Growth & Resilience - introduction

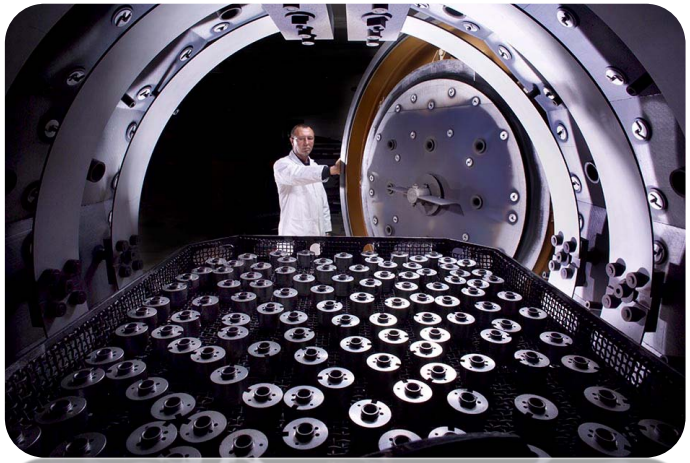
Stephen Harris, CEO

Today’s agenda...

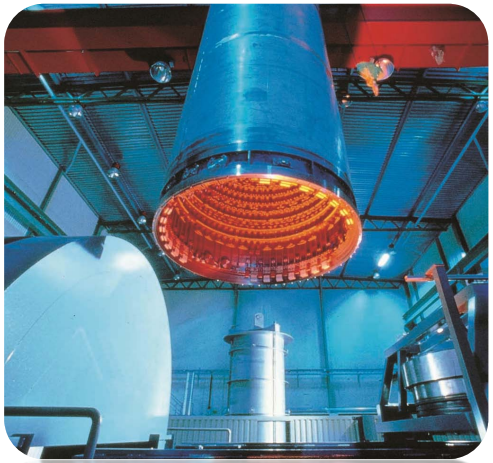
1)	**Introductory presentation**	Stephen Harris
2)	**Insight into growth opportunities**	Divisional Management
3)	**Modeling growth – and a possible downturn**	David Landless
4)	**Summary**	Stephen Harris

Bodycote processes

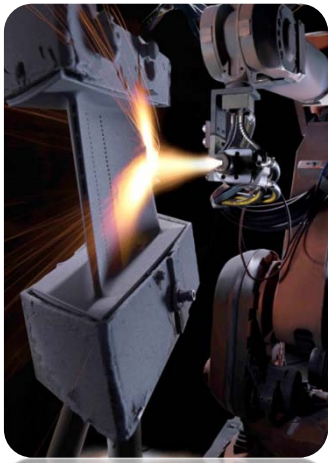
THERMAL PROCESSING



Heat treatment
Highly precise improvement of properties in metal components



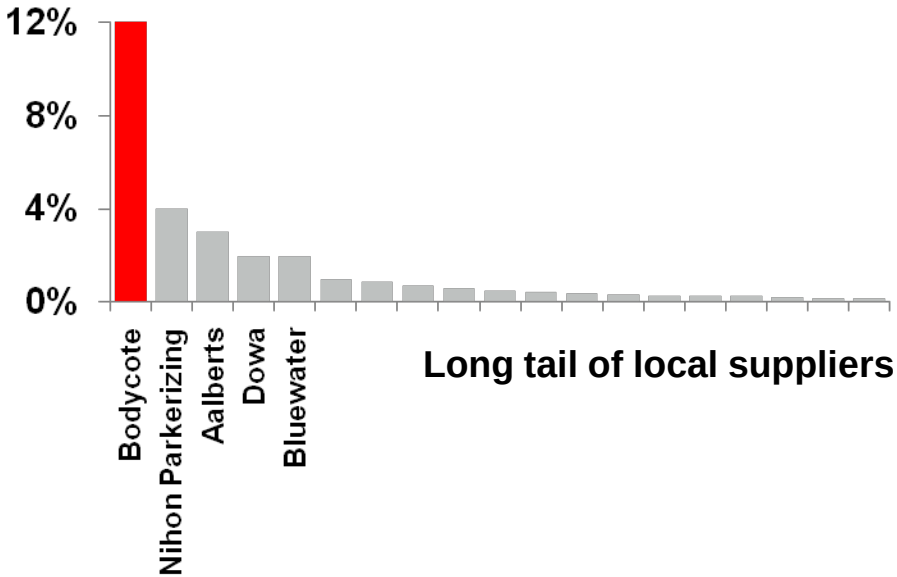
Hot Isostatic Pressing (HIP)
The ultimate strengthening process



Surface Technology
Temperature and wear protection

GLOBAL LEADERSHIP

Independent thermal processors

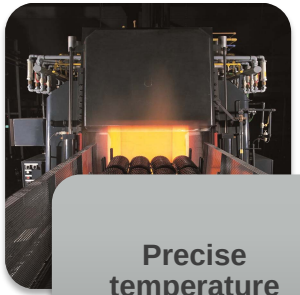


- Overall market estimated at £20bn*
- c20% outsourced to independents
- Bodycote the only global player
- Handful of regional players
- Mostly localised groups or single site operations

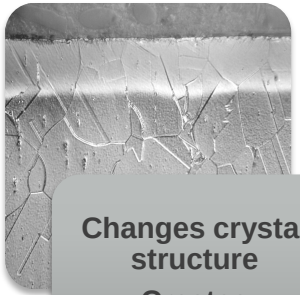
* Management estimate

Bodycote 3x bigger than next largest player

What is heat treatment?



Precise temperature cycling in controlled atmosphere



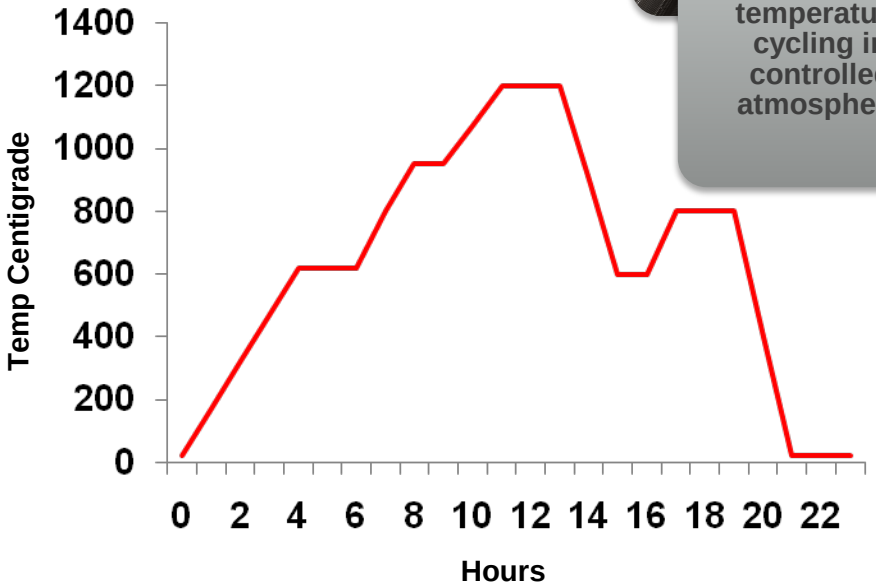
Changes crystal structure

Creates ‘diffusion’ layer

Changes internal stresses

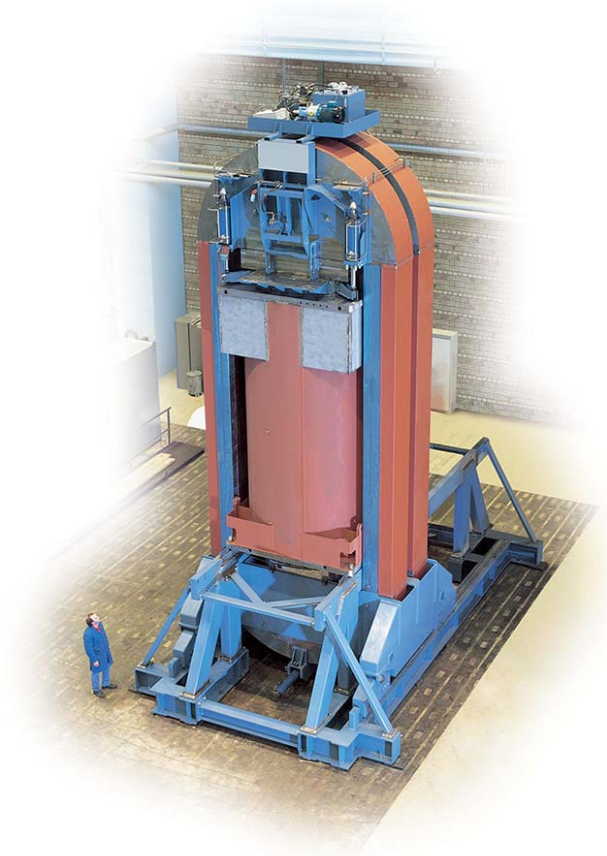
Improves properties, e.g.:

- Strength
- Hardness
- Wear resistance
- Corrosion resistance



Different cycles and gases produce different characteristics

What is HIP?



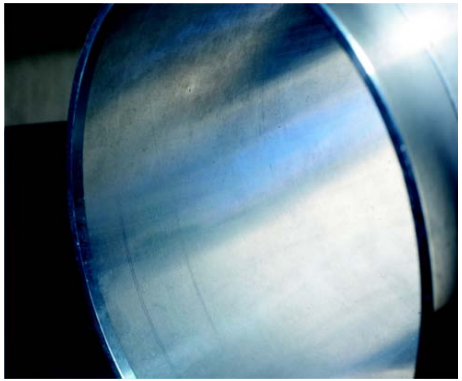
Hot: up to 2,000°C

Isostatic: omnidirectional inert gas pressure

Pressure: up to 45,000 psi

- Eliminates porosity in castings or sintered components
- Improves density
- Improves material properties, e.g. strength

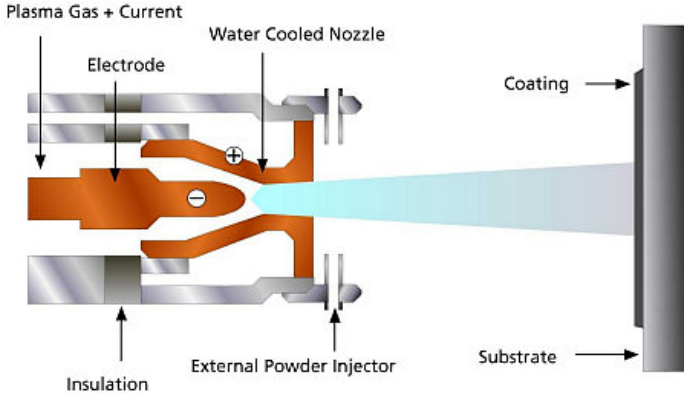
Before HIP



After HIP

What is surface technology?

- A group of processes used to apply a ceramic or cermet coating to metals
- Includes plasma spray, HVOF and thermo-chemically formed ceramics
- Finely divided metallic or non-metallic materials, usually in powder form, are deposited onto the surface of components in a semi-molten state



