The information contained within this announcement is deemed by the Group to constitute inside information as stipulated under the Market Abuse Regulations (EU) No. 596/2014 ("MAR"). Upon the publication of this announcement via a Regulatory Information Service ("RIS"), this inside information is now considered to be in the public domain.

For immediate release **15 October 2019**

Haydale Graphene Industries plc

('Haydale' or the 'Group' or the 'Company')

Full Year Results

Haydale (AIM: HAYD), the global advanced materials group, is pleased to announce its full year results for the year ended 30 June 2019.

Operational Highlights

- Board members reduced and new leadership team installed;
- Formation of a global cross site / cross commodity sales team each with specific product/market expertise.
- Recruitment of a UK Sales Director with significant industry, product and market knowledge of composites.
- Review of the Group's business unit structure to ensure streamlining and efficiencies largely complete in the US and UK, with the APAC region review ongoing;
- The redirection of the Ammanford (UK Inks) business from a cost centre to a profit centre in progress
- Focus shifted to commercial revenue and grant income or free of charge R&D only if the commercial opportunity is apparent;
- Significant in year investment in the US blanks tooling business ($1.2 million) to capture more of the value chain;
- Functionalisation capabilities enhanced with several new treatments creating a variety of offerings to meet customer requirements;
- Incorporation of nano materials into bespoke solutions has become a core competence;
- Development of tooling and component enhanced pre-preg for niche automotive; anticipated to the reach wider automotive industry in due course.

Financial Highlights

- Commercial revenues £3.47 million (2018: £3.4 million);
- Initial growth of £0.5m in the US business following a total of $1.5m investment in capital equipment, offset by a reduction in the refocused UK (RPC) business now targeting repeatable product related commercial sales;
- c£1.6 million of annualised cost savings achieved to date;
- Adjusted operating loss before non-cash items (depreciation, amortization, share based payment charges, impairments and one-off restructuring costs of £0.35 million was £4.18 million (FY18: £4.88 million)
- The Board, following extensive discussions with its advisors and auditors, impaired intangible assets relating to the UK (RPC) composites business by £1.78 million not withstanding the impairment, the Board considers the composite business to have a good pipeline of opportunities. This was driven by the Group's current market cap despite a good pipeline of opportunities.

Post Period End Highlights:

- Launch of advanced nano-materials additives for eleastomers at IRC, September 2019

Commenting on the results David Banks, Non-exective Chairman of Haydale, said:

"*The year under review has been a challenging one for Haydale. At management level, we have recruited a new Executive team lead by Keith Broadbent, who was promoted from COO to CEO in March 2019, and Laura Redman-Thomas, who joined as our CFO in December 2018. At an operational level, we have streamlined the business and rationalised our cost base, created a rigorous product and commodity analysis with subsequent clear focus, both inwardly and outwardly, introducing best manufacturing procedures and processes, created a Group sales force and refinanced the business with the fundraising announced in March*."

- Ends -

For further information:

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Notes to Editors

Haydale is a global technologies and materials group that facilitates the integration of graphene and other nanomaterials into the next generation of commercial technologies and industrial materials. With expertise in graphene, silicon carbide and other nanomaterials, Haydale is able to deliver improvements in electrical, thermal and mechanical properties, as well as toughness. Haydale has granted patents for its technologies in Europe, USA, Australia, Japan and China and operates from six sites in the UK, USA and the Far East.

For more information please visit: www.haydale.com
Twitter: @haydalegraphene

A copy of this preliminary statement will be available to download on the Group's website www.haydale.com. Copies of the Annual Report and Accounts, together with the notice convening the annual general meeting, will be posted to shareholders in due course at which time the Annual Report and Accounts will be made available to download on the Group's website, www.haydale.com, in accordance with AIM Rule 26.

CHAIRMAN'S STATEMENT

Introduction

I am pleased to present Haydale Graphene Industries Plc's ("Haydale", the "Group" or the "Company") full year audited results to 30 June 2019 ("FY19").

The year under review has been a challenging one for Haydale. At management level, we have recruited a new Executive team lead by Keith Broadbent, who was promoted from COO to CEO in March 2019, and Laura Redman-Thomas, who joined as our CFO in December 2018. At an operational level, we have streamlined the business and rationalised our cost base, created a rigorous product and commodity analysis with subsequent clear focus, both inwardly and outwardly, introducing best manufacturing procedures and processes, created a Group sales force and refinanced the business with the fundraising announced in March 2019.

Summary financials

Total income for FY19 of £4.25 million (FY18: £4.23 million), comprised commercial revenues of £3.47 million (FY18: £3.40 million) and grant income of £0.79 million (FY18: £0.83 million).

FY19 has been a year of change and rationalisation, delivering an annualised cost base reduction of £1.6 million. During the year there was significant ($1.2 million) investment in the US blanks (SiC) business, further development of the ink market, the cost centres in the UK and Thailand were converted to profit centres and a global sales strategy was introduced.

As a result of these improvements the revenue in the second half of FY19 was up 12% on the first half of the year and 35% over the same time period in FY18 driven predominantly by the US SiC business. The FY19 £0.5 million revenue upside in the US SiC business and £0.14 million in APAC inks was offset by the £0.58 million reduction in the UK composites business where the focus was redirected towards commercial sales and well-funded, commercially viable grant related projects for longer-term growth.

The gross profit for the year was broadly in line with the prior year at £1.9 million (FY18: £2.0 million). Total administrative expenses for the year were adversely impacted by non-recurring one-off restructuring costs relating to actions by management to re-align the Group's cost base, such that total administrative expenses for the year including £0.35 million of exceptional items were £8.53 million (FY18: £8.85 million). Total comprehensive loss for the year was £7.12 million (FY18: £5.41 million), including the £2.13 million of restructuring costs and a non-cash, accounting adjustment for an impairment of intangible assets of £1.78 million. The loss from trading activities, including one-off restructuring costs, was £5.85 million (FY18: £6.02 million).

Operations

During the year under review we re-evaluated our products and services in order to align our cost base with our addressable markets. We are now using tailored advanced materials, including graphene, boron nitride and silicon carbide micro-fibre (SiC) to enable our customers to improve the quality and electrical, thermal and/or mechanical performance of their products. We have six international operating sites, with two in the UK and one in each of the USA, Thailand, South Korea and Taiwan.

In the Far East, our Thailand operation continues to grow following the successful commissioning of one of our HT60 plasma reactors for one of Thailand's leading Petro-chemical processors as well as our long-term consulting contracts. The customer intends to add value to certain by-products arising from their manufacturing process using our functionalisation capabilities.

Following a product review carried out in the year, we now have speciality inks and coatings capabilities in both the Far East and UK, covering the biomedical sensor market where commercial progress continues. Pleasingly, our inks and coatings expertise are now supplemented by piezo resistive and heating applications that are already in commercial applications across several sectors.

