

# Preliminary results

October 2019

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- It should be noted that past performance cannot be relied on as a guide to future performance. This presentation contains forward-looking statements with respect to AGM’s plans and objectives regarding its financial conditions, results of operations and businesses.

# Executive Leadership



## **Dr Adrian Potts**

### **Chief Executive Officer**

Joined AGM in January 2015, CEO from August 2018

Various senior roles in composites industry including UMECO

Experienced in strategy development, business turn-arounds and integrating new innovation

Lives in USA - spends his time 50:50 USA:UK to ensure widest commercial focus



## **David Blain**

### **Chief Financial Officer**

Joined AGM in October 2018 from Nanoco Group PLC

Substantial experience in PLCs and the nanomaterials industry

Experienced at delivering successful commercialisation of technology startups

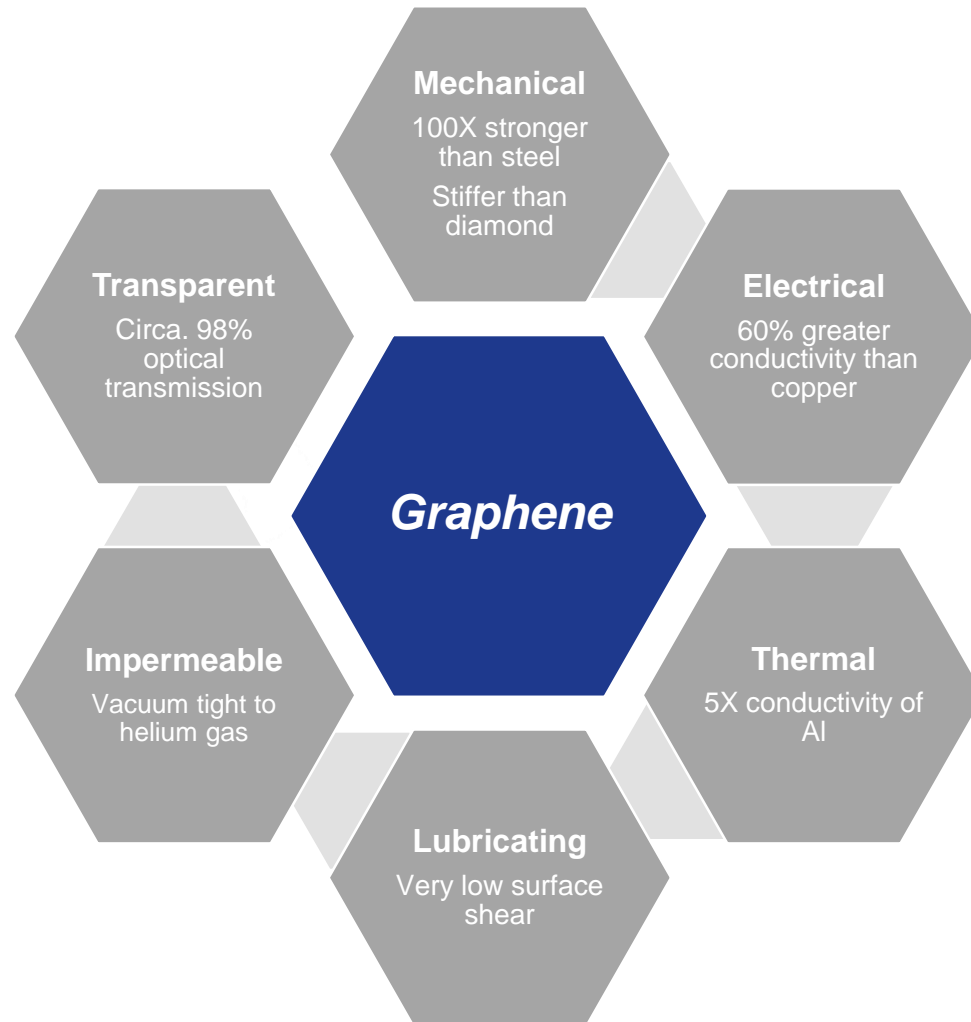
# Company Overview



- Leading innovator in Graphene applications technology
