



# FY22 Annual Results

for the year to 30<sup>th</sup> September 2022

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# Highlights: FY22

✓ **Full year revenue £5.0m: 39% higher than FY21**

✓ **EBITDA loss reduced to £0.9m from £1.5m**

✓ **Trading in Q1 FY23 ahead of same quarter last year**



Energy sector revenue up 72%  
including Oil & Gas up by 54%



Fundraise of £0.5m in Sept 2022



Six fold increase in power generation  
revenue



Industrial sector revenue up by 10%



Regular Airbus orders now being  
received



Aerospace sector revenue up by 24%



Two major orders for power  
generation turbine blades completed

# Financial Key Points FY22



## Increasing revenue across all sectors; up by 39% overall

EBITDA loss reduced to  
£0.9m  
(FY21 loss £1.5m)

Gross Margin increased  
to 37%  
(FY21 36%)

Gross Profit £1.9m  
(FY21 £1.3m)

Fundraise of £0.5m in  
September 2022

Cash at Bank £0.7m  
(FY21 £1.5m)

Post year-end cash  
injection of £0.5m from  
US property deal

Cash outflow from  
operations £1.0m  
(FY21 £1.9m)

Net assets: £5.5m  
(FY21 £6.9m)

Capex £0.3m  
(FY21 £0.3m)

Two-stage strategy agreed following Board review:

