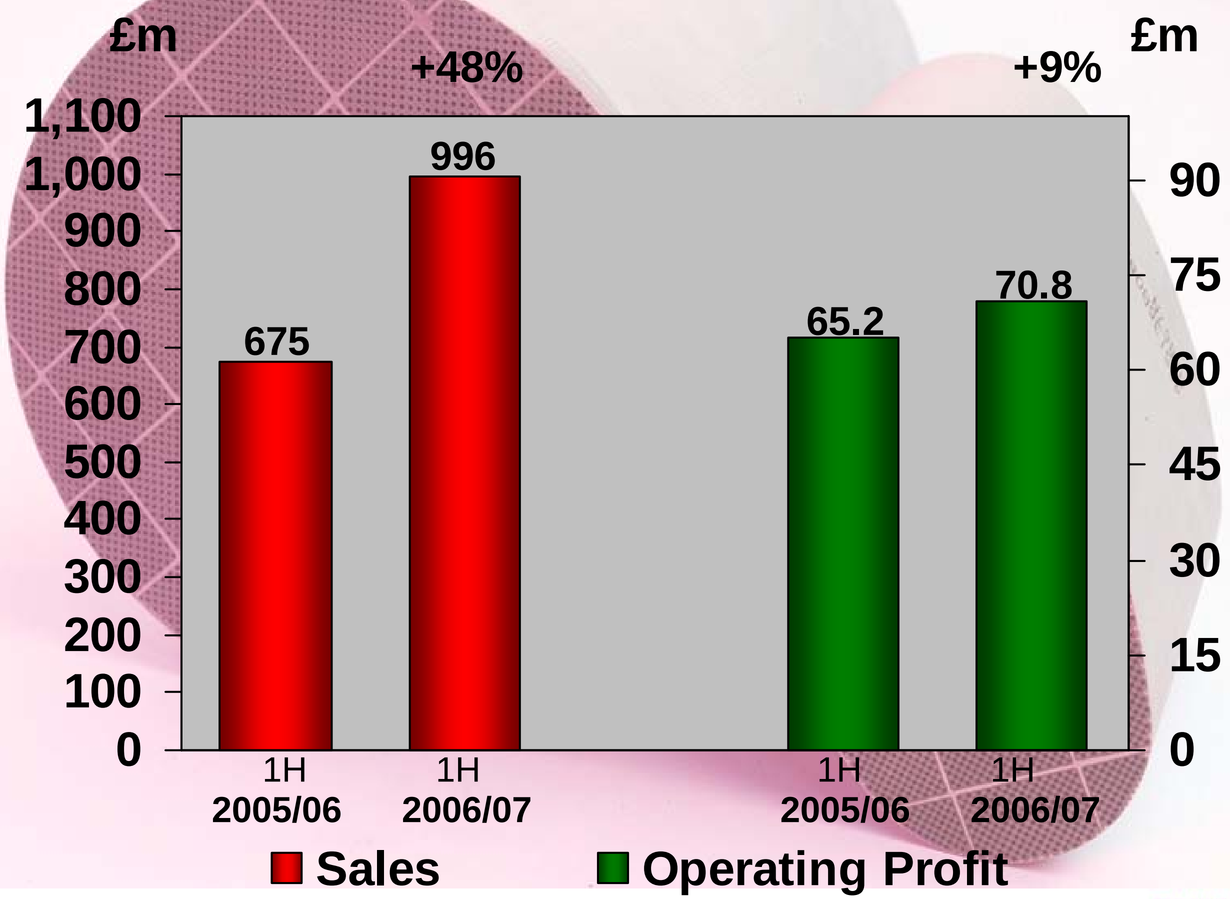
also known as diesel particulate filters (DPF) and catalysed soot filters (CSF)



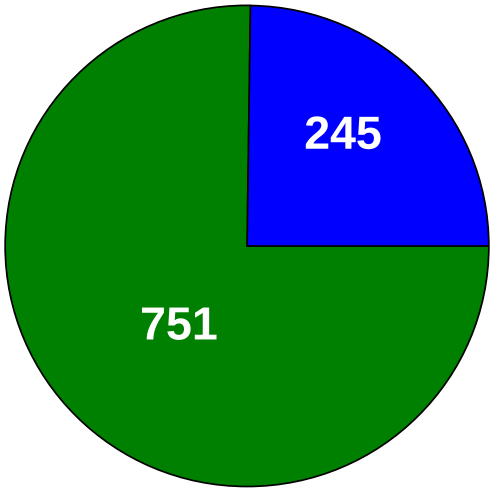
- Systems of catalyst components
  - continuous regenerating trap (CRT®)
  - catalysed CRT® (CCRT®)
  - SCRT®(SCR + CRT)
  - EGRT® (EGR + CRT)

Catalysts Division - 2006/07 Half Year Results

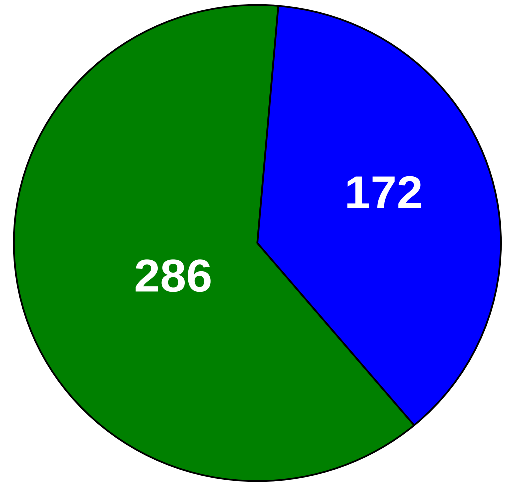
- Profits up 9%
- Both ECT and PCT achieve good growth



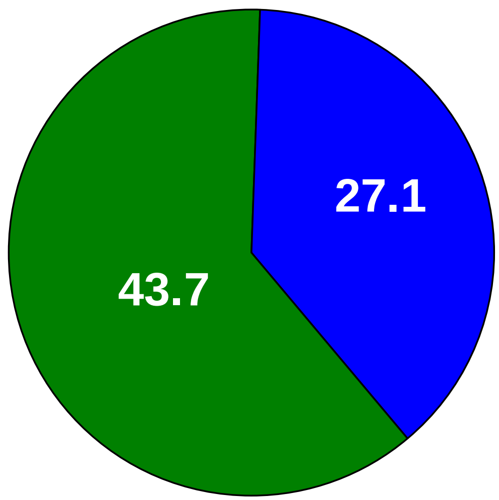
Catalysts Division – 2006/07 Half Year Results



Sales £996m



Sales excl. Precious Metals £458m



Operating Profit £70.8m

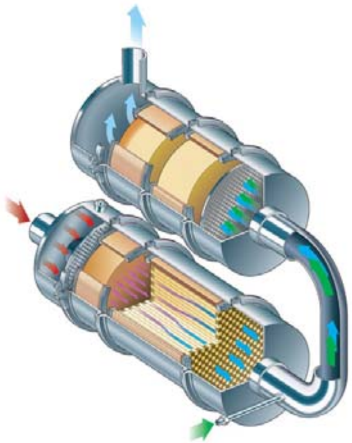
ECT

PCT / Fuel Cells

Substrate Costs

Autocatalyst **£3 - £10**

CSF **£100 - £120**



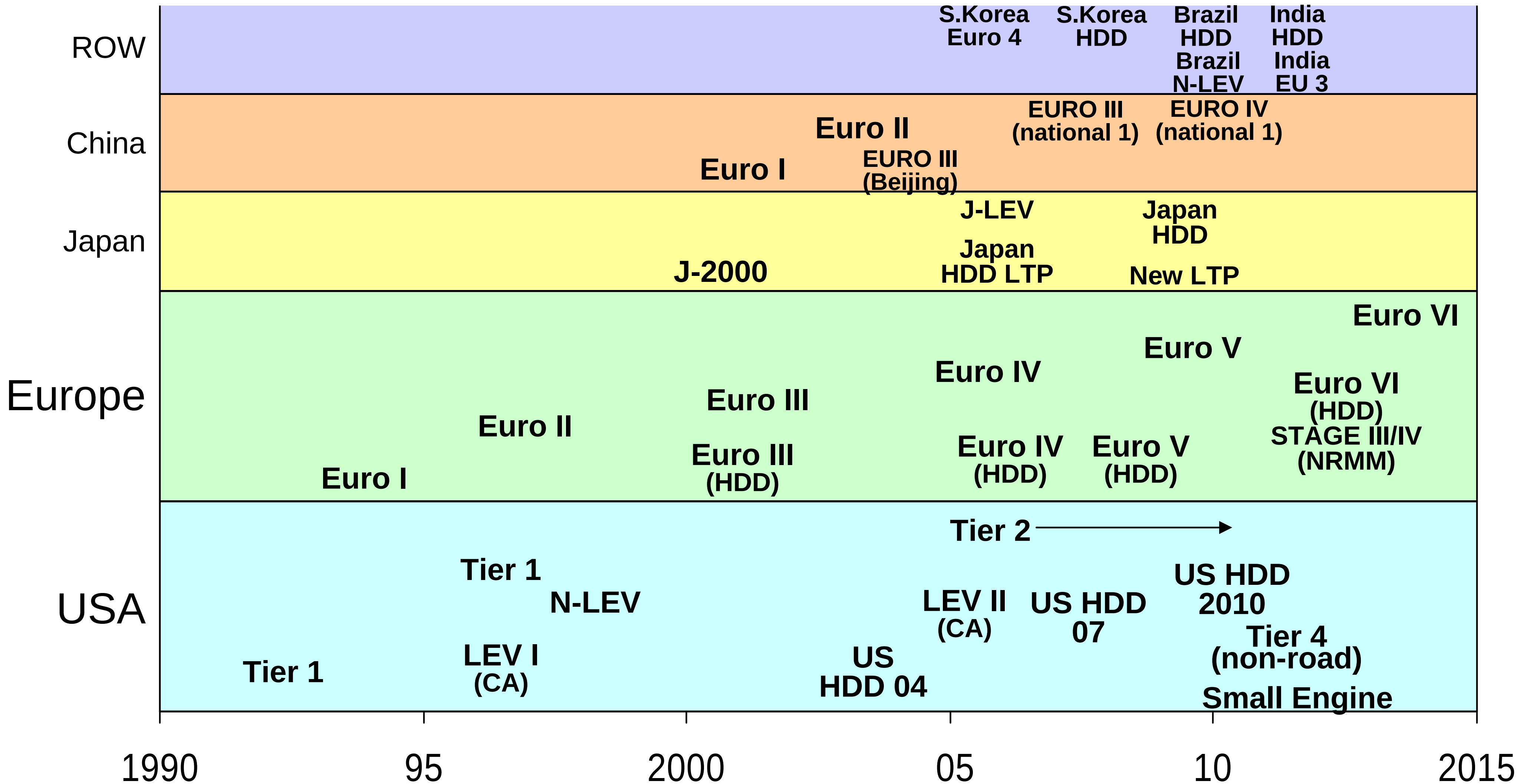
HDD **Flow through £60**
Filter system £300