Improves wear and temperature resistance

The value proposition

Heat treatment

An essential enabler of modern technology

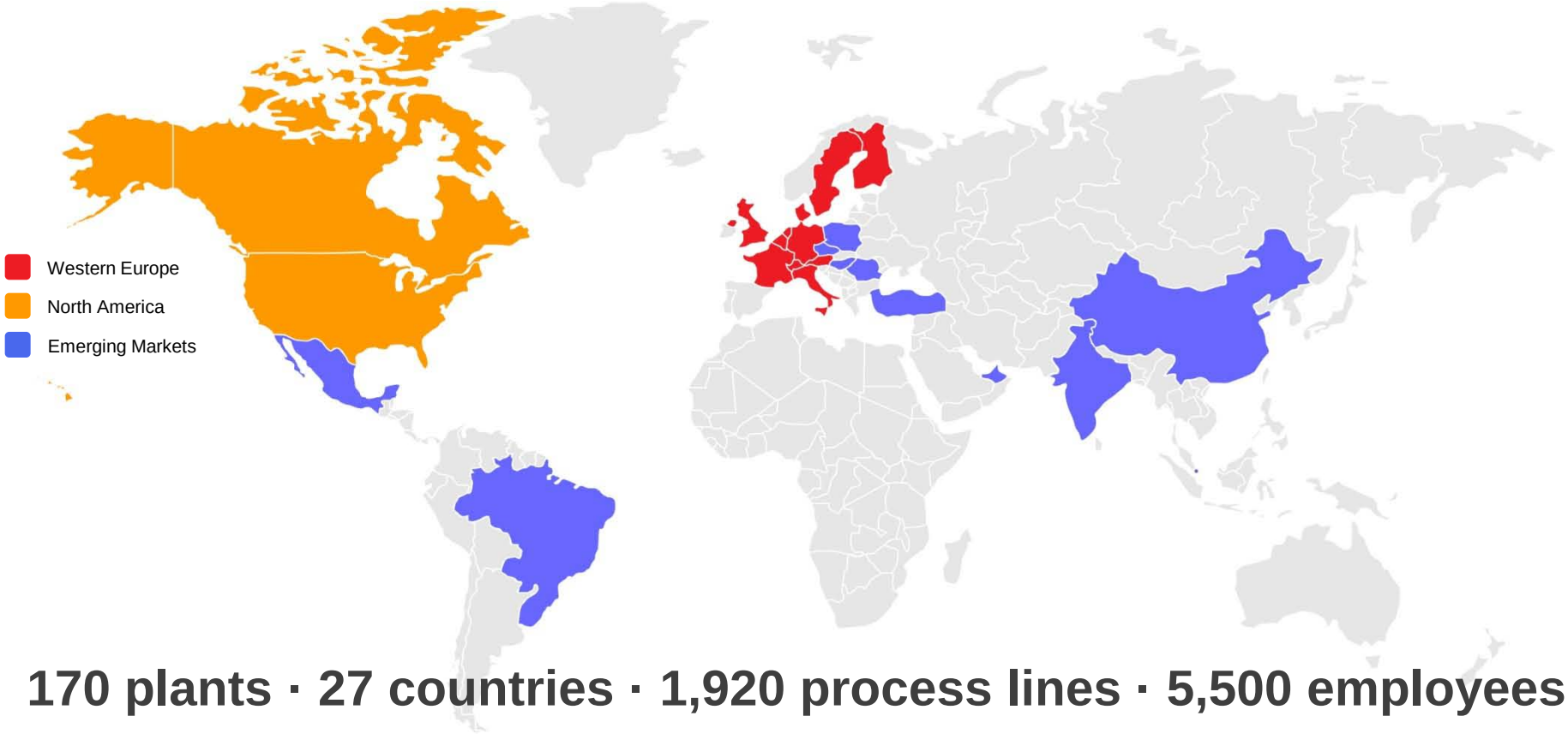
- Optimises strength where it's needed
- Process control – total predictability
- Mission critical

Bodycote

Scale benefits:
- 170 plants
- 1,920 process lines

- Multiple processes and multiple plants are major advantage to customers
- Network simplifies complexity
- Economies of scale:
  - Freight and energy
  - Equipment utilisation

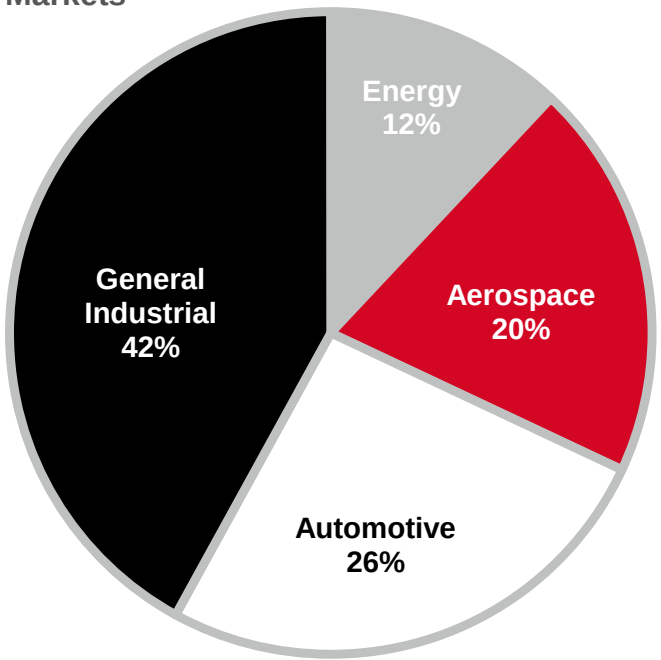
Where is Bodycote?

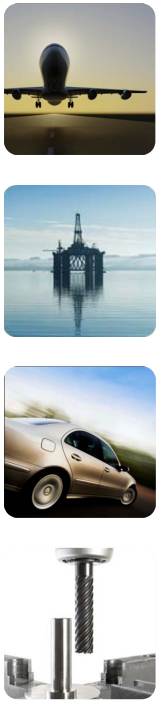


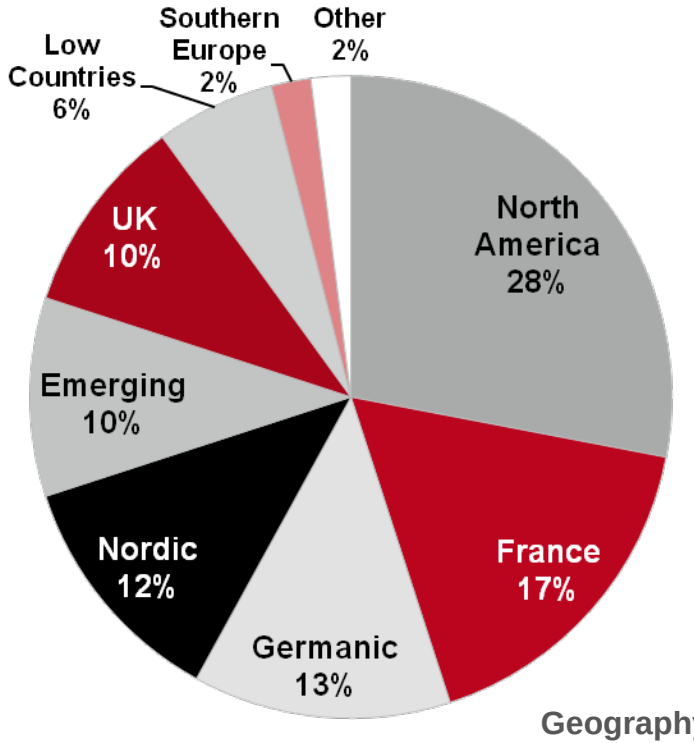
170 plants · 27 countries · 1,920 process lines · 5,500 employees

Spread of activities 2011 H1 sales

Markets

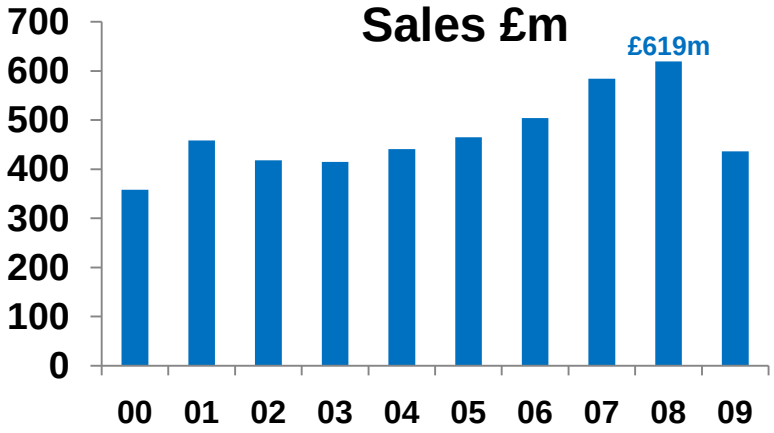


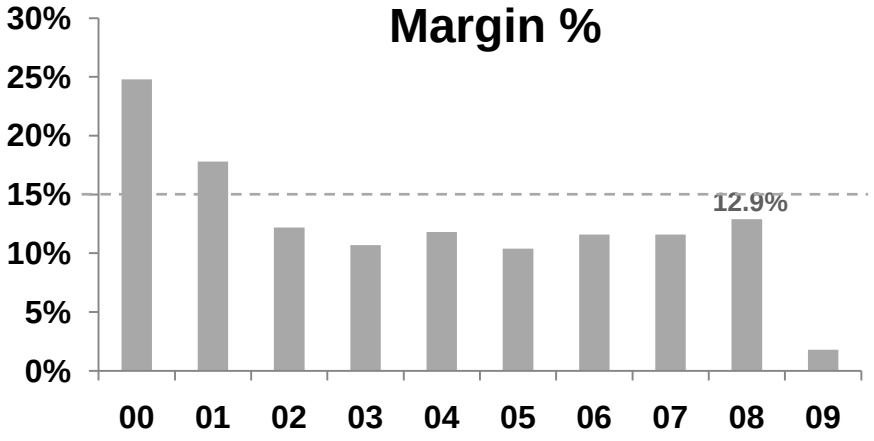




Geography

Performance history excludes Testing, at 2011 exchange rates





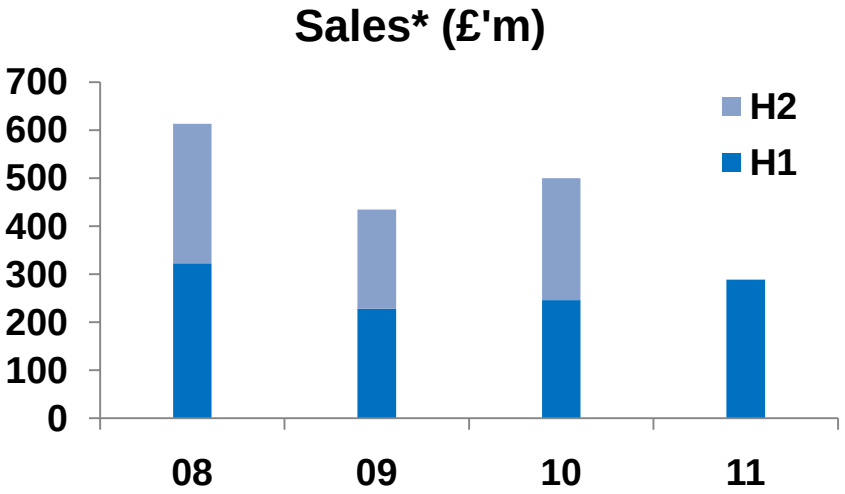
Prior to 2008

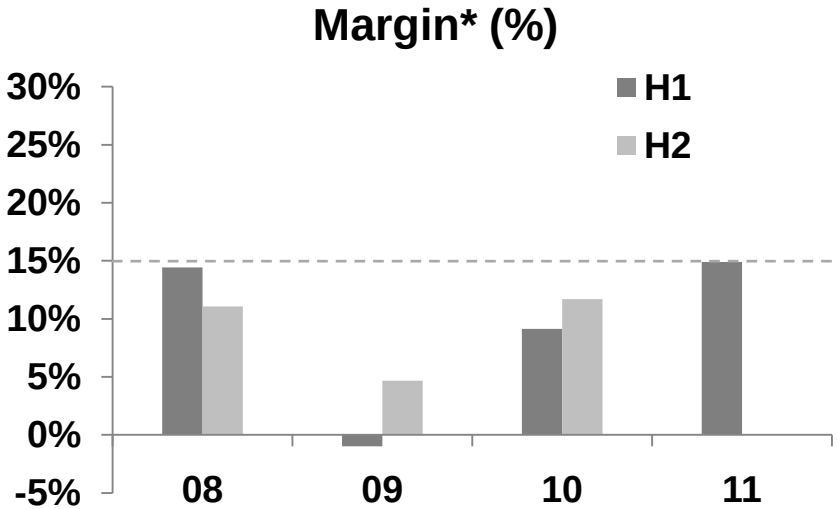
- Network expansion
- Growth via acquisitions & greenfields
- Substantial investment

BUT

- Capital utilisation weak
- Cash generation weak
- Business ‘quality’ erosion

The new Bodycote





2009 – a new beginning

- Major restructuring
- Withdrawal from low profit, low potential plants
- Bench strength enhanced
- New focus