Our USA facility, Haydale Ceramic Technologies ("HCT"), manufactures a range of our proprietary SiC microfibres which add strength, toughness and anti- scratch properties to existing materials. Despite taking longer than we had expected to increase sales, HCT continues to supply against its existing long term contracts with world-wide businesses that incorporate HCT's SiC in the manufacture of their hard-edged cutting tools. As previously announced, in order to supplement the sale of our proprietary SiC "powder", we took the decision in FY18 to add value to our SiC micro-fibres by investing in our own in-house manufacturing capabilities at our US site to address a growing market in selling our own proprietary SiC cutting tools ("blanks"). The machinery is now commissioned, and we are expecting to ramp up production in the current financial year after positive feedback from our customers.

The graphene teams at our Loughborough and Ammanford sites have been developing customer solutions for resins that incorporate our functionalised graphene for the pre-preg carbon fibre market for enhanced electrical, thermal and mechanical applications following the positive work with NICHE and BAC Motors. In addition, following successful trials, the teams have developed a range of graphene enhanced elastomers that were launched post the period end at the IRC 2019 show at the KIA Oval earlier in September.

The new Graphene Engineering Innovation Centre (GEIC) opened in December 2018 at the University of Manchester, where Haydale is a Tier 1 Partner. The GEIC has installed one of our HT60 plasma reactors for graphene functionalization and is showcasing it to other partners and customers.

We continue to enhance the functionalisation performance of our reactors with further upgrades and are working on some exciting product improvement opportunities for the myriad of companies now looking at collaborating with the GEIC and its Tier-1 Graphene partners and with our other customers across the globe.

Outlook

We enter FY20 with two new graphene-enhanced product lines in pre-preg and Elastomers and a focussed sales force with the industry contacts to promote them.

I foresee significant growth opportunities for Haydale with the new and adapted approach of using our global footprint as one team, with cross-selling and cross R&D focus, a re-orientation to organic growth and cost monitoring. Business development surrounding the major advances we have seen in the core skills on inks, functionalisation and dispersion of graphene, in conjunction with the new market segment of SiC, sets Haydale up for the next phase of evolution and scale up. Under the new executive team the Group has focussed its development activities on areas where is considerers there to be immediate commercial potential.

The Executives strategic review of the Group’s operations in the US and UK is largely complete, and the review of the group’s Far East operations is ongoing.

I would like to thank our new executive team who have worked tirelessly to address the Group’s challenges in order to put in place the solid foundations required to deliver on our anticipated growth. A number of challenges remain to be addressed, and I am confident in their ability to overcome them. I would also like to thank the staff, our advisors and my fellow non-executive directors for their hard work and dedication. I would also like to thank our shareholders for their continued support.

David Banks
Chairman
14 October 2019

STRATEGIC REPORT

The directors present their Strategic Report for the year ended 30 June 2019

Haydale Graphene Industries Plc ("Haydale" or the "Group") is the AIM listed group that uses tailored advanced materials, including graphene, boron nitride and silicon carbide micro-fibre (SiC) to enable its customers to improve the quality and performance of their products and thereby creating additional value and market edge. The Group's vision is to be in the vanguard of nano advanced materials and dispersion to become a world leader in the creation of material change through understanding the potential of those materials through careful characterisation, and the incorporation of its bespoke and unique patented functionalisation process, as appropriate.

The Group's regulatory approved proprietary graphene-based and other speciality inks and coatings for the print and biomedical sensor markets that it has developed continue to progress commercially and have now been supplemented by offerings in piezo resistive and heating applications that are in commercial applications across several sectors. Progress in enhanced resins for the pre-preg carbon fibre market covering electrical, thermal and mechanical applications has also moved into the commercial phase.

In the USA, Haydale manufactures proprietary SiC micro-fibres and whiskers that strengthen ceramics and hard-edged cutting tools for fashioning jet engine turbine blades from solid super alloy billets. This application has now benefitted from substantial investment and moving up the value chain to produce blanks which incorporate the fibres and have helped to further strengthen the relationship with customers. Other applications including corrosion barriers for oil and gas pipelines and coatings where high scratch and wear resistant is required is another application that is addressed.

The Group has operational activities in its six chosen geographies worldwide. In summary, these are:

Haydale subsidiary	*Location*	*Principal activities*
Haydale Limited	Ammanford, Wales	Ex R&D operation now producing inks and supporting master batch production for direct sales to customers and other sites in the Group. Specialist Functionalisation centre.
Haydale Composite Solutions Limited ("HCS")	Loughborough, England	Sale of pre-preg, and consulting services in advanced composites, elastomers and other nano materials and including test services. Its R&D involvement in grants focuses on products that could lead to commercial production.
Haydale Technologies (Korea) Limited ("HTK")	Seoul, South Korea	Dedicated sales servicing the fast-moving Korean, Chinese and Japanese markets.
Haydale Technologies (Thailand) Company Limited ("HTT")	Bangkok, Thailand	Ex R&D facility now focused on commercial applications with plasma functionalisation facilities. Services the APAC region and supporting the Far East sales teams.
Haydale Technologies Taiwan Ltd ("HTW")	Kaohsiung, Taiwan	Established in July 2017 as the production facility and technical centre for sales of speciality inks, initially into the biomedical sensor market.
Haydale Technologies, Inc. ("HTI")	South Carolina, USA	Haydale Ceramic Technologies is HTI's wholly owned operating subsidiary which produces and sells novel SiC micro fibres and whiskers, as well as ceramic blanks to the cutting tool industry.

Background to urgent business restructure and re-alignment

The lead in to FY19 was the trading statement announcement on 13 June 2018 which explained a delay in expected sales in FY18 and the intention of Ray Gibbs to resign as CEO in order to concentrate on business development. On 7 September 2018 David Banks stepped up from Non-executive Chairman to be appointed as Interim Executive Chairman and Keith Broadbent was appointed to the main board as Chief Operating Officer. On 9 November 2018, the Company announced that the planned $1.5 million sale and leaseback of the capital tools equipment at its US facility would not be available and that the Group was considering alternative sources of finance. At the same time a £1 million reduction of annualised SG&A costs was announced as the start of a new direction of business prudence and refocus. On 21 December 2018, an announcement was made that additional working capital had been raised through a loan with the Development Bank of Wales and a new equity subscription, concurrent with a change to the board of Directors ("Board") with Laura Redman-Thomas being appointed as the new CFO and Matt Wood stepping down from that position, and Ray Gibbs and Roger Smith also resigning from their Board positions.

The Group released its interim results on 22 February 2019 which continued to show a challenge on cash and short-term revenues. A proposed placing, subscription and open offer was announced on the same day which completed on 12 March 2019, raising £5.8 million (before costs). Following the General Meeting held on 12 March 2019, Keith Broadbent was appointed as the Group's new CEO and David Banks reverted to Non-executive Chairman.