- Significant (and patent protected) IP in production, dispersion and application technology
- Strong progress in 3 core sectors of protective coatings, composites and functional materials
- Management team focused on commercial traction and revenue development
- Expertise and know-how to manage the primary challenge of incorporating graphene into end products and achieve property enhancements
- Enhanced product offering of easy-to-use, dispersed nanomaterials
- Products supported by in-depth technical data and practical guidance, providing a unique solutions proposition for a growing number of customer engagements
- Early commercial engagements resulting in customer product launches
- Commercial engagements approaching product sales

Increasing commercial progress. Focus on near term sales

# Graphene – The performance and opportunity



- Generic material
- Isolated in 2004 at University of Manchester
- Nobel prize in 2010

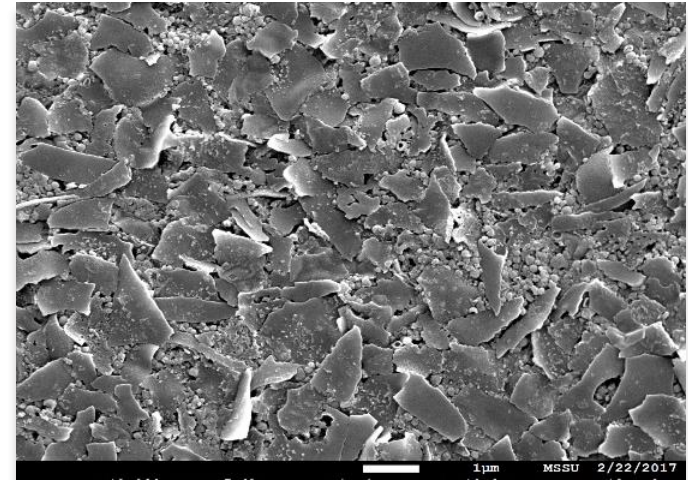
The challenge for the industry is how to **realise** what is potentially the most disruptive material of the 21st Century



