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Nanoco Group PLC
16 October 2019

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NANOCO GROUP PLC

("Nanoco" or the "Company")

Preliminary Results for the year ended 31 July 2019

Nanoco Group plc (LSE: NANO), a world leader in the development and manufacture of cadmium-free quantum dots and other specific nanomaterials emanating from its technology platform, is pleased to announce its Preliminary Results for the year ended 31 July 2019.

Operational highlights

- Platform technology strategy implemented - focus on capabilities in design, development and scale-up of cadmium-free quantum dots (CFQD® quantum dots) and novel nano-materials
- Significant improvements in dot performance
- Continued investment in IP portfolio with 745 granted and pending patents (2018: 654)
- Core R&D, IP and production capabilities retained following display resource pivot
- Commercial efforts focussed on two attractive, high growth markets which are summarised below:

Nano-materials (for use in the electronics industry)[1]

- o Achieved US Customer milestones, with £7.8 million contract delivering through to December 2019
- o Completed new Runcorn manufacturing facility, funded by US Customer, now in final product validation
- o Patented nano-material technology now proven in devices
- o Actively engaging with other potential customers in Infrared (IR) sensing market

Display

- o Further deepening of R&D activity into QD-OLED and micro-LED (Gen 2) and electro-luminescent (Gen 3) displays while enhancing performance of dots for film based application as it moves into the mass market (Gen1)
- o Significant improvements in key performance characteristics in Green and Red dots
- o Engaged in commercial opportunities in all three generations of display technology as noted above

Financial highlights

- Significant increase in billings to £9.6 million (2018: £6.5 million)
- Revenue more than doubled to £7.1 million (2018: £3.3 million)
- Loss after tax reduced to £4.4 million (2018: £6.0 million, 2017: £9.1 million)
- Q4 reorganisation following display resource pivot in Q2, now delivering £0.6m of savings in FY20
- Waiver of £4.2m contract liability by US Customer offsets non-cash costs triggered by completion of current project
- Cash of £7.0 million as at 31 July 2019 (31 January 2019: £6.2 million; 31 July 2018: £10.7 million)
  - o Expect to have c.£6.0m cash on hand in December 2019 when US Customer contract ends
  - o Further headroom to reduce costs and preserve cash if commercial revenue streams are delayed

[1] The Group's platform technology is built on nano-materials. Nano-materials for use in the electronics industry are one subset of that platform. CFQD® quantum dots are another subset.

Dr Christopher Richards, Nanoco's Chairman, commented on the results:

"Nanoco has delivered a strong performance this year, achieving our best ever financial results in the Company's history. We pushed our innovative platform technology into a range of potentially lucrative commercial applications including IR sensing, while significantly enhancing the performance of our nano-materials and actively engaging in development work in all three display technology generations.

"It was clearly disappointing, for reasons wholly unconnected to Nanoco's performance or our materials, that the US Customer decided not to continue the current project contract when it expires in December 2019. However, we remain confident in the Group's assets, team and capabilities. Our expected positive cash position of £6.0m following completion of the current contract deliverables for the US Customer provides us with reasonable headroom to deliver on new sources of commercial income.

"Our commercial focus going forward will primarily be in the electronics and display markets. We are already actively engaged with an encouraging pipeline of potentially attractive opportunities, all of which can be delivered by our current asset and cost base. As ever, the Executive team is alert to the impact of further delays in the realisation of these opportunities and contingency plans are in place to manage any such delays to our commercial development.

"There are still challenges and uncertainties to be managed and the Board remains focused on maximizing shareholder value. Our expanded platform technology continues to be relevant across a wide range of market applications and has created a number of commercial opportunities to pursue. The Board therefore remains confident in the value inherent in the business."

Analyst meeting and webcast details

To listen to a webcast of the analyst briefing, please log on to the following web address approximately five minutes before 8.30am on 16 October 2019: https://webcasting.brrmedia.co.uk/broadcast/5d8de042cbe3ca44a572df2c

A recording of the webcast will also be made available on Nanoco's website, www.nanocogroup.com, later today.

A meeting for analysts will be held at 8.30am this morning, 16 October 2019 at the offices of Peel Hunt LLP, Moor House, 120 London Wall, EC2Y 5ET. For further details please contact Peel Hunt on +44 (0)20 7418 8909

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Notes for editors:

About Nanoco Group plc
Nanoco (LSE: NANO) harnesses the power of nano-materials. Nano-materials are materials with dimensions typically in the range 1 - 100 nm. Nano-materials have a range of useful properties, including optical and electronic. Quantum dots are a subclass of nano-material that have size-dependent optical and electronic properties. The Group produces quantum dots.

Within the sphere of quantum dots, the Group exploits different characteristics of the quantum dots to target different performance criteria that are attractive to specific markets or end-user applications such as the Display and Electronics markets. One of the interesting properties of quantum dots is photoluminescence: the emission of longer wavelength light upon excitation by light of a shorter wavelength. The colour of light emitted depends on the particle size. Nanoco's CFQD® quantum dots are free of cadmium and other toxic heavy metals, and can be tuned to emit light at different wavelengths across the visible and infrared spectrum, rendering them useful for a wide range of applications including displays, lighting and biological imaging.

Nanoco has non-exclusive manufacturing and marketing licensing agreements in display with The Dow Chemical Company, Merck KGaA of Germany and Wah Hong Industrial Corporation of Taiwan.