Global Network

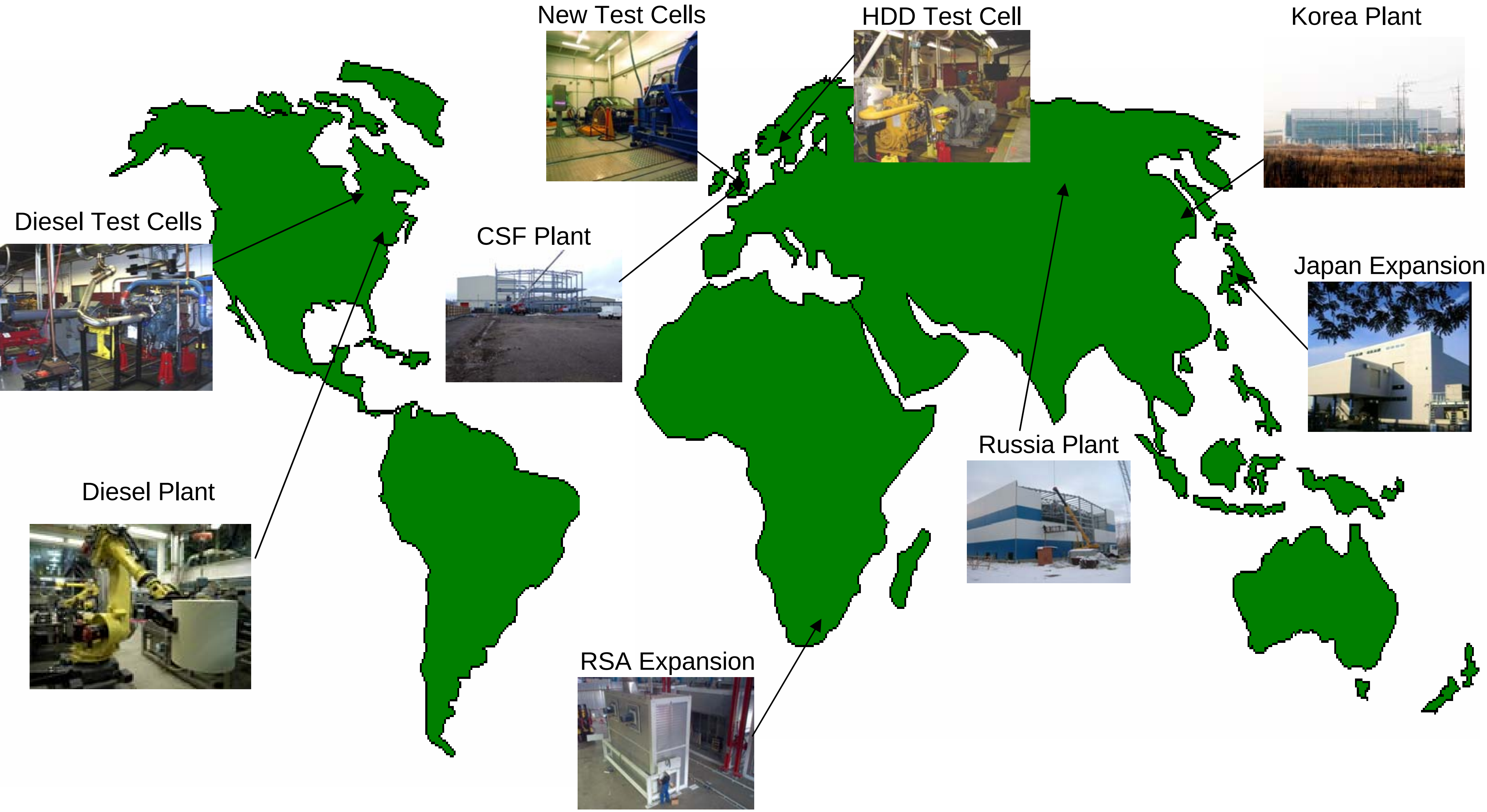
12 Manufacturing Sites

7 Technology Centres

Legislative Horizon

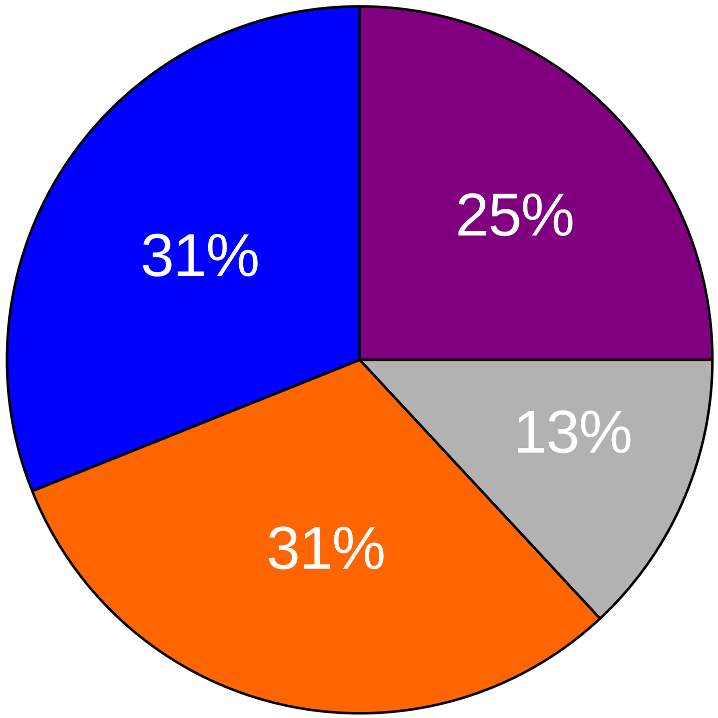


Current Investment in Growth



Autocatalysts - Global Market Share

Revenues excl.
Precious Metals
Available market



BASF
JM
Umicore
Other

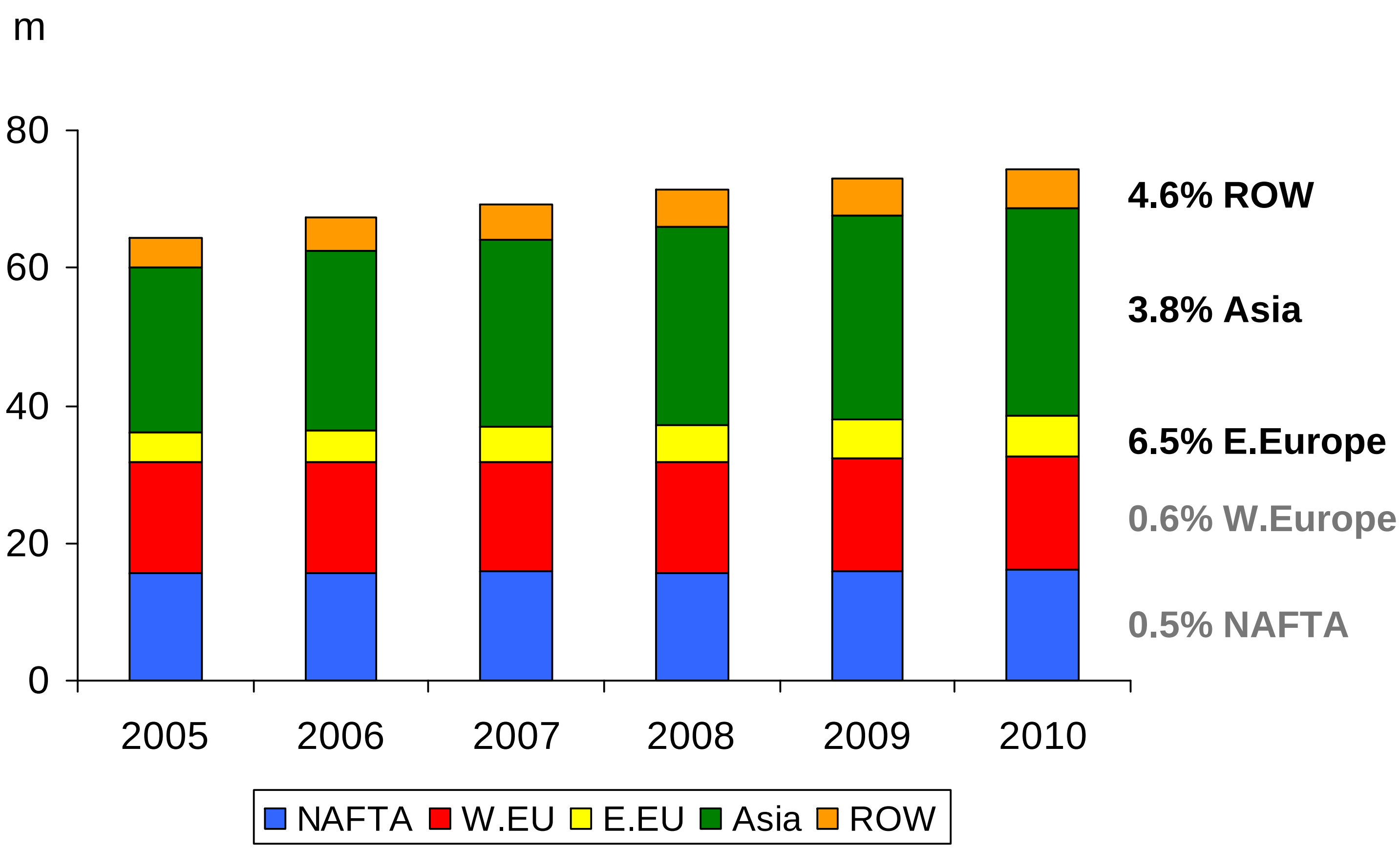
Outlook

- Emission tightening continues around the world
- Emphasis on particulate removal offers significant new opportunity in the light duty segment today
- Focus on NOx reduction in the next rounds of legislation will require additional emission control
- On road, heavy duty diesel volumes begin series production in the second half of 2006/07
- Further tightening of on road and the start of off road HDD continues into the next decade
- Locomotive, marine and small engine legislation offer incremental opportunity beyond 2010

Expectation – double digit growth for the foreseeable future

Global Light Duty Market

Global Light Duty Vehicle Production

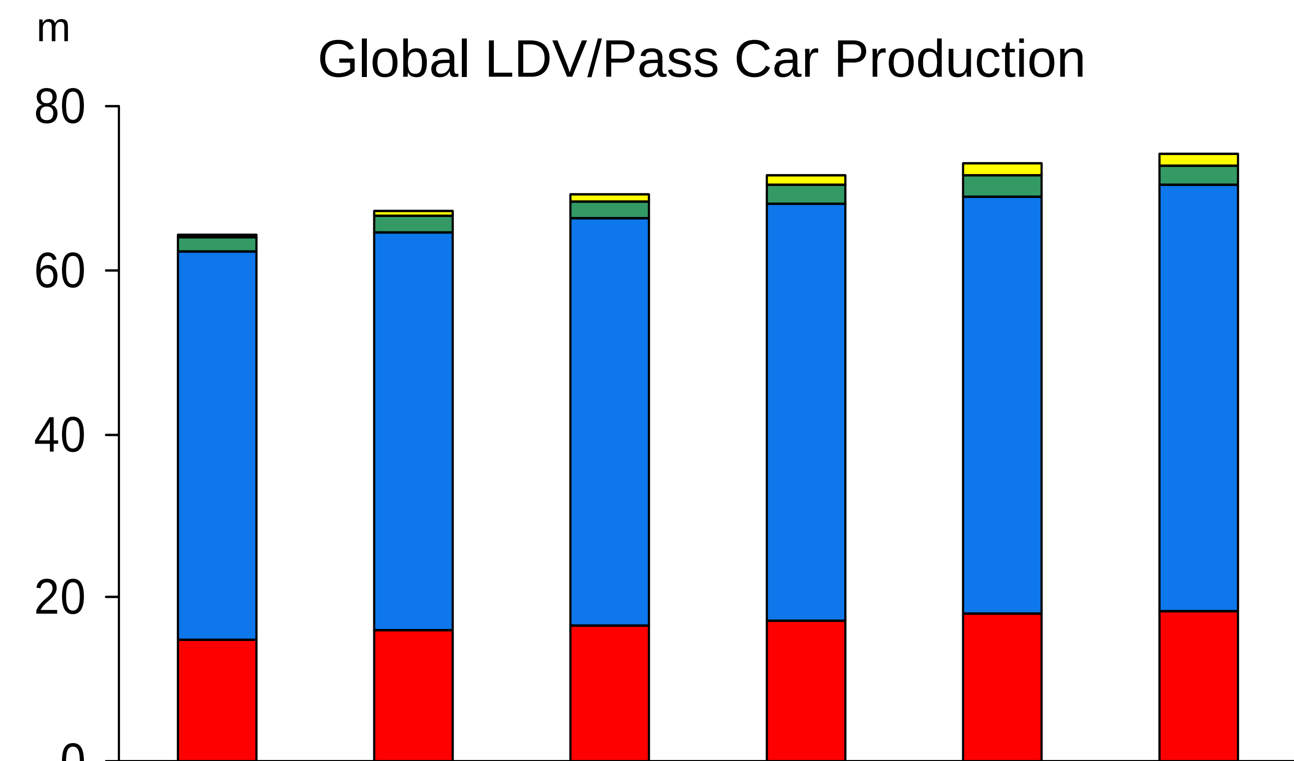


Vehicle Market Dynamics

- Moderate global growth
  - 2005-10 CAGR 2.9%
- Strong regional growth in China, India, E.Europe

Source: Global Insights & JM Forecasts

Global Production by Fuel Type



	2005	2006	2007	2008	2009	2010
Hybrid	0.34	0.49	0.80	1.11	1.36	1.46
Other	1.73	2.15	2.29	2.36	2.52	2.48
Petrol	47.35	48.68	49.57	50.67	51.13	51.83
Diesel	14.87	15.91	16.64	17.29	17.94	18.44

Diesel Petrol Other Hybrid

Source: Global Insights & JM Forecasts

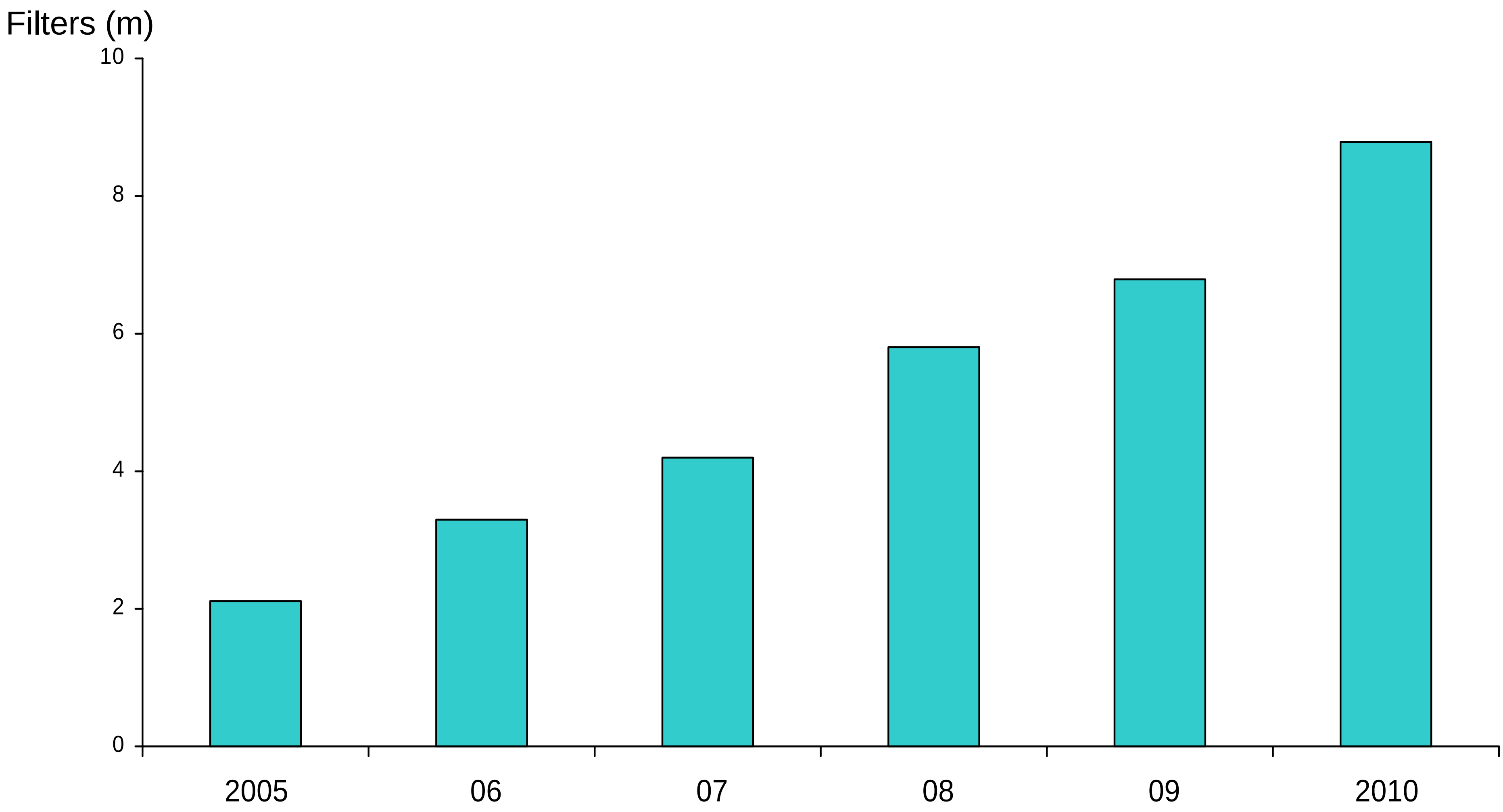
Vehicle Market Dynamics

- Diesel growth remains in EU
  - NA < 10% in 2010
- Petrol stable growth
- Other fuel technologies will have limited impact

Light Duty – Market Opportunities

- **Diesel particulate filters**
- NOx removal
- Asia market growth (and market share growth)
- Continuous PGM thrifting