Overall the year has been one of major reorganisation and resetting commercial priorities. In summary, this has meant that over the last six months:

- Board members reduced and new leadership team installed;
- A full review of the Group's business unit structure to ensure streamlining and efficiencies with a review of US and UK largely completed, with the review of the APAC region ongoing – with c£1.6 million of annual cost savings achieved to date;
- A major change of strategy whereby the focus is securely on commercial revenue, either project or product related, with grant income or free of charge R&D only to be used in applications where an immanent commercial opportunity was apparent;
- Core focus established in:
    - Growing the US business following significant investment (c$1.5 million) on the blanks (SiC) business;
    - The redirection of Ammanford from cost centre to profit centre;
    - Development of the ink market;
    - Composites focus to be maintained but with reduced resource given the timing of the major commercial revenues have been and are expected to be longer than first planned; and
    - Business unit strategy has been modified into a global sales strategy – to sell technology across the various sites and geographies i.e. cross selling.
- Formation of a cross site / cross commodity sales team headed by Neil Taylor, VP of HCT in the US (expertise SiC), and with a UK Sales Director having been recruited post year end (Composites) and a UK sales engineer part of the team (Inks).

This reorganisation will continue throughout the new financial year as we look to opportunities to further rationalise in conjunction with entering the growth phase.

Globalisation of the Strategic Business Units

As mentioned in previous reports, the setting up of two business units in 2017 (Resins, Polymers and Composites ("**RPC**") and Advanced Materials (including SiC and inks) ("**AMAT**") delivered some limited success and growth in the business, but did not facilitate the global approach necessary to leverage the Group's geographical and technological commercial advances. Consequently, a part of this dual BU structure has been split to provide a third reporting entity, "**APAC".** This has created a more flexible structure which aligns with commodity or product focus on one hand insofar as SiC, Inks, Composites and Elastomers naturally have a site-based expertise, but also encourages Project Managers and Sales personnel to look to other geographical areas for potential revenue.

This change to allow greater potential of cross-selling has been supplemented and re-enforced with the formation of a global sales team with accountability across the Group; and a new VP Sales, Neil Taylor, promoted from within the business; and a new UK Sales Director, Simon Green, recruited externally. Initial success has been reported previously with commercial activities on coatings with SiC in progress in the UK, with live commercial enquiries involving pre-preg composites and graphene offerings underway in the US. The combination of the Group's ink expertise is being pooled and leveraged. This methodology is set to continue as the template for growth as the one company one team mantra takes further hold.

Sharing best practice in Operational and other business systems and practices such as Health and Safety and Quality (ISO9001) continues to gather force. This, together with more central reporting structures underway in finance, will assist in cross group communication and enhanced governance.

Progress on Core Element - Plasma functionalisation

Building on the progress from last year, the HDPlas™ functionalisation process continues to be the cornerstone of the Company's offering. Good progress has been made with several new and different key treatments enabling much more varied offerings to customers' requirements. This enables a much greater range of graphene and other nano material treatments and facilitates potential improvements in dispersal and mechanical strength, electrical conductivity, and thermal conductivity. The loaded matrix can and is being added to commercial applications such as pre-preg, compounded into polymers or elastomers, or sold as Masterbatch in many ongoing programs.

Key to the investment this year has been the research allowing ramp up technology to be much better understood and has, therefore facilitated increased commercial quantity requirements as and when required.

New applications for the plasma functionalisation process include projects developing the treatment of materials to re-life such as Carbon Black and processing larger types of components to support external surface enhancements, including greater adherence.

Marketing

The focus on Marketing for graphene profiling that has served Haydale well in the past has fundamentally shifted to product marketing for product sales. Alterations to the website in the year will be further enhanced in the new financial year with an incorporation of the US and Far East offering onto a single website and presenting the one global face of Haydale.

SITE SPECIFIC PROGRESS

Loughborough, East Midlands (RPC)
In context of the overall strategic direction, the Loughborough Site has seen an emphasis on reducing cost overhead, reducing grant income in preference to commercial paid-for projects whilst maintaining the progress in relation to the further development of the main technologies. The focus continues with the application specific customer solutions which now includes composites, elastomers, inks and SiC. The incorporation of nano materials into the bespoke solutions has become a core competence.

Highlights have included the progress from the funding grant announced in October 2018 with the Niche Vehicle Network, BAC Mono and Pentaxia as part of the consortia to further develop pre-preg for tooling and automotive parts, to the showcase of the BAC Mono "R" at Goodwood Festival of Speed with the composite parts integral in the vehicle being exhibited (announced post period in July 2019). This product development of the tooling and component enhanced pre-preg could well be a steppingstone for graphene-enhanced composite body panels and tooling reaching the wider automotive industry soon. Haydale's Composites Transition Piece (CTP) was also a product of previous grant collaboration, and now endorsed by the National Grid, is another example of product development targeting commercial revenues. This, together with the enhanced portfolio and other applications coming through the same route, bodes well for future revenues and growth.

Ammanford, Wales (RPC)
Ammanford's transition from an R&D cost centre to a commercial profit centre got underway in the second half of FY19. The focus has been on ink sales initially and, to that end, we have recruited an experienced Sales Engineer from that industry. As previously announced, Haydale, in collaboration with The Welsh Centre for Printing and Coating (WCPC), has developed and refined a range of proprietary printing inks utilising functionalised graphene. This includes the development of advanced ink technology to be embedded into a range of apparel for elite athletes in training for the 2020 Olympic and Paralympic Games.

In order to further support this transition and provide a pipeline going forward, Haydale is a partner in the Smart Expertise Program funded by the Welsh Government which is designed to speed up the process required to take products from proof of concept into volume and profitable products. This involves close collaboration with our Taiwan operations whose focus is also inks.

As part of the bigger sales team led by Neil Taylor in the US, the intention is to look to sell the full portfolio of products across all SBU's including ink, composites, elastomers and SiC.

Significant progress has been made in many areas of the functionalisation process, including the ability to increase treatment levels across several materials. Examples include treatment to increase hydrophobicity, as well as increase the ability to treat low bulk density materials such as high grade FLG's (few layered graphene) and recovered carbon blacks. Additionally, Haydale is collaborating with the National Physical Laboratory for further understanding of the functionalisation process as part of an Innovate UK grant as the focus continues on real life products. Key will be the ability to continue to improve material throughput. Collaboration with our key OEM on plans to design the next generation of HDPlas™ reactors to provide the ability to meet commercial volumes in anticipation of the breakthrough driven by the increasing scope of the core and patented technology has also been a priority.

We continue to have an office in Harwell Business Park, Oxfordshire, leased from June 2018, to provide a central location for business development alongside significant potential customers operating in the aerospace and advanced materials sectors.

Greer, South Carolina (AMAT)
The US operation, Haydale Ceramic Technologies LLC ("HCT"), continues to deliver the bulk of revenues for the Group and, in FY19, achieved sales of SiC of £2.7 million (FY18: £2.11 million). During the year, it developed and extended a previously announced four-year agreement to supply SiC micro-fibre to a global group selling tooling and wear-resistant solutions. HCT renegotiated and extended the term of the agreement. This new sole supply agreement has a potential sales value of more than US$3.3 million over a now five-year term, which represented an increase of US$1.35 million in the order book at the time.

The commissioning and installation of the equipment invested in last year at $1.5 million to produce engineered SiC ceramic blanks for the cutting tool industry has been well received and qualified with major jet engine and aerospace manufacturers worldwide and the team are now working towards scaling up to commercial production quantities. There have been some initial teething issues with the ramp up, but progress is being made and the expectation of good revenue growth is still very much anticipated. The support of customers in this process has been significant as the teams work together to realise the joint opportunities.