New focus

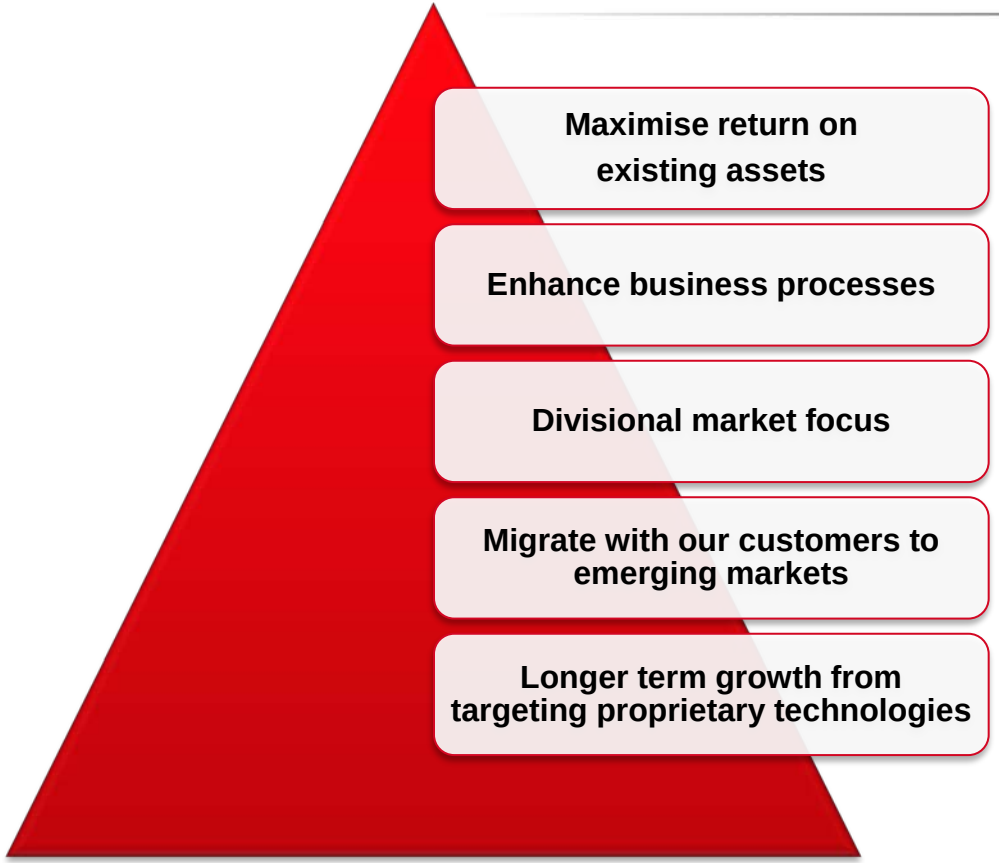
- Business 'quality'
- Capital efficiency
- Higher-value opportunities

→

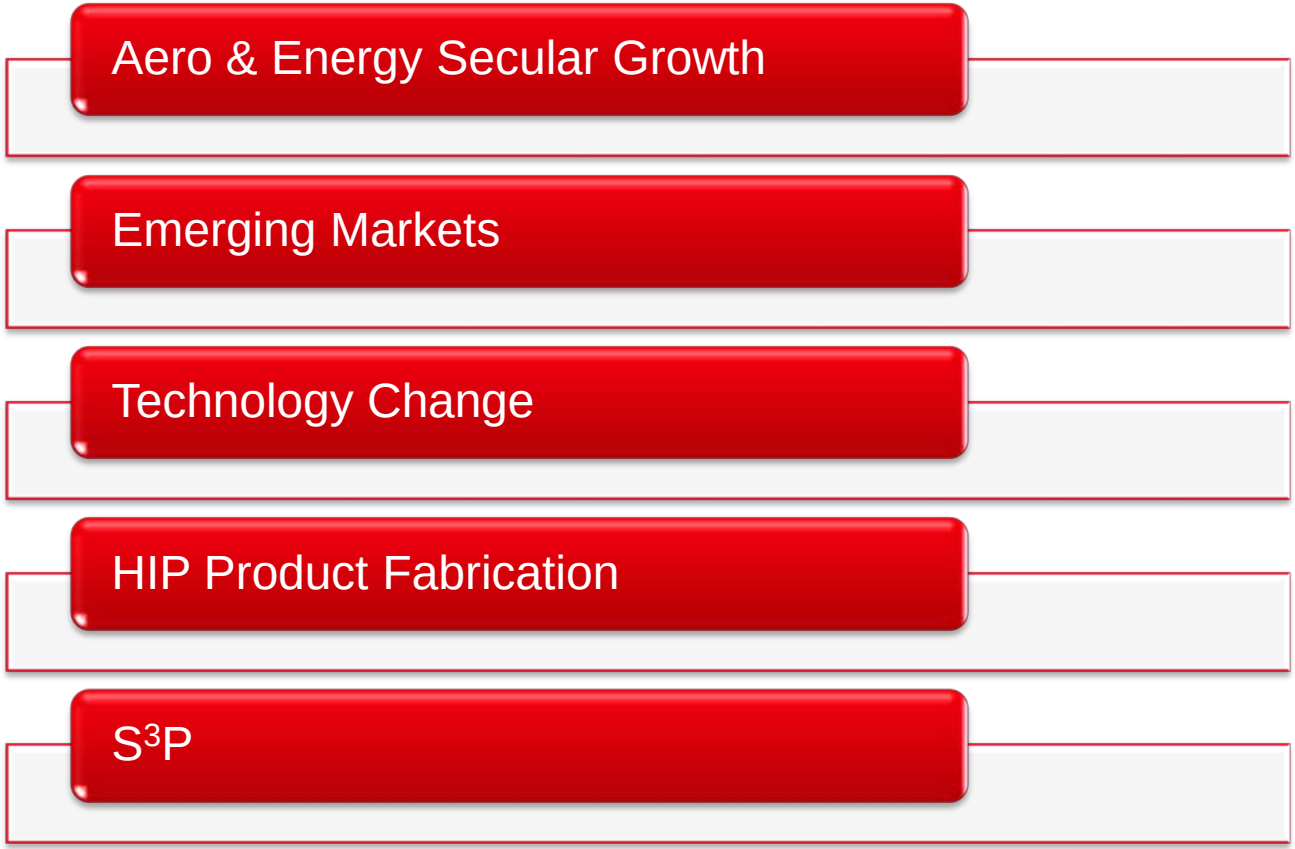
- Better margins
- Strong cash
- And good growth too

* Excludes Testing, at 2011 exchange rates

Our strategy



Investing in five drivers for growth



Aerospace & Energy – Secular Growth Markets

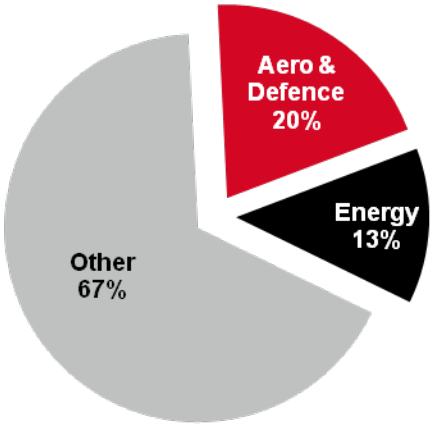




Aerospace & Energy

Bodycote

2011 H1 Group Sales



Market characteristics:

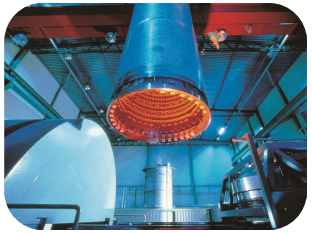
- Advanced requirements
- Low volumes
- Complex supply chains
- Late cycle

Bodycote characteristics:

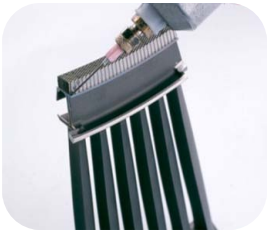
- Specialist state-of-the-art plants
- Nadcap quality accreditations
- Global

Bodycote's processes

Aero and gas turbine components must operate in high temperatures.
Heat treatment, HIP and surface coatings are essential.



Cast blades are "HIPed" to increase their creep & fatigue resistance



Honeycomb is vacuum brazed onto the vanes

Precipitation hardened to increase strength at high temp.

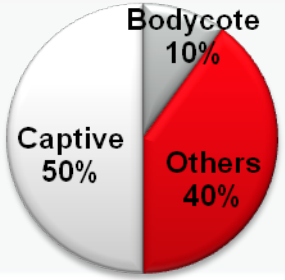
Thermal spray coating to improve temperature resistance

Multiple processes required – only Bodycote has them all

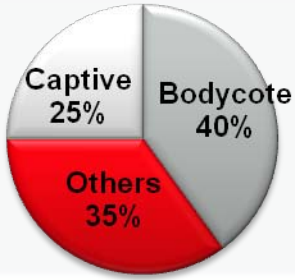
Global market position

Aerospace, defence and energy

	ADE proportions	Plants
Heat treatment	c60%	37 ADE specialist



Hot Isostatic Pressing (HIP)	c30%	10 specialist



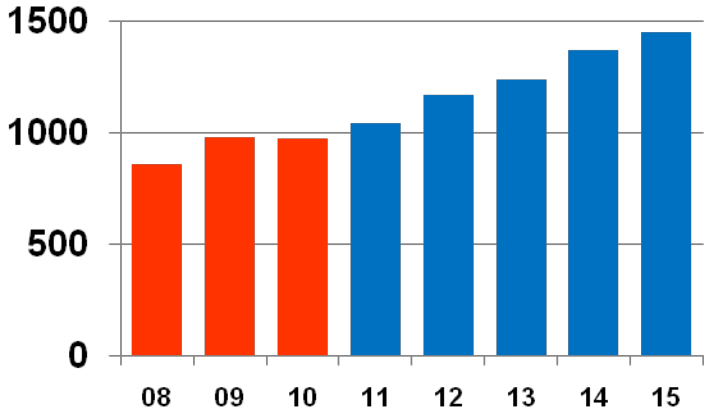
Surface technology	c10%	5 specialist

Leading global player - HT and HIP

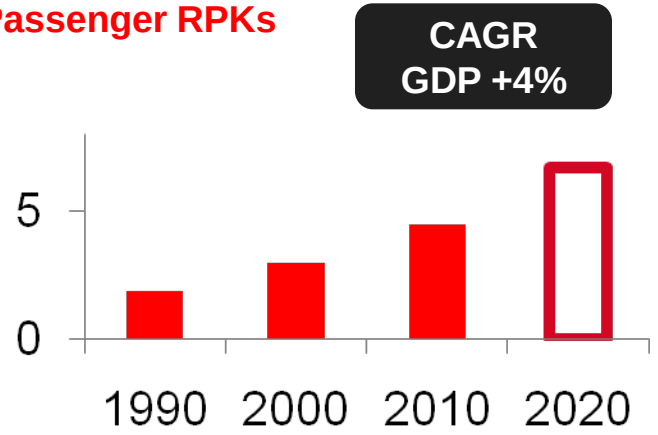
Aerospace

Boeing/Airbus deliveries & guidance*

* 2015 is a management estimate



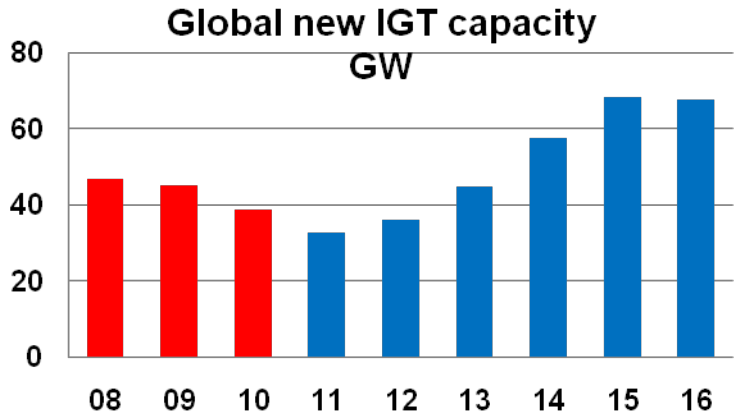
Passenger RPKs



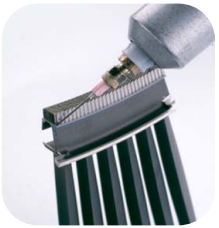
- Boeing/Airbus backlog >6000
- 787 launch backlog >800
- 737 monthly build increasing from 31 to 42
- A320 monthly build increasing from 36 to 44

High visibility of long-term growth

Power generation



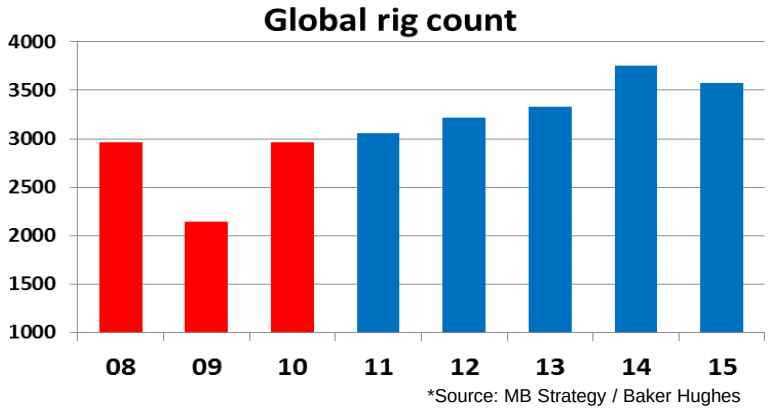
*Source: MB Strategy/ Energy Information Administration



- New capacity forecast to more than double from current low
- GE and Siemens comprise c60% of annual new capacity
- Shift to higher efficiency designs - GE 7H, 9H, LMS100

Growth ahead driven by forthcoming energy capacity shortfall

Oil & Gas



*Source: MB Strategy / Baker Hughes

- Rig count forecast to grow 20% over next 3 years
- Non-US rig contribution growing from 40% to 50%
- US fracking/directional drilling driving advanced treatments