Nanoco was founded in 2001 and is headquartered in Manchester, UK, with a US subsidiary, Nanoco Inc., in Concord, MA. Nanoco continues to build out a world-class, patent-protected IP portfolio generated both by its own innovation engine, as well as through acquisition.

Nanoco is listed on the Main Market of the London Stock Exchange and trades under the ticker symbol NANO. For further information please visit: www.nanocogroup.com.

Chairman's statement

The successful delivery of a number of milestones and the new Runcorn production facility for our US Customer was a source of great pride for the whole Nanoco team and has driven the strongest financial results in the Group's history. For the year to 31 July 2019, revenue more than doubled for the second year in a row to £7.1 million (2018: £3.3 million), our Adjusted EBITDA loss was cut 38% to £3.8 million (2018: £6.2 million) and the second half saw the business generate a small cash surplus.

It was therefore clearly disappointing that the US Customer decided, for reasons wholly unconnected to the performance of Nanoco and our nanomaterials, that the current contract will not be extended after it expires on 31 December 2019. However, we continue to operate on a broadly cash neutral basis through to the end of December 2019, when we expect to have some £6.0 million of cash on hand.

The Group is in active discussions with other potential new customers for our materials, with a particular emphasis on both the electronics and display sectors. In addition to these potentially lucrative commercial opportunities for continued funding of the Group's operations, the Board is also reviewing other sources of funding.

Strategy and business activity
Nanoco's platform technology has remained our key strategic focus during the year (our 'dot only' strategy). We continued to extend and deepen the commercial relationship with our US Customer in the electronics industry, which exploits and builds on the technology platform developed over a number of years. Building on the absorption characteristics of our quantum dots and leveraging the outstanding skills of our technical teams, we moved into a significantly wider field of nanomaterials and delivered all of our customer's very challenging technical expectations. Though the end of the current contract is disappointing, the Group is left in a stronger position in terms of our own know-how and the new, unencumbered production facility at Runcorn which can be utilised freely to service other existing and potential customers in the rapidly growing electronics and infra-red sensing markets.

Our research teams have also significantly improved the emission performance of our CFQD® quantum dots by improving their energy efficiency and clarity of colour. These performance improvements are reflected in our growing IP portfolio and increasing specialist know-how. It is this platform technology, which can be deployed across a wide range of applications that is key to unlocking the true value potential of the Group.

In the Display sector, some momentum is starting to build, with film, QD OLED hybrid and micro-LED screens being actively pursued by the larger brands of device builders. On film-based systems, volumes will be greatly aided by the lowering of prices for televisions featuring quantum dots, meaning this is no longer a high-end, niche application. Quantum dots on QD OLED hybrid TVs are likely to appear on the market in 2021/2022 and we are supporting material pre-qualification work with our licence partners.

Recognising that the Group's core strengths with respect to the display market are in quantum dots, we have redeployed resources that were previously working on resin and film, back onto our core quantum dot technology platform. In addition, we have increased our engagement with other companies which specialise in resin, film and ultimately display panels themselves for potential future partnerships.

In Life Sciences, the Board recognises that this application requires different capabilities from our core electronic materials business and we continue to explore a number of strategic options, including a possible spin-out of this business line.

In the application itself, we have made further progress in demonstrating the clinical safety of our materials. This will allow us to move forward with the development of new commercial applications in several therapeutic areas which we have identified as most applicable to our technology.

Other market niches continue to be explored.

Financial performance
Revenue in the last financial year more than doubled to £7.1 million (2018: £3.3 million). The loss before tax benefited directly from the increased revenue on a relatively fixed cost base and narrowed to £5.5 million (2018: £7.4 million). Cash consumption of £4.6 million in the first half was dominated by the completion of capital spend on the Runcorn production facility expansion. In the second half the Group delivered a net positive cash flow of £0.8 million and the Group expects to have around £6.0m of cash by the time of the completion of the contract extension with the US Customer at the end of December 2019.

With the Group still being at a pre-commercial production stage in its evolution, our financial focus remains firmly fixed on close management and control of our cost base and cash resources. Cash, cash equivalents and deposits at the year-end were £7.0 million (31 July 2018: £10.7 million; 31 January 2019: £6.2 million). No dividend is proposed for the year (2018: none).

Governance and Board
The Board recognises the value of meeting the highest standards of corporate governance and will continue to strive to achieve such standards for the benefit of all stakeholders. During the year, the Board has overseen the roll out of a number of new or improved elements of our corporate governance framework, such as a new electronic platform for delivering more timely information to the Board and a significantly revised monthly Board information pack with more targeted, clear strategic KPI's and forward looking analysis.

We have also recently made a number of changes to the Board itself. At the end of the last financial year, we decided to combine the executive roles of COO and CFO. The aim was to provide enhanced leadership in finance and governance, as well as driving underlying business operations and performance at a time of significant change. Brian Tenner was appointed to this role on 20 August 2018. I am pleased to report that the three-person team made up of the CEO, CTO and COO/CFO has already proven effective in this, its first year of working together. Keith Wiggins, the former COO, and David Blain, the former CFO, both left the business during the first half of the financial year following an orderly transition and handover and we wish them well.

A number of changes were also made to the Non-Executive membership of the Board as well as the roles carried out by each member. Brendan Cummins, Non-Executive Director and Chair of the Remuneration Committee, stepped down from the Board to focus on other commitments, particularly in the area of social enterprise. The Board would like to thank Brendan for his wise counsel and commitment to the Group over the last four years. We wish him well in the years ahead.