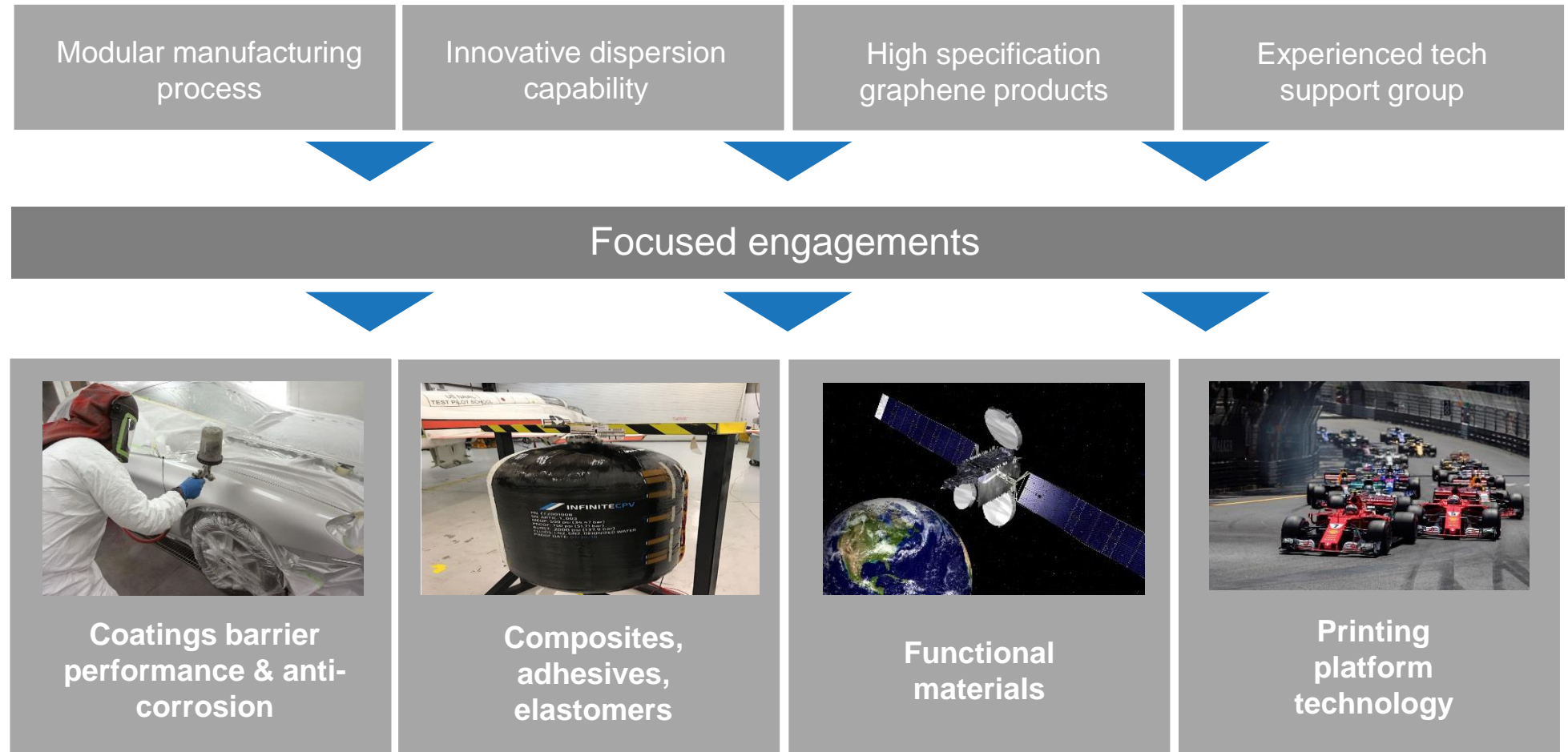
# AGM – Ideally placed to meet the challenge with unique offer

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- AGM's patented dispersion technology - key enabler for successful use
  - Range of chemistries to suit numerous applications
  - Environmentally friendly solutions
  - Dispersion optimisation to suit end use
  - Long shelf life additives
- Differentiators that set AGM apart:
  - 1) AGM's Application Technology – clear understanding of end-use need and how to achieve it
    - Deep engagement with end customer
    - Understand objectives, needs and commerciality
    - Standard dispersions – as general purpose additives across a range of applications
    - Customised solution – end-use specific
  - 2) AGM's "How-To" data enables easy use of graphene
    - Impressive technical data to support claims
    - How-To knowledge to assist the customer practically
    - Regulatory leadership for safe use of nano-materials



# AGM's Business model



Routes to market are through sales team and distributors that have delivered a sales pipeline of over 100 ongoing programmes, 77% of which are in coatings

# Highlights for the period



## Commercial

- Primary focus on coatings sector using graphene dispersions as best opportunity for growing revenues
- Successful coatings product launches with a number of commercial engagements expected to lead to revenue
- Number of target coatings customers successfully testing and approaching completion
- AGM graphene dispersions working well for anti-corrosion on aluminium as well as steel
- Water-based product technology opens dialogue with environmentally-focused customers
- Selection, engagement and launch of distributors for sales of standard graphene dispersions
- Composites materials customers seeing practical benefits of graphene addition. From space applications to mass transit interiors to composite tooling
- Qualification of Thermal Adhesives to aerospace requirements approaching completion. Product promoted to Space and Defence community

## Management

- New CEO and CFO appointed
- Initiated strategic review of the business that has led to an evolved focus to accelerate commercial momentum