Efforts to introduce SiC in the powder-coating anti-corrosion market have continued with revenues also expected to grow in the current financial year. This application has been the subject of a paid for commercial contract in the UK and work is underway between the US and UK sites to develop a bespoke coating process to further address this market opportunity.

HCT has a long-term sales order book for delivery of SiC and, as at 12 September 2019, stood at approximately $3.55 million ($4.22 million, 10 September 2018).

Thailand Bangkok **(APAC)**
HTT, our high-class facility in the prestigious Thailand Science Park in Bangkok, has progressed well in the year and is also moving into more commercial project applications, including functionalisation projects of some of the by-products of a large petrochemical processor and entering first stages of their own bespoke product sales, in particular, PATit. PATit is Haydale's software driven anti-counterfeiting device that "reads" the unique conductive transparent and opaque inks when printed onto a product label, proving the authenticity (or otherwise) of the goods. There is currently an agreement that has been signed with TKS Siampress Management Co., Ltd to use the technology in commercial applications on an exclusive basis in Thailand and one other territory to be decided by the parties. Furthermore, there is another customer working with the technology to develop a different bespoke application.

The site continues additionally to be a technical and sales support service for our Korean and Taiwan activities.

Taiwan Kaohsiung, **(APAC)**
HTW continues to provide graphene and other speciality inks in lower quantities, principally to leading biomedical sensor printers in the diabetes testing market. We are receiving regular repeat orders from customers, albeit still in relatively small quantities and the joint development agreement with STAR RFID. The previously announced intention to relocate to bigger premises will be dependent on the sales achieving commercial volumes and will be reviewed as part of the ongoing strategic review.

Korea Seoul **(APAC)**
Our sales office in Seoul remains a good access route to Chinese and Japanese markets as we continue to progress in the commercial sphere. Our sales engineer is now part of the global sales structure and this will assist revenue growth going forward. The new PATit sales opportunity described above was one that originated from this source.

FUTURE STRATEGIC DIRECTIONS

FY19 has been a transitional and challenging year for Haydale and the much-discussed potential for a commercial focus to develop a sales team and reduce overheads has been affected. This will be the fulcrum of business in FY20 and onwards. The cross selling of products: pre-preg and Inks in the US; Composite technologies in the APAC regions; and SiC in the UK and Europe, is a crucial element in this growth direction. The new global sales team that is now in place has very specific objectives to leverage this geographical reach and expertise across all the focus product groups with robust back up of the core and unique functionalisation process to underpin the drive.

Further improvements in characterisation, dispersion, capital equipment modification, material treatment levels and innovations continue as part of customer paid for process, and the concurrent development of further know-how with additional potential IP is, of course, an essential element of this new intensity, which in turn helps support more business. Examples of this were evident at the innovations in elastomers recently announced at the IRC 2019 (International Rubber Conference) where we launched a range of functionalised nanomaterials pre-dispersed in process oils for improvements in mechanical and thermal conductivity of customer's rubber products We also continue to spread this learning, expertise and best practice throughout the Group to our people.

Central to our future success is also our partnerships which have continued to be developed over the last twelve months and where we are looking to expand further. WCPC (Welsh Centre for Printing and Coating) is part of Swansea University and is fully committed through the part-funded Smart Expertise Program to support the path to commercialism. The combination of WCPC's significant expertise and equipment and Haydale's newly created commercial focus assists in expediting products to quality volume to deliver to customers' needs.

The relationship with University of Manchester's £60 million Graphene Engineering Innovation Centre ("GEIC") is similarly a major bridge in the commercialisation drive which, from June 2019, has one of our HT60 functionalisation reactors installed and commissioned. As a Tier One member of the GEIC, Haydale gains access to the materials knowledge, applications engineers and both analytical and processing equipment within the GEIC. This gives Haydale, through the GEIC's world-renowned development facilities, a quicker route to market and access to a greater reach and range of customers.

We continue to target the less regulated markets, including sporting goods, which provide potential significant short-term revenue opportunities for Haydale. An example of which has been supply during the year of graphene-enhanced masterbatch to a customer involved in the hockey and lacrosse supply industry. However, any significant sales orders are predicated on the adoption of our products and technologies by our commercial partners and customers, timing of which is outside our control. The excellent work we have done over the last nine months to focus on our core products and expertise, an example of which is our datasheets on graphene enhanced pre-pregs and elastomers, has been extremely well received by industry and our newly created sales team are following up on these new leads.

Grant Funded Projects

Grant funded projects have continued over the last twelve months with the new emphasis that only projects that lead to commercial products in the short to medium term or add significantly to the Group's knowledge bank on applications with commercial potential in defined time scales will be undertaken. The type of projects involved have included the large petrochemical customer work detailed above in Thailand but most focus has been in the UK at our Ammanford and Loughborough sites. An example of this includes the development of graphene enhanced functionalised additives for use in elastomers. This involves highly loaded nanomaterial dispersions in process oils to offer enhanced mechanical, physical, electrical and thermal properties of elastomer compounds. The technical datasheet and product information was launched at IRC in September 2019.

Other examples include a plan of work to create a graphene sensor that will be able to detect defects in composite materials during both the manufacturing process and the normal service life of a component, to improve the electrical conductivity of epoxy resin structural adhesives using functionalised nanomaterials, and a product readiness project to produce graphene enhanced composite tooling using thermal pre-preg, and graphene enhanced components using mechanically improved pre-preg.

Further work is also underway on the enhancement of the electrical pre-preg offering for EMS shielding and lightning strike, and it is anticipated this will result in another product specified for FY20.

This structured approach to development is facilitating the internal learning experiences and potential product to fit with the organic growth momentum at the centre of our strategic drive.

Management and Personnel

We have looked to make reductions in overheads this year whilst at the same time investing in the training of our staff as we continue to build organisational capability.

In September 2018, Keith Broadbent was promoted to the newly created role of the Group's Chief Operating Officer and as a director of the Company and, following the equity fundraise in March 2019, became the CEO of the Group, replacing David Banks who reverted to his previous role as Non-executive Chairman.

In December 2018, several directors decided to stand down, including Matt Wood, as part-time Finance Director, who was replaced by Laura Redman-Thomas as full-time CFO. Ray Gibbs also stepped down as a director of the Company in December 2018 and Roger Smith, NED, stepped down in January 2019.

Having discussed with our advisers and key shareholders, it is the Board's intention over the coming weeks to adopt a new EMI and Group wide share option scheme in order to incentivise, retain and recruit our staff. The new scheme will replace the Group's existing share option schemes and all options granted under the previous schemes are expected to be surrendered. Further details of the new scheme and any grants of options made will be issued in due course.

Cost Savings

Our focus on cost savings, which started in October 2018 and continued following the Group's securing of a loan from the Development Bank of Wales in December 2018 and through the equity fund raising that completed in March 2019, has achieved annualised savings to overheads of approximately £1.6 million to date. These predominantly relate to Senior Management salary costs, consultancy costs and travel.