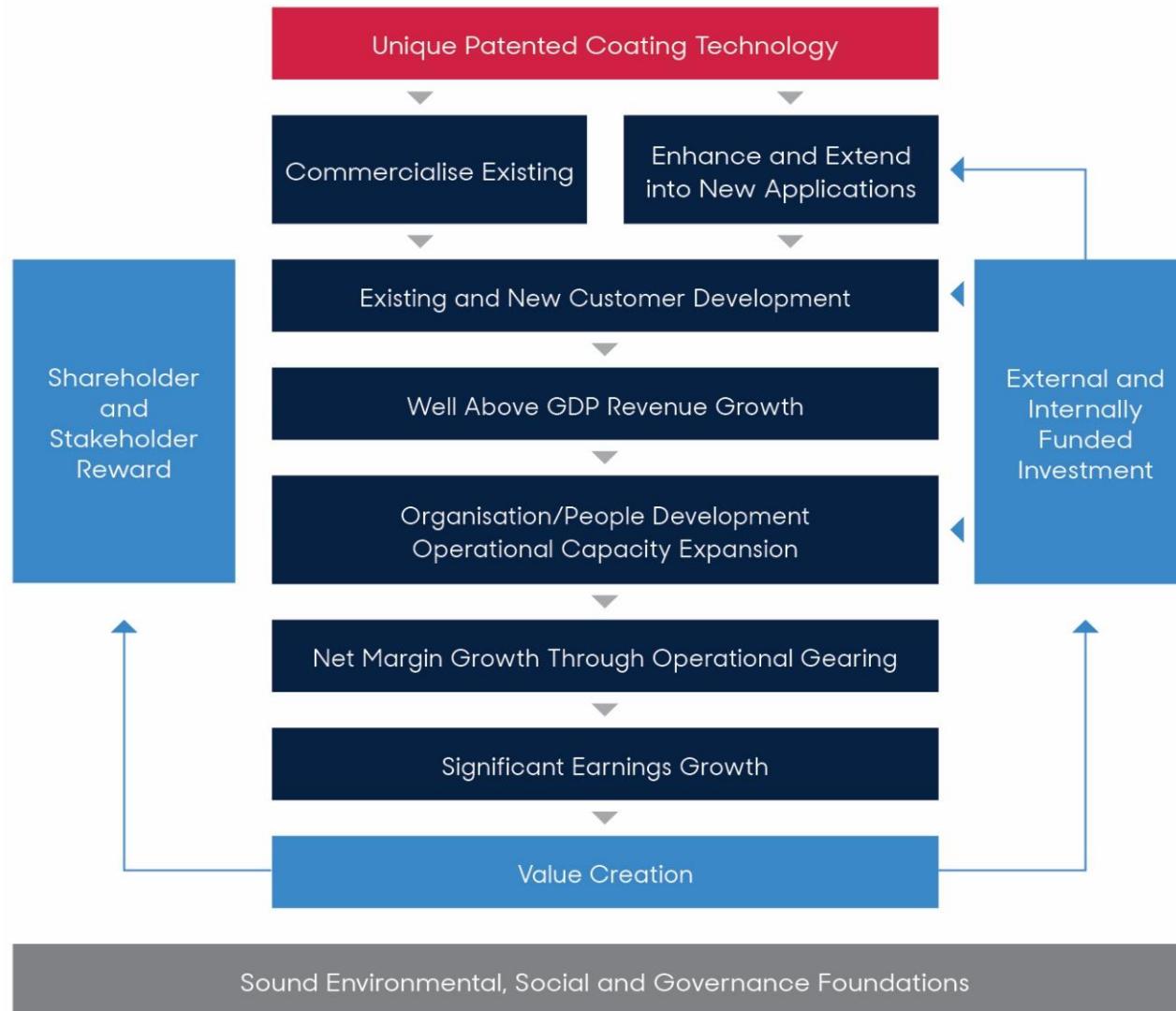


(a) Focus on becoming profitable and cash generative. This will be driven mainly by increased sales to existing and new customers, utilising proven coating technology and existing production capacity, thereby benefiting from the Group's strong operational gearing;