# Highlights for the period



## R&D

- Standardised **Genable®** dispersions product range fully launched for resin, solvent and water
- Repeatable, reliable, demonstration that graphene additions, correctly dispersed in coatings produce outstanding barrier and anti-corrosion performance
- Innovative water-based acrylic coatings chemistry with graphene launched to enhance barrier performance in WB Direct-To-Metal coatings
- Long range harsh environment product development progressed well. Materials Performance award nominated in conjunction with US NACE
- Commitment to technical conference presentations made to share and promote the outstanding performance uplift achievable with graphene in coatings
- Demonstration of substantial fracture toughness improvements in composites through the use of Structural Ink® printing technology
- IP position bolstered with patent granted in key territory
- Leadership in regulatory matters related to safe use of graphene

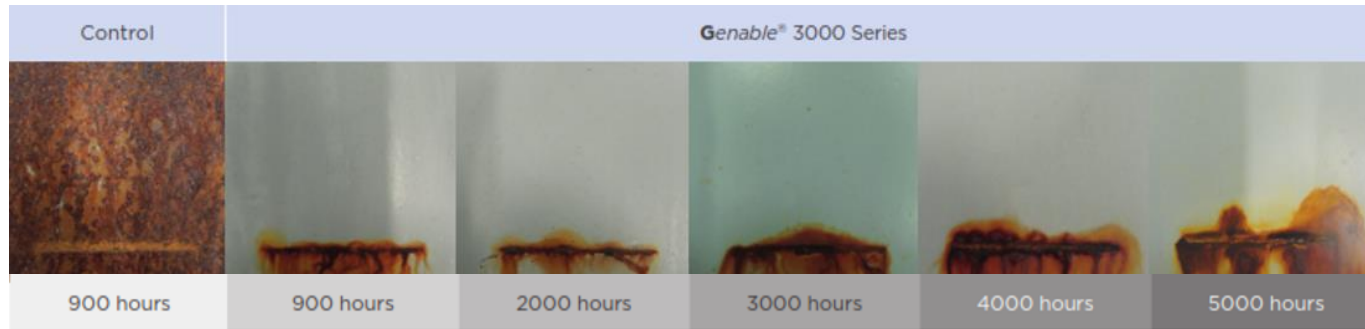
## Financial

- Cash at 31 July 2019 was £6.1m
- Loss before tax for the period was £4.8m. £3.9m after tax.

# Number of projects in pipeline vs January 2019

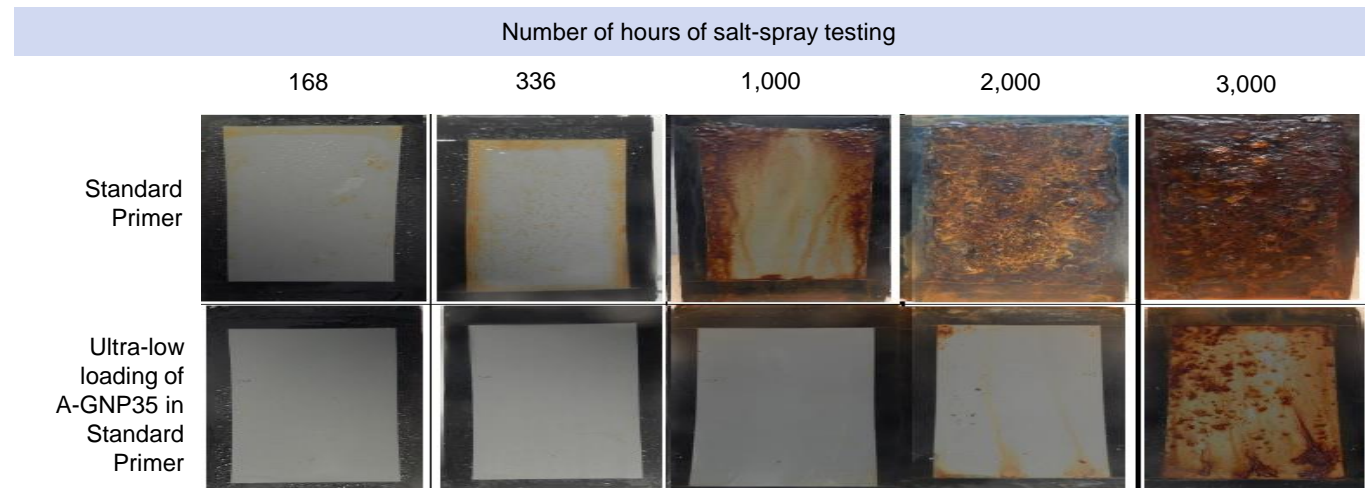
Stage of development	Approval time				Total	
	Short	Medium	Long	Scouting/ unclear		
Agreement on scope of sampling and engagement	0 (-11)	12 (-6)	5 (-2)	4 (-2)	21 (-21)	
Initial testing and interpretation of results	0 (-8)	21 (-4)	21 (+9)	9 (+8)	51 (+5)	
Repeat testing for consistency and review of results	1 (-4)	6 (-7)	5 (+4)	2 (+1)	14 (-6)	
Final product trials formulation and specification		0 (-4)	4 (+2)	3 (+3)	7 (+1)	
Final commercial engagement		3 (-1)	5 (+2)		8 (+1)	
Totals at 31 July 2019		4	48	34	15	101
Movement since 31 January 2019		(-28)	(-13)	(+14)	(+7)	(-20)