Impairment Review

At the end of FY19, the Board, following extensive discussions with its advisors including its auditors, took the decision to impair the carrying value of intangible assets relating to the UK (RPC) composites business by £1.78 million. This was despite good pipeline opportunities and takes into consideration the company's current share price, its resulting market cap and the change in the composites business since its acquisition in 2014 from a predominantly grant funded sales business to a product sales business.

Patents, IP and Licensing

Haydale's critical IP remains its processing, mixing and dispersion knowledge and know-how derived from the work we have carried out in conjunction with Huntsman, together with the FDA-approved ink formulations that have been developed in the Far East.

The Group currently holds patents in the US, UK, Europe, China, Japan and Australia.

Key Performance Indicators ("KPIs")

The Group's KPIs are its financial metrics, being its revenues, gross profit margin, adjusted operating loss, cash position, total borrowings and long-term sales order book as follows:

	FY19 (£'000)	**FY18 (£'000)**
Revenue	3,467	3,403
Gross profit margin	55%	59%
Adjusted operating loss	(4,180)	(4,880)
Cash position	4,688	5,092
Borrowings	1,247	896
Long-term sales order book, inclusive of grants*	3,557	4,674

** unwinding of multi-year contracts in the US of £0.8 million and timing in UK Composites £0.29 million*

FINANCIAL REVIEW

The Financial Review should be read in conjunction with the consolidated financial statements of the Group and the notes thereto. The consolidated financial statements are presented under International Financial Reporting Standards as adopted by the European Union and are set out on pages 35 to 78. The financial statements of the Company continue to be prepared in accordance with FRS 101 and are set out on pages 79 to 87.

Statement of Comprehensive Income

In the year under review, the Group's three principal areas of income were: Sale of SiC fibers, whiskers and blanks, Specialty Inks and graphene enhanced composites. There is a further category of grant funded turnover which will be discussed separately

The Group's total income for the year ended 30 June 2019 of £4.25 million (FY18: 4.23 million), comprised commercial revenues of £3.47 million (FY18: 3.40 million) and grant income of £0.79 million (FY18: £0.83 million). The increase in revenue from the US SiC business of £0.50 million and £0.14m increase in APAC inks was offset by a £0.58 million reduction in the UK RPC business, where the focus was redirected towards commercial sales and well-funded, commercially viable grant related projects for longer-term growth. Although revenue was flat year on year, the Group's second half income increased by 12% compared to the first half of the year and by 35% on the same period in FY18, predominantly driven by growth in the US.

The Group's gross profit, which excludes the income from grant funded projects was £1.90 million (FY18: £2.0 million) delivering a gross profit margin of 55% (FY18: 59%). The reduction in margin was primarily due to a different sales mix and a below average yield from the US operations in the first half of FY19. This was further impacted by higher than expected graphite costs in the US, and pricing strategies as the business seeks to expand the markets for its products.

The Group's adjusted operating loss before non-cash items, such as depreciation, amortization, share based payment charges, impairments, and one-off restructuring costs was a loss of £4.18 million (FY18: £4.88 million). The loss from trading, including one-off restructuring costs of £0.35 million was £5.85 million (FY18: £6.02m). The Directors consider that adjusted operating loss is a more useful measure of the Group's performance and comparative performance than loss from operations, as it excludes a non-cash accounting adjustment for the impairment of intangible assets.

As stated in the Strategic Report, at the year end, the Board, following extensive discussions with its advisors including its auditors, took the decision to impair the carrying value of intangible assets relating to the UK (RPC) composites business by £1.78 million. This was despite good pipeline opportunities and takes into consideration the current share price, the resulting market cap and the change in the composites business since its acquisition in 2014 from a predominantly grant funded sales business to a product sales business.

During the year, we invested significantly in the US blanks business, realigned and refocused resource throughout the Group, particularly reducing the cost base in the UK composites business. R&D was redirected towards commercially viable products expected to deliver future strategic growth. Overall third-party R&D spend for the year was £0.76 million (FY18: £1.05 million), of which £0.49 million was expensed during the year (FY18: £0.88 million), with the balance of £0.22 million being capitalized, (FY18: £0.18 million).

The Group's adjusted administrative costs of £6.87 million (FY18: £7.71 million) exclude non-cash items of depreciation, amortization, share based payment charges, depreciation and amortization as well as one-off restructuring costs of £0.35 million to facilitate strategic change and future cost base reductions. Total administrative expenses for the year were £8.53 million (FY18: £8.85 million).

In the year the cost base was realigned achieving annualized savings of approximately £1.6 million of which £0.50 million was realized in the second half of FY19. Overall, the loss before tax for the year was £7.76 million (FY18: £6.12 million) and included non-cash items of £3.10 million and one-off costs of £0.35 million. Non-cash items included impairment of intangible assets, amortization, depreciation and share based payment charges.

Total comprehensive loss for the year was £7.12 million (FY18: £5.41 million), including the £1.78 million non-cash charge for the impairment of intangible assets and one-off restructuring costs of £0.35 million.

At the year end, the Group's contracted order book stood at £3.56 million (FY18: £4.67 million) and, since the year end, additional long-term orders have been secured resulting in an order book as at 10 September 2019 of £3.55 million to be delivered over the coming years.

The loss per share for the year reduced to £0.06 (FY18: £0.21 loss).

Statement of Financial Position and Cashflows

As at 30 June 2019, net assets amounted to £11.25 million (2018: £12.54 million), including cash balances of £4.69 million (2018: £5.09 million). Other current assets increased to £3.13 million at the year-end (2018: £2.56 million), and current liabilities increased to £3.12 million as at 30 June 2019 (2018: £2.51 million). Net cash outflow from operating activities, before working capital movements for the year was £4.59 million (2018: £4.83 million). The principal contributing factors being the adjusted operating loss of £4.18 million (2018: £4.88 million) plus the one-off restructuring costs of £0.35 million. Capital expenditure of £1.2 million (FY18: £0.72 million) was predominantly for the US blanks equipment which utilized a significant portion of cash during the year.

Capital Structure and Funding

As at 30 June 2019, the Company had 317,723,848 ordinary shares in issue (2018: 27,328,773). During the year, the Company issued 290,395,075 new ordinary shares in connection with the Company's placing and offer for subscription which raised £5.81 million (before expenses) and was completed on 13 March 2019. No options were exercised into ordinary shares during the year (FY18: no options were exercised).

The Group repaid borrowings of £0.5 million during the year (FY18: £0.45 million), principally in relation to the Group’s US borrowing facilities which are secured on the Group’s US based tangible assets. A new loan was secured on 19TH December 2018 with the Welsh Development Bank for £0.75 million. The net result left Haydale’s financing costs in line with the previous year at £0.12 million (FY18: £0.10 million). The Group’s total borrowings at the year-end were £1.25 million (2018: £0.90 million), £0.58 million of which was in the UK and the balance held by the Group’s US subsidiaries.