Dr Alison Fielding took over Brendan's responsibility as Chair of the Remuneration Committee and also assumed Brendan's responsibilities as Senior Independent Director. At the same time, we were pleased to welcome Christopher Batterham to the Board as a Non-Executive Director, Chair of the Audit Committee and member of the Remuneration and the Nominations Committees, bringing his considerable financial and operational experience to the Board.

Employees and shareholders
On behalf of the Board, I would like once again to pay tribute to Nanoco's employees for their achievements during the year. This has been an exceptionally busy year which has also seen periods of uncertainty for staff as we have adjusted our activities to reflect changes in business focus. The Group's highly skilled team has responded with remarkable professionalism, flexibility and dedication. The Board is enormously appreciative of their contributions and commitment to the Group.

I would also like to thank our shareholders for their continuing support and look forward to meeting as many as possible at our AGM to be held on 5 December 2019.

Outlook
The last year has demonstrated the strong merits of our broad-based platform technology, particularly as we used our deep technical knowledge and know-how to quickly develop a high performing material for use in infrared sensors in electronics applications. This is an attractive and high growth market that the Group is keen and able to exploit.

The loss of potential future revenue arising from the US Customer's decision not to continue its current project with Nanoco past December 2019 presents certain financial challenges for the business. However, we are actively engaged in discussions with customers regarding a number of other commercial opportunities in our focus markets to mitigate this. Our expected positive cash position of £6.0m following completion of the current contract deliverables for the US Customer provides us with reasonable headroom to deliver on these new sources of commercial income.

The Group showed a high level of agility and responsiveness in the past 12 months, in delivering new and improved nanomaterials, in pivoting our resources to match commercial opportunities and in fine-tuning our cost base to match the current levels of activity. That agility will stand us in good stead in the year ahead as we manage the uncertainty around commercial revenue generating opportunities and, consequently, our cost base. Contingency plans are in place in the event of any major shortfall in the balance of our income and costs.

The Group's core assets, team, and capabilities remain an attractive investment opportunity. Our expanded platform technology and production infrastructure allow us to explore a number of new commercial markets and applications as potential sources of income in the short-term. The Board therefore remains confident in the value inherent in the business.

Dr Christopher Richards
Chairman
16 October 2019

Chief Executive Officer's statement

The Group has made strong progress this year in a number of different areas, delivering our best ever financial results. We have delivered rapid developments in our platform technology, building on our solar expertise to develop materials for use in new end markets for infra-red sensing materials, while at the same time significantly upgrading the performance of our CFQD® quantum dots for use in display applications. We also increased our IP portfolio of patents granted and pending to 745; an increase of just over 90 during the period.

Against this background of progress and achievements, it was disappointing to learn that the US Customer will not be proceeding to commercialisation of its current programme with Nanoco; a decision which had nothing to do with the performance of Nanoco as a supplier or our materials.

While we will continue to deliver services to the US customer until 31 December 2019, our focus remains on securing further income with a number of parties in the display sector, on both QDs in film, QD OLED hybrid and on micro-LEDs for display.

The availability of our new enlarged Runcorn production facility also allows us to engage with other companies and applications in the electronics sector that can make use of our infrared wavelength absorbing dots, particularly around advanced sensing applications in consumer electronics, automotive, military, and applications in medical and the Internet of Things ('IoT').

We had £7.0 million in cash at the end of the financial year and expect to have around £6.0 million at the end of December 2019 when the current contract with the US Customer expires. We maintain close control of our cost base and reluctantly had to reduce our headcount by 20% in Q4 of the financial year. The restructuring has already been paid back and ongoing benefits are coming through in our monthly trading figures. The combination of our financial resources and trading performance gives us headroom to deliver on the current pipeline of commercial opportunities in the sectors noted above to create meaningful organic cash flows. Our medium-term goal remains to achieve a self-sustaining level of annual cash flows.

Business performance

Electronics

We noted last year that our activities and results for the next two years would be dominated by our work in the consumer electronics sector, which has indeed been the case. Building on the successful delivery of technical milestones in the prior year, we completed the expansion of the Runcorn production facility during the year. In January 2019 we then entered into a major contract extension with the US customer that delivers attractive service-based revenue and cash flows for the calendar year ending 31 December 2019. The year also saw the start of commissioning and testing of the newly expanded Runcorn production facility, dedicated to the production of nano-materials for use in the electronics sector.

The contract wins with the US Customer were a firm recognition of both the Group's strong capabilities and our highly skilled and adaptable professional staff. The Group has taken advantage of our scale and agility to respond quickly to new commercial opportunities as they have arisen and where the potential is significant.

During the year, we successfully achieved a number of key milestones for our US Customer, earning the contracted milestone revenues in full. We also delivered a number of additional R&D milestones under a separate contract for the same customer, examining a range of different materials for use in electronics applications.

The table below sets out a summary of the historical financial information and current status of each contract and associated extensions with our US Customer.