# Market progress – coatings



**At least 5x Performance improvement by using Graphene A-GNP loading low % by weight in final coating**

## Substantial improvement to corrosion performance



**AGM dispersion technology and application know-how key to performance success**

# Market progress – coatings



- Automotive anti-corrosion aerosol primer
- Designed for extended anti-corrosion protection on steel
- Exceptional performance advantage to prevent rust formation
- Benefits from being zinc-free for enhanced environmental performance
- **Product launched**



- Standard graphene dispersions
- Stabilised for extended shelf life – avoids sedimentation and need to re-disperse
- Available in epoxies, solvents and water and custom solutions to suit
- **Enables ease of customer use, flexibility in formulating and best opportunity for success**



- Distribution network for standard dispersion
- CAME for Italian market initially. Early market development for 18 months
- Carst & Walker for South African additives supply to paints and coatings market
- **Technical approach to selling supports the customer well with new technology**

# Market progress – coatings



- Liquid roofing coating system with exceptional performance
- Anti-corrosion performance substantially extended with graphene addition
- Alltimes' warranty extended by 50% to 30 years
- Cost effective solution for end-users
- **Launched to Alltimes' customers July 2019**



- HMG - Very positive initial testing
- Continuing development for protective coatings sector
- **Anticipating product launch 2020**
- Applied Nano Surfaces - Graphene-fortified low friction high abrasion resistance coatings
- **Product qualified for use in coating system. Awaiting scale up**



- AGM's graphene dispersions reduce corrosion in aluminium for aerospace primer applications
- Products in test currently undergoing scale up in production environment
- Positive performance mitigates corrosion, enabling extended protection
- **"Ease of use" - ease of addition, mixing, and application of paint**



# Market progress – composites



- Carbon fibre pressure vessels enhanced with AGM graphene dispersions
- Use of graphene enhances composite durability in extreme test conditions to -300F and 600psi pressure rating
- Pressure vessels considered for use on multiple NASA spaceflight missions, including Materials on the International Space Station Experiments (MISSE), Artemis, and Lunar Gateway
- **Continuing collaboration**