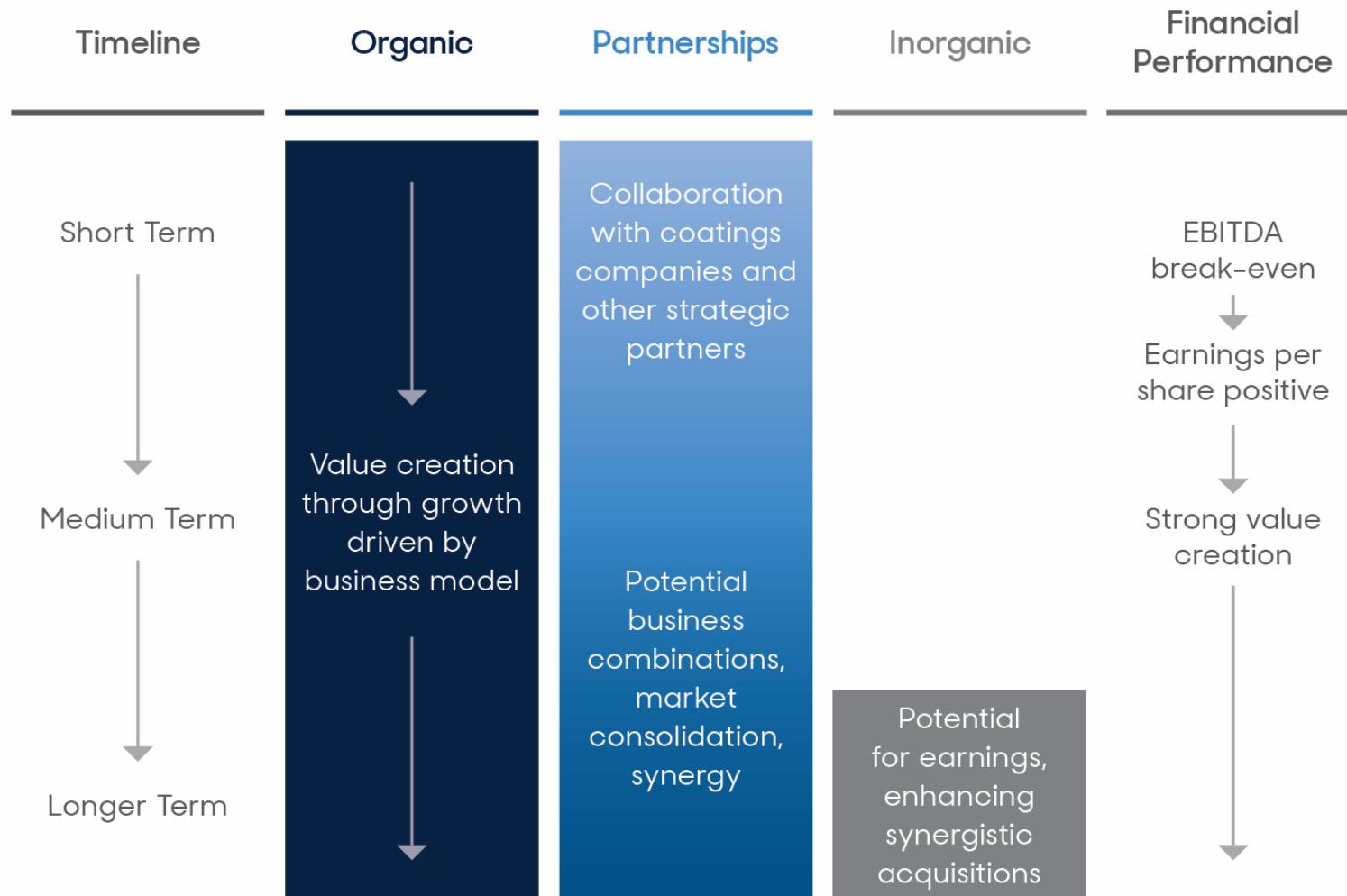


(b) Developing opportunities to drive significant value for shareholders and other stakeholders over the medium to longer term through further development and commercialisation of the Group's unique high performance coatings technology, including co-operation with other coatings companies.

# Hardide Business Model

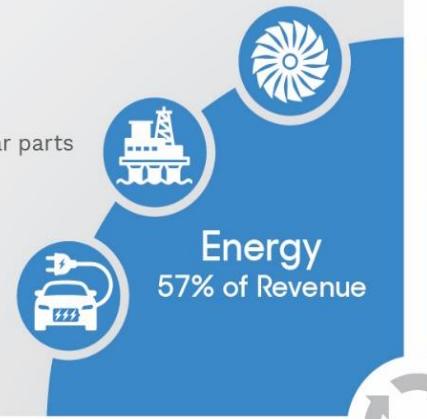


# Hardide Strategic Direction

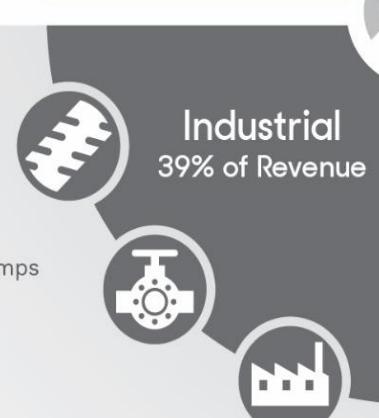


# Hardide's applications

- Oil & gas directional drilling tools
- Well stimulation tools
- Oil & gas production components
- Sand control systems
- Coating of industrial diamonds for wear parts
- Silicon production for solar cells
- Production of EV batteries
- Hydrogen production and storage systems
- Power generation steam and gas turbine blades