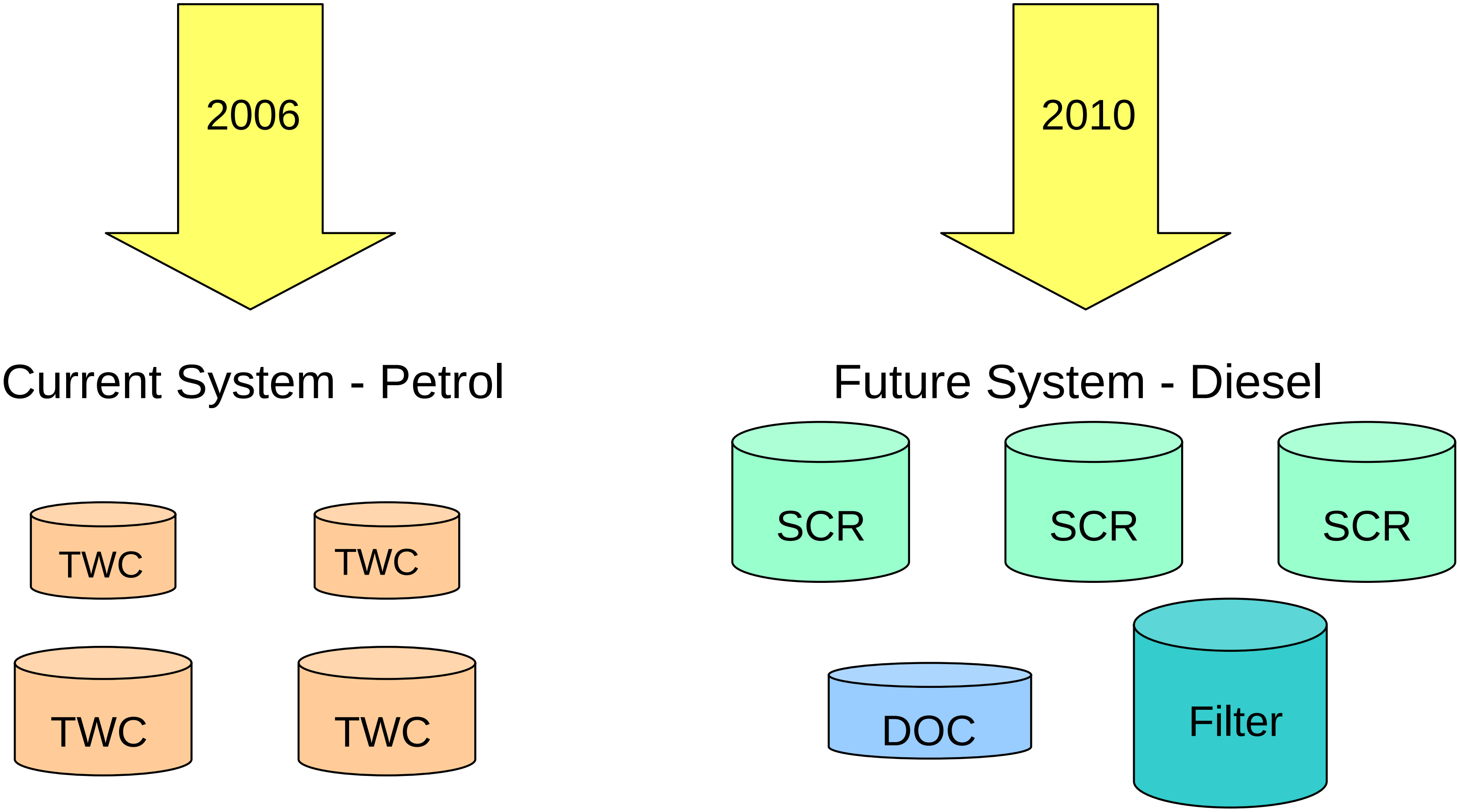
Estimate Europe Filter Demand



US Potential Diesel Demand

US Pick Up Truck Market

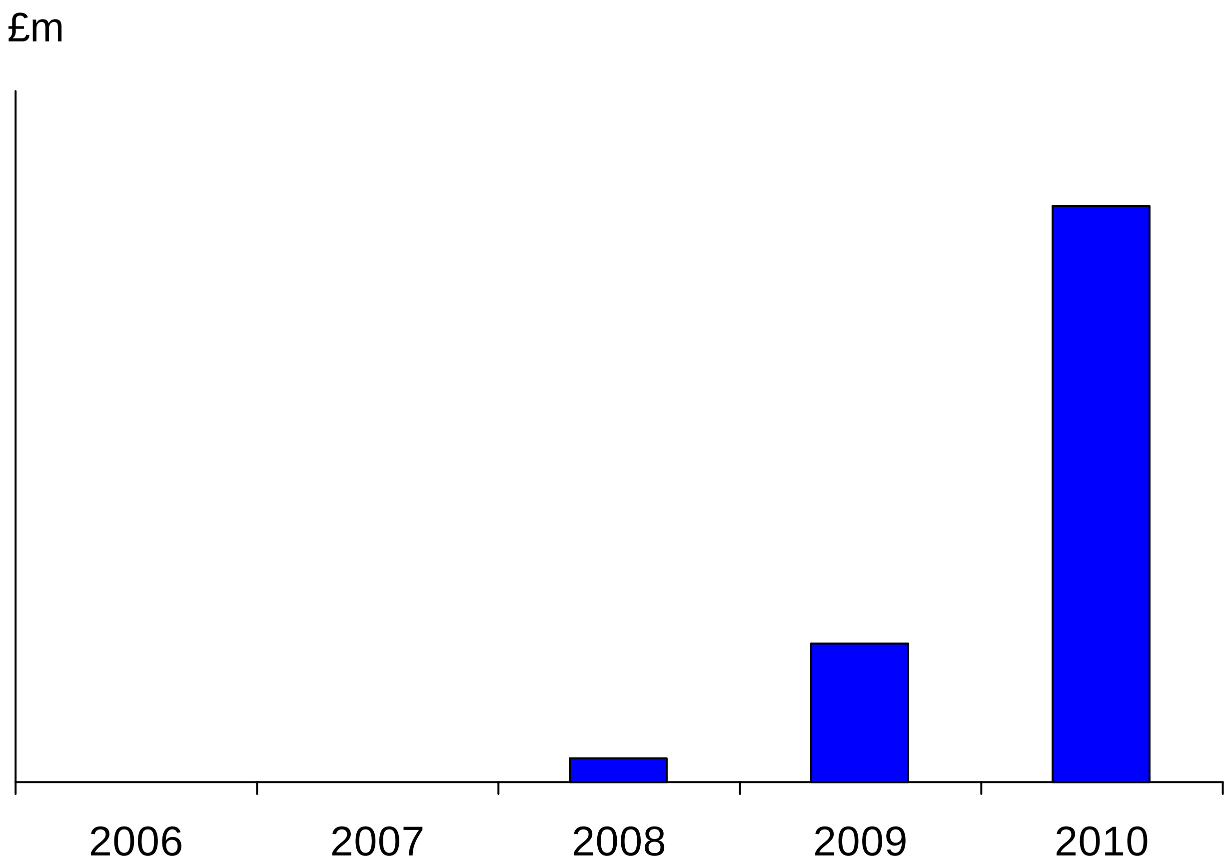
2.9 m/annum



Light Duty – Market Opportunities

- Diesel particulate filters
- **NOx removal**
- Asia market growth (and market share growth)
- Continuous PGM thrifting

SCR Opportunity



- Tightening NOx requirements (US Tier 2, Euro VI) will require additional aftertreatment
- OEMs currently running NOx removal development programs
  - SCR is the most likely product
  - Lean NOx Trap (LNT) could be used on smaller vehicles
- Timing of market is difficult to predict (and will there be any advanced incentive programs)
- Significant incremental volume for the light duty market

Light Duty – Market Opportunities

- Diesel particulate filters
- NOx removal
- **Asia market growth (and market share growth)**
- **Continuous PGM thrifting**

Paul Framp, Managing Director

ECT Europe

Our business is:

"Developing, Manufacturing and Selling catalysts for the removal of pollutants from the exhausts of internal combustion engines."

Converting

$CO \longrightarrow CO_2$

$HC \longrightarrow CO_2, H_2O$

$NOx \longrightarrow N_2, O_2$

$C \text{ (soot)} \longrightarrow CO_2$

Vehicles Using JM Autocatalysts

Audi
bajaj auto ltd.
BUGATTI
BMW
CATERHAM
Daimler
DAF
DAIMLERCHRYSLER
Ferrari
FIAT

Ford
HONDA
GM
IVECO
Jeep®
JAGUAR
LANCIA
LAND ROVER
MAN
mazda
MBK

MITSUBISHI MOTORS
NISSAN
PEUGEOT MOTOCYCLES
PIAGGIO
PORSCHE
proton
PSA PEUGEOT CITROËN
RENAULT

ROVER
Rolls-Royce
SCANIA
SKODA AUTO
SUBARU
SUZUKI
TOYOTA
TVR
VOLVO

Our Principal Light Duty Customers

Audi

Ford

LAND ROVER

VOLVO

RENAULT

PSA PEUGEOT CITROËN

FIAT

GM

TOYOTA

PORSCHE

Environmental and Legislative Pressures

Honda’s Advert, “Hate Something…Change Something”

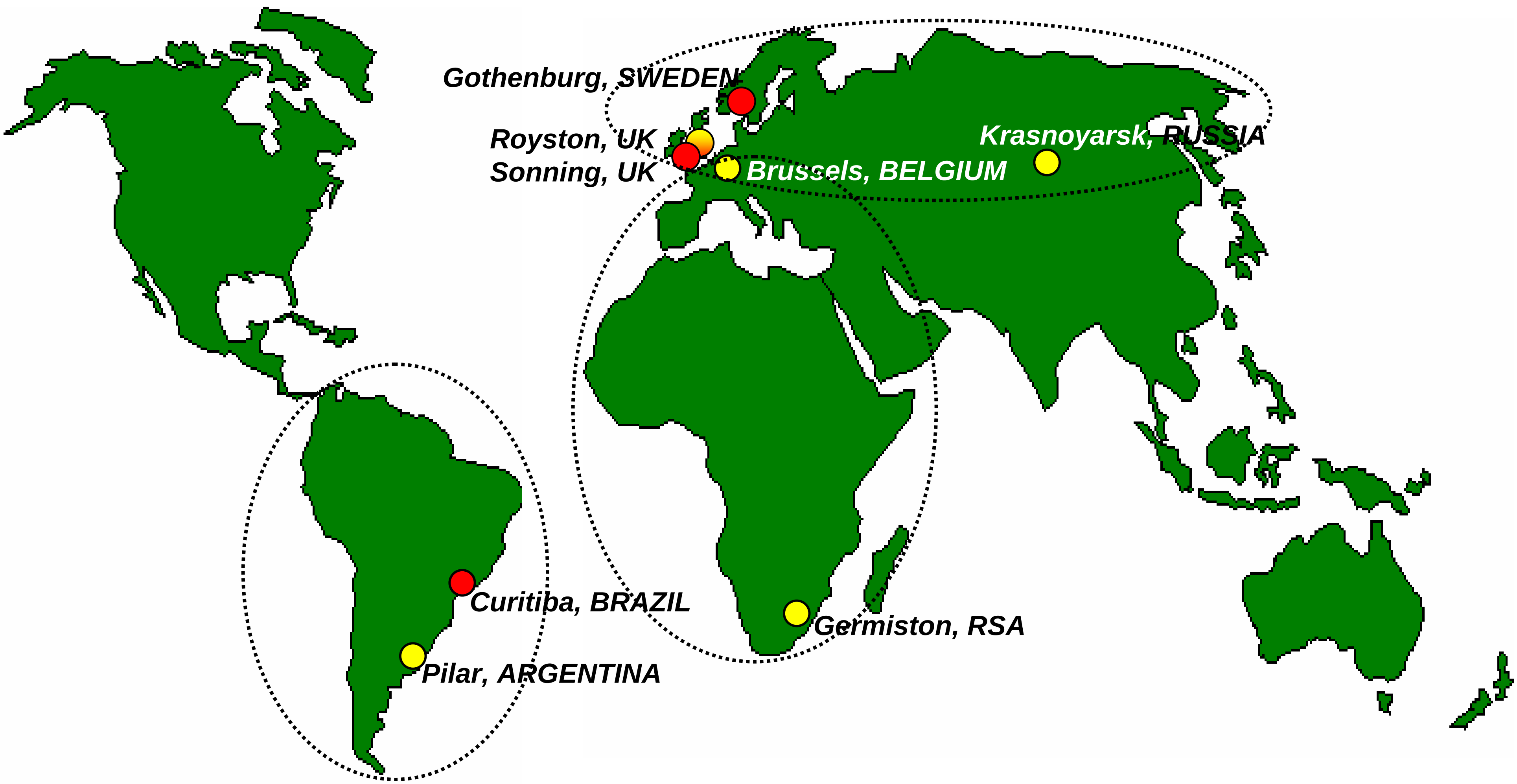
Mercedes Re-branding of Diesel as “Bluetec”