Energy requirements drive exploration boom

Bodycote leads the market

Broad spectrum of capabilities

- Surface coatings
- Hot isostatic pressing
- Metal joining
- Full heat treatment portfolio

Expansive accreditations & approvals list

- Nadcap (key aerospace approval)
- Norsok (key oil & gas approval)
- AMS (Aerospace Material Specification)
- All key OEM approvals

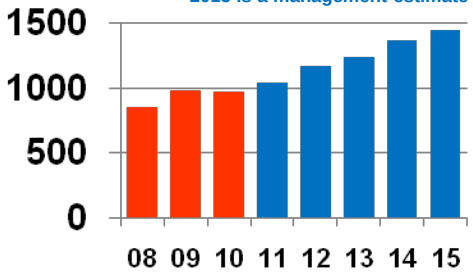
Meeting the needs of ‘majors’

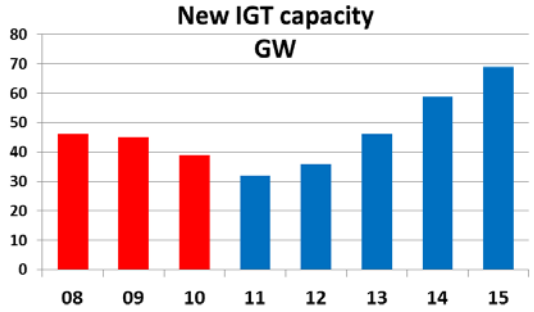
- Capacity to meet peak requirements
- International footprint
- Risk mitigation – service redundancies

In summary – secular growth

Boeing/Airbus deliveries & guidance*

* 2015 is a management estimate





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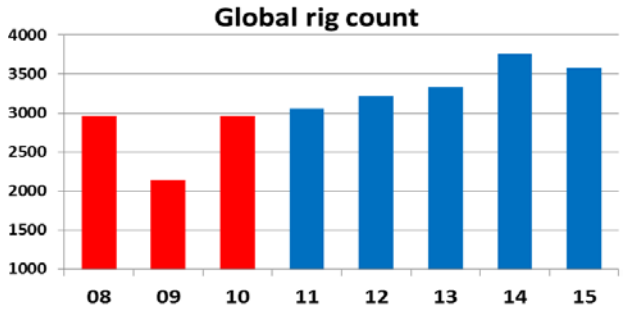


*Source: MB Strategy / Baker Hughes

- Aerospace & energy set for good growth, even if economy is turbulent
- Bodycote has strong leadership position
- Recent events:
  - New 10 year agreement with Rolls-Royce
  - 787 deliveries now underway
  - Investments to increase capacity

Emerging Markets

Emerging markets – where we are

2011 H1 Proportions

Largest
- Eastern Europe
- Brazil

Fastest Growing
- China
- Mexico
- Turkey

Strategic Outposts
- India
- Singapore

Emerging markets – today 10% of Group sales

28 plants in 11 countries

Emerging markets

Competitive advantage

- Partnership with established Western customers
- Global knowledge of customers and products
- Proven technology transfer capabilities
- Market leadership – here for the long haul
- Bodycote management system
- Comprehensive quality accreditations
- Long-term agreements, strategic partnering

Wuxi, China

Bodycote positioning

Partnering with global tier-1 and tier-2 component manufacturers requiring western-quality metal processing

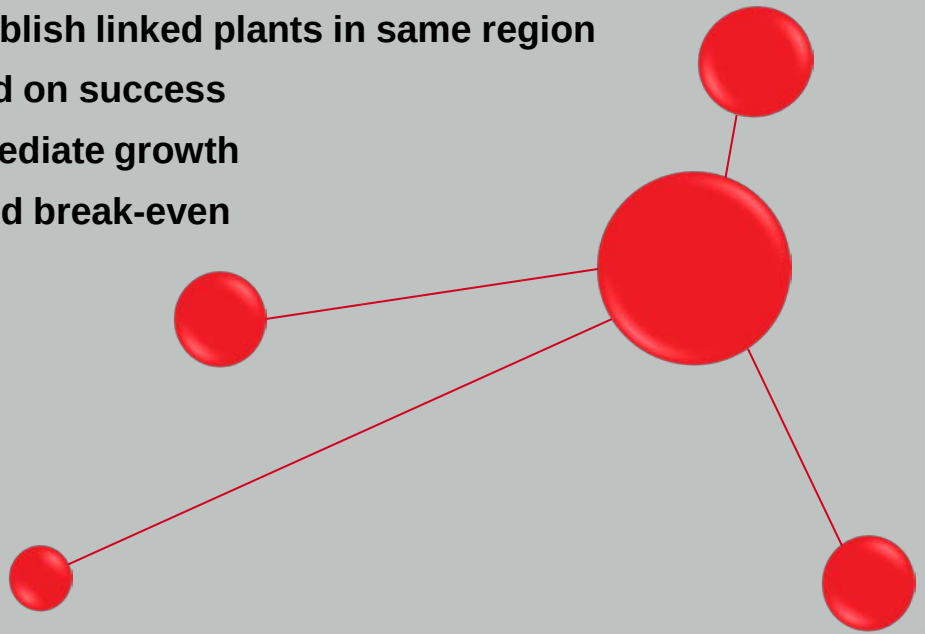





Emerging market expansion strategy

Build plant clusters – hub and spoke model

- **Establish linked plants in same region**
- **Build on success**
- **Immediate growth**
- **Rapid break-even**



Preferred to:

Lone greenfield:

- Many challenges
- Several years of losses

Acquire – and reshape:

- Much quicker
- Costly/risky
- Reposition to higher value Bodycote work
- Withdraw from marginal activities

Hub & Spoke development cycle

a) Begin working with 2-4 new customers

b) Develop and prove prototype capability

c) Run initial production in hub

d) Build new satellite plant

e) Move customers from hub to satellite

f) Replace customers in hub and repeat

g) Add other customers local to satellites

India

Developing our established territories

Well established Growing and good profits

- China
- Czech
- Hungary
- Poland
- Romania
- Turkey

- **Develop existing clusters**
- **Add new plant clusters**
- **Main focus on China**

Restructuring complete profitable and growing

- India
- Singapore

- **Add high-value sales & incremental capacity**

Work in progress

- Brazil

- **Add high-value sales**

In summary...

Today:

- 29 plants
- 10 countries
- Encouraging profits
- Good growth

Next:

- Build out plant clusters
- Focus on China

Stronger growth ahead

Changing Technology





Technology change

Customer technical needs are changing

Environmental legislation forcing change

Examples of new Bodycote technology to meet customers' changing technical needs

2 new processes explained

European directives restrict use of Chrome VI

- Hexavalent chrome – Chrome VI – is a known toxin
- EC directives protect drinking water from Chrome VI pollution by waste recovery requirements
- Redesign of machinery and cars eliminates passivated zinc and electroplated chrome

Favours nitrocarburising with post-oxidation (proprietary Bodycote Corr-I-Dur® process)

Corr-I-Dur®

Superior corrosion resistance

- Process unique to Bodycote
- Eliminates Chrome VI – corrosion protection benefits
- Automotive and machinery applications

Brake piston
(280gm v prior 440gm

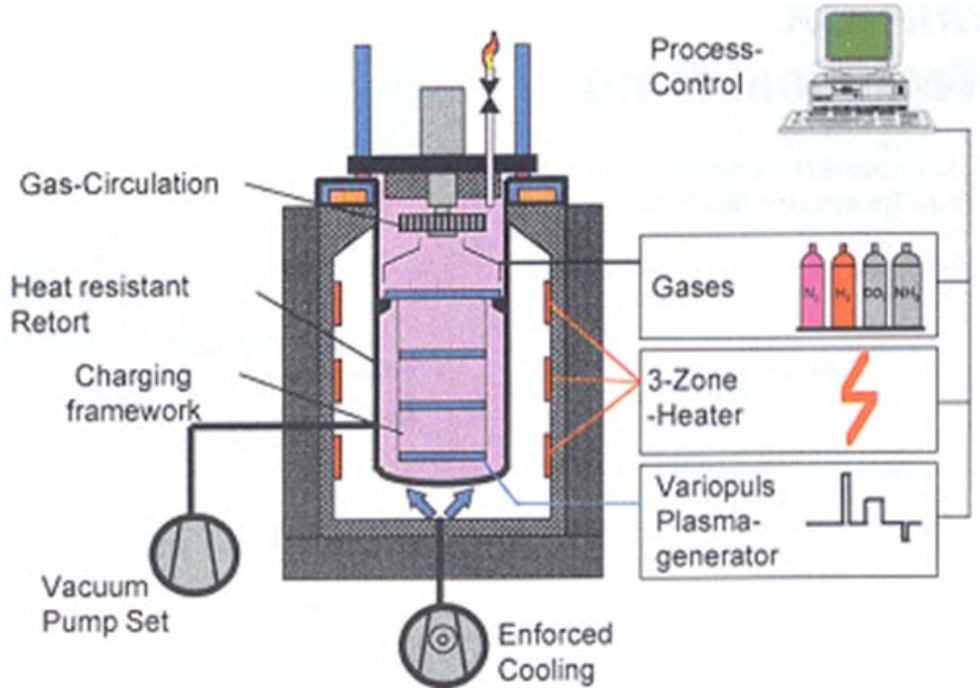
60hr salt spray test vs chemical coatings

Hydraulic equipment pistons

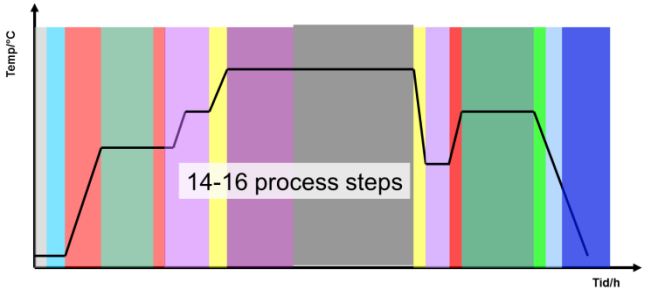
Corr-I-Dur®

Bodycote

Complex, precise, high value process



- **Multi-layer protection**
- **Adds nitrogen, then oxygen**
- **Cycle time: 12-20 hours**

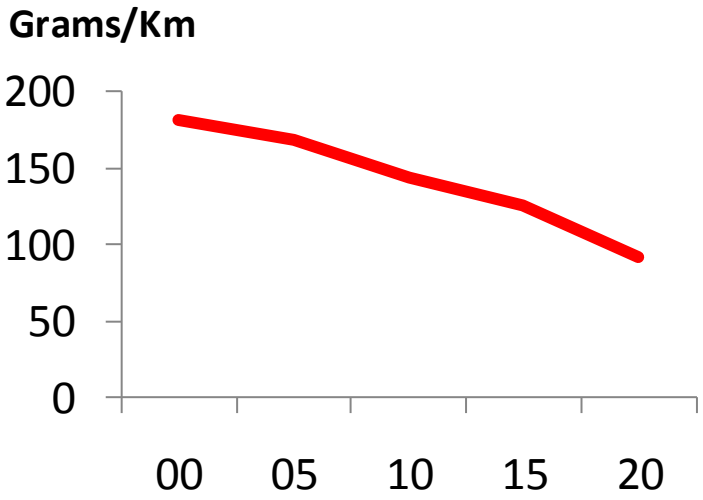


Average CO_2 emissions/car

Bodycote

EU legislation:

- 130 gms by 2015
- 95 gms by 2020
- Lower than Smart car (97 gms)



Easy wins: already happened
Next steps: more technology, lower weight

More technology: Energy recovery, hybrids, advanced injection, turbo

+

Lower weight: Smaller mechanical components

=

More heat treatment

Classical carburising v new LPC technology

Low Pressure Carburising – similar process, but under vacuum

Low pressure carburising

Many advantages...

...for the environment
- Lower emissions

...for Bodycote
- Shorter cycle – more throughput
- Lower energy use

...for customers
- Improves fatigue behaviour and distortion
- Clean surfaces (even blind holes)
- No need for grinding
- Stronger lighter plants

In summary – technology change

Customer needs impacted by legislation:

- Elimination of Chrome VI
- Improved CO_2 emission
  - more technology
  - stronger, smaller parts

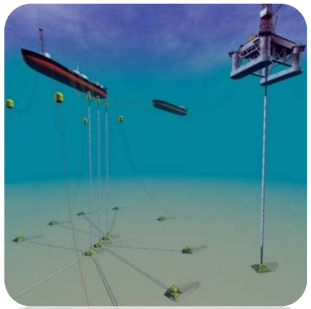
New Bodycote solutions – examples:

- Corr-I-Dur®
- Low Pressure Carburising

- **Growing heat treatment requirement**
- **Particularly for new high-added value Bodycote processes**

HIP Product Fabrication



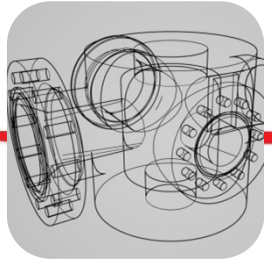

The opportunity

- Penetrating market for:
  - Low-volume large complex parts
  - With optimum mechanical strength

- The market is currently served by top-end forgings – we estimate the market size for stainless steel forgings at €1 billion.