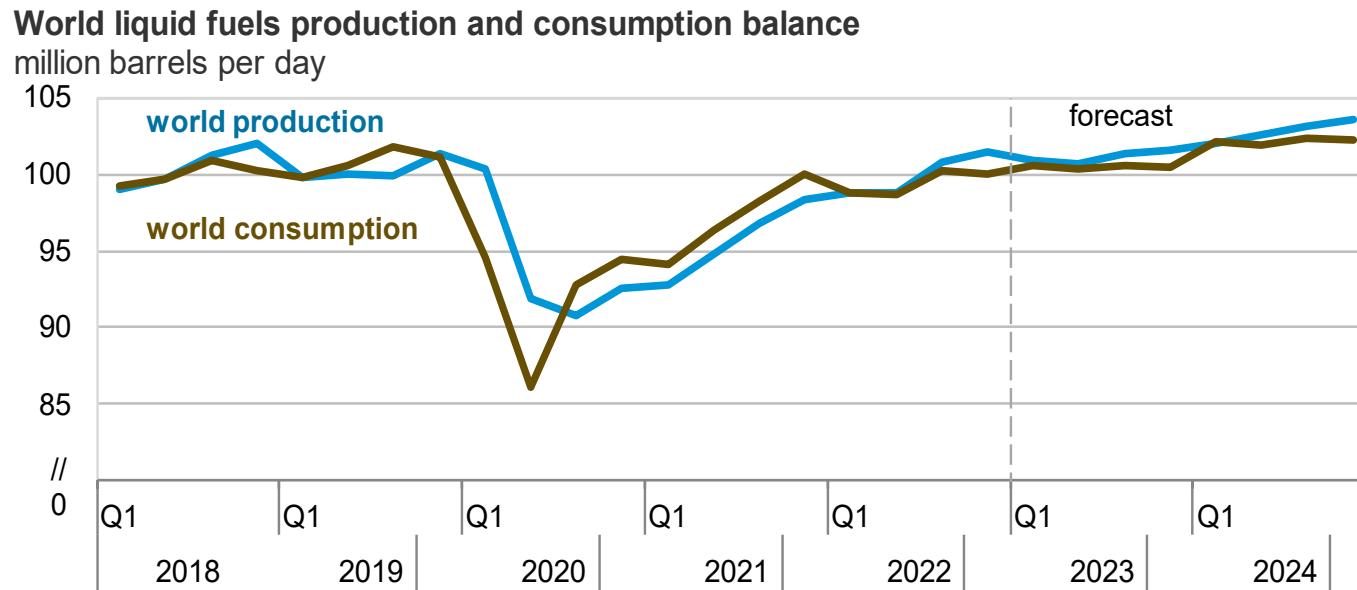
- Injection moulding extrusion feeder screws and dies
- Airport high speed X-ray screening machines
- Severe service valves and pumps
- High volume positive displacement pumps
- Rotors and shafts
- Closed and open face impellers
- Sleeve bearings
- Hydrodynamic bearings
- Complex 3D printed parts



- Eurofighter Typhoon canopy locking system
- Airbus wing/flap components
- F35 Joint Strike Fighter components
- Helicopter transmission systems
- Aircraft door and control system actuators
- Undercarriage/landing gear
- General hard chrome replacement

# Energy – Oil & Gas (up by 54%)

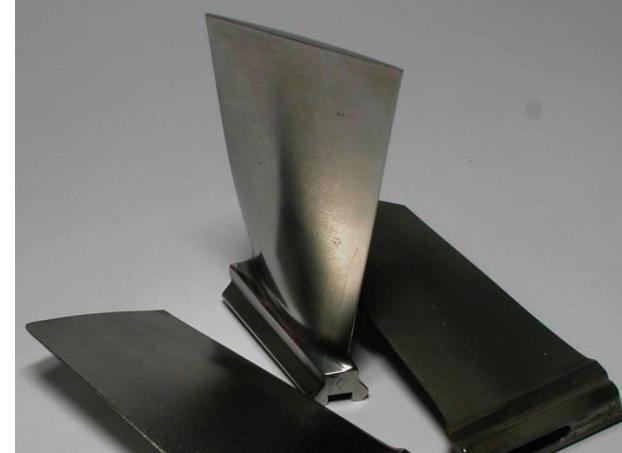
- O&G market demand returning, but slower than anticipated due to supply chain material shortages
- Forecasts from major oil service companies are very positive for FY23 and beyond
- Multiple new and high value applications currently in testing
- Coating of mesh sand screens a major opportunity due to Hardide's unique ability



Source: US Energy Information Administration, Short term Energy Outlook January 2023

# Energy- Power Generation (six-fold increase)

- Two large orders for coating gas turbine blades completed successfully for Ansaldo Energia, Italy – further gas turbine blade orders expected in 2023
- Trials and technical discussions underway with the second largest global manufacturer of turbines
- EDF development still progressing but slowed due to COVID. Expect more progress as EDF buying GE Nuclear Division and will then be a manufacturer of steam turbines



# Energy- Alternative (longer term)

## Current projects in Alternative Energy industries include:

- **Hydrogen –**

Lab tests underway to provide data on the coating being a good barrier to hydrogen diffusion. A customer currently testing actual components