Global Network

12 Manufacturing Sites

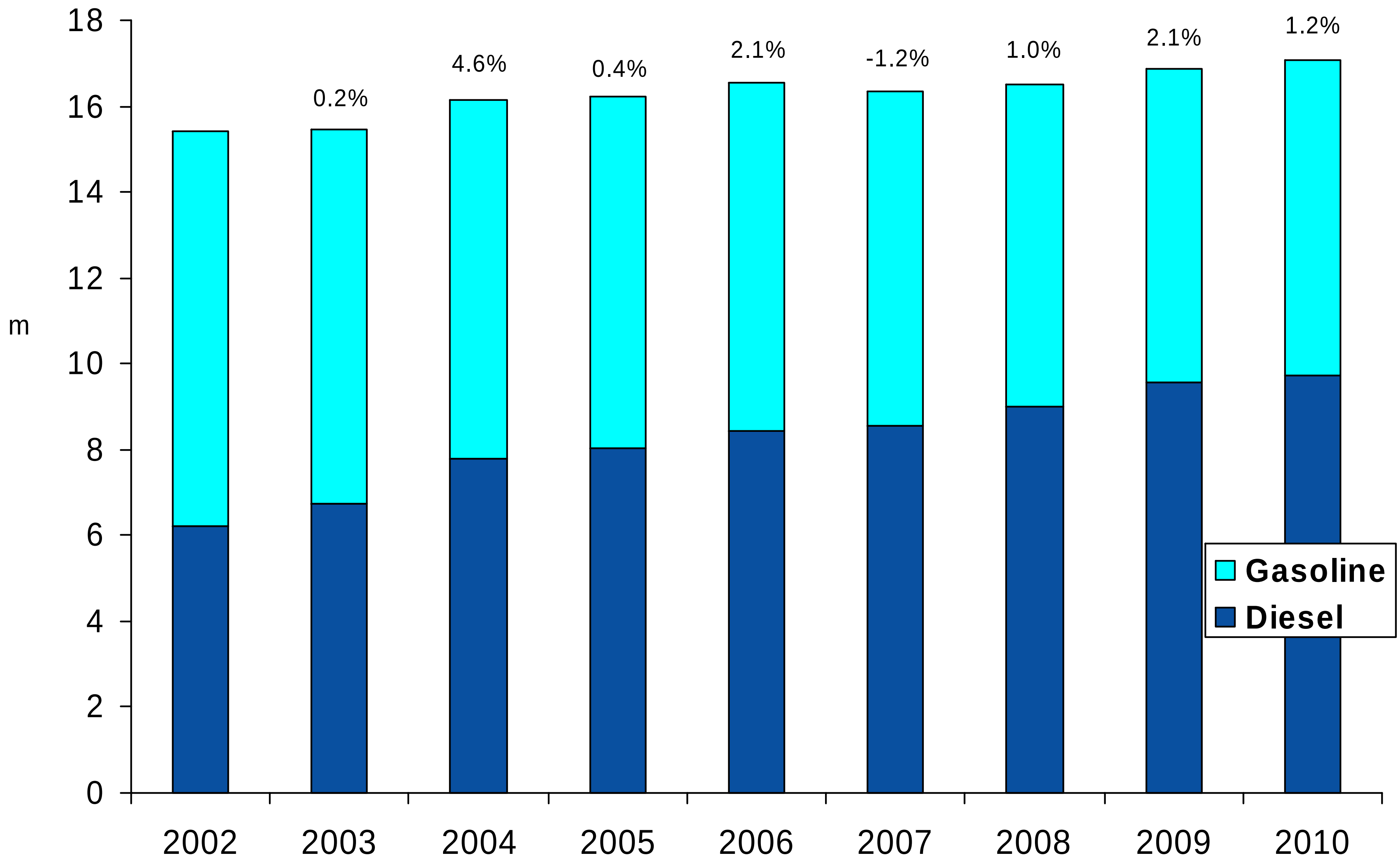
7 Technology Centres

Our Definition of Europe



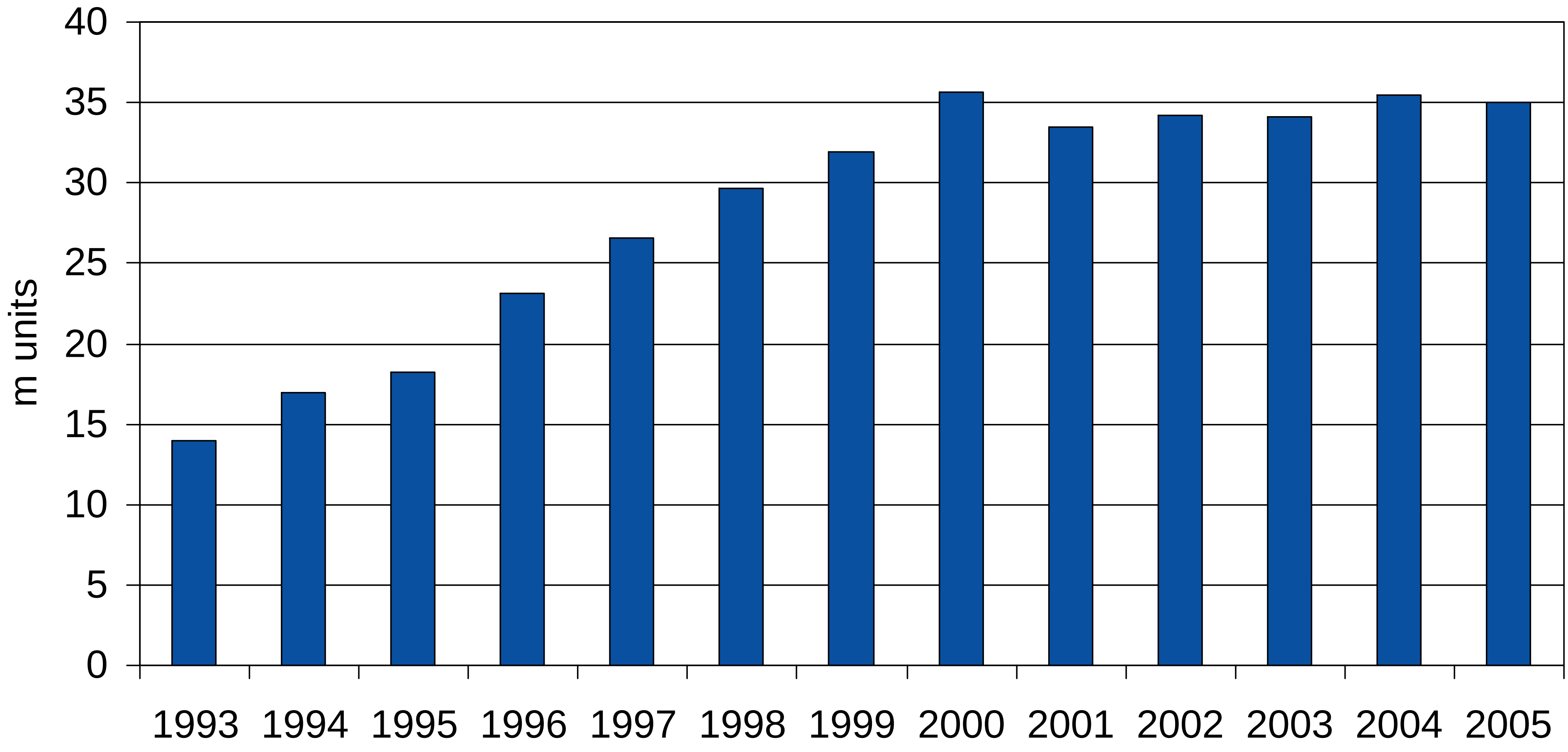
5 Manufacturing Sites **4 Technology Centres**

Car Sales in Europe 2002-2010 (includes Eastern Europe)



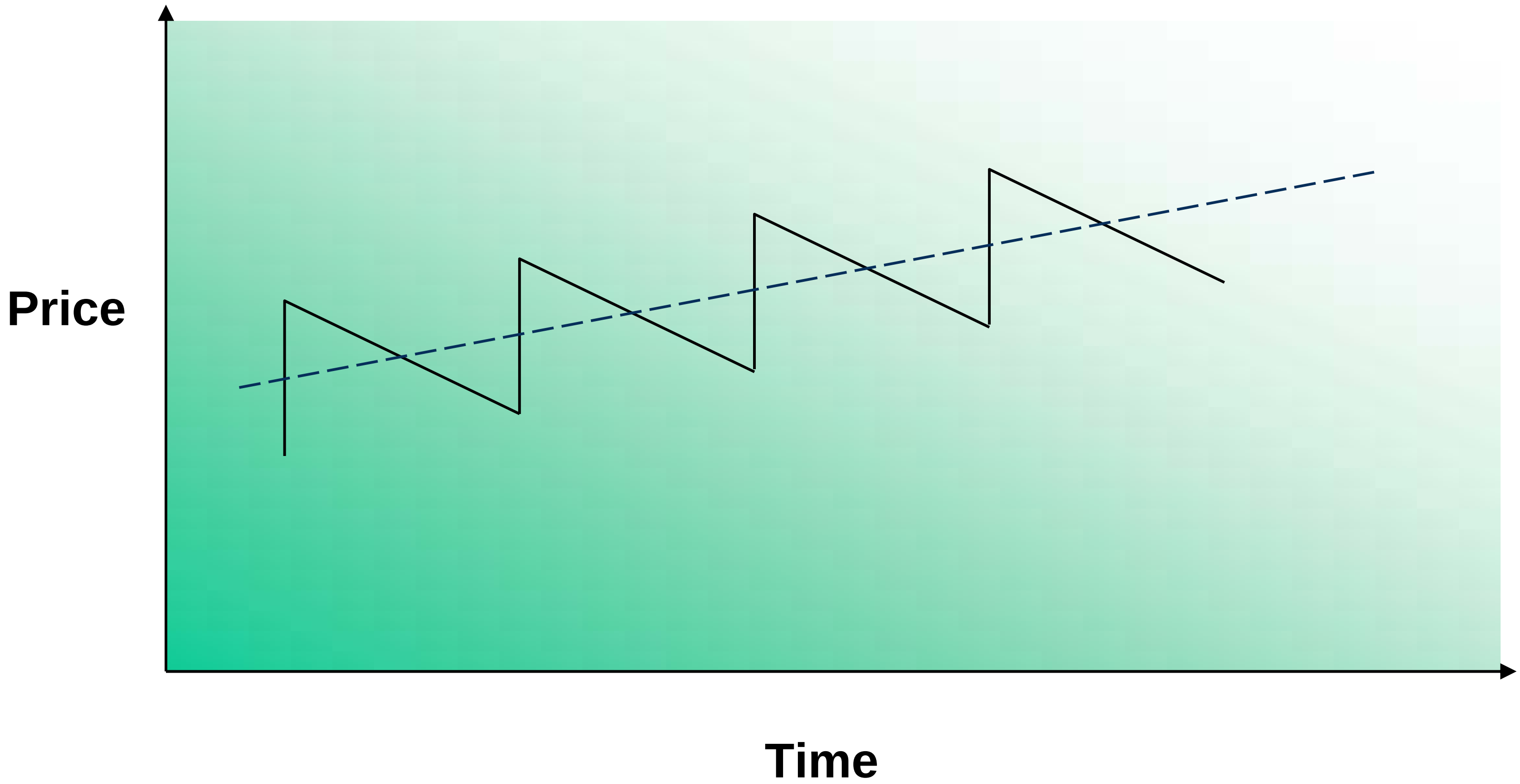
Source: Global Insight – Dec 2006

Total European Catalysts Sales (m units)

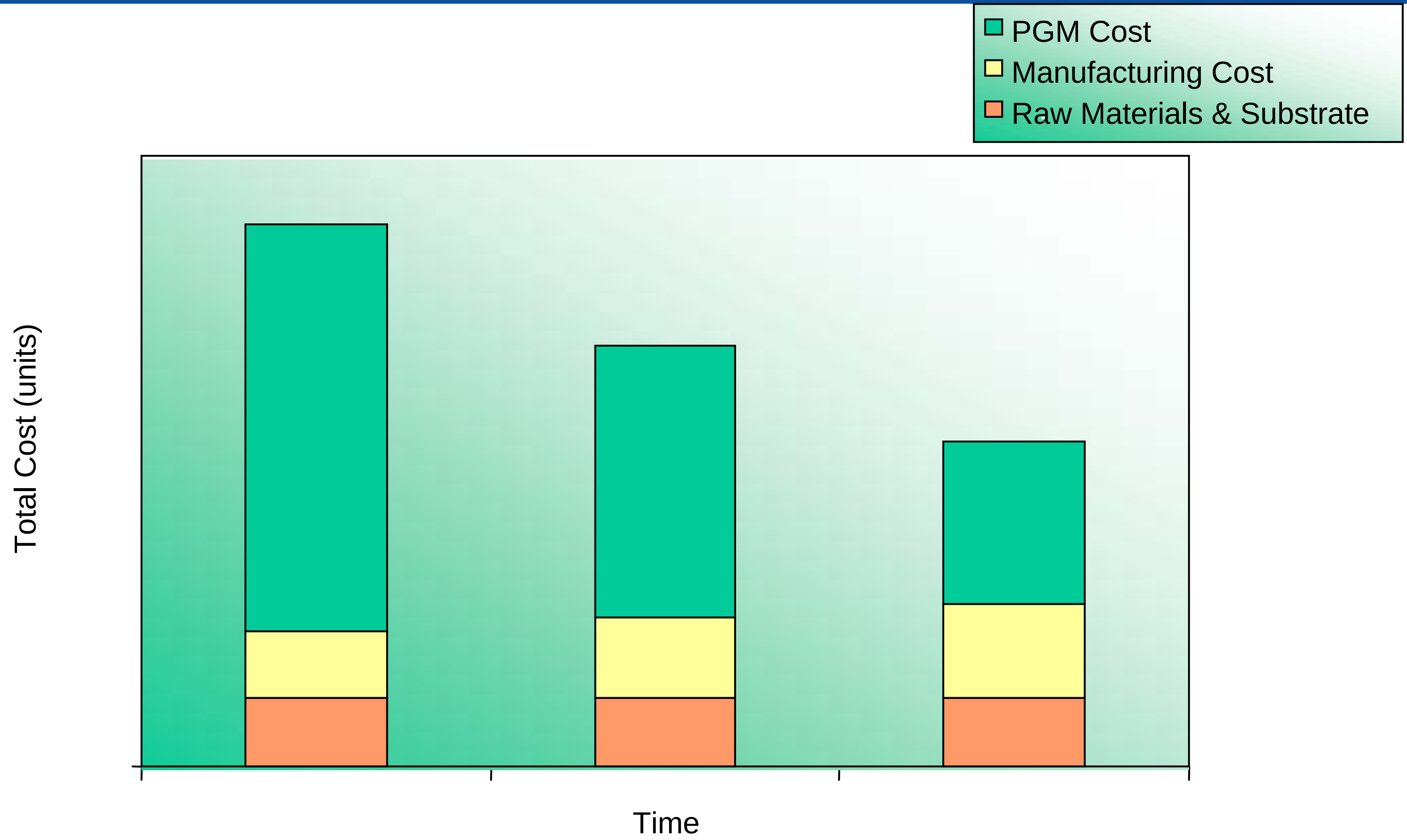


Source: CEFIC Ecostats

ECT Pricing Model



Catalyst Total Cost



Increasing Unit Margins

- Continuing legislative pressure has allowed continuing increases in net revenues on standard technologies
- Metal thrifting and part or whole substitution of Pd for Pt has allowed OE buyers to demonstrate system cost improvements, while our unit margins increase
- Same process is now underway on catalysed soot filters
- And further new technologies in NOx control between now and 2014
- … but worth noting that the swing to diesel, with more expensive filter substrates, larger scale pieces, and more use of platinum, has increased the unit sales price of catalysts…

Royston Fastcat

- Established 2000
- Nominal capacity 3m catalysts
- New CSF plant output 850k filters
- 291 employees

Brussels

- Established 1990
- Close to Brussels airport
- Nominal capacity 4m catalysts
- New Heavy Duty Diesel line
- 274 personnel