Contract	Time frame and key deliverables	Financial implications
First contract	**Signed February 2018 covering the period to 31 December 2018.** • Milestone 1: Achieved in full • Milestone 2: Achieved in full • Milestone 3: Achieved in full • Complete construction of expanded Runcorn production facility.	• Funding £3.4m to pay for Runcorn facility, entitled customer to discounted material price for commercial production materials (now waived); plus • £4.2m earned for delivery of the milestones.
	Contract extension signed January 2019 covering period to December 2019.	• Extension valued at just under £8.0m, £1.2m revenue deferred until production and the balance split almost evenly between FY19 and FY20. • Focus on stress testing and optimising the Runcorn facility. Any sales of material would be in addition to these sums.
Second contract	**Signed April 2018 covering the period to 30 November 2018.** R&D services contract with four additional technical milestones.	• Total contract value of £1.1m earned in full in FY18 and FY19 including all 4 technical milestones.

The US Customer's subsequent decision not to extend its current contract with the Group, while disappointing, means that Nanoco's capabilities and skills garnered from the project can now be used in speaking to other companies interested in infrared sensing applications.

Going forward we are likely to be part of an extensive supply chain in the electronics market, albeit, as announced during the past year, our own future performance and activities are subject to changes outside our control. The in depth nature of our technological insight does mean however that we tend to 'punch above our weight' in terms of direct engagement with end customers and their technology teams.

The release of the Group from the contract liability to the US Customer, and the completion of the Runcorn production facility, means that the Group can now target other commercial applications for its IP know-how and materials. We have an installed asset and staff base capable of addressing those opportunities in infrared sensing applications, particularly in the electronics, automotive and more general IoT markets, such as industrial control systems.

The revenue generating capacity of the new Runcorn facility is very significant if appropriate commercial orders can be won. We believe that our deep knowledge of a wide range of material sets and their applications make Nanoco an attractive partner for a wide range of participants with whom we are actively engaged in the rapidly growing infrared sensing market.

Display (CFQD® Quantum Dots)

Display remains an important target market for Nanoco. To improve our competitive proposition, the Company's focus has shifted over recent months from providing downstream display products, to providing the highest performing CFQD® quantum dots to multiple film coating, photo-resist and ink producing companies. Our mission is to work with the companies who are considered by the display OEMs to be best in class.

We measure CFQD® material performance using a number of key metrics including, but not limited to, Full Width Half Maximum "FWHM" (the width in nanometres of the emission peak halfway up its height - narrower is better), quantum yield ("QY") percentage (a measure of how efficiently the quantum dots absorb blue light and convert it to red or green light) and stability (how durable the quantum dot is in any specific application). An example of our improved performance in the period is a 15% reduction of the CFQD® quantum dots' FWHM while retaining very high quantum yields and stability.

The integration of quantum dots into TVs is evolving. The first generation of QD displays use red and green quantum dots in a resin, which is then coated onto a film and integrated into the backlight of an LCD display. This dramatically enhances colour performance and reduces power consumption. The second generation of QD based displays will integrate red and green quantum dots onto a blue OLED panel or blue micro-LEDs using ink jet printing or photo-resist patterning technology. Major display OEMs are currently converting existing LCD production lines to accommodate this new hybrid QD-OLED device structure. We anticipate that displays using second generation technology will enter the market as early as 2021/22. The third generation of quantum dot display is electroluminescent red, green and blue quantum dots fabricated into a display. Nanoco is heavily involved in all three stages of this quantum dot display evolution.

Two years ago we modified our strategy from a pure licensing model to a hybrid business model where we have licensed our technology to three different channel partners while also developing our own manufacturing capability. We continue to work closely with our licensee partners DuPont (formerly Dow) and Merck as well as our film coating partner Wah Hong and have also started to increase the range of companies with whom we are actively engaged.

Other sectors including life sciences, lighting and healthcare

Substantial progress was achieved in the period by our Life Sciences team. Major gene and animal toxicology studies on our red biocompatible CFQD® quantum dots (Vivodots™ nanoparticles) were concluded with no significant signs of adverse effects even at high doses. These Good Laboratory Practice ("GLP") compliant studies lay the ground for further clinical development and potential regulatory approvals across a variety of medical applications that the Nanoco Life Sciences team is pursuing. Our short-term goal is to maximise the performance of targeted Vivodots™ nanoparticles which would allow high quality visualisation of tumours for enhanced image-guided surgery and enhanced specificity in cancer diagnostics.

We continue to explore early stage opportunities in horticultural lighting, working with potential partners in both the lighting device and horticultural stages of the supply chain. We also continue our commercial sales relationship with CareWear, a US-based supplier of therapeutic light patches that accelerate trauma recovery.

Operations

The highlight of the year was the completion of the new production facility at Runcorn. This doubles our footprint to 22,000 sq ft and importantly creates very significant revenue-generating capacity.

The facility is undergoing commissioning and stress testing and will be production ready in the first half of FY20. Our CFQD® facility has continued to transition new and improved generations of quantum dots from R&D scale to production scale.

Intellectual property

The Groups Intellectual Property ("IP") has grown to 745 patents and patent applications; an increase of 91 over the past 12 months. This IP and a significant range of business process secrets strongly underpin the Group's valuation while also operating as a challenging barrier to entry to potential competitors.

Environment/restriction of hazardous substances ("RoHS")

Nanoco is committed to protecting the environment in which our activities are conducted. This commitment is directly expressed in our decision to develop our CFQD® quantum dot products to be free of toxic cadmium, which is still widely used by our competitors in their quantum dot products.