Product fabrication process

Powdered alloy



Design capsule

Manufacture capsule

Powder fill capsule

HIP

Heat treatment

Inspection

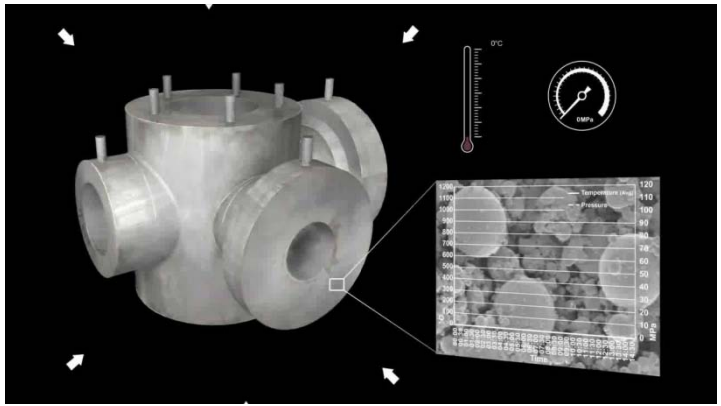
Finished product

End application

Hot Isostatic Pressing (HIP)

Process

- Heats up to 2000°C
- Compresses up to 300 MPa
- Inert gas – Nitrogen or Argon
- Processes for up to 30 hours



What does the process do?

- Consolidates alloy powders to 100% solid metal
- Eliminates porosity in microstructure of components
- Improves mechanical properties
  - fatigue, strength, wear qualities

Completely different from Sintering

- HIP product fabrication is a high pressure process giving ultimate qualities. Sintering is a mass production process for producing low cost product.

Market segments & applications

- Energy – Oil & Gas
  - Valve bodies, pump housings, swivels, tees, hubs, manifolds
- Machinery
  - Extrusion barrels
- Tooling
  - Bars (solid and hollow), rectangular blocks, billets
- Electronics
  - Sputtering targets for flat panel display, semiconductors
- Power generation
  - Steam chests, rotors, turbine discs, rings, valve bodies





Advantage vs other fabrication methods

Bodycote

Near-net shape HIP PM was used to manufacture superconducting dipole cryomagnet end covers for the world's largest energy subatomic particle accelerator known as the Large Hadron Collider.

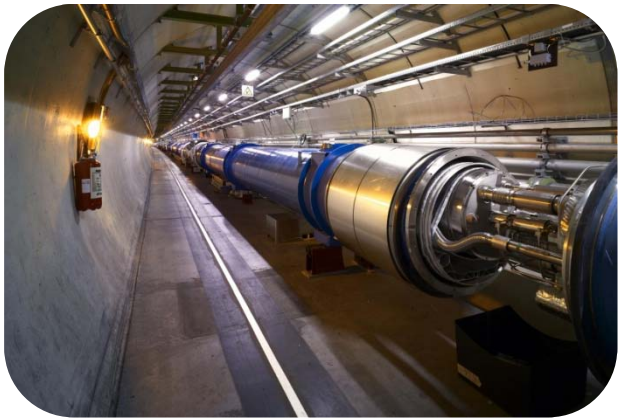


Photo courtesy of CERN

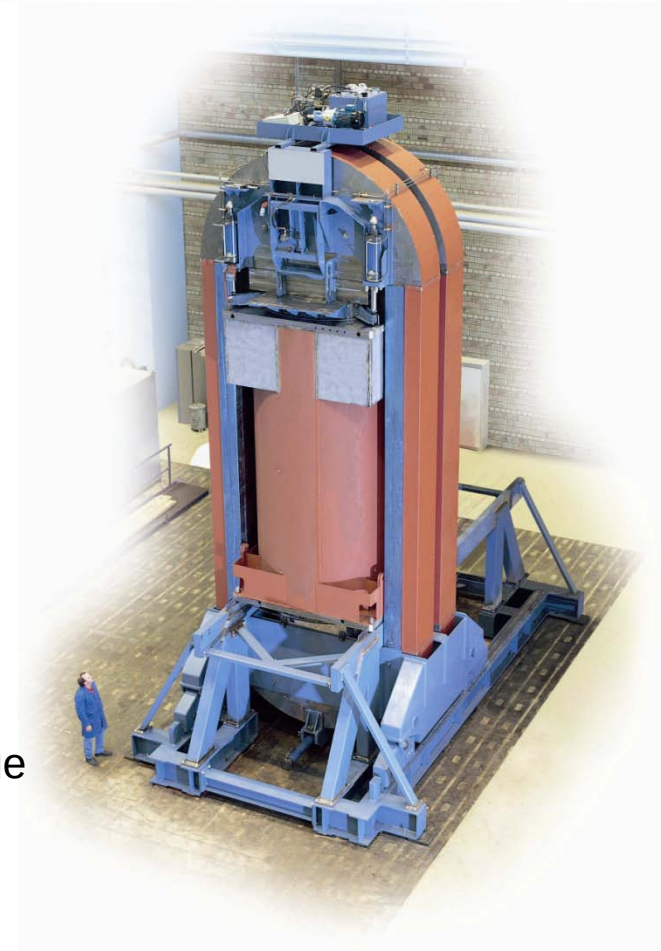
CERN comparison of critical criteria for four fabrication techniques considered

Key: ++ very good, + good, - poor, -- very poor	Welded	Closed die forged	Cast	HIP PM
Microstructure	-	++	-	++
Tensile properties	+	+	-	++
Impact toughness	+	++	+	+
Near-net shaping	++	--	+	++
Reliability, Non Destructive Testing	--	++	+	+

Winner: Design Excellence Award Grand Prize
Photo courtesy of Metso

Barriers to entry

- Know-how:
  - Substantial know-how required
  - Both art and science
  - Our HIP knowledge established over decades
  - Includes design and modelling of complex shapes
- Investment:
  - HIPs are very expensive – a large HIP costs > £10m
  - Bodycote has 50 of varying sizes in multiple locations
- Leadership:
  - Bodycote the natural supplier with first mover advantage



Bodycote HIP market position

Bodycote

Global leader

55%

global market share
(excluding captives)

10

PLANTS
US & EUROPE

50

HIP VESSELS

HIP Product Fabrication – the future...

Strong growth prospects

Bodycote is:

- Well ahead with missionary selling task
- Establishing key customer partnerships
- Developing know-how for different applications
- Investing in resources and capacity

Current growth:

> 50% p.a.

S^3P – Specialty Stainless Steel Processes

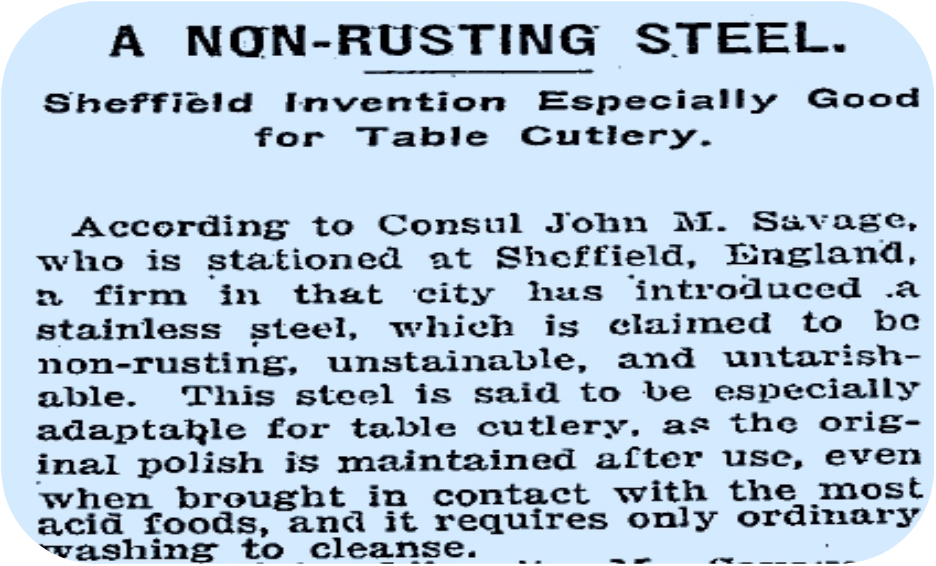




Stainless steel

What is stainless steel?

- Steel alloy with minimum 12% chromium content
- Chromium oxide provides the corrosion resistance



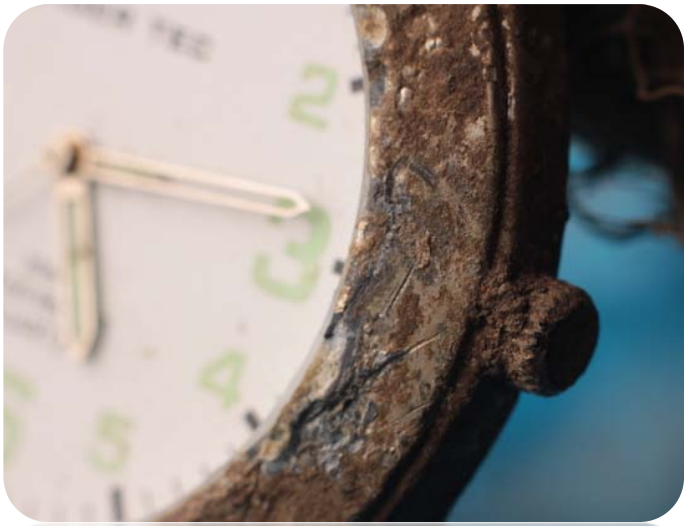
A NON-RUSTING STEEL.

Sheffield Invention Especially Good for Table Cutlery.

According to Consul John M. Savage, who is stationed at Sheffield, England, a firm in that city has introduced a stainless steel, which is claimed to be non-rusting, unstainable, and untarnishable. This steel is said to be especially adaptable for table cutlery, as the original polish is maintained after use, even when brought in contact with the most acid foods, and it requires only ordinary washing to cleanse.

New York Times, 31 January 1915

Corrosion



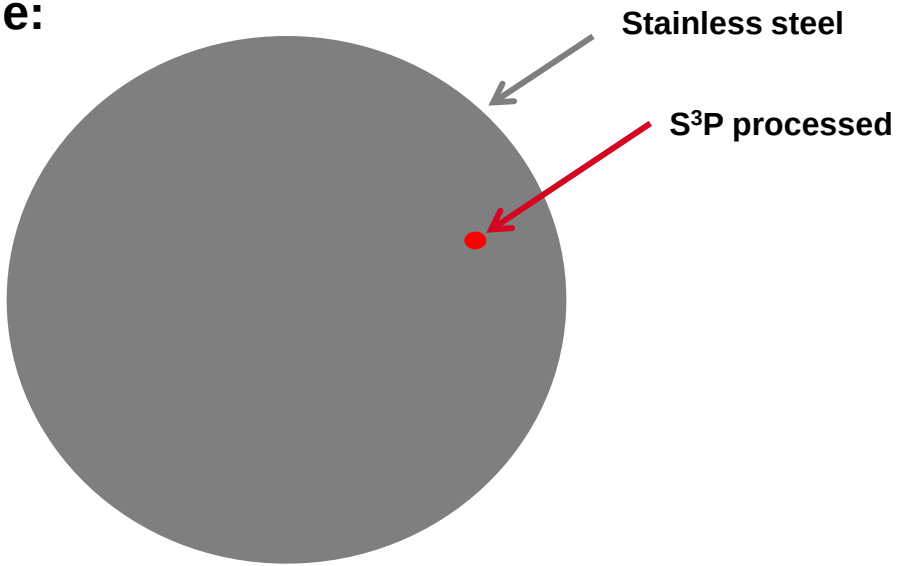
Corrosion is costly

Friction, wear and corrosion of steels, including consequential losses, is estimated to cost 5% of European GDP.