Germiston, South Africa

- Established 1991
- Close to Johannesburg airport
- Grown rapidly since 2000
- Nominal capacity 7.5m
- New Volvo Powertrain business
- 570 employees

Pilar, Argentina

- Pilar established 1997
- Close to Buenos Aires and airport
- Nominal capacity 1m pieces
- 65 employees

Russia

- New facility under construction at Krasnoyarsk
- A JM company, located on the secure site of a Russian PGM company
- In production by end of 2007
- Starting capacity of 1m units

Gothenburg Engine Test Centre

- Diesel engine test centre at Gothenburg
- 8 engine test cells, for HDD and LDD applications
- 31 employees

Royston Technology Centre

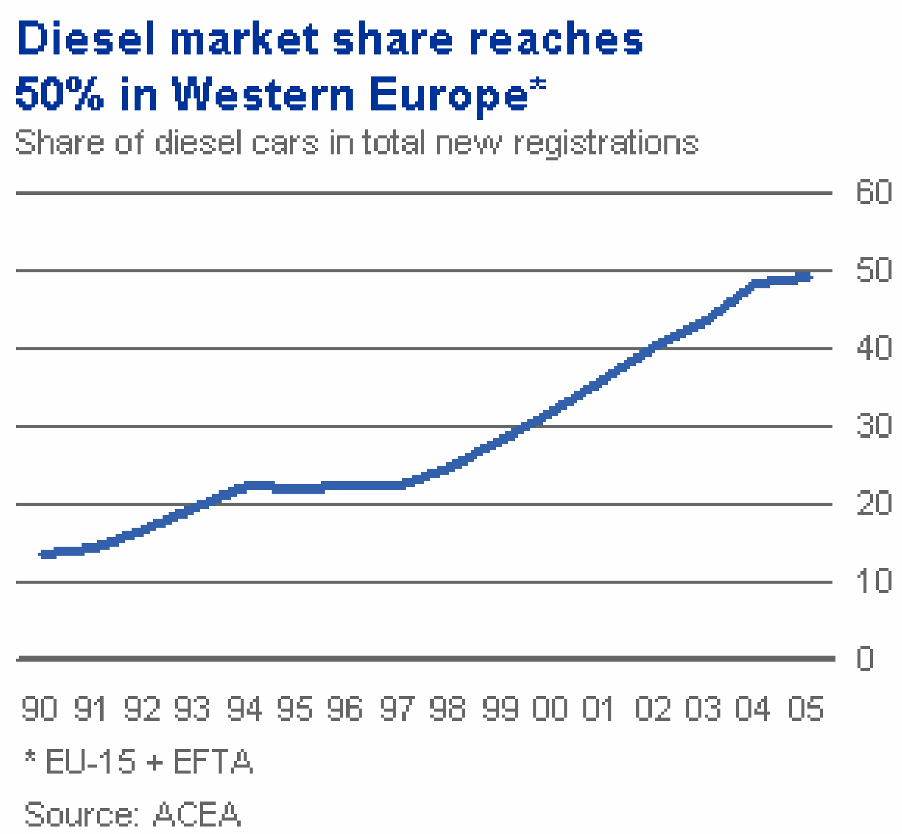
- Established 1970s
- Laboratories, engine test facilities, vehicle test facilities
- Purpose of the technology group is to design catalysts for internal combustion engines, and then tailor the catalyst to the individual application
- Very high direct interaction with customers
- 159 employees, mostly PhDs

Antoine Bordet
General Manager, Northern Europe

The Diesel Filter Market in Europe

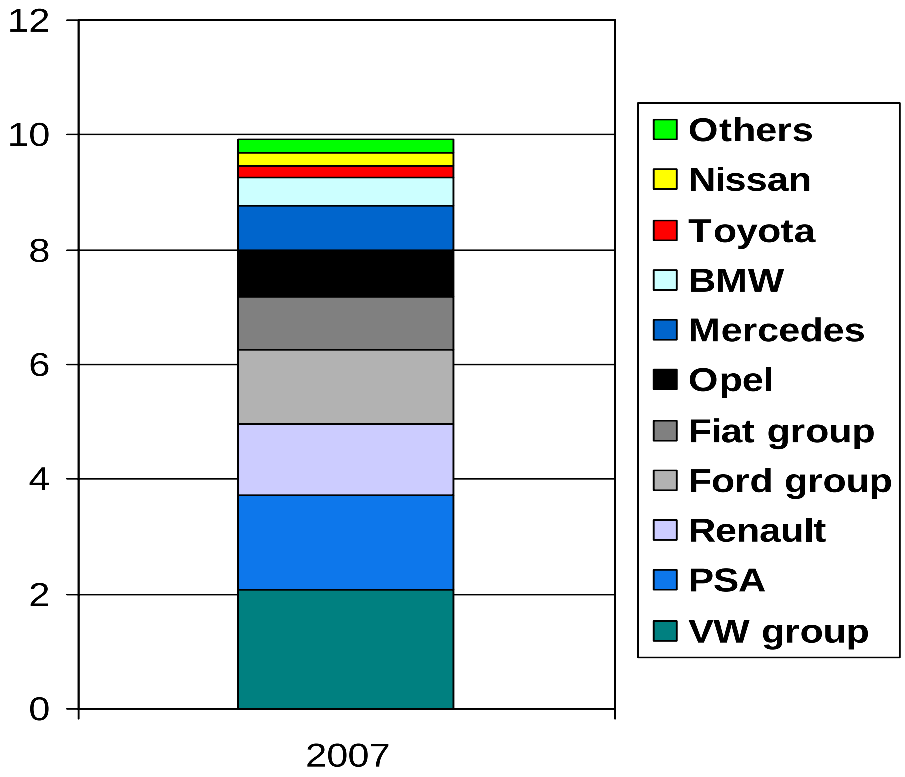
The Diesel Market in Europe

- Diesel vehicles are very popular in Europe
  - Better fuel economy
  - Equivalent (if not better!) driving performance
- 50% of light duty vehicles sold are diesel
- Concerns about particulate matter emitted by diesel



The Diesel Market in Europe

No of diesel vehicles manufactured in Europe (m units)



Current European penetration at 50%

Belgium 73.4%, Spain 70%, France 70%.

Germany at 44% , UK at 38%, Italy at 59%:

Potential for further market growth

Main diesel manufacturers

are JM customers

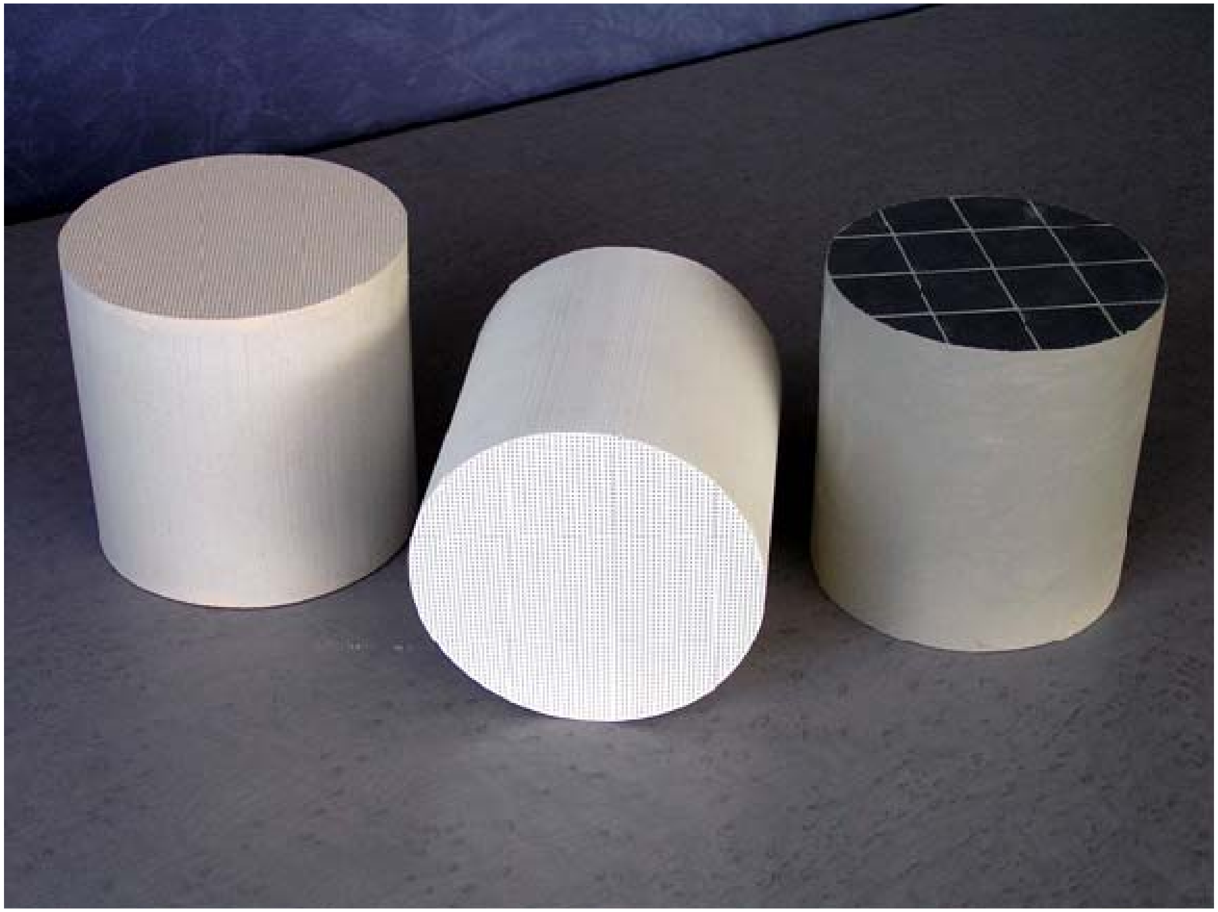
Health Effects of Particulate Matter

- The clear consensus of the scientific and environmental communities is that particulate matter (PM), and particularly ultra fine particles, cause serious hazard to human health
- It is “officially” estimated, by the EPA and the EU, that PM pollution causes up to 50,000 deaths per year in the US and 200,000 deaths per year in Europe
- The studies implicate particulate matter from a large variety of sources, but the greatest concerns arise from fossil fuel combustion processes (domestic, industrial and transport)

The Diesel Filter Market

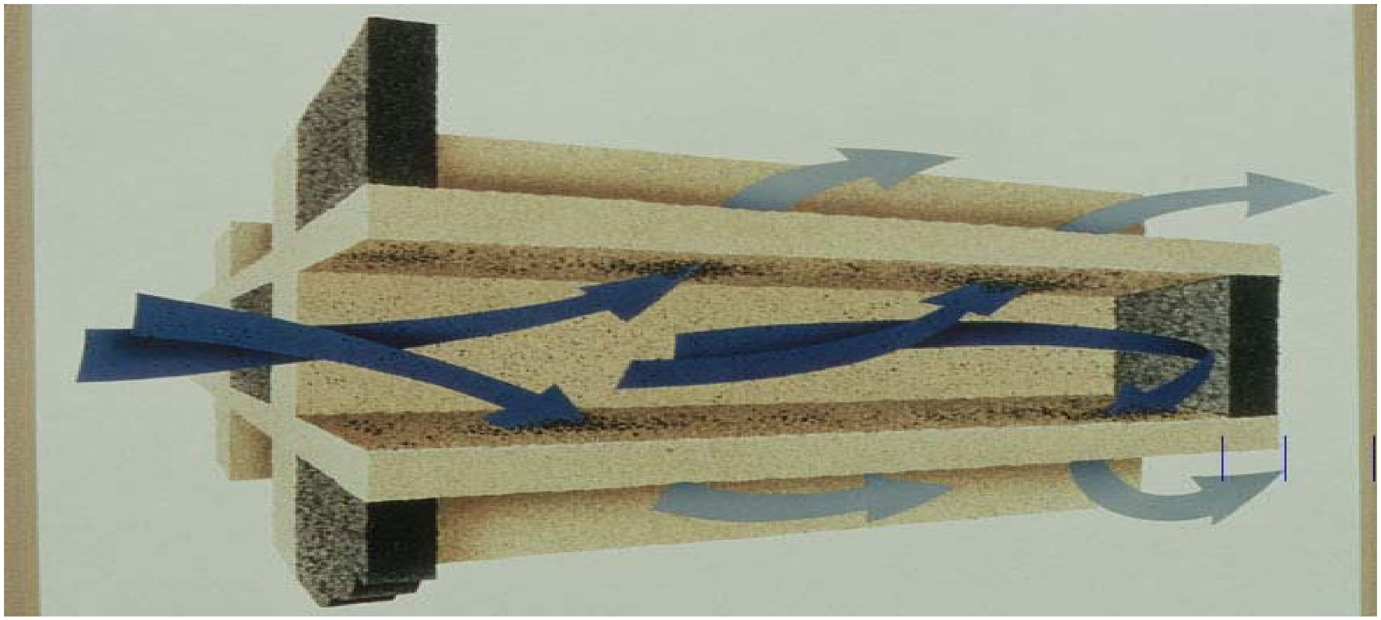
- All diesel cars currently require a catalyst (Diesel Oxidation Catalyst)
- All diesel cars in Europe will require a filter by 2010, but market exists before legislation comes into place
- We are currently making 1 million units out of 3 million cars fitted
- European light duty diesel car and light truck sales will be at least 9m units by 2010
- We are investing in new capacity

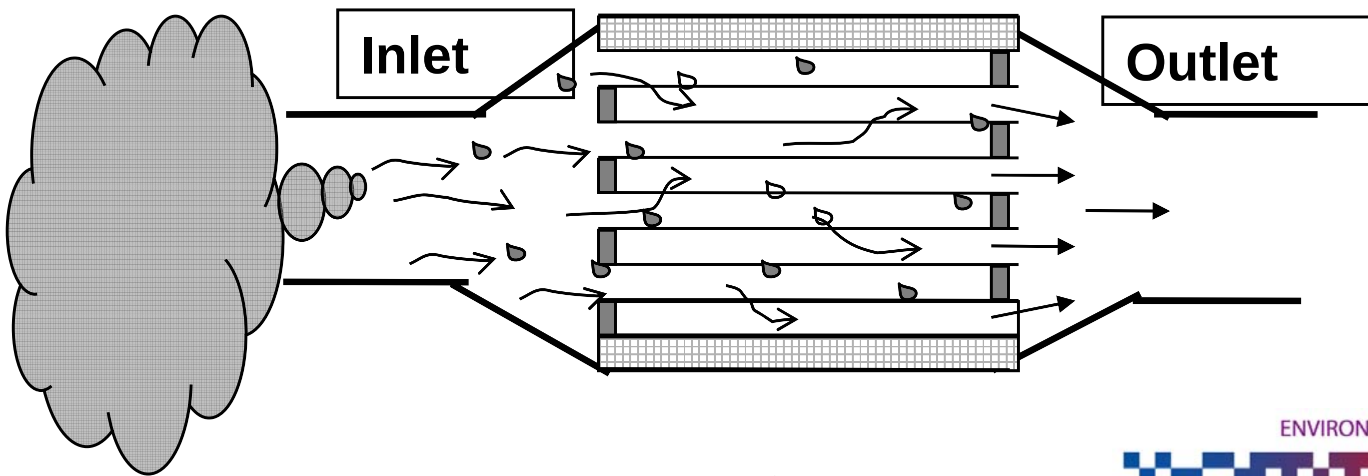
Filters



CSF = catalysed soot filter

How A Coated Filter Works





Use of Palladium in Filters

Palladium has now been used in series production for diesel products for a while

JM introduced palladium into DOCs in 2004 and into coated filters in 2006

Pt:Pd ratios are still in the order of 25% – 33% Pd

However, palladium is not used in all formulations

Our First Production & Development Facility – Phase 1

- First manual production lines purchased and assembled in 2004

Followed by Major Investment, Royston CSF Line 1

- Investment for half million capacity in 2005
- Further investment in 2006 to double capacity to 1m units per year
- We believe that we are class leaders in achieving precision dosing of PGM in filters, in terms of mass tolerance and spatial distribution

Royston CSF Plant 1

- The market for CSFs grew more rapidly than anyone was expecting
- Our factory is now full and quite congested
- We are building a new factory next door to add capacity
- The new factory will be more spacious and more efficient

Further Investment in CSF Capacity

- Further CSF capacity now being constructed at Royston and in South Africa to provide capacity for 2m filters
- New plants on stream 2007
- Further legislation for diesel will require NOx aftertreatment. This will further increase the number of catalyst bricks per car from the end of the decade
- ..and strong possibilities for diesel growth in the USA….