Nanoco has participated actively with regulators concerning the use of cadmium-based quantum dots in displays and LED light products. The European Commission (EC) is carrying out a review of requests to extend the duration and scope of the current RoHS exemption, which excludes lighting products and limits display products to 31st October 2019 for display products, after which the normal RoHS limit of 100ppm will apply. Nanoco has responded to the consultation to oppose any extensions. Nanoco continues to expect that regulations in other key markets, including China, will fall in line with RoHS in future. Our contacts with display companies indicate that most already accept the need for new display products to be cadmium-free - especially the world leading brands in television, computer monitor and laptop displays.

People

Our employees are a key strength. It is their technical skill and ingenuity which allows the Company to continue to aggressively innovate and remain at the leading edge of our industry. We therefore remain committed to ensuring that they have access to the appropriate resources to keep their skills and experience up to date. The additional focus this year on our nano-material opportunity was an example of where we were able to leverage our scientifically broad-based skill set and technical know-how.

During the fourth quarter of the financial year, we reluctantly took the decision to reduce our headcount and cost base to match the activity levels in the business. We reduced our headcount by just under 20% which is now delivering around £0.6m per annum in cash savings. This was accomplished without reducing significantly our production and core R&D capabilities.

We made a number of changes to our senior management team during the year to bring new skills and perspectives to the Group. These new appointments in the management team support our transition from the operating processes and systems of an R&D focused business to those of a commercial production company. Nanoco's leadership team now includes a newly appointed HR Business Partner and a Group Financial Controller as well as an internal promotion for the Head of our Runcorn manufacturing facility.

Outlook

It has been a year of extreme contrasts for the Group. We have enjoyed great progress and successes in achieving the targets set for us by customers, in advancing the performance of our materials and significantly expanding our high quality IP portfolio, not forgetting the excellent financial results and which included a cash positive operating position in the second half.

Our challenge now is to re-build momentum in the business through the conversion of our commercial pipeline. To that end, we are using our newly developed materials and know-how in the field of infra-red sensing to engage with other potential customers and applications in this sector. We have also re-doubled our efforts to develop new relationships in the display sector with other potential partners. We remain closely focused on the potential funding needs of the business in this context and the importance of continuing to ensure the maximisation of shareholder value.

Having been close to achieving our long term goal of transitioning from an R&D services business to a fully-fledged production company, it is a source of great strength that we retain the know-how, IP portfolio, production capability and highly capable technical resource in our staff to still achieve that long term goal. In so doing, I am confident that we can deliver value for all of our stakeholders.

Dr Michael Edelman
Chief Executive Officer
16 October 2019

Financial review

Revenue and other operating income increased by £3.8 million (112%) to £7.3 million (2018: £3.5 million). The increase is largely due to the US customer. Revenue from sale of products and services rendered accounted for 93.7% (2018: 95.6%) of revenues with the balance being royalty and licence income. Revenue from the sale of products was £0.2 million (2018: £0.2 million).

Cash remains our key focus and constraint, and it is therefore pleasing to have generated cash in the second half of the year. With cash outflow for the year of £3.7 million, this resulted in a year-end balance of £7.0 million (2018: £10.7 million).

Billings, which are considered a key performance indicator for the Group, have increased by £3.1 million to £9.6 million (2018: £6.5 million) and are linked to the development and supply agreement signed in the prior year.

Revenue from royalties and licences do not have a directly associated cost of sale. Cost of sales increased by £0.3 million to £0.7 million (2018: £0.4 million) as a result of increased sales with gross margins remaining robust.

Research and development expenditure was in line with the prior year at £4.0 million. This comprised R&D labour costs of £3.3 million (2018: £3.2 million) and material costs, utilities and other costs totalling £0.7 million (2018: £0.8 million). Labour costs represented 84% (2017: 73%) of total R&D costs with the balance of costs comprising materials and utility costs.

Total payroll costs in the year were £6.0 million (2018: £5.6 million). The increase in total payroll costs is attributable to the higher average headcount during the financial year (2019: 92 compared to 2018: 86). In Q3, we began a review of the cost base of the Group, and implemented a restructuring in Q4 that is now delivering £0.6m of annual savings. We are confident that the new structure will allow a leaner operation through a reduced cost base without impacting our production and R&D, core capabilities and customer deliverables.

Highlights	**2019 £ million**	2018 £ million	% change
Turnover	**7.1**	3.3	115%
Adjusted operating loss	**(5.0)**	(7.2)	(30%)
LBITDA*	**(3.8)**	(6.2)	(38%)

Net loss	**(4.4)**	(6.0)	(27%)
Loss per share	**(1.52)**	(2.21)	(31%)
Billings	**9.6**	6.5	48%
Cash and cash equivalents	**7.0**	10.7	(35%)

Non-GAAP measures
The non-GAAP measures of adjusted operating loss and adjusted loss before interest, tax, amortisation and share-based payment charges ("LBITDA") are provided in order to give a clearer understanding of the underlying loss for the year that reflects cash outflow from the business.

The calculation of both Non-GAAP measures is shown in the table below:

	2019 £m	2018 £m
Operating loss	**(5.5)**	(7.4)
Share-based payment charge	**0.2**	0.3
Exceptional costs	**0.3**	-
Adjusted operating loss*	**(5.0)**	(7.1)
Depreciation	**0.6**	0.5
Amortisation	**0.6**	0.5
Adjusted LBITDA	**(3.8)**	(6.1)

Adjusted LBITDA has decreased by £2.4 million to £3.8 million (2018: £6.2 million). This has been driven by the improvement in gross profit of £3.6 million, offset by the increase in administrative expenses of £1.3 million.

The loss before tax was £5.5 million (2018: £7.4 million).