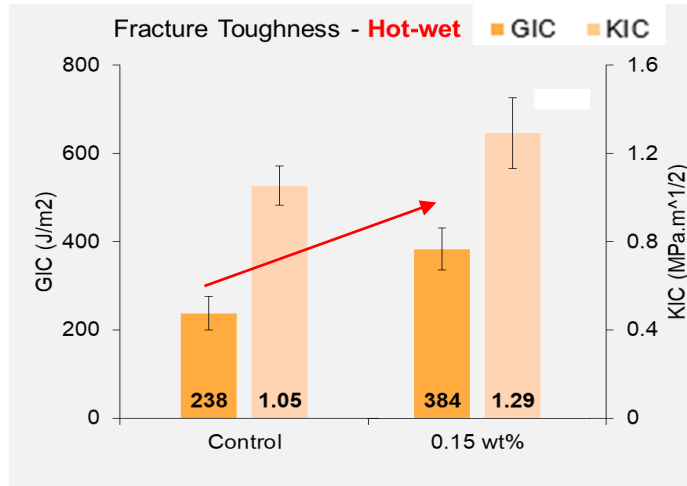


- NATEP NEAT Project completed
- Composites for interiors applications in mass transit and aerospace
- Mechanical performance enhancements with graphene additions
- **Balance of performance advantage, optimised design, improved processing and enhanced surface finish**



- NATEP CTES project completed with partners CTES Ltd, SHD and GKN Aerospace
- Demonstrates innovative durable composite tooling technology
- Lower cost tooling solutions, enhanced in-service performance and optimised design
- **Dissemination phase with further demonstrators possible**

# Market progress – Inks, Printing and Functional Materials



- Structural ink printing enabling substantial increases in performance in composites
- Scale up development following equipment investment last year
- Selective printing enables reinforcing materials to be placed where needed, so low additional weight deposited
- Fracture toughness gains repeatable and substantial
- Available for scale up manufacturing potential with formulated graphene ink technology



- Thermal adhesive materials for high performance applications
- 2 product forms. High to very high thermal conductivity
- Very low density compared to industry standard
- Excellent adhesive performance
- Qualification to aerospace customer ongoing
- Broader promotion of TP300 and TP400 products to Space and Defence materials specifiers

# Income statement summary

- Revenue arises from production and sample evaluation orders – fall due to lower sales to Airbus (£46k)
- Other income relates to grant income for composite developments
- Cost of sales represents the cost of graphene production – will be recognised as inventories in future as sales increase
- Operating expenses (excluding exceptionals) increased due to additional labour costs
- R&D tax credits include £208,000 in relation to an increase to the prior year claim

	Year ended 31 July	
	2019	2018
	£'000	£'000
Revenue	50	77
Other income	74	126
	124	203
Cost of sales	(472)	(250)
Gross loss	(348)	(47)
Operating expenses	(4,554)	(4,555)
EBITDA	(4,559)	(3,984)
Exceptional costs	—	(307)
Depreciation of property, plant and equipment	(343)	(311)
Operating loss	(4,902)	(4,602)
Finance income	67	57
Loss before tax	(4,835)	(4,545)
Tax credit	908	1,046
Loss for the year attributable to equity shareholders	(3,927)	(3,499)

# Cashflow summary

	2019	2018
	£'000	£'000
Operating activities		
Net cash used in operations	(4,184)	(4,005)
Corporation tax received	—	631
Finance income	69	53
Net cash used in operating activities	(4,115)	(3,321)
Investing activities		
Purchase of intangible assets	(77)	(62)
Purchase of property, plant and equipment	(116)	(257)
Net cash used in investing activities	(193)	(319)
Financing activities		
Net proceeds from issue of Ordinary shares	—	9,375
Net cash (used in)/generated from financing activities	—	9,375
Net (decrease)/increase in net cash and cash deposits	(4,308)	5,735
Net cash and cash deposits at 31 July 2018	10,443	4,708
Net cash and cash deposits at 31 July 2019	6,135	10,443

- Net cash utilised in operating activities shows an increase of £794k reflecting the R&D tax credit of £623,000 which was received after the year end
- Cash balance of £6.1m is in line with Board expectations after taking into account receiving the R&D tax credit post year end.
- The re-alignment process which is ongoing is expected to extend the cash runway to Q4 2021.