- **Solar cells –**

Coating production components used in manufacturing process of silicon ingots for solar cells. Customer currently increasing capacity



- **Wind –**

Low friction/wear & corrosion resistance on moving parts



- **EV batteries –**

Coating not detrimental to electrical properties of battery

- Opportunity with large US-based EV manufacturer is continuing



# Industrial (up by 10%)

- Revenue up 39% from main US-based customer of positive displacement pumps used for highly aggressive and corrosive fluids
- More components currently being converted over to Hardide coating which will increase the product range in FY23
- Airport baggage X-ray machine manufacturer revenue down 52% in FY22 due to COVID restrictions on flying
- Production of their X-ray machines now returning – we supply a kit of parts per machine



# Aerospace (up by 24%)

## Aerospace market now in recovery:

- Passenger numbers and aircraft utilisation increasing
- Airbus increasing production rates, especially on A320 series single aisle aircraft – planning increase from current 50/month to 75/month by 2025
- Regular parts being coated for A320, A330 and A380. An additional, high volume opportunity on A320 currently in trials
- Leonardo Helicopters: full approval received and first orders for transmission components completed successfully
- Maintenance activity very buoyant- bow wave of heavy maintenance and checks due to greater utilisation of fleets
- Ongoing orders for BAE Eurofighter Typhoon



# Outlook



Recovery in demand well underway but mindful of economic headwinds, ongoing cost inflation and supply chain disruptions

Success in recovering cost increases through selling prices

Revenues continue to grow due to increasing adoption of our coatings

Board determined to achieve profitability and be cash generative

Board seeking to drive significant value for shareholders over medium to longer term by further development and commercialisation of our unique, high performance coatings technology, including co-operation with other coating companies

**Implemented initiatives to improve working capital and reduce costs by £0.3m/£0.4m in first half of calendar year 2023**

**Vigorously progressing high value, near and medium term additional sales opportunities which underpin the drive to profitability**



## Financials

# Consolidated Income Statement

£m	2020/21	2021/22	Variance
	FY	FY	
Sales	3.6	5.0	+39%
Gross Profit %	36%	37%	+1 ppt
Overheads	2.8	2.8	-
EBITDA	(1.5)	(0.9)	+40%

# Balance Sheet

£m	2020/21	2021/22
	FY	FY
Assets	9.2	9.0
Cash	1.5	0.7
Net working capital	(0.7)	(1.1)
Liabilities & provisions	(3.1)	(3.1)
Capital Employed	6.9	5.5
Equity	22.8	23.3
Losses	(16.0)	(18.2)
Other reserves	0.1	0.4
Shareholders' funds	6.9	5.5

# Cash Flow

£m	2020/21	2021/22
	FY	FY
Net Operating Cash	(1.7)	(0.9)
Net Investing Cash	(0.3)	(0.3)
<i>Share Issues</i>	0.8	0.5
<i>Finance Lease</i>	0.1	-
<i>Lease Principal</i>	(0.3)	(0.2)
<i>Loan Changes</i>	0.4	0.1
<i>Grant repaid</i>	(0.2)	-
Net Financing Cash	0.8	0.4
Net Cash At Start	2.7	1.5
Net Cash At End	1.5	0.7



Thank you



# Appendix

## What Hardide does....



# Hardide plc - what we do

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- Produces a unique, patented nano-structured tungsten carbide surface coating that protects critical metal components used in aggressive environments
- Increases working life by typically 3-5x and up to 100x
- Coating created by chemical reaction of specialist gasses inside Chemical Vapour Deposition (CVD) reactors, and grows directly onto the component

# UK & US facilities



- HQ, technical centre and 22,000 sq.ft production facility in Bicester, Oxon, UK



- 25,000 sq.ft production facility in Martinsville, Virginia, USA



# History of Hardide

**2000**  
Company formed

**2003**  
Relocated to Bicester

**2005**  
Floated on AIM

**2016**  
US facility opened

**2017**  
Airbus approval

**2020**  
New larger UK site

 **Leading global innovator** and developer of advanced Tungsten Carbide based metal coatings

 **Strong IP portfolio:** 6 patents registered since incorporation with a new patent granted for coating turbine blades



**Hardide developed and commercialised a patented CVD tungsten carbide nano-structured coating with a unique combination of properties**