Dr David Prest

Heavy Duty Diesel

Agenda

1. Today's HDD market
2. Legislation, technologies & market solutions
3. Developing OE markets
4. Non road market
5. Retrofit market
6. Manufacturing
7. Summary

Two Market Segments in Each Region

Generally vehicles >6 tgvw

On road and non road applications

- OE
  - Regulatory compliance
  - Technical approval by OE
  - Includes option-fit
  - Supply chain via system integrators / canners

- Retrofit
  - Local legislation
  - Approval by verifications
  - Incentives and restrictions for users
  - Supply chain via agents or direct

OE On Road Market

Major Vehicle OEMs – regulated markets

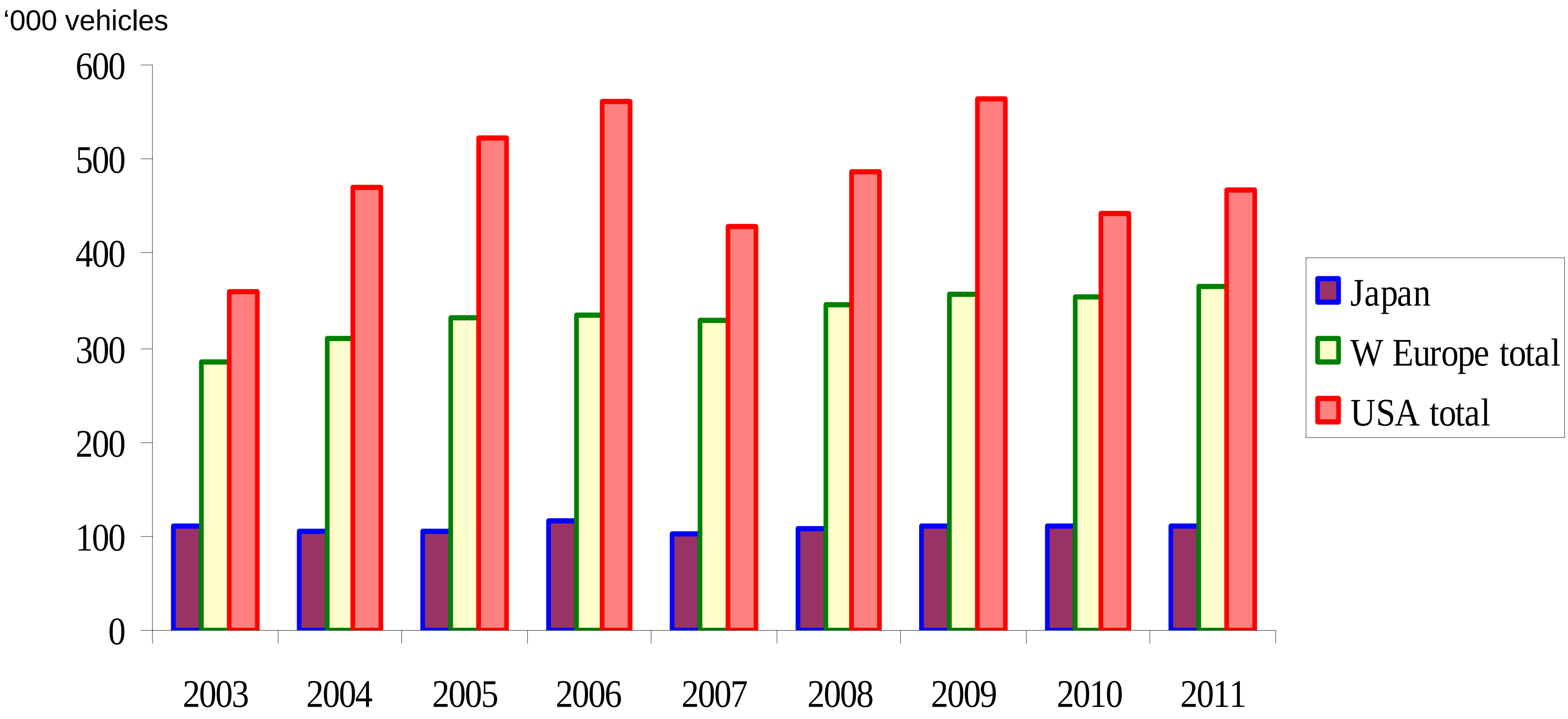
'000 vehicles

DaimlerChrysler (incl. Mercedes, Fuso, Freightliner, Sterling)	214
Volvo group (incl. Renault VI, Mack)	112
Paccar (incl. Kenworth, Peterbilt, DAF)	93
International	85
Ford	61
MAN	50
Iveco	48
GM	42
Isuzu	36
Toyota / Hino	36

Note: Major engine OEMs include Cummins, Caterpillar

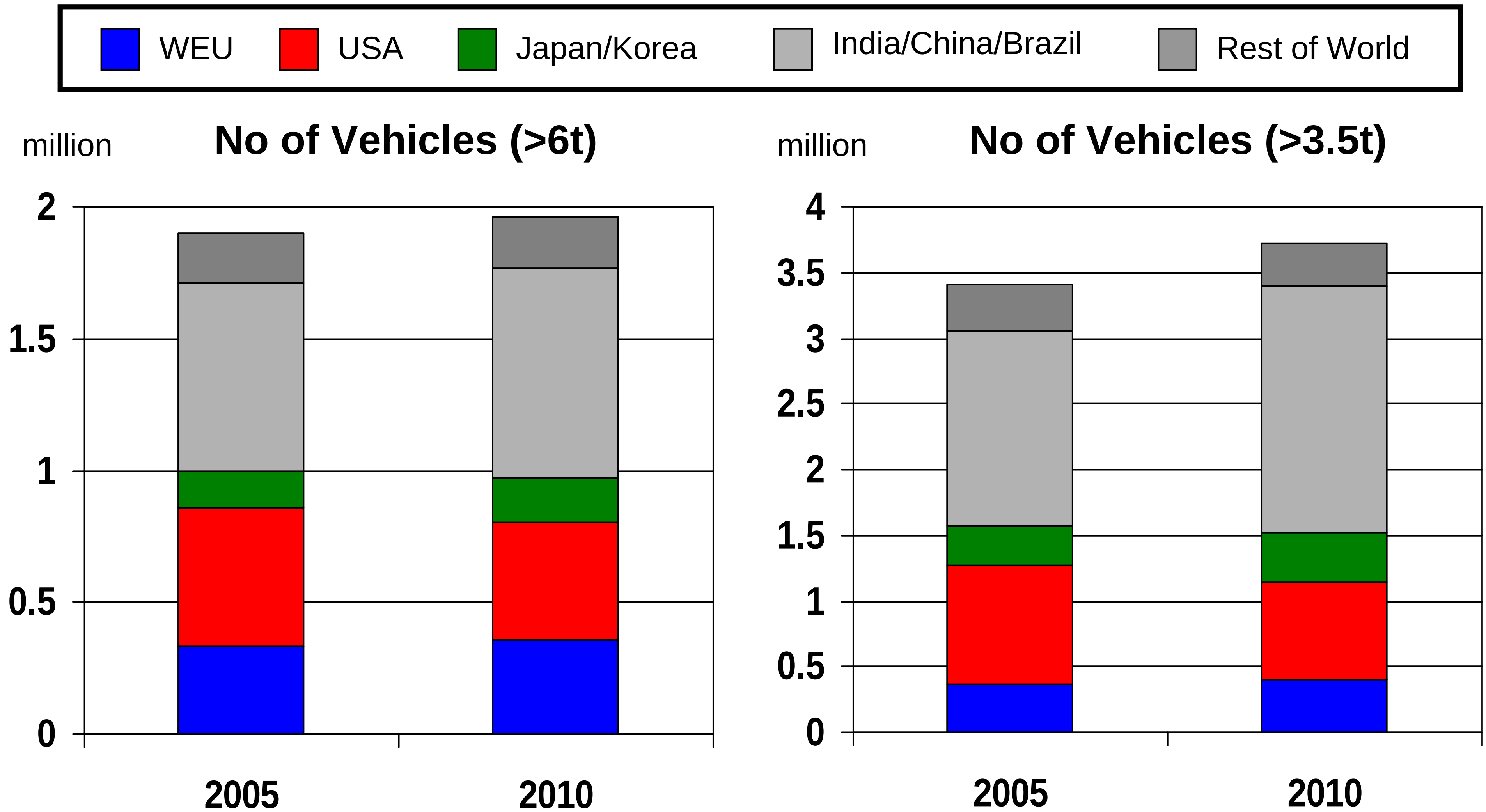
Source: JD Power. Quantities are 2007 sales forecasts ('000 vehicles). Scope: >6 tonnes

OE Annual Vehicle Sales



Source: JD Power. Scope: >6 tonnes

OE On Road Market

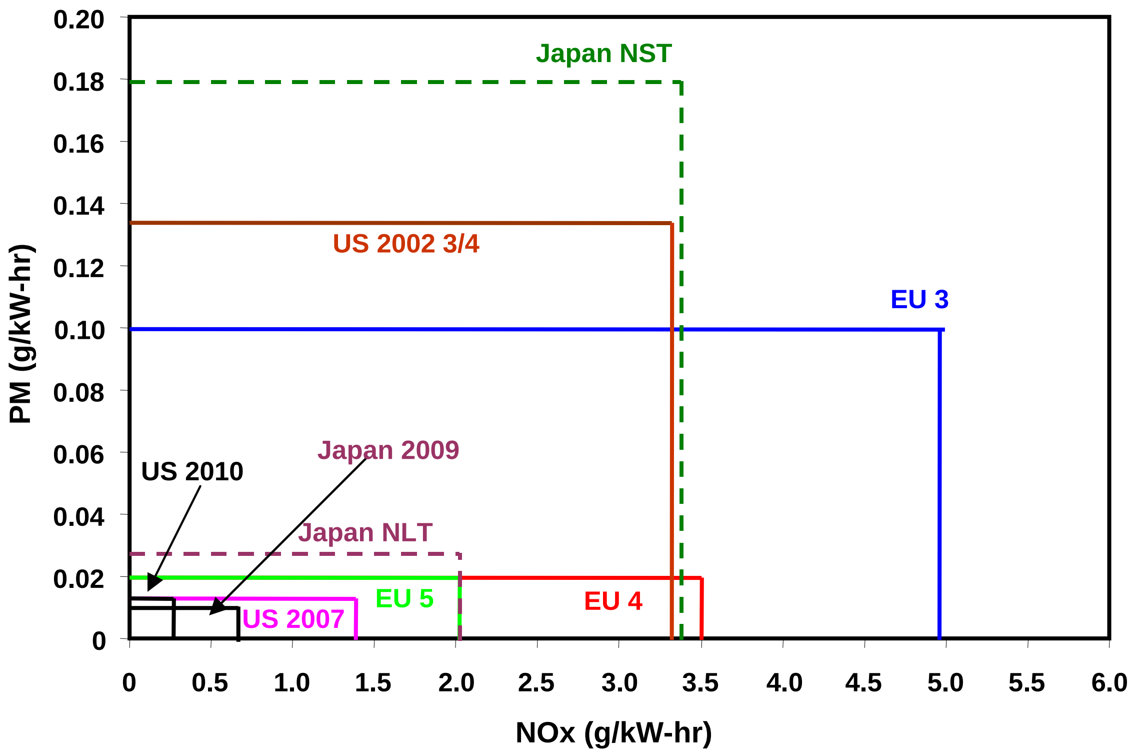


Source: JD Power & Johnson Matthey

The Controlled Pollutants

- Carbon Monoxide CO
- Hydrocarbons HC
- Nitrogen Oxides NOx
- Particulate Matter PM