## Post period end - Extending cash runway



- AGM has started a process to re-align its resources around its efficient dispersion and application technology to better support the product development cycle of those customers that present the nearest-term revenue opportunities, in order to focus on growing sales
- Re-alignment will reduce the Company's operating cost base and extend AGM's cash runway to at least two years to Q4 2021 and place the Company in a better position to deliver this new technology and products to the market place
- Resources will be focused on growing revenues from the significant pipeline of approximately 100 active engagements
- Cash operating cost base of £4.3m in the year to 31 July 2019 is expected to fall by circa £0.9m and £1.1m for the years ending 31 July 2020 and 2021, respectively. The cost of implementation of these changes is circa £0.2m
- The Company retains the capability to scale up at the appropriate time and maintains its core skill base



# Post period end - Highlights



- JBL public about launch of graphene primer. - Jim Miller, Commercial Director at James Briggs Ltd, said: “This is an incredibly exciting launch for us that has the real potential to revolutionise the aerosol primer market” (30/9/19)
- New Blocksil Top Coat product being promoted
- Alltimes actively promoting Advantage Graphene. Active demonstration of Alltimes product planned at Wilton site
- Presenting compelling coatings data at Western Coatings Show
- Developed composite applications for space exploration with Infinite Composites Technologies
- Launch of very low density, high thermal conductivity adhesives for space applications
- Further distributor appointments in discussion
- Continuing focus on coatings sector to realise revenues
- Ongoing targeted approach to exploit Structural Ink technology

# Investment summary



## Leading IP and know-how

- Leading innovator in graphene
- Significant (and patent protected) IP in production, dispersion and application
- Company ideally placed to help industry manage the primary challenge of incorporating graphene into end products and achieve recognised property enhancements

## Compelling product portfolio

- Making strong progress in 3 core sectors of coatings, composites and functional materials
- Enhanced product offering and supporting product data providing unique solutions with significant number of customer engagements
- Strong technology base to develop coatings offering and continued opportunities with composites, inks, printing and adjacent technologies

## Evolved focus gaining customer traction

- Management team streamlining focus on commercial traction and revenues
- Early commercial engagements approaching product sales
- Cash runway until at least Q4 2021

The background of the slide features a 3D molecular model of a crystal lattice, likely diamond or silicon, composed of interconnected spheres and rods. The spheres are rendered with a metallic, reflective blue finish. A vertical white band runs down the center of the image, creating a gradient effect from dark blue on the sides to white in the middle. The word "Appendix" is centered within this white band.

# Appendix

# Major shareholders

Shareholder	% holding
IP Group	19.09
Insight Investment	9.98
Herald Investment Management	9.61
Hargreaves Lansdown Stockbrokers	8.68
Eden Tree Investment	7.59
Ruffer	7.11
Baillie Gifford	4.84
Interactive Investor	3.01
HSDL Stockbrokers	2.82
University of Durham	2.49
<b>Directors</b>	
Professor Karl Coleman	3.60
Dr Bryan Dobson	0.27
Sean Christie	0.07
Mike Townend	0.05
Adrian Potts	0.04
David Blain	0.04

# AGM technical capabilities

<b>Analysis</b>	<b>Information Gathered</b>
Raman Spectroscopy	Composition, Degree of Graphitization
Electron Microscopy SEM/TEM	Morphology, Fracture surface analysis
Light Scattering	Particle Size Distribution
Thermogravimetric Analysis	Thermal Stability, moisture content, non-carbon residue
Turbidity Monitoring	Short and long term dispersion stability
Viscometry	Dispersion viscosity, rheology
UV Analysis	Dispersion characterisation
Mechanical Testing	Flexural modulus + strength, tensile modulus + strength
Electrical Testing	Sheet resistance, bulk resistivity
Thermal Analysis	Thermal conductivity
Electrical Impedance Spectroscopy	Corrosion potential, corrosion current, coating impedance
Synthetic Seawater Immersion Testing	Corrosion resistance
Salt Spray Testing	Corrosion resistance
Impact Testing	Coatings impact resistance
Abrasion Resistance Testing	Coatings performance
Chemical Resistance Analysis	Coatings performance
QUV	UV resistance
Analysis	Information Gathered



# About AGM