Exceptional items
During the year the Group saw a number of exceptional cost and income items linked to the decision by the US Customer not to extend the current contract when it expires in December 2019. The Group also incurred the cost of the restructuring exercise implemented in the fourth quarter. These items were considered sufficiently material to require separate disclosure to allow the reader to understand their input. They are set out in more detail in Note 7 to the Financial Statements.

Taxation
The tax credit for the year is £1.1 million (2018: £1.4 million). The tax credit to be claimed, in respect of R&D spend, is £1.1 million (2018: £1.4 million). Overseas corporation tax was £nil during the year (2018: £nil). There was no deferred tax credit or charge (2018: £nil).

Cash flow and balance sheet
During the year, cash, cash equivalents, deposits and short-term investments decreased to £7.0 million (2018: £10.7 million). The cash outflow of £3.7 million compares directly to £2.9 million in 2018 when excluding cash raised through the placing of share capital (net inflow of £7.9 million). Cash flow from operating activities decreased from an outflow of £0.3 million in 2018 to an outflow of £0.6 million.

Tax credits of £1.4 million (2018: £1.8 million) were received during the year.

The Group maintained its capital spend on tangible assets in the year at £2.1 million (2018: £2.2 million) as the manufacturing facility was completed. Expenditure incurred in registering patents totalled £1.0 million (2018: £0.8 million) during the year reflecting the Group's continued focus on developing and registering intellectual property. Capitalised patent spend is amortised over 10 years in line with the established Group accounting policy.

Treasury activities and policies
The Group manages its cash deposits prudently. Cash deposits are regularly reviewed by the Board and cash forecasts are updated monthly to ensure that there is sufficient cash available for foreseeable requirements.

More details on the Group's treasury policies are provided in note 27 to the financial statements.

Credit risk
The Group only trades with recognised, credit-worthy third parties. Receivable balances are monitored on an ongoing basis and any late payments are promptly investigated to ensure that the Group's exposure to bad debts is not significant.

Foreign exchange management
The Group invoices most of its revenues in Sterling and also has US Dollar and Euro revenues. The Group is therefore exposed to movements in those currencies relative to Sterling. The Group will use forward currency contracts to fix the exchange rate on invoiced or confirmed foreign currency receipts should the amount become significant. The Group does not take out forward contracts against uncertain or forecast income.

There were no open forward contracts as at 31 July 2019 (2018: none). The Group's net profit and equity are exposed to movements in the value of Sterling relative to the US Dollar. The indicative impact of movements in the Sterling exchange rate on profits and equity based on the retranslation of the closing balance sheet are summarised in note 27 to the financial statements and were based on the year-end position.

Significant accounting judgements
Set out below are the key accounting matters and judgements assessed during the year:

- revenue recognition and deferred income;
- carrying values of tangible and intangible assets;
- going concern;
- carrying value of Company investment and intercompany receivable balances; and
- share based payments.

The Audit Committee was closely involved in the above accounting matters and judgements and further details are set out in the Audit Committee's report which is included in the Annual Report and Accounts.

A key area is the assessment of going concern due to the existence of the material uncertainty regarding management's ability to implement the necessary cost savings in an appropriate timely manner should budgeted revenues not be secured.

Nevertheless, considering the mitigating actions that can be taken and after making enquiries and considering the uncertainty described above, the Directors have a reasonable expectation that the Group has access to adequate resources to continue in operational existence for the foreseeable future.

Accordingly they continue to adopt the going concern basis in preparing the consolidated financial statements and the Board concluded that it is appropriate to utilise the going concern assumption.

Summary
We have undoubtedly experienced a commercial setback during the financial year. We will therefore continue to manage our costs and cash flow carefully while assessing other commercial opportunities. This approach to our cash and cost base reflects an appropriate level of caution given that there is such uncertainty surrounding the delivery and timing of future revenues.

The Group has demonstrated its agility and ability to reduce its costs when needed a number of times over recent years. We are therefore confident that we have the means and the will to secure our short term future while pursuing near term commercial opportunities.

Brian Tenner
Chief Operating Officer and Chief Financial Officer
16 October 2019

Principal risks and uncertainties

In common with all businesses at Nanoco's stage of development, the Group is exposed to a range of risks, some of which are not wholly within its control or capable of complete mitigation or protection through insurance.

Specifically, a number of the Group's products and potential applications are at a research or development stage and hence it is not possible to be certain that a particular project or product will lead to a commercial application. Other products require further development work to confirm a commercially viable application.

Equally, a number of products are considered commercially viable but have yet to see demand for full scale production level quantities. And finally, as in the case of the US Customer, the Group is only one part of a long and complex supply chain and the Group therefore has little visibility of demand other than from contracts already in place. There are therefore a range of risks that are associated with the different stages of product development as well as for the Group as a whole.

The Board has established a process for carrying out a robust risk assessment which evaluates and manages the principal risks faced by the Group. The Board reviews the process and a detailed review of risks was undertaken by the Audit Committee during the financial year ended 31 July 2019. The Board has also established an acceptable level of risk (risk appetite) which is used to inform the scale and urgency of actions required. Where risks are deemed to be outside management control, efforts are focused on mitigating any potential impact. Where all practical measures to prevent or mitigate risks have been taken and a residual element of risk still remains, these risks are accepted by the Group.