On Road Regulation Development



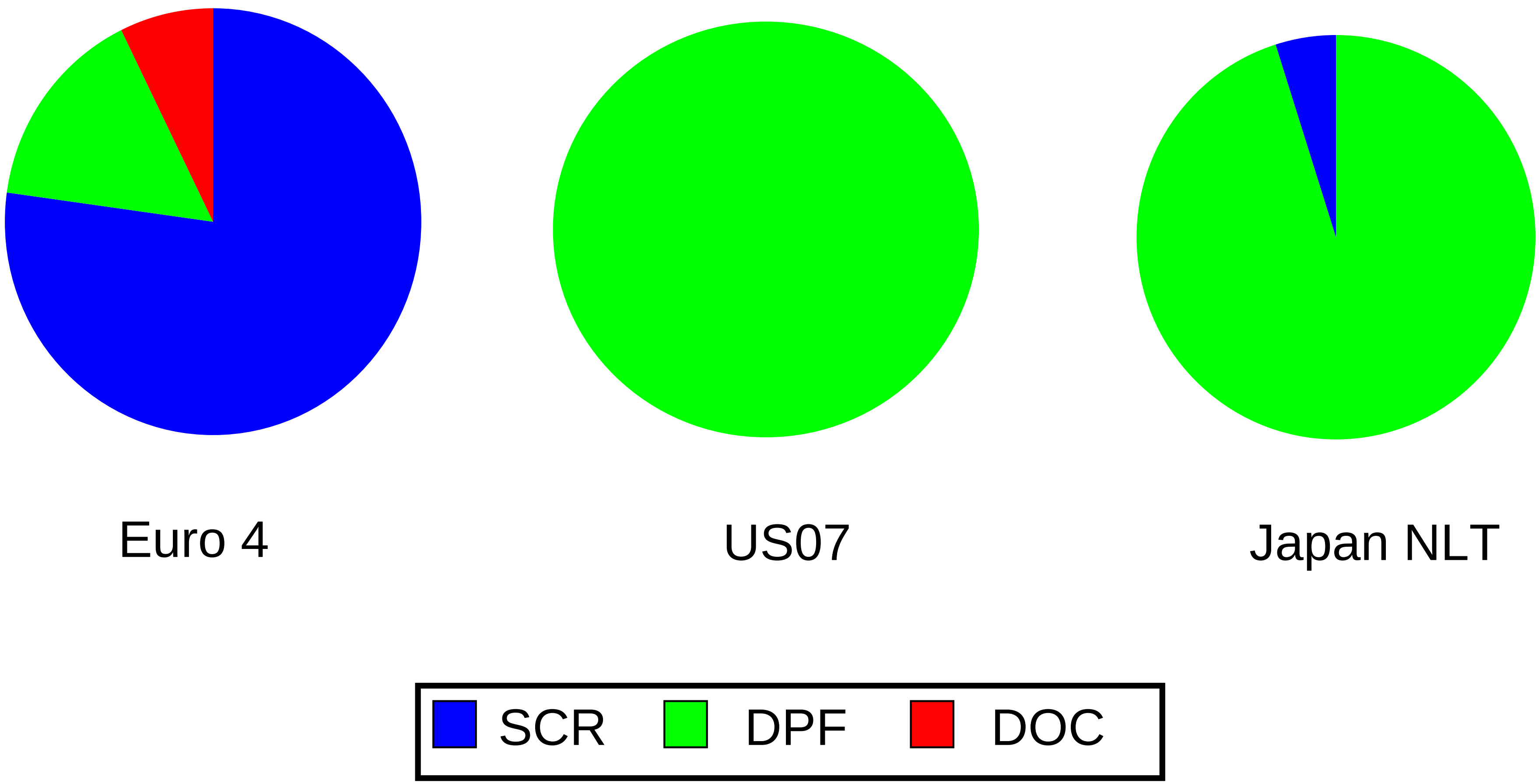
	New Models	All Models
Europe		
Euro 4	01-Oct-05	01-Oct-06
Euro 5	01-Oct-08	01-Oct-09
United States		
US2007	01-Jan-07	01-Jan-07
US2010	01-Jan-10	01-Jan-10
Japan		
Short Term		
2.5-12t	01-Oct-03	01-Oct-03
12t +	01-Oct-04	01-Oct-04
New Long Term		
2.5t+	01-Oct-05	01-Oct-05
Japan Diesel 09		
2.5t+	31-Dec-09	31-Dec-09
China		
Beijing - Euro 4	2008	
Rest of country - Euro 4	2010	
India		
Major cities	2010 (or earlier?)	
South Korea		
Euro 4	01-Jan-06	01-Jan-08
Brazil		
Euro 4	2009	

Johnson Matthey's Technology Toolbox

	CO	HC	PM	NOx
DOC – Diesel Oxidation Catalyst	X	X	X	
CRT® – Continuously Regenerating Trap (DOC + filter)	X	X	X	
CCRT® – Coated CRT (DOC + coated filter)	X	X	X	
SCR – Selective Catalytic Reduction				X
EGR – Exhaust Gas Recirculation				*X*
NAC – NOx Adsorber Catalyst	X	X		X
SCRT® (SCR + CRT)	X	X	X	X
EGRT® (EGR + CRT)	X	X	X	X

HDD OE On-Road Market

Different technologies in different markets



Note: "DPF" includes DOC + DPF (CRT®), DOC + CSF (CCRT®) and CSF - only

Competitors

Competitors include:

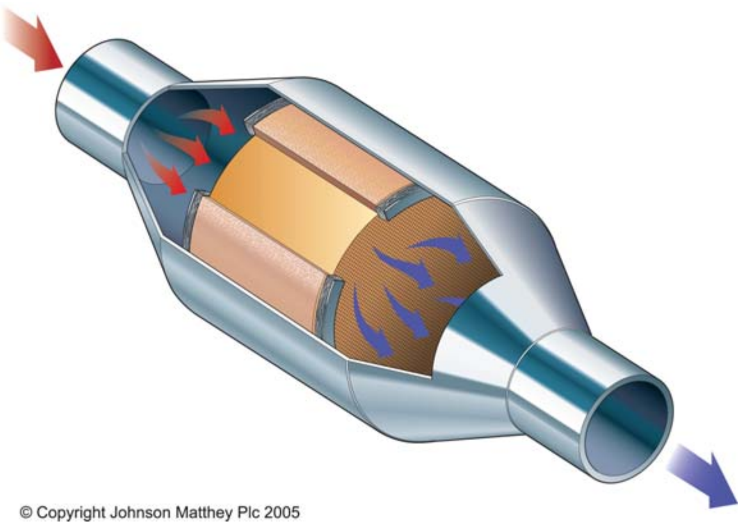
- Argillon
- BASF
- Frauenthal
- Haldor Topsoe
- Heesung Engelhard
- NE Chemcat
- Tokyo Roki
- Umicore

OEM Prime Path Options

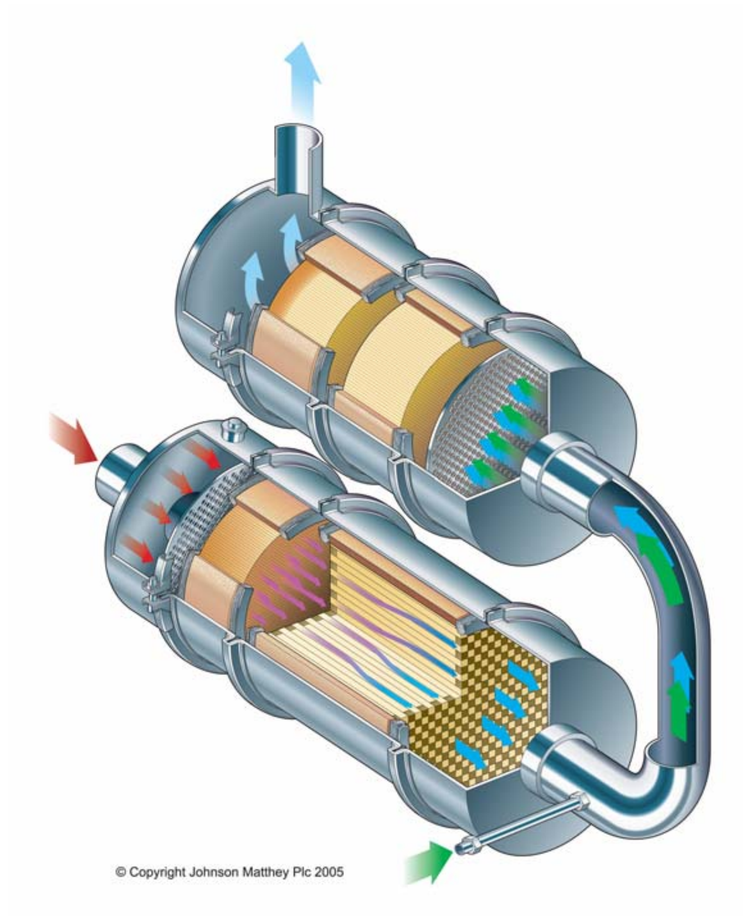
HDD (on road)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Europe			SCR EGR + DPF EGR + DOC			SCR EGR + DPF EGR + DOC			SCR + DPF	
USA	EGR			EGR + DPF			SCR + DPF NAC + DPF			
Japan		EGR		SCR + DPF SCR			SCR + DPF NAC + DPF			

Note: "DPF" includes DOC + DPF (CRT®), DOC + CSF (CCRT®) and CSF - only

HDD Technology Evolution

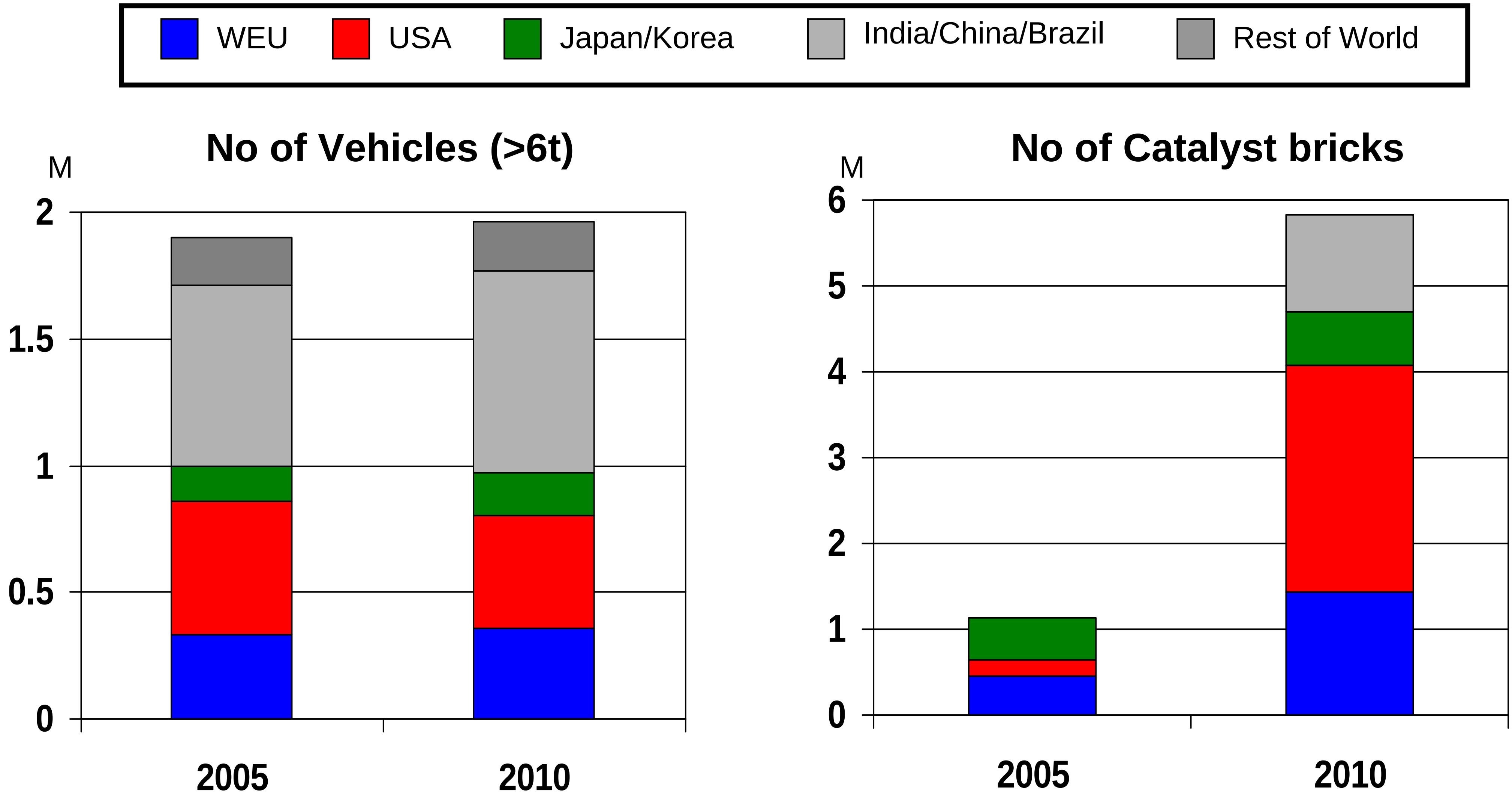


DOC



SCRT®

OE On Road Market



Source: JD Power & Johnson Matthey

OE On Road Developing Markets

Major OEMs – sales including developing markets

'000 vehicles

DaimlerChrysler (incl. Mercedes, Fuso, Freightliner, Sterling)	372
Volvo group (incl. Renault VI, Mack)	184
TELCO *(India)*	154
DongFeng *(China)*	131
Paccar (incl. Kenworth, Peterbilt, DAF)	117
First Auto Works (FAW) *(China)*	110
Ford	110
International	105
Isuzu	100
Scania	92
Toyota / Hino	81
Iveco	79
MAN	75
China National Heavy Truck Corporation (CNHTC) *(China)*	58

Source: JD Power. Quantities are 2010 production forecasts. Scope: >6 tonnes, global production >50k.

