History of Hardide

- **2000**: Company formed
- **2003**: Relocated to Bicester, Oxon
- **2005**: Floated on AIM
- **2016**: Opened facility in US
- **2017**: Airbus approval

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

➢ Strong IP portfolio: 5 patents registered since incorporation with a new and important patent pending for turbine blades
Hardide group facilities

**UK** – Head office and 10,000 sq.ft coating facility in Oxfordshire

**USA** – 25,000 sq.ft coating facility in Martinsville, Virginia, opened in 2016

**Russia** – Research lab in Moscow. Scientists with decades in CVD research. Working on new Hardide formulations
Key facts

Patented coating technology

Leonardo Helicopters full approval in progress

High margins:
- Variable margin: >70%
- Gross margin: > 50%
- Very high operational gearing

Approved supplier to BAE and Airbus

3-year sales growth: 47% CAGR

Current major markets Oil & Gas and Flow Control: downhole components, pumps and valves

Developing markets: aerospace, power generation, precision engineering

Good prospects of EBITDA break-even in near term

Strong balance sheet

Head office and main facility in Bicester, Oxfordshire

Group headcount c. 45

US coatings facility in Martinsville, Virginia opened 2016

FY18 revenue £4.6m
Key markets

**Oil & Gas**
- Used by leading oil & gas service providers – downhole, well stimulation and subsea applications

**Flow Control**
- Severe service pumps & valves for demanding environments

**Precision Engineering**
- Power generation, plastics extrusion, baggage X-ray machines, silicon wafer production

**Aerospace**
- BAE and Airbus approved, Leonardo approval in progress, multiple applications with other global aero players
Nano-structured tungsten carbide, metallurgical coatings that significantly extend the life of critical parts and tools. A CVD (Chemical Vapour Deposition) process creates an extremely hard, tough and thin layer with a number of advantages over competitor processes.

**Superior wear & erosion resistance**
Outperforms hard chrome by factor of 12 and cemented tungsten carbide by factor of 3

**Chemical Resistance**
Virtually pore-free structure provides very high protection against a range of corrosive and aggressive chemicals

**Tailored Hardness**
Gas phase of process allows precise control over hardness. Micro hardness of up to 4000HV can be achieved

**Ease of Finishing**
Only polishing required in contrast to expensive grinding with other technologies - especially with complex shapes

**Internal Surfaces and Complex Shapes**
Gas-phase deposition process allows uniform coating to form on internal surfaces and complex designs. This is not possible for HVOF, Plasma Spray, D-Gun or PVD Coating technologies

**Toughness and Flexibility**
Follows contours of substrate and has high flexibility – substantially reducing the risk of cracking under deformation

**Coating Thinness**
CVD process requires no binder, creating a less bulky structure than alternative technologies
Financial trends

**Sales revenue**

<table>
<thead>
<tr>
<th></th>
<th>H1 2016</th>
<th>H2 2016</th>
<th>H1 2017</th>
<th>H2 2017</th>
<th>H1 2018</th>
<th>H2 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>£m</td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**Gross Profit**

<table>
<thead>
<tr>
<th></th>
<th>H1 2016</th>
<th>H2 2016</th>
<th>H1 2017</th>
<th>H2 2017</th>
<th>H1 2018</th>
<th>H2 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>£m</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
<td>0.6</td>
</tr>
</tbody>
</table>

**Gross Margin**

<table>
<thead>
<tr>
<th></th>
<th>H1 2016</th>
<th>H2 2016</th>
<th>H1 2017</th>
<th>H2 2017</th>
<th>H1 2018</th>
<th>H2 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>0%</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
</tr>
</tbody>
</table>

**EBITDA**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>£m</td>
<td>-1.4</td>
<td>-1.2</td>
<td>-1.0</td>
</tr>
</tbody>
</table>
Sales grew strongly over the past three years (47% per year) but gross profit grew nearly twice as fast (87% per year) and fixed costs (production overheads + admin costs) grew at only 16% per year.

<table>
<thead>
<tr>
<th></th>
<th>2015/16</th>
<th>2016/17</th>
<th>2017/18</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>2.14</td>
<td>3.24</td>
<td>4.61</td>
<td>47%</td>
</tr>
<tr>
<td>Variable Gross Margin %</td>
<td>67%</td>
<td>75%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Fixed costs of sales</td>
<td>0.75</td>
<td>0.85</td>
<td>0.97</td>
<td>14%</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>0.69</td>
<td>1.58</td>
<td>2.41</td>
<td>87%</td>
</tr>
<tr>
<td>Gross Profit %</td>
<td>32%</td>
<td>49%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>Overheads</td>
<td>1.99</td>
<td>2.33</td>
<td>2.71</td>
<td>17%</td>
</tr>
<tr>
<td>EBITDA</td>
<td>(1.31)</td>
<td>(0.74)</td>
<td>(0.30)</td>
<td></td>
</tr>
<tr>
<td>'Fixed' costs</td>
<td>(2.74)</td>
<td>(3.18)</td>
<td>(3.68)</td>
<td>16%</td>
</tr>
</tbody>
</table>
## Business development

<table>
<thead>
<tr>
<th>Airbus</th>
<th>Positive progress. Multiple components at final stage before production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leonardo Helicopters</td>
<td>Positive progress. Final stages before part approval on transmission system</td>
</tr>
<tr>
<td>Other Aerospace</td>
<td>New interest from US aerospace companies - trials with Triumph Aerospace and others</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>Two new major supply contracts in place</td>
</tr>
<tr>
<td></td>
<td>Three new major customer applications</td>
</tr>
<tr>
<td>Flow Control</td>
<td>Additional high volume components from the major pump customer</td>
</tr>
<tr>
<td>Precision Engineering</td>
<td>Continuing demand for x-ray baggage screening machine parts</td>
</tr>
<tr>
<td></td>
<td>Power generation turbine blade opportunities</td>
</tr>
<tr>
<td>North America</td>
<td>Additional business development manager appointed</td>
</tr>
<tr>
<td></td>
<td>Now 61% of Group turnover</td>
</tr>
</tbody>
</table>
Investment proposition

❖ A unique coating technology that fills a major gap in the range of competitors’ coatings:
  ➢ coats uniformly where others cannot:
    ➢ complex shapes
    ➢ internal as well as external surfaces
  ➢ Coating facilities in UK and USA

➢ Strong revenue growth
➢ Large market size
➢ Solid position in oil & gas sector
➢ Verge of breaking into aerospace markets with Airbus, Leonardo Helicopters and others
➢ Power generation turbine blade market opportunities are huge

We continue to re-invest in the business and production facilities as our strategy is to make the company an attractive acquisition target
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