Risks are evaluated with respect to probability of occurrence and the potential impact if a risk crystallised. Where the Group has identified risks, these are monitored with controls and action plans to reduce the probability of a risk crystallising and the impact of each potential event if it did occur. The residual risk score, after mitigating controls, is then plotted on a "risk heat map". The Group's principal risks are discussed in further detail in the annual report.

Principal over-arching risk
The principal over-arching strategic risk faced by the business is that the Group exhausts its available funding before achieving adequate levels of commercial revenues and cash flows to be able to be self-funding. As described in Note 2(c), the Directors consider that a material uncertainty exists regarding the Group's ability to implement the required cost savings within the necessary timeframe, as indicated in the downside case, should expected revenues not be secured. The probability of this risk arising in the short term was initially reduced by the new agreement with a US Company signed in early 2019. That agreement, when added to other sources of income and R&D tax credits expected to be received in the year, created the opportunity for the Group to be broadly cash flow neutral in the calendar year to 31 December 2019. The new agreement had also been de-risked in that the income to be earned is primarily generated by services for the customer and is not dependent on contingent milestones or other uncertain deliverables.

However, the natural consequence of having this attractive new agreement is that the Group was then exposed to a new risk in the short term of "key customer reliance". This risk then crystallised in the fourth quarter of the year when the US customer announced that the current project and contract would not be extended when they expire in December 2019. The decision by the US customer significantly increases the risk of not becoming self-funding before existing cash resources are exhausted.

The Group is therefore actively seeking new and additional customer relationships to reduce this risk. The Group is also reviewing a number of strategic options for funding. Commercial negotiations are ongoing to secure additional revenues to mitigate the exposure in this area. As set out in the going concern statement in Note 2(c), management has identified the short term actions that would need to be taken if no further sales contracts are agreed.

Directors' responsibility statement

In accordance with the FCA's Disclosure and Transparency Rules, the Directors listed on the Company's website (www.nanocotechnologies.com/about-us/board-directors) confirm, to the best of their knowledge, that:

1. the preliminary results have been prepared in accordance with IFRS as adopted by the European Union and give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group and Company and the undertakings included in the consolidation taken as a whole; and

2. the foregoing reviews and statements, include a fair review of the development and performance of the business and the position of the Group and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties faced by the Group.

By order of the Board

Brian Tenner
Chief Operating Officer and Chief Financial Officer
16 October 2019

Consolidated statement of comprehensive income

for the year ended 31 July 2019	Notes	**2019 £'000**	2018 £'000
Revenue	4	**7,123**	3,315
Cost of sales		**(665)**	(432)
Gross profit		**6,458**	2,883
Other operating income	5	**204**	136
Operating expenses			
Research and development expenses		**(4,385)**	(3,960)
Administrative expenses		**(7,760)**	(6,468)
Operating loss	6	**(5,483)**	(7,409)
- before exceptional items and share based payments		**(4,985)**	(7,152)
- share-based payments	22	**(232)**	(257)
- net exceptional costs	7	**(266)**	-
Finance income	9	**12**	11
Finance expense	9	**(38)**	(7)
Loss before taxation		**(5,509)**	(7,405)
Taxation	10	**1,151**	1,400
Loss after taxation		**(4,358)**	(6,005)
Other comprehensive income/(loss)			
Gain/(loss) on exchange rate translations		**14**	(13)
Total comprehensive loss for the year		**(4,344)**	(6,018)
Loss per share			
Basic and diluted loss for the year	11	**(1.52)p**	(2.21)p

The loss for the current and preceding year arises from the Group's continuing operations and is attributable to the equity holders of the Parent. The basic and diluted loss per share are the same as the effect of share options is anti-dilutive.

Consolidated statement of changes in equity

for the year ended 31 July 2019

Group	Issued equity capital £'000	Reverse acquisition reserve £'000	Share-based payment reserve £'000	Merger reserve £'000	Accumulated losses £'000	Total £'000
At 1 August 2017	136,477	(77,868)	2,957	(1,242)	(49,877)	10,447
Loss for the year	-	-	-	-	(6,005)	(6,005)
Other comprehensive loss	-	-	-	-	(13)	(13)
Total comprehensive loss	-	-	-	-	(6,018)	(6,018)
Issue of share capital on placing (note 22)	8,578	-	-	-	-	8,578
Costs of placing	(629)	-	-	-	-	(629)
Share-based payments	-	-	257	-	-	257
At 31 July 2018	144,426	(77,868)	3,214	(1,242)	(55,895)	12,635
Loss for the year	-	-	-	-	(4,358)	(4,358)
Other comprehensive income	-	-	-	-	14	14
Total comprehensive loss	-	-	-	-	(4,344)	(4,344)
Issue of share capital on exercise of		-				

options	27		(27)	-	-	-
Share-based payments	-	-	232	-	-	232
At 31 July 2019	**144,453**	**(77,868)**	**3,419**	**(1,242)**	**(60,239)**	**8,523**

Company statement of changes in equity
for the year ended 31 July 2019

Company	Issued equity capital £'000	Share-based payment reserve £'000	Capital redemption reserve £'000	Accumulated loss £'000	Total £'000
At 1 August 2017	136,477	2,957	4,402	(25,095)	118,741
Loss and total comprehensive loss for the year	-	-	-	(50,025)	(50,025)
Issue of share capital on placing (note 22)	8,578	-	-	-	8,578
Costs of placing	(629)	-	-	-	(629)
Share-based payments	-	257	-	-	257
At 31 July 2018	144,426	3,214	4,402	(75,120)	76,922
Loss and total comprehensive loss for the year	-	-	-	(38,278)	(38,278)
Issue of share capital on exercise of options	27	(27)	-	-	-
Share based payments	-	232	-	-	232
At 31 July 2019	**144,453**	**3,419**	**4,402**	**(113,398)**	38,876