HDD OE On Road Market

New Market Opportunities

BRAZIL *(120k engines in 2010: DC, VW, Ford, Scania, ~5 smaller players)*
- Euro 4 regulations introduced from 2009
- SCR expected to be the technology of choice
- Fuel quality issues preclude use of filters

CHINA *(480k engines in 2010: DongFeng, FAW, CNHTC, >15 others)*
- Euro 4 regulations begin to come in from 2010
- SCR expected to dominate
- Some filters and oxidation catalyst systems (niche)

INDIA *(225k engines in 2010: TELCO, Ashok Leyland, Eicher, ~5 smaller players)*
- Fuel quality essential for market introduction
- Regulation expected in major cities first
- Timetable for regulation not yet finalised

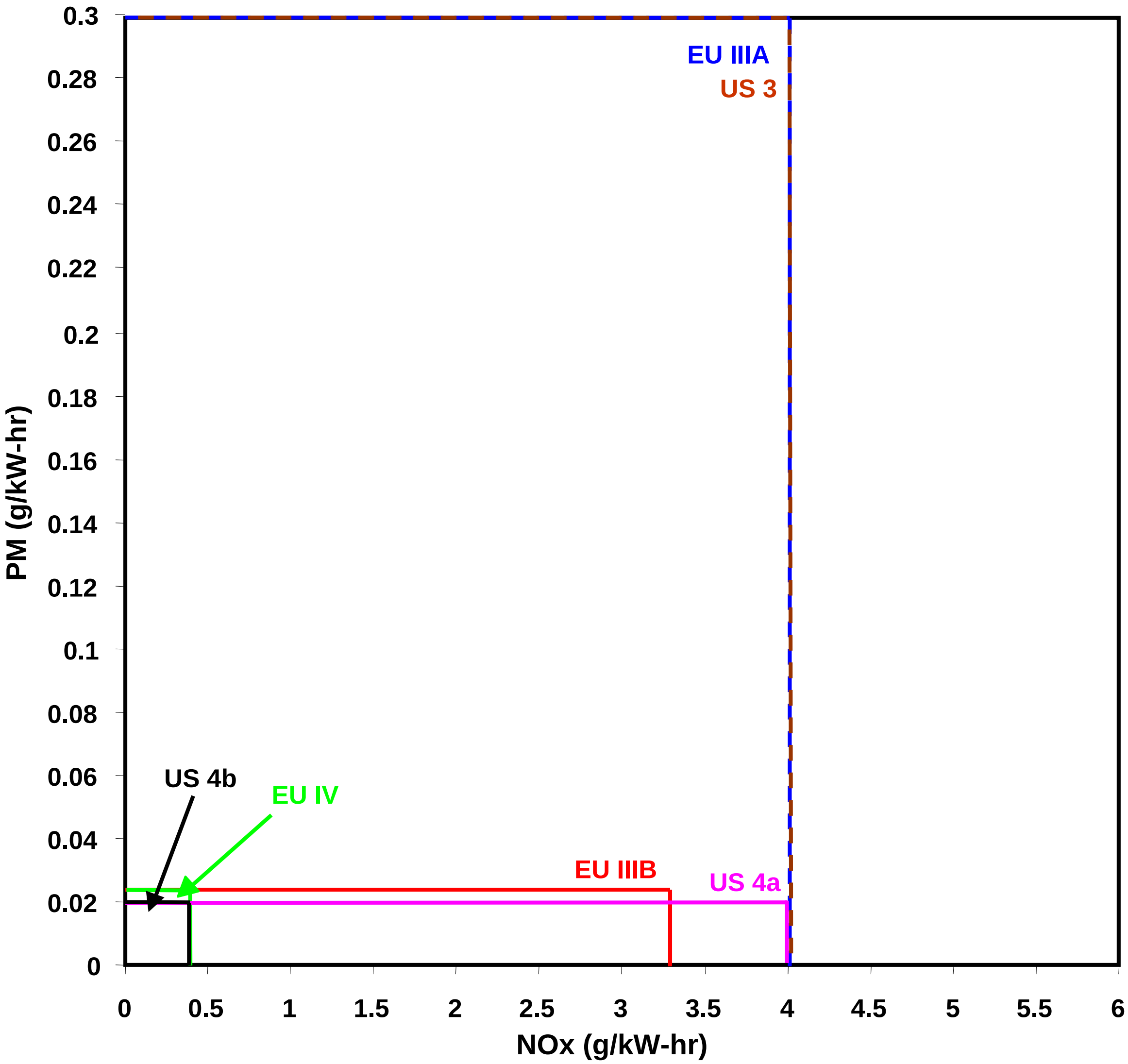
World Diesel Fuel Standards

Sulphur Content in ppm

Country	Year					
	2005	2006	2007	2008	2009	2010
European Union	**50**				**10**	
USA	**500**		**15**			
China	**350 for Beijing**					
Brazil	**500**				**50**	
India (11 Major Cities)	**350**					**50**
India	**500**					
Japan	**50**			**10**		
Korea	**50**	**30**				

- **500 ppm**
- **50 ppm**
- **Less than 30 ppm**

Non Road Regulation Development



Regulation is by engine power. The chart and table show information for 100kW engines, eg construction. Limits for larger engines are tighter and implemented sooner; those for smaller engines less stringent and later

Europe	New Models	All Models
Stage IIIB	Jan 2011	Jan 2012
Stage IV	Oct 2013	Oct 2014
United States		
Tier 4a	Jan 2011	Jan 2012
Tier 4b	Jan 2014	Dec 2014

OE Non Road Market

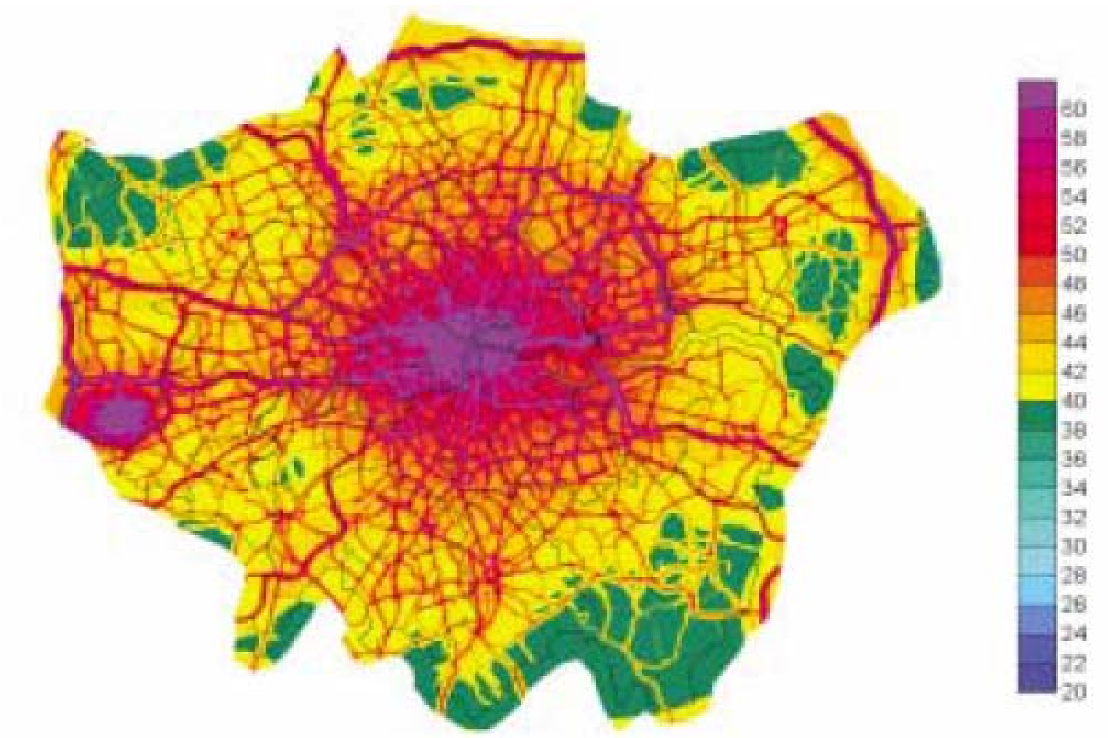
'000 vehicles

Kubota	400
Yanmar	300
Caterpillar (inc Perkins)	200
John Deere	180
Case New Holland / Iveco	150
Deutz	150
Cummins	140
Mitsubishi	100
Isuzu	80
Komatsu	50
Volvo	40
JCB	40

- 2/3 size of on road market
- Smaller average engine size

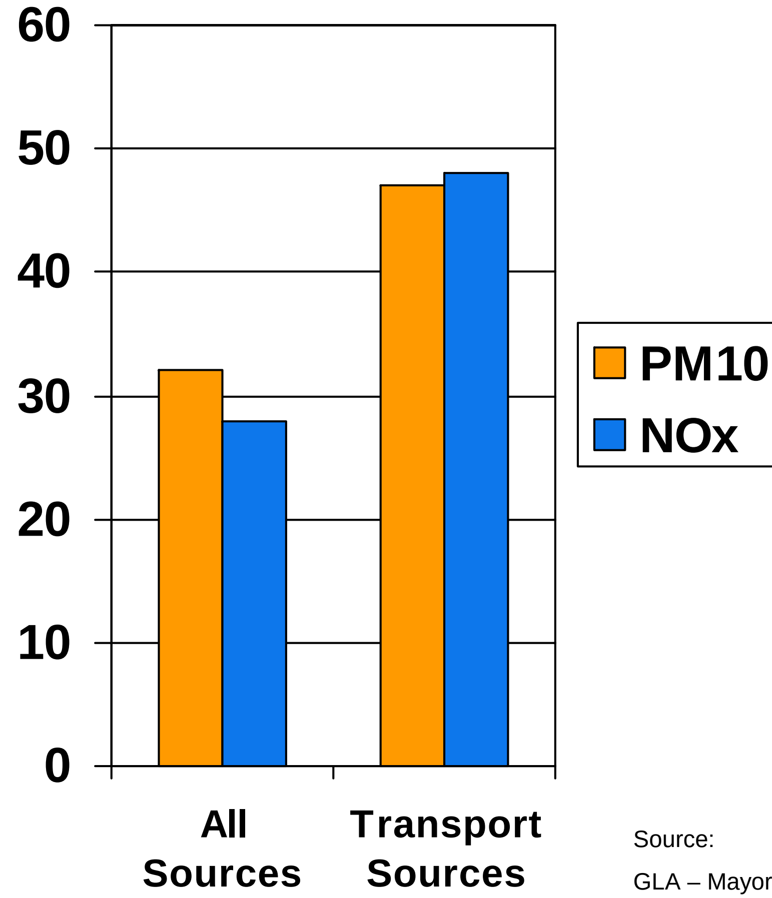
Source: Ricardo & Johnson Matthey

Emissions in London



- Many large cities have air quality problems
- Heavy duty vehicles make a significant contribution to emissions because the emissions per vehicle mile are higher and they have a high annual mileage

% Contribution of heavy duty vehicles to emissions in Greater London

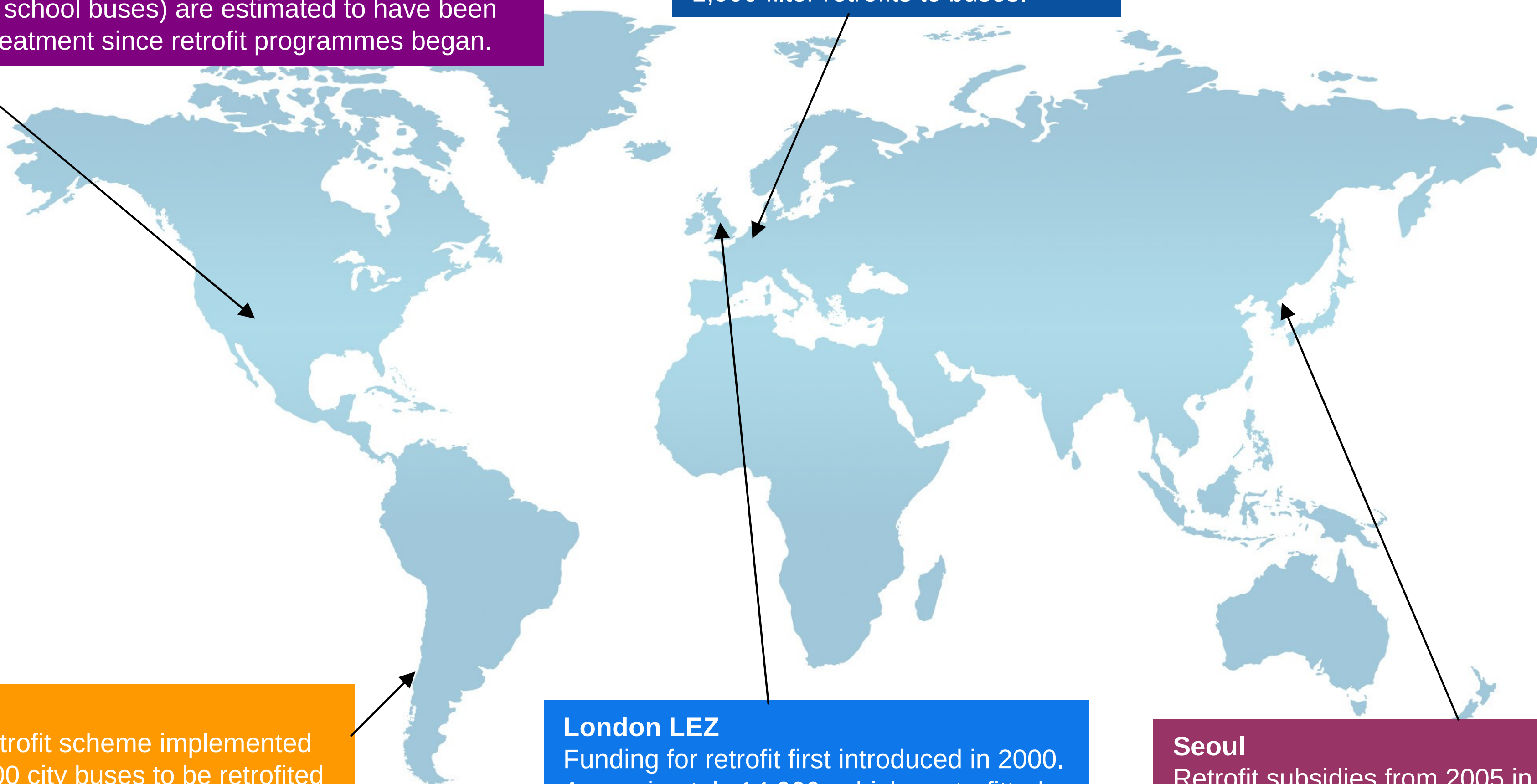


Source:
GLA – Mayor's Air Quality Strategy Document

Typical Retrofit Opportunities

USA
National, state and city programmes introduced from 2000 onwards, some provide funding, others make retrofit mandatory. Approximately 160,000 diesel engines (including 5,000 school buses) are estimated to have been fitted with aftertreatment since retrofit programmes began.

Netherlands LEZ
Filter retrofit subsides for city buses from 2000. Approximately 1,000 filter retrofits to buses.



Chile
TranSantiago retrofit scheme implemented 2006. Up to 2,000 city buses to be retrofitted

London LEZ
Funding for retrofit first introduced in 2000. Approximately 14,000 vehicles retrofitted, including around 4,000 London buses.

Seoul
Retrofit subsidies from 2005 in Seoul and surrounding area. Potentially 500,000 vehicles to be retrofitted over five year period.

HDD Summary

- Market for OE on road established in EU, US and Japan
- Major new opportunities in China, India, Brazil start from 2009
- New sector of non road starts from 2011
- Retrofit market continues, though lumpy
- JM has full technology capability
- Market size $700m (excl. PGM) by end 2008
- Market potential $3bn (excl. PGM) by 2014
- JM in leading position globally

HDD Manufacturing Technology