**The coating does what others can't:** coating complex shapes, both inside and outside and non-line of sight areas

**Provides B2B coating service from sites in Bicester, UK and Virginia, USA**

**Customers and developments:** all major oil service companies, Airbus, BAE Systems, Leonardo Helicopters, Ansaldo Energia, EDF Energy



**Listed on AIM since 2005**

# Hardide's family of coatings

Coating hardness/toughness/thickness can be tailored to a specific application requirements

Type	Hardness	Toughness	Thickness	Applications
Hardide-H "Ultra-Hard"	3000 – 3500 Hv	Satisfactory	5...10 µm	Self-sharpening blades
Hardide-T "Tough"	1100 – 1600 Hv	Excellent	Typically 50 µm	Oil tools, pumps, valves, actuators
Hardide-A "Aerospace"	800 – 1200 Hv	Excellent	50-100 µm	Hard chrome replacement
Hardide-W	400 Hv	Excellent	Up to 300 µm	X-ray Anodes

# Hardide coating technology

**Nano-structured, tungsten carbide metal-matrix coatings that significantly extends the life of critical parts and tools**

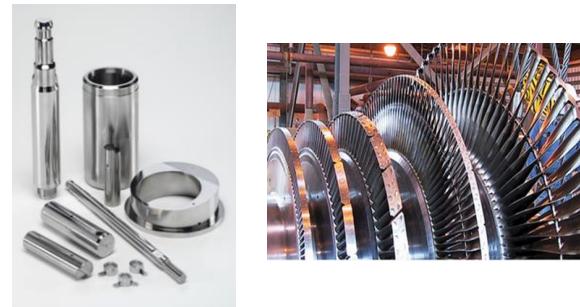
Coating is crystallised atom-by-atom from gases by Chemical Vapour Deposition (CVD)

Hardide does what other coatings can't: uniformly coats complex shapes, both internal and external surfaces, including non-line-of-sight areas

250x greater wear resistance than steel

Protects against corrosion, acids and sour oil  $H_2S$

Coated parts typically last 3-5x times longer- and up to 100x times!!



Hardide enables high-value manufacturers to make globally competitive products, differentiated in terms of quality, performance and life-cycle costs

# Hardide CVD coating reactor



# Coats internal surfaces and complex shapes



# International accreditations

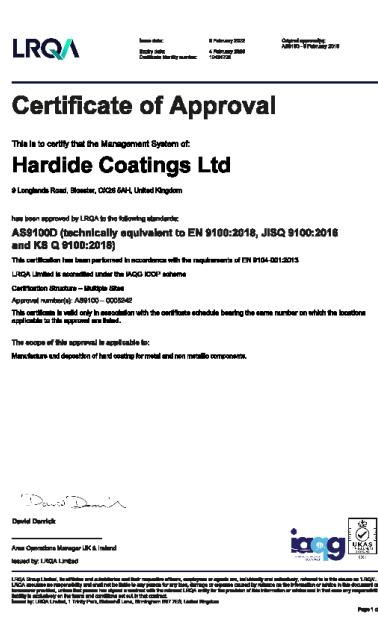
Accredited to various international standards:-

 Aerospace quality management system: **AS9100 RevD**

 **Nadcap (Gold Merit status)** (the global aerospace process approval standard)

 Quality management system: **ISO 9001:2015**

 Environmental standard: **ISO 14001:2015**



# Summary



**A unique coating technology that fills a major gap in the range of other coating companies:**

Coats uniformly where others cannot:

- complex shapes
- internal as well as external surfaces

Proven technology with coating facilities in UK and USA

Enables blue-chip engineering companies make globally competitive products

Strong revenue growth over 4 years before COVID – now back on upwards path

Process knowledge embedded in key employees

Large addressable market size

Solid position in energy sector

New aerospace business with Airbus, Leonardo Helicopters and others

Power generation turbine blade market opportunities are significant

In new, larger UK premises with additional production equipment and space for future growth

**Positioned well for significant future growth**