Haydale’s objectives when managing capital are to safeguard the Group’s ability to continue as a going concern in order to provide return to equity holders of the Company and benefits to other stakeholders and to maintain an optimal capital structure to reduce the cost of capital. The Group manages this objective through tight control of its cash resources to meet its forecast future cash requirements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
For the year ended 30 June 2019

	Note	Year ended 30 June 2019 £'000	Year ended 30 June 2018 £'000
REVENUE	5	3,467	3,403
Cost of sales		(1,567)	(1,403)
Gross profit		1,900	2,000
Other operating income		785	831
Adjusted Administrative expenses		(6,865)	(7,711)
Adjusted operating loss		(4,180)	(4,880)
Adjusting administrative items:			
Share based payment expense		(200)	(291)
Restructuring costs		(350)	-
Depreciation and amortisation		(1,118)	(851)
		(1,668)	(1,142)
Total trading administrative expenses		(8,533)	(8,853)
LOSS FROM TRADING		(5,848)	(6,022)
Impairment	9	(1,784)	-
Total administrative expenses		(10,317)	(8,853)
LOSS FROM OPERATIONS		(7,632)	(6,022)
Finance costs		(123)	(95)
LOSS BEFORE TAXATION	6	(7,755)	(6,117)
Taxation	7	570	850
LOSS FOR THE YEAR FROM CONTINUING OPERATIONS		(7,185)	(5,267)
Other comprehensive income:			
Items that may be reclassified to profit or loss:			
Exchange differences on translation of foreign operations		60	(47)
Items that will not be reclassified to profit or loss:			
Remeasurements of defined benefit pension schemes		2	(99)
TOTAL COMPREHENSIVE LOSS FOR THE YEAR FROM CONTINUING OPERATIONS		(7,123)	(5,413)
Loss for the year attributable to:			
Owners of the parent		(7,185)	(5,267)
Total comprehensive loss attributable to:			
Owners of the parent		(7,123)	(5,413)
Loss per share attributable to owners of the Parent			
Basic (£)	8	(0.06)	(0.21)
Diluted (£)	8	(0.06)	(0.21)

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 30 June 2019

Company Registration No. 07228939

	Note	30 June 2019 £'000	Restated 30 June 2018 £'000
ASSETS			
Non-current assets			
Goodwill	9	1,453	2,087
Intangible assets	9	1,024	2,130
Property, plant and equipment	10	5,556	5,061
Deferred tax asset		-	-
		8,033	9,278
Current assets			
Inventories	11	1,182	781
Trade receivables		637	705
Other receivables		472	603
Corporation tax		836	473
Cash and bank balances		4,688	5,092
		7,815	7,654
TOTAL ASSETS		15,848	16,932
LIABILITIES			
Non-current liabilities			
Bank loans	14	388	640
Deferred tax		-	125
Pension Obligation		1,085	1,120
		1,473	1,885
Current liabilities			
Bank loans	14	859	256
Trade and other payables	13	2,056	2,172
Deferred income		209	78
		3,124	2,506
TOTAL LIABILITIES		4,597	4,391
TOTAL NET ASSETS		11,251	12,541
EQUITY			
Capital and reserves attributable to equity holders of the parent			
Share capital	12	6,354	547
Share premium account	12	27,764	27,539
Share-based payment reserve		828	1,298
Foreign exchange reserve		(100)	(160)
Retained earnings		(23,595)	(16,683)
TOTAL EQUITY		11,251	12,541

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
For the year ended 30 June 2019

	Share capital	Share premium	Share-based payment reserve	Foreign Exchange Reserve	Retained profits	Total Equity
	£'000	£'000	£'000	£'000	£'000	£'000
At 1 July 2017	392	18,936	1,007	(113)	(11,317)	8,905
Comprehensive Loss for the year						
Loss for the year	-	-	-	-	(5,267)	(5,267)
Other comprehensive loss				(47)	(99)	(146)
Total Comprehensive loss	392	18,936	1,007	(160)	(16,683)	3,492
Contributions by and distributions to owners						
Recognition of share-based payments	-	-	291	-	-	291
Issue of ordinary share capital	155	9,123	-	-	-	9,278
Transaction costs in respect of share issues	-	(520)	-	-	-	(520)
At 30 June 2018	547	27,539	1,298	(160)	(16,683)	12,541
Comprehensive Loss for the year						
Loss for the year					(7,185)	(7,185)
Other comprehensive loss	-	-	-	60	2	62
Total comprehensive loss	547	27,539	1,298	(100)	(23,866)	5,418
Contributions by and distributions to owners						
Recognition of share-based payments	-	-	200	-	-	200
Share based payment charges – lapsed options			(670)		670	-
Issue of ordinary share capital	5,807	225	-	-	-	6,032
Transaction costs in respect of share issues					(399)	(399)
At 30 June 2019	6,354	27,764	828	(100)	(23,595)	11,251

CONSOLIDATED STATEMENT OF CASH FLOWS

For the year ended 30 June 2019

	Note	Year ended 30 June 2019 £'000	Year ended 30 June 2018 £'000
Cash flow from operating activities			
Loss before taxation		(7,755)	(6,117)
Adjustments for:-			
Amortisation of intangible assets	9	2,007	149
Loss on disposal of intangible assets		-	75
Depreciation of property, plant and equipment	10	895	702
Loss/(Profit) on disposal of property, plant and equipment		16	(60)
Share-based payment charge		200	291
Pension plan contributions		(118)	-
Finance costs		123	95
Pension – net interest expense		42	37
Operating cash flow before working capital changes		(4,590)	(4,828)
(Increase)/Decrease in inventories		(401)	190
Decrease in trade and other receivables		200	266
Increase in payables and deferred income		13	159
Cash used in operations		(4,778)	(4,213)
Income tax received		76	269
Net cash used in operating activities		(4,702)	(3,944)
Cash flow used in investing activities			
Purchase of property, plant and equipment		(1,205)	(723)
Purchase of Intangible Assets		(267)	(175)
Proceeds from disposal of property, plant and equipment		-	83
Acquisition of subsidiary – deferred consideration		-	(444)
Net cash used in investing activities		(1,472)	(1,259)
Cash flow used in financing activities			
Finance costs		(123)	(95)
Proceeds from issue of share capital (net of share issue costs)		5,634	8,757
New bank loans raised		750	-
Repayments of borrowings		(500)	(446)
Net cash flow from financing activities		5,761	8,216
Effects of exchange rates changes		9	(12)
Net (decrease) / increase in cash and cash equivalents		(404)	3,001
Cash and cash equivalents at beginning of the financial year		5,092	2,091
Cash and cash equivalents at end of the financial year		4,688	5,092

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
For the year ended 30 June 2019

1. General information

Haydale Graphene Industries Plc (the "Company") and its subsidiaries (together the "Group") are focussed on enabling technology for the commercialisation of graphene and other nanomaterials. The Company is a public limited company which is listed on the AIM Market of the London Stock Exchange plc and is incorporated and registered in England and Wales. The Company's registered office is Clos Fferws, Parc Hendre, Capel Hendre, Ammanford, Carmarthenshire, SA18 3BL.