Market analysis – stainless steel

Stainless steel production worldwide:

- 31m tonnes (2010)
- 6% CAGR over last 5 years



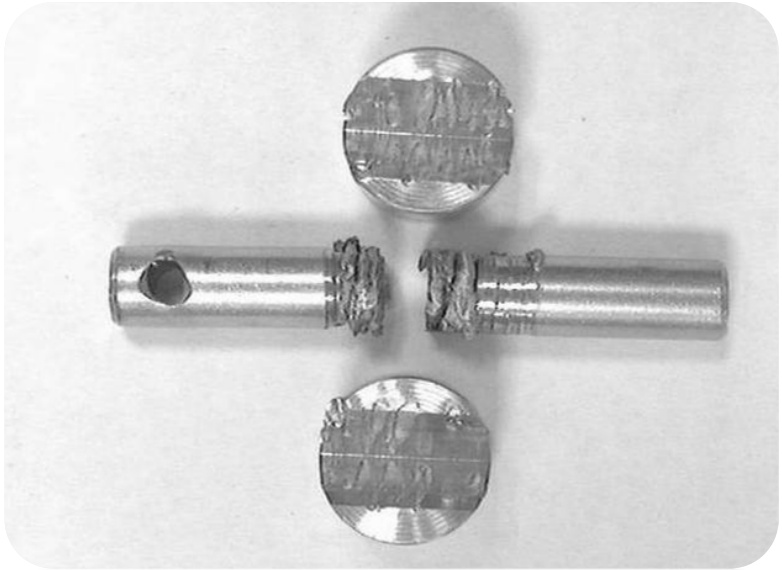
We process a minute share of total stainless steel
> Growth in 2011 H1 c.50%

Characteristics of stainless steel

- Many excellent characteristics – particularly corrosion resistance
- But... disadvantages:
  - Low strength
  - Low surface hardness
  - Low wear resistance
  - High risk of adhesion

S^3P solution

Overcomes disadvantages



S³P offering

- Enhances...
  - Wear resistance 3x and more
  - Surface hardness 5x
  - Avoidance of sticking
- Overcomes weaknesses of stainless steel better than alternatives
- Several can harden – only we can maintain corrosion resistance

Unique, premium offering
– for customers that need the best

S^3P offering – business concept

- S^3P is a solution provider
- Premium priced technology
- Missionary selling approach
- Highly diversified markets - worldwide

Unique, proprietary product
Process has high price – but benefits justify cost

S³P offering – locations

Germany

France

Netherlands

USA

Track record:

> 5yr CAGR 17% despite economic crisis
> strong margins

Examples of S³P applications

Bodycote

INDUSTRIAL FLUID & GAS HANDLING

Key factors

- Large dimensions treatable ✓
- Increased wear resistance ✓
- Maintain corrosion resistance ✓
- Toughness at low temperatures ✓
- High reliability, reduction of lifecycle cost ✓

Applications > pumps and valves
> connectors and fittings

FOOD MANUFACTURING & PRODUCTION

Key factors

- No risk of delamination v coating ✓
- No sticking of tight tolerance parts ✓
- Outperforms hard chrome plating ✓
- Wear resistant against abrasive foods ✓
- Maintain corrosion resistance ✓

Applications > fluid handling
> bottling plant

Examples of S³P applications

Bodycote

AUTOMOTIVE

Key factors

- Highly resistant to surface wear ✓
- No post treatment machining required ✓
- Withstands modern fuel concepts ✓
- High reliability, provides longer part life ✓

Applications > turbo charger
> exhaust circulation
> variable camshaft system

MEDICAL DEVICES

Key factors

- Biocompatibility ✓
- Maintains sharp edge during operation ✓
- Non-magnetic behaviour is maintained ✓
- Maintain corrosion resistance ✓

Applications > fixation instruments
> bone cutter
> implants

S3P actions

- 50% more capacity by end 2012
- Increase penetration of existing markets
- Continue missionary selling
- Expand into emerging markets in due course

S³P – Specialty Stainless Steel Processes

Bodycote

Opportunity for substantial growth

Outstanding margins

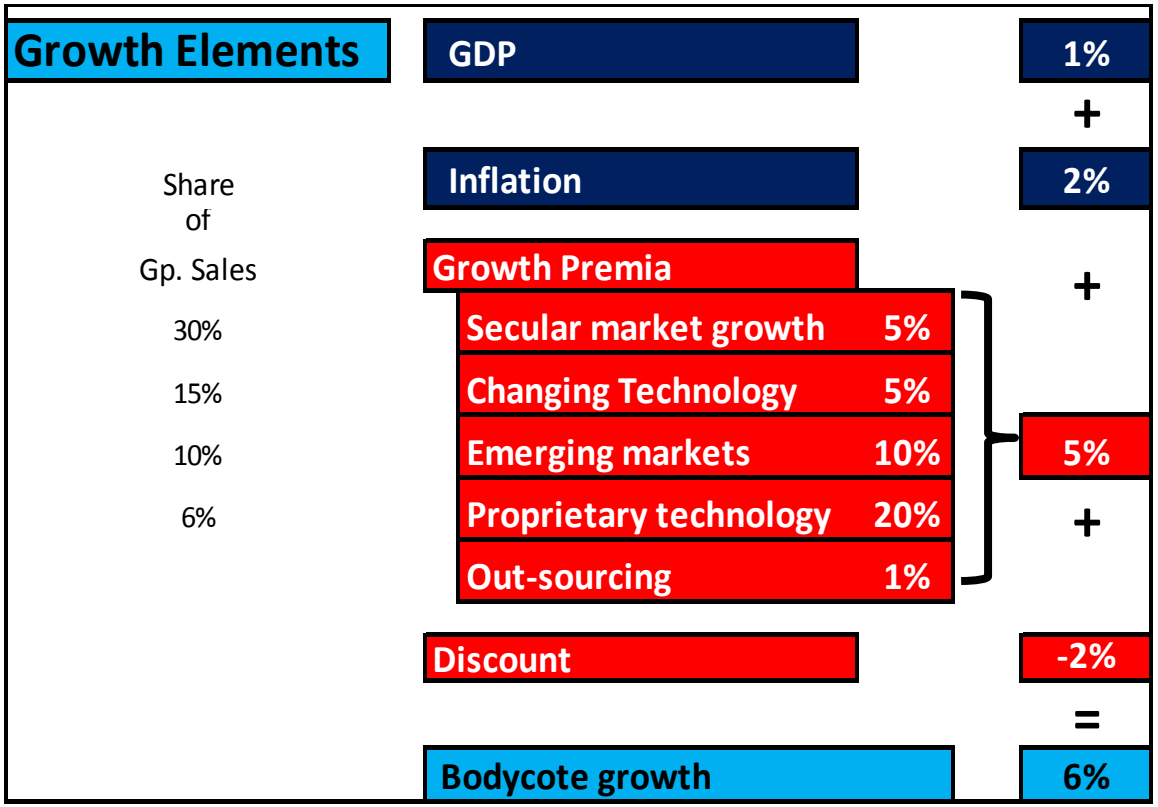
Niche process – wide market applications

Growth & Resilience

Scoping the growth opportunities
The possibility of a downturn
Modelling some hypothetical scenarios

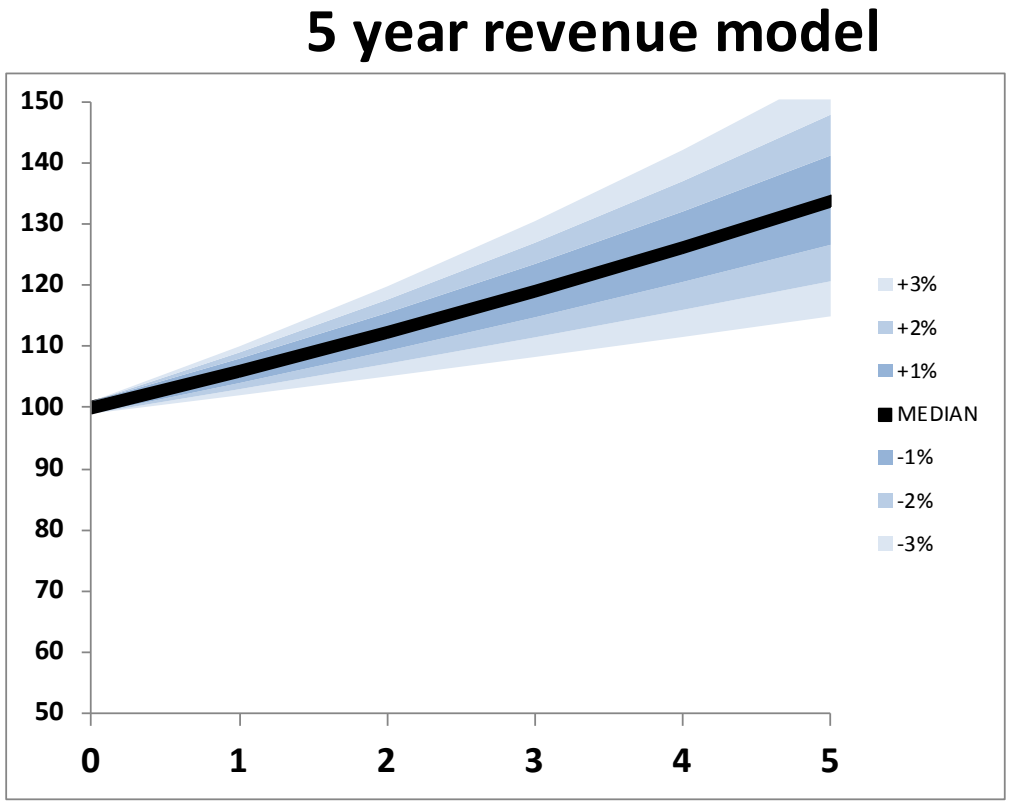
David Landless, Group Finance Director

Median case growth scenarios – 5yr horizon



Median case revenue – reality not a single line

Bodycote median case	6%



Prospects

Bodycote

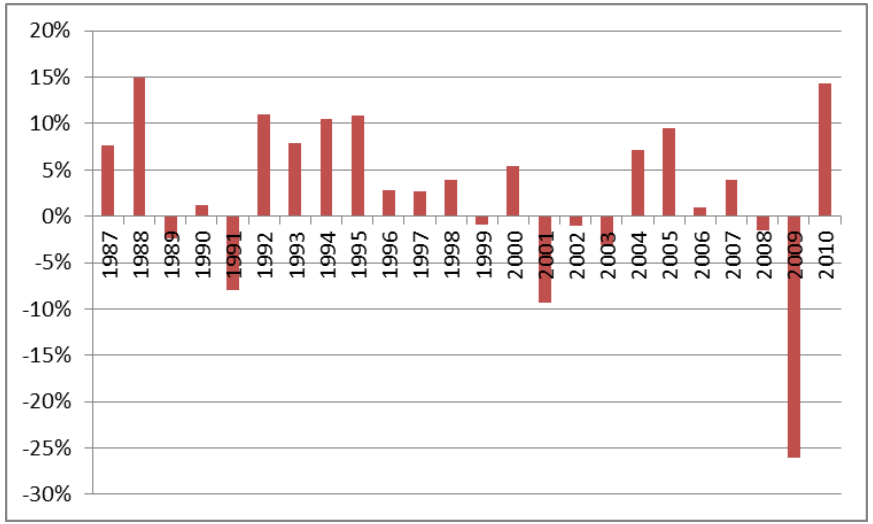
Secular Aero & Energy growth + **4 growth initiatives** =

- **“Premium growth” of 5% to general market**
- **Discounted to 3%**

- **Possibility of a “double dip” impacting the general market**
- **Next slides provide historical context to scale of possible downturn**
- **And show our increased resilience**

The long view

Year on year HT industry output change – at constant prices*



*Source: US Federal Reserve – Heat Treatment & Coatings

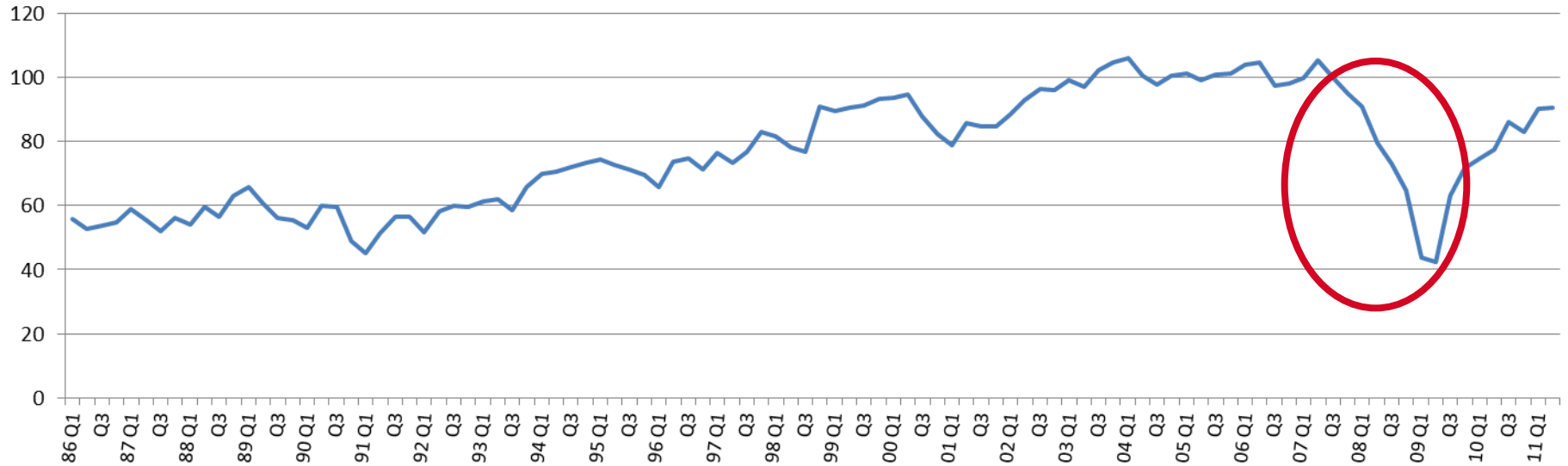
- **2009 truly exceptional 26% decline**
- **Typical cycle: a decline of 5 -10% once in 10 years**
- **25 year CAGR:**
  3% at constant prices
  5% at actual prices