Consolidated and Company statements of financial position
at 31 July 2019

Registered no. 05067291

	Notes	**31 July 2019 Group £'000**	**31 July 2019 Company £'000**	31 July 2018 Group £'000	31 July 2018 Company £'000
Assets					
Non-current assets					
Tangible fixed assets	12	**747**	**-**	2,604	-
Intangible assets	13	**3,897**	**-**	3,432	-
Investment in subsidiaries	14	**-**	**39,229**	-	66,821
		4,644	**39,229**	6,036	66,821
Current assets					
Inventories	15	**226**	**-**	217	-
Trade and other receivables	16	**1,117**	**-**	1,415	10,508
Income tax asset		**1,129**	**-**	1,400	-
Cash and cash equivalents	17	**7,005**	**97**	10,729	43
		9,477	**97**	13,761	10,551
Total assets		**14,121**	**39,326**	19,797	77,372
Liabilities					
Current liabilities					
Trade and other payables	18	**2,553**	**-**	3,020	-
Provisions	19	**797**	**-**	**-**	**-**
Deferred revenue	21	**1,462**	**-**	400	-
		4,812	**-**	3,420	-
Non-current liabilities					
Financial liabilities	20	**433**	**450**	407	450
Deferred revenue	21	**353**	**-**	3,335	-
		786	**450**	3,742	450
Total liabilities		**5,598**	**450**	7,162	450
Net assets		**8,523**	**38,876**	12,635	76,922
Capital and reserves					
Issued equity capital	22	**144,453**	**144,453**	144,426	144,426
Reverse acquisition reserve	22	**(77,868)**	**-**	(77,868)	**-**
Share-based payment reserve	23	**3,419**	**3,419**	3,214	3,214
Merger reserve	24	**(1,242)**	**-**	(1,242)	-
Capital redemption reserve	24	**-**	**4,402**	-	4,402
Accumulated losses	25	**(60,239)**	**(113,398)**	(55,895)	(75,120)
Total equity		**8,523**	**38,876**	12,635	76,922

The Parent Company's result for the period ended 31 July 2019 was a loss of £38,278,000 (2018: loss of £50,025,000). There was no other comprehensive income in either the current or prior year.

Approved by the Board and authorised for issue on 16 October 2019.

The notes on pages 15 to 37 form an integral part of these financial statements.

Dr Michael Edelman **Mr Brian Tenner**
Director ***Director***
16 October 2019 *16 October 2019*

Consolidated and Company cash flow statements
for the year ended 31 July 2019

	Notes	**31 July 2019 Group £'000**	**31 July 2019 Company £'000**	31 July 2018 Group £'000	31 July 2018 Company £'000
Loss before tax		**(5,509)**	**(38,278)**	(7,405)	(50,025)
Adjustments for:					
Net finance income	8	**(26)**	**-**	(4)	-
Loss/(profit) on exchange rate translations		**14**	**-**	(13)	-
Depreciation of tangible fixed assets	11	**613**	**-**	504	-
Amortisation of intangible assets	12	**552**	**-**	476	-
Impairment of intangible assets	12	**26**	**-**	**-**	**-**
Impairment of Company investment	14	**-**	**24,006**	**-**	**-**
Impairment of inter-company receivable	16	**-**	**14,272**	-	50,000
Share-based payments	23	**232**	**-**	257	-
Exceptional items	7	**266**	**-**	**-**	**-**
Changes in working capital:					
Increase in inventories		**(9)**	**-**	(29)	-
Decrease/(increase) in trade and other receivables		**298**	**-**	(746)	-
(Decrease)/increase in trade and other payables		**(1,515)**	**-**	1,702	-
Increase in provisions		**797**	**-**	**-**	**-**
Increase in deferred revenue		**2,226**	**-**	3,081	-

Cash outflow from operating activities		**(2,035)**	**-**	(2,177)	(25)
Research and development tax credit received		**1,423**	**-**	1,837	-
Overseas corporation tax paid		**-**	**-**	-	-
Net cash outflow from operating activities		**(612)**	**-**	(340)	(25)
Cash flow from investing activities					
Purchases of tangible fixed assets	11	**(2,081)**	**-**	(2,215)	-
Purchases of intangible fixed assets	12	**(1,043)**	**-**	(782)	-
Inter-company loans to a subsidiary		**-**	**-**	-	(12,551)
Inter-company receipt	17	**-**	**54**	-	-
Interest received		**12**	**-**	11	-
Net cash (outflow)/inflow from investing activities		**(3,112)**	**54**	(2,986)	(12,551)
Cash flow from financing activities					
Proceeds from placing of ordinary share capital		**-**	**-**	8,578	8,578
Costs of placing		**-**	**-**	(629)	(629)
Issue of convertible loan note	20	**-**	**-**	400	-
Loan repayment		**-**	**-**	-	-
Net cash inflow from financing activities		**-**	**-**	8,349	7,949
(Decrease)/increase in cash and cash equivalents		**(3,724)**	**54**	5,023	(4,627)
Cash and cash equivalents at the start of the year		**10,729**	**43**	5,706	4,670
Cash and cash equivalents