2. Group Annual Report and Statutory Accounts

The financial information of the Group set out above does not constitute "statutory accounts" for the purposes of Section 435 of the Companies Act 2006. The financial information for the year ended 30 June 2019 has been extracted from the Group's audited financial statements which were approved by the Board of directors on 14 October 2019 and will be delivered to the Registrar of Companies for England and Wales in due course. The report of the auditor on these financial statements is unqualified, did not include any references to any matters to which the auditors drew attention by way of emphasis without qualifying their report and did not contain a statement under Section 498 (2) or Section 498 (3) of the Companies Act 2006.

3. Basis of preparation

Whilst the financial information included in this preliminary announcement has been prepared in accordance with the recognition and measurement criteria of International Financial Reporting Standards ('IFRSs') as adopted by the European Union, this announcement does not itself contain sufficient information to comply with those IFRSs. This financial information has been prepared in accordance with the accounting policies set out in the 30 June 2019 report and financial statements.

4. Going concern

The Group consolidated financial statements are prepared on a going concern basis which the Directors believe continues to be appropriate. The Group meets its day-to-day working capital requirements through existing cash resources which at 30 June 2019, amounts to £4.69 million. The Directors have prepared cash flow projections for the period ending no less than 12 months from the date of their approval of these financial statements. On the basis of those projections, and current cash resources, the Directors believe that the Group will be able to continue to trade for the foreseeable future.

5. Segment analysis

IFRS 8 requires operating segments to be identified on the basis of internal reports about components of the Group that are regularly reviewed by the chief operating decision maker (which takes the form of the board of directors of Haydale Graphene Industries Plc) as defined in IFRS 8, in order to allocate resources to the segment and to assess its performance.

For management purposes, the Group is organised into the following reportable segments:

- Resins, Polymers and Composites (focussing on the composites market in Europe (known as RPC) ;
- Advanced Materials (focussing on SiC & blank products for tooling) (known as AMAT); and
- Asia-Pacific (focusing on Ink sales to the Asian markets) (known as APAC)

The strategic business units RPC & AMAT were created on 1 July 2017, prior to this date management did not distinguish between different operating segments. The strategic business unit APAC was created on 1 July 2018. Comparative figures have been calculated on the basis that the operating segments existed in the previous financial year.

Geographical information

All revenues of the Group are derived from its principal activity, the sale and distribution of nano-technology and silicon carbide products or the delivery of research projects into those nano materials. The Group's revenue from external customers by geographical location are detailed below.

	2019 £'000	2018 £'000
By destination		
United Kingdom	328	238
Europe	657	516
United States of America	632	532
China	3	448
Thailand	239	199
South Korea	414	93
Japan	1,133	1,299
Rest of the World	61	78
	3,467	3,403

During 2019, £1.13 million or 33% (2018: £1.29 million or 38%) of the Group's revenue depended on a single customer. During 2019 £0.58 million or 17% (2018: £0.34 million or 10%) of the Group's revenue depended on a second single customer.

Revenue within Europe was predominantly split between Germany £0.58 million or 17% and Netherlands £0.05 million or 1% (2018: Germany £0.34 million or 10%, and Ireland £0.17 million or 5%), as a proportion of total group turnover for the year.

All amounts shown as other income within the Statement of Comprehensive Income are generated within and from the United Kingdom. These amounts include income earned as part of a number of grant funded projects and a government grant which is being released over a period of 5 years. The residual amount is reflected in deferred income.

Revenue from goods was £2.98 million or 86% (2018: £2.48 million or 73%) and revenue from services was £0.34 million or 10% (2018: £0.80 million or 24%).

Dis-aggregation of revenues

The split of revenue by type:	2019 £'000	2018 £'000
Services	342	836
Reactor sales	77	89
Reactor rental	69	-
Goods	2,979	2,478
	3,467	3,403

2019	RPC £'000	AMAT £'000	APAC £'000	TOTAL £'000
Services	184	-	158	342
Reactor sales	-	-	77	77
Reactor rental	69	-	-	69
Goods	188	2,619	172	2,979
	441	2,619	407	3,467

2018	RPC £'000	AMAT £'000	APAC £'000	TOTAL £'000
Services	682	-	141	836
Reactor sales	-	-	89	89
Reactor rental	-	-	-	-
Goods	336	2,122	33	2,478
	1,018	2,122	263	3,403

Services and rector rental revenues are recognised over time, whereas goods and reactor sales are recognised at a point in time.

6. Loss before taxation

Loss before taxation is arrived at after charging:

	2019 £'000	2018 £'000
Research and development:		
- current period's expenditure	493	878
- impairment of intangibles – Note 9	1,785	-
- amortisation of other intangibles	222	149
Loss on disposal of intangibles – Note 9	-	75
Restructuring costs	350	-
Depreciation of property, plant and equipment	867	675
Loss/ (profit) on disposal of property, plant and equipment	16	(9)
Foreign Exchange	(24)	(33)
Operating lease rentals:		
- land and buildings	614	572
- plant and machinery	6	6

7. Income tax

Current tax credit	2019 £'000	2018 £'000
Total income tax credits:		
- for the financial year	442	399
- under provision in the previous financial year	-	63
Total Current Tax	442	462
Deferred tax credit		
Origination and reversal of temporary differences	128	388
Recognition of previously unrecognised deferred tax assets	-	-
	128	388
	570	850

The reason for the difference between the actual tax charge for the year and the standard rate of corporation tax in the United Kingdom applied to the losses for the year are as follows:

	2019 £'000	2018 £'000
Loss for the year	(7,185)	(5,267)
Income tax credit	(570)	(850)
Loss before income taxes	(7,755)	(6,117)
Tax using the Group's domestic tax rates of 19% (2018 – 19%)	1,474	1,162
Expenses not deductible for tax purposes	(409)	(274)
Different tax rates applied in overseas jurisdictions	17	26
R&D enhancement	275	234
R&D costs capitalised	43	36
Surrender for R&D tax credit	(44)	(15)
Adjustment for under/(over) provision in previous periods	-	63
Movement in unrecognised losses carried forward	(681)	(747)
Movement in unrecognised fixed asset temporary differences	(233)	(23)
Deferred tax: Origination and reversal of temporary differences	128	388
Recognition of previously unrecognised deferred tax assets	-	-
Total tax credit	570	850

Changes in tax rates and factors affecting the future tax charge
The main rate of corporation tax for UK companies is currently 19%. The Finance Bill 2016, which was substantively enacted in September 2016, announced a reduction to the main rate of corporation tax. The rate will reduce to 17% from 1 April 2020.

The main rate of corporate tax in the U.S reduced from 34% to 21% effective from 1 January 2018 as part of the U.S tax reforms. This has reduced the deferred tax liability attributable to the group's subsidiaries based in South Carolina.

The Group has tax losses that are available indefinitely for offset against future taxable profits of the companies approximately amounting to £21.85 million (2018: £15.78 million) and £4.53 million (2018: £3.84 million) of fixed asset timing differences. The group currently expects to be able to utilise its US tax losses in the foreseeable future and a deferred tax asset has been recognised in respect of these tax losses up to the value of the timing difference of fixed assets and therefore no overall deferred tax asset has been created.