History:

- **CAGR 5%, "Single digit" shock every 10 years**
- **2009 impacted by co-incidence of exceptional events**

US auto industry output – 25 years by quarter

Source: Federal Reserve

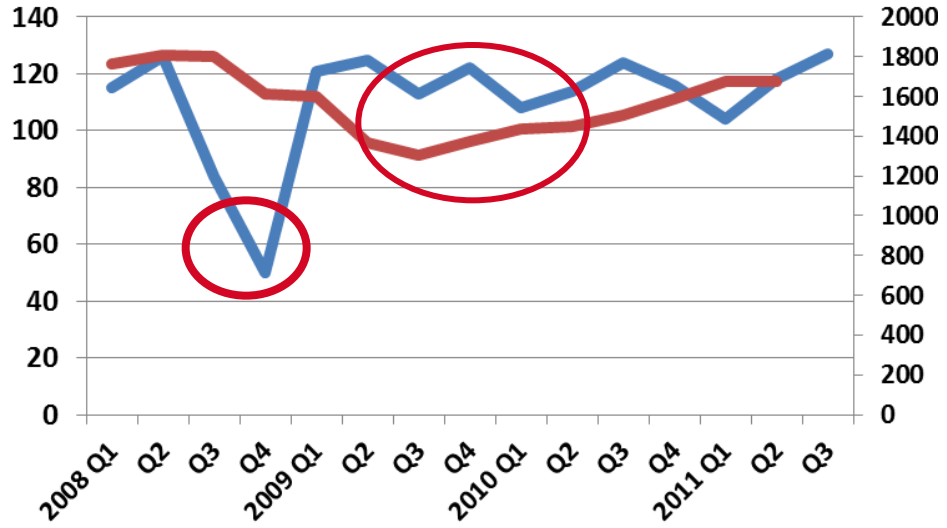


2009 crisis unique

- Auto production troughed at 40% of prior level
- GM bankruptcy and crises at other US majors

Boeing build units & PCC sales by quarter

Source: Boeing and Precision Castparts



Boeing production halt impacted suppliers in following year

2009 on 2008:

+28% Boeing

PCC -20%

Disruption to Boeing supply chain followed 2008 strike

Supply chain also impacted by 787 development traumas (& A380)

Supplier demand slumped c20% despite buoyant end-market

Industrial production – incidence of downturns

Source: US Federal Reserve data for industrial production - 25 year history

Industrial production

- Trend growth 2%
- Deviations from trend growth:
  - 2009 crisis 13%
  - 4 shortfalls of 2-6%
  - 3 shortfalls <2%

Bodycote

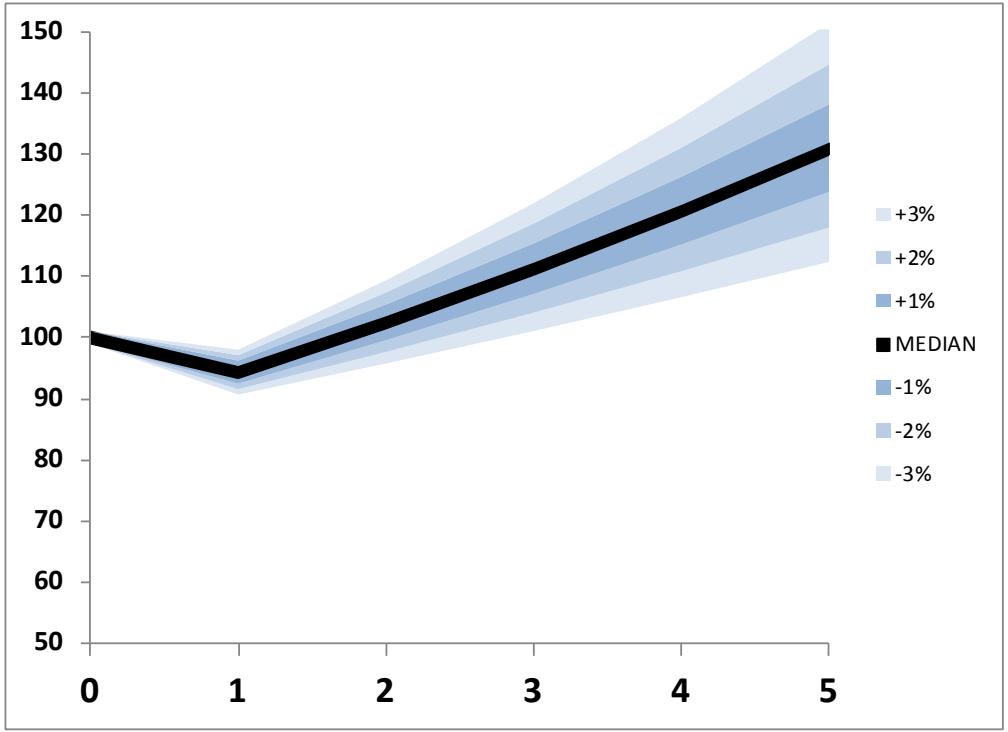
- We've evaluated a 10% deviation from trend
- Why 10%:
  - Worst crisis* in last 25 years save for 2009: 6%
  - Multiplier for our mix: x1.6

  10%

* 2001

Hypothetical scenario - 10% downturn from trend

Bodycote median case	6%
Economic downturn	-10%

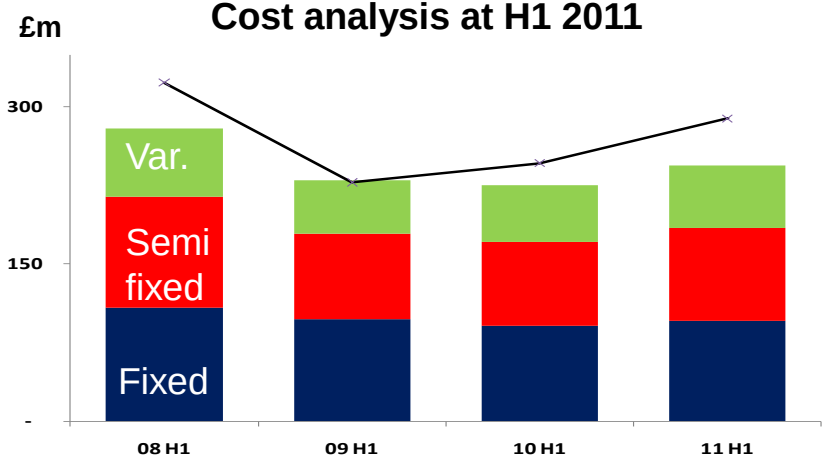


Drop-thru from top-line to bottom-line

Bodycote has substantial infrastructure and fixed costs – and modest direct costs

High drop through:
- **benefits incremental sales**
- **hurts "decremental" sales**

Cost analysis at H1 2011



Bodycote business model - natural high operational gearing

Profit effect of sales drop

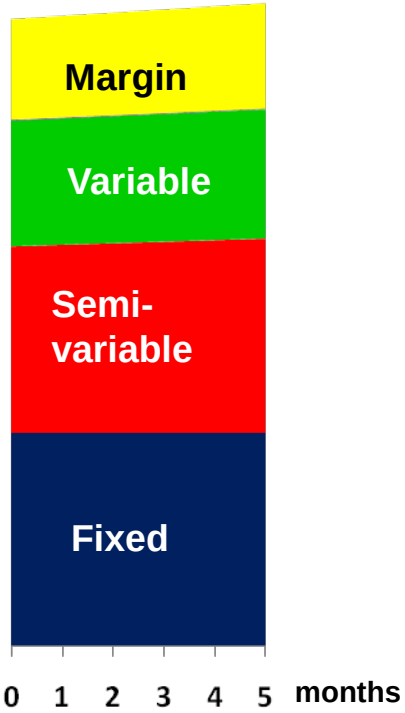
	Aero & Energy US/UK bias	Auto & General Industrial	
		Europe	US & ROW
Effect on profit of sales drop of 100:			
After 1 week	90	90	90
After 3 months	60	70	60
After 9 months	50	45	40

- Impact of sales drop in AGI less than impact of same drop in ADE
- Takes longer to achieve cost reductions in Europe

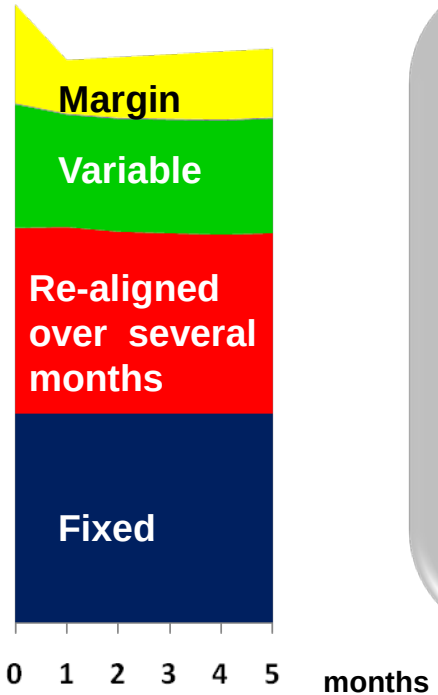
Cost profile in different scenarios

Bodycote

Normal steady growth



Hypothetical sudden downturn

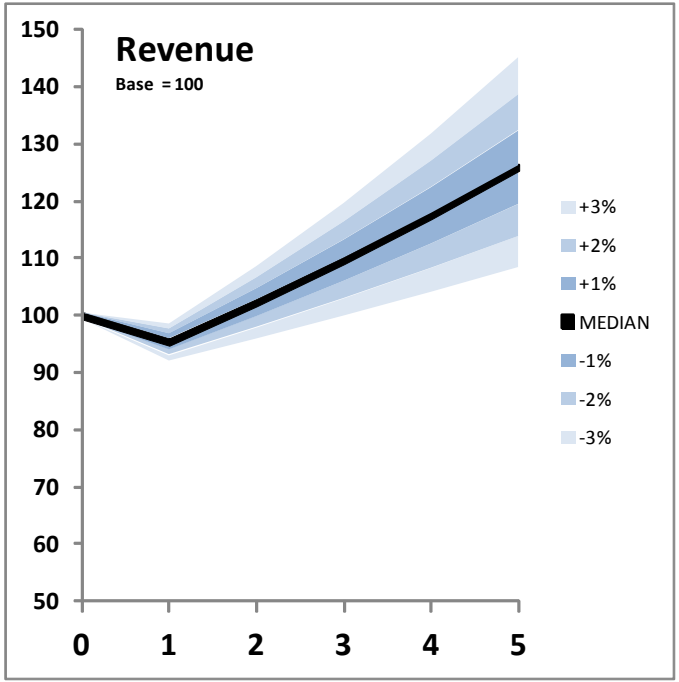


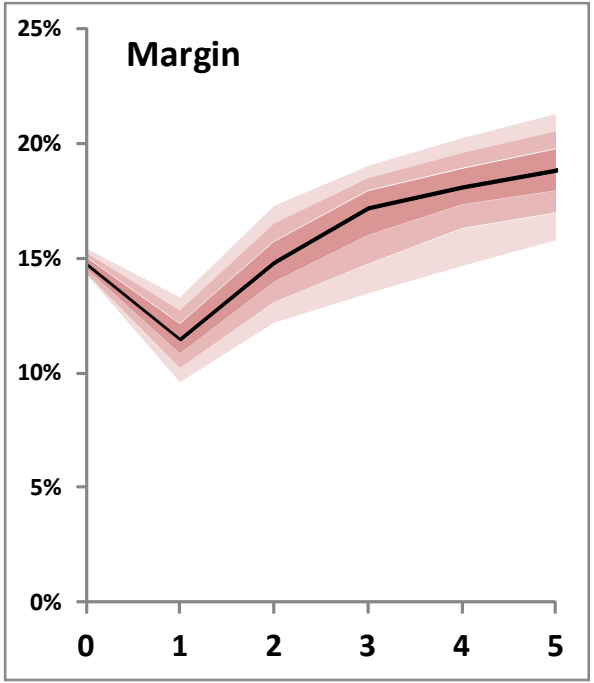
- Cost gearing beneficial in growth scenario
- If sudden downturn occurs semi-variable cost re-alignment takes several months
- Ability to respond quickly greater than in 2008/9:
  - temporaries 15.6%
  - previously 11.6%

Hypothetical Scenario: 10% downturn

Bodycote growth offset by downturn

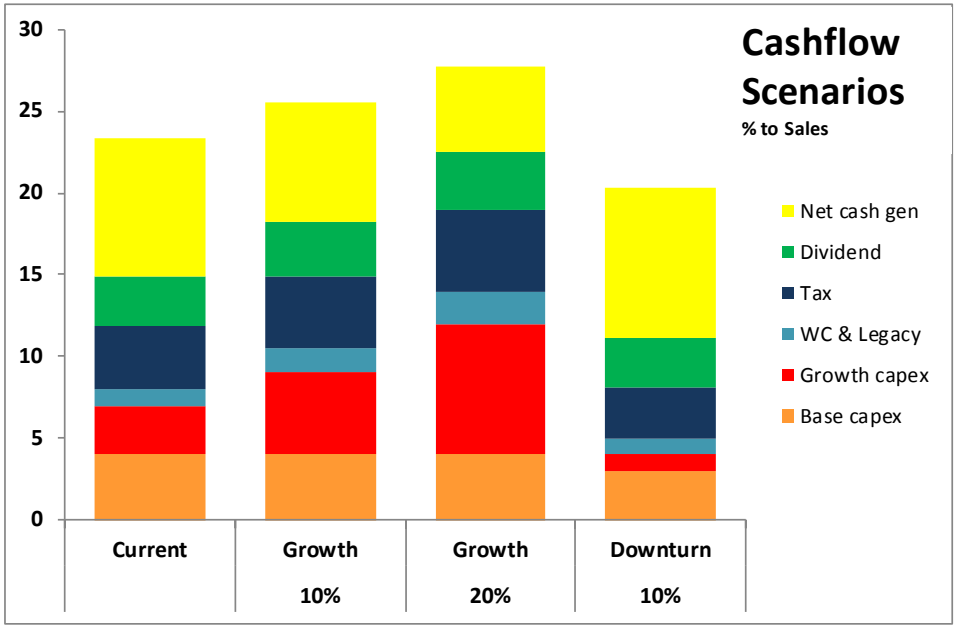
Bodycote growth	6%
Economic downturn	-10%





- More resilient than in prior downturns
- Margins in this hypothetical scenario dip to c.12%

Cashflow resilience – EBITDA utilisation



EBIT Margin	15%	17%	19%	12%
EBITDA Margin	23%	26%	28%	20%
Capex/Depn	80%	110%	140%	60%

Status quo:

- Net cash generation 8% to sales

Growth scenarios:

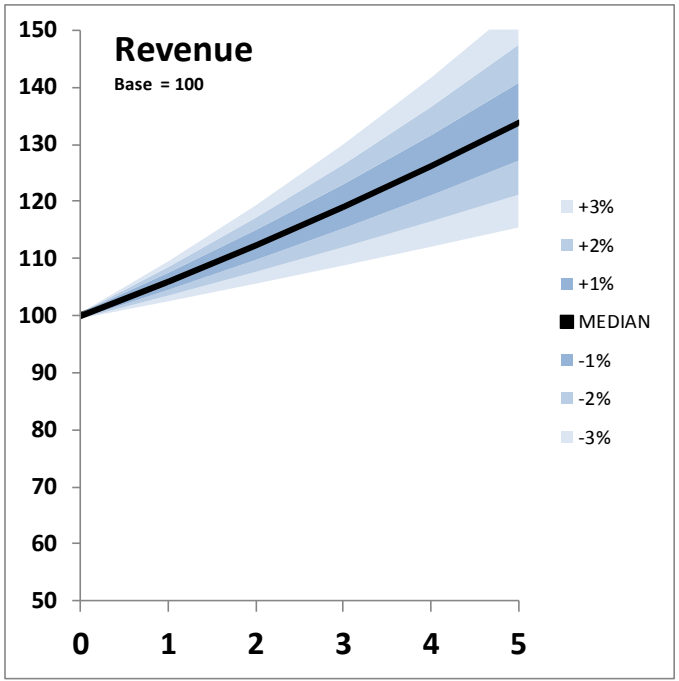
- Capex 1.2x to 1.5x depn.
- Significant net cash generation

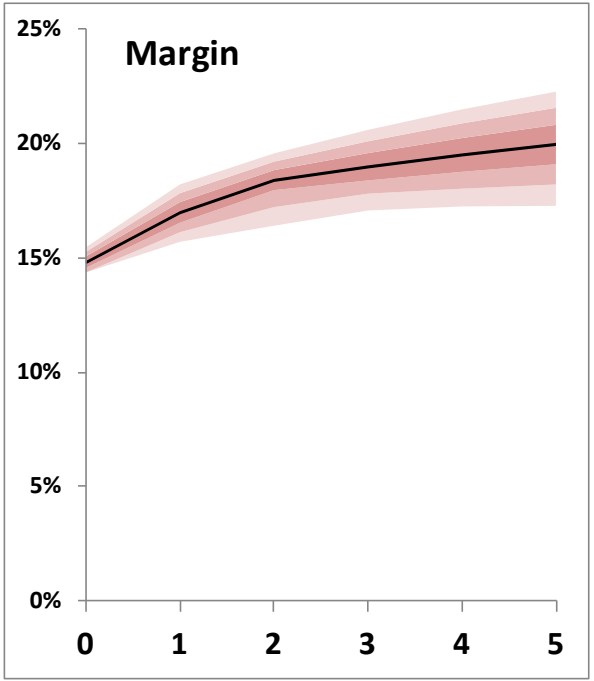
Economic setback scenarios:

- Capex 0.6x depn.
- Still significant net cash

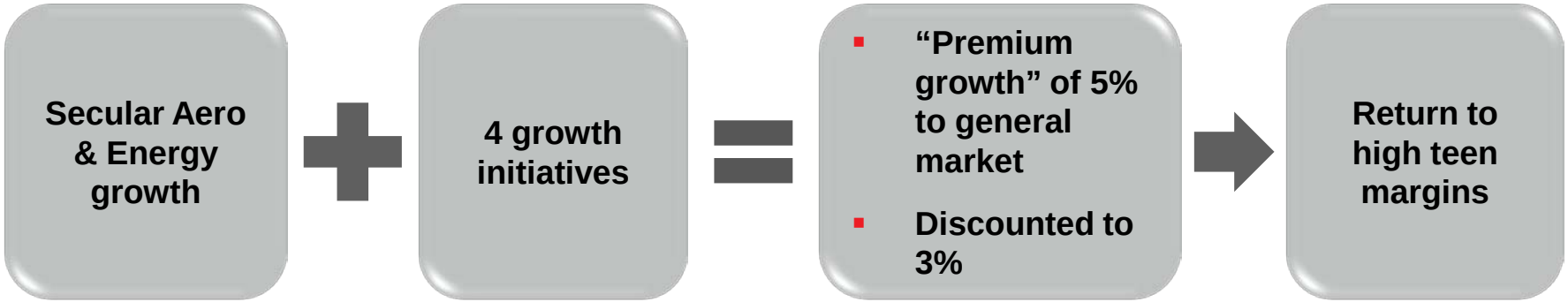
Scenario: Median case 6% 5yr CAGR

Bodycote median case	6%





Recap



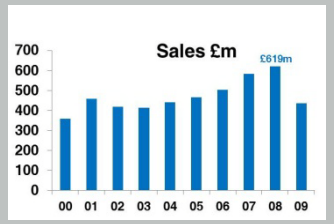
Cash generation transformed – now minimal borrowings

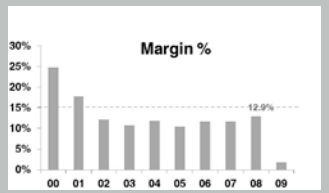
Growth & Resilience – a recap

Stephen Harris, CEO

Bodycote has changed

Rear view mirror – prior to 2009:





- Network expansion
- Substantial investment

BUT...

- Cash generation weak
- Business quality patchy

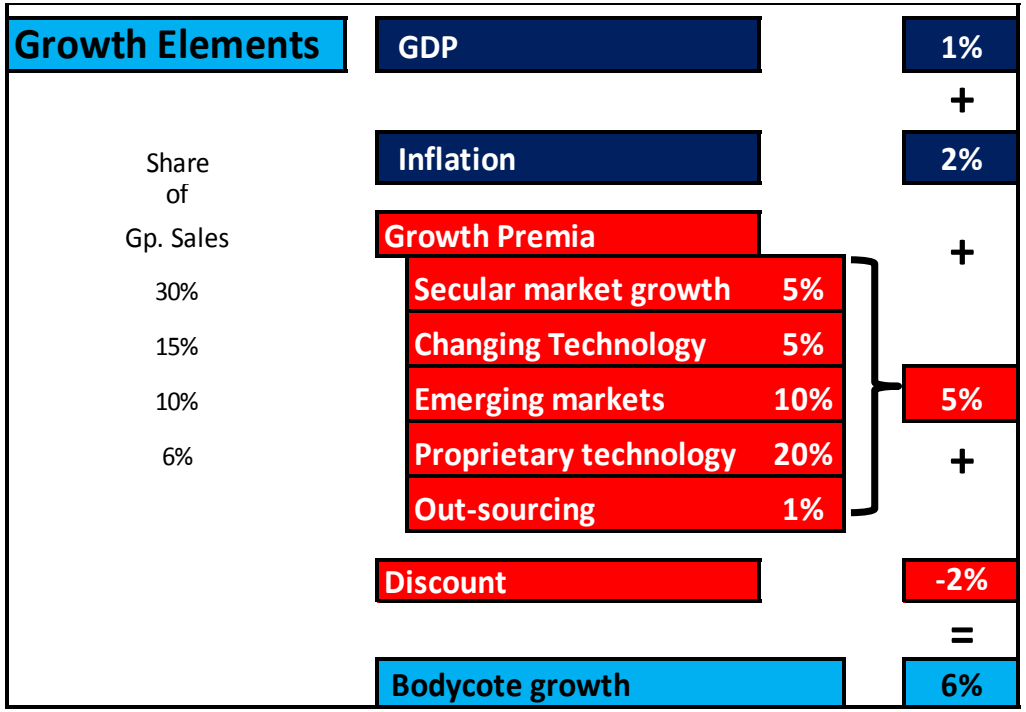
Now:

- Withdrawn from low margin business
- Focus on business quality
- Bench strength enhanced
- Margins starting to climb above the 10 year plateau
- Cash flow transformed
- Targeting premium growth

Much more resilient than 2008/09

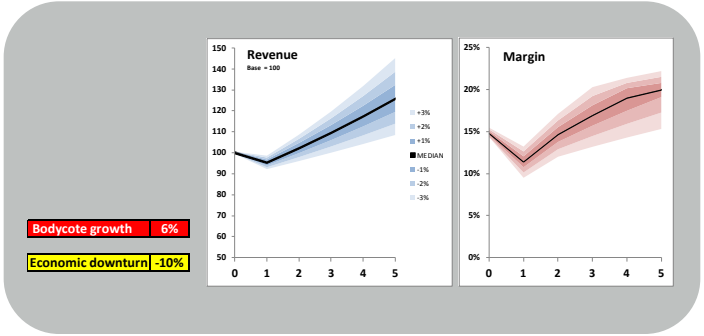
	Then	Now
Growth mix	▪ Problem sites ▪ Boeing distortions ▪ US auto industry near death experience	▪ Varied growth engines ▪ Secular Aero/Energy growth
Margins	▪ 13% falling to 2%	▪ Low double digits to high teens
Fixed costs	▪ Legacy overhang	▪ Much lower
Cash flow	▪ Marginal	▪ Strong
Debt	▪ High	▪ Minimal

Above market growth aspirations



- Median case: Achieve 3% growth in excess of general market growth over next 5 years
- In high quality business
- No precision to the numbers
- Achievement will be uneven
- Route may well be bumpy

Quantified some turbulent scenarios



What we know:

- Not yet back to 2007 activity
- Good current growth rate
- History shows 5 -10% setbacks every 10 yrs or so
- 2009 suffered from extreme distortions
- P&L impact of a downturn

What we don't know:

- Timing or magnitude of any prospective economic downturn

Summary and conclusion

A changed Bodycote

- Bodycote targeting good growth but also able to withstand a downturn
- Robust margins
- Enhanced return on capital
- Good cash generation

Growth & Resilience

Stephen Harris, CEO