8. Loss per share

The calculations of loss per share are based on the following losses and number of shares:

	2019 £'000	Restated 2018 £'000
Loss after tax attributable to owners of Haydale Graphene Industries Plc	(7,185)	(5,267)
Weighted average number of shares:		
- Basic and Diluted	115,060,850	24,744,693
Loss per share:		
Basic (£) and Diluted (£)	(0.06)	(0.21)

The loss attributable to ordinary shareholders and weighted average number of ordinary shares for the purpose of calculating the diluted earnings per ordinary share are identical to those used for basic earnings per share. This is because the exercise of share options would have the effect of reducing the loss per ordinary share and is therefore not dilutive under the terms of IAS 33. At 30 June 2019, there were 2,632,199 (2018: 3,619,940) options and warrants outstanding as detailed in note 16.

The loss per share for the comparative period was incorrectly calculated as £0.22. The comparative figure has been recalculated and amended to show the correct loss per share.

9. Intangible assets

	Customer Relationships £'000	Development expenditure £'000	Goodwill £'000	Total £'000
Cost				
At 1 July 2017	1,154	1,428	2,114	4,696
Additions	-	175	-	175
Additions from acquisitions	-	(55)	(27)	(82)
At 1 July 2018	1,154	1,548	2,087	4,789
Additions	-	267	-	267
At 30 June 2019	1,154	1,815	2,087	5,056
Accumulated amortisation				
At 1 July 2017	173	257	-	430
Charge for the period	115	34	-	149
Disposals	-	(7)	-	(7)
At 1 July 2018	288	284	-	572
Charge for the year	115	107	-	222
Impairment	143	1,008	634	1,785
At 30 June 2019	546	1,399	634	2,579
Net book value				
At 30 June 2019	608	416	1,453	2,477
At 30 June 2018	866	1,264	2,087	4,217
At 30 June 2017	981	1,171	2,114	4,266

10. Property, plant and equipment

	Leasehold improvements £’000	Plant and machinery £’000	Fixtures and fittings £’000	Motor vehicles £’000	Assets under construction £,000	Total £’000
Cost						
At 1 July 2017	519	5,781	417	33	74	6,824
Additions	65	217	76	-	365	723
FX translation	(1)	(31)	21	(1)	-	(12)
Disposals	-	(124)	(3)	(2)	-	(129)
Transfers	-	97	-	-	(97)	-
At 1 July 2018	583	5,941	511	30	341	7,406
Additions	48	267	12	-	878	1,205
FX translation	4	179	20	-	-	203
Disposals	-	-	(21)	-	-	(21)
Transfers	-	1,188	-	-	(1,188)	-
At 30 June 2019	635	7,575	522	30	31	8,793
Accumulated depreciation						
At 1 July 2017	182	1,445	115	6	-	1,748
Charge for the year	58	562	50	6	-	676
FX translation	-	(1)	27	-		26
Disposals	-	(100)	(3)	(2)		(105)
At 1 July 2018	240	1,906	189	10	-	2,345
Charge for the year	68	732	61	6	-	867
FX Translation	1	24	5	(1)	-	29
Disposals	-	-	(4)	-	-	(4)
At 30 June 2019	309	2,662	251	15	-	3,237
Net book value						
At 30 June 2019	326	4,913	271	15	31	5,556
At 30 June 2018	343	4,035	322	20	341	5,061
At 30 June 2017	337	4,336	302	27	74	5,076

11. Inventories

	2019 £’000	2018 £’000
Raw materials	116	291
Work in progress	96	30
Finished goods	970	460
	1,182	781

The total value of inventories recognised in cost of sales during the year was £725,986 (2018: £924,091)

Raw materials and finished goods comprise functionalised carbon, chemicals and associated raw materials. Work in progress comprises recoverable costs on long-term contracts

12. Share capital and share premium

	Number of shares No.	Share capital £'000	Share premium £'000	Total £'000
At 1 July 2017	19,597,713	392	18,936	19,328
Issue of £0.02 ordinary shares	7,731,060	155	8,603	8,758
At 30 June 2018	27,328,773	547	27,539	28,086
Issue of £0.02 ordinary shares	290,395,075	5,807	225	6,032
At 30 June 2019	317,723,848	6,354	27,764	34,118

During the year, the Company issued 290,395,075 new ordinary shares of 2p each as follows:

- In January 2019, 1,250,000 shares were issued; and
- In March 2019, 289,145,075 shares were issued in connection with the Company's £5.8 million placing and open offer:

Issue costs amounting to £399,085 have been charged to the profit and loss account during the year (2018: £520,342 was charged to the share premium account).

13. Trade and other payables

	2019 £'000	2018 £'000
Trade payables	473	687
Tax and social security	57	73
Accruals and other creditors	1,526	1,412
	2,056	2,172

14. Bank loans

	2019 £'000	2018 £'000
Bank loans	1,247	896
The borrowings are repayable as follows:-		
- within one year	859	256
- in the second year	267	267
- in the third to fifth years inclusive	121	373
	1,247	896

The Group's borrowings are denominated in US dollars and Pounds Sterling. The directors consider that there is no material difference between the fair value and carrying value of the Group's borrowings.

	2019 %	2018 %
Average interest rates paid	6.1	4

In October 2016, a five year bank loan of $1,720,000 (equivalent to approximately £1.4 million at the time) was drawn by Haydale Technologies Inc ("HTI"), the Company's US holding company subsidiary, secured on the fixed assets of HTI and its newly acquired operating subsidiary, Advanced Composite Materials. This loan carries an interest rate of 4% and is repayable in equal instalments. In addition to this HTI has secured a working capital line of credit with a rate fixed at 5.25% on the remaining balance.

In January 2019, a 15 month loan of £750,000 was taken out with the Development Bank of Wales. The loan is accruing interest at a rate of 11% per annum and is repayable in 12 equal monthly instalments which commenced in April 2019.

15. Operating lease arrangements

The amounts of minimum lease payments under non-cancellable operating leases are as follows:

	2019 Land and buildings £'000	**2019 Plant and machinery £'000**	**2018 Land and buildings £'000**	**2018 Plant and machinery £'000**
- within one year	624	4	573	7
- within two to five years	473	4	976	8
- later than 5 years	139	-	177	-
Aggregate amounts payable	1,236	8	1,726	15

Payments recognised as an expense under these operating leases were as follows:

	2019 Land and buildings £'000	**2019 Plant and machinery £'000**	**2018 Land and buildings £'000**	**2018 Plant and machinery £'000**
Operating lease expense	614	6	572	6

A significant proportion of the lease arrangements relate to the premises from which HTI and HCT operate in South Carolina, USA totalling £0.70 million (2018: £1.11 million). The lease expires on 31 December 2020. Other leases pertain to the office and unit contracts for the two UK facilities of in aggregate £0.16 million (2018: £0.22 million). Of the £0.16 million, certain leases are cancellable with three months' notice.

During the previous year a new lease agreement has been entered into, in respect of offices at Harwell, Oxfordshire. The lease expires in March 2028. The estimated committed costs are £0.33 million (2018: £0.36 million).

The facility in Thailand is leased and, at the date of these results, will expire in 4 months. The cost is £0.01 million (2018: £0.03 million).

Within the minimum lease payments for plant and machinery is the cost relating the general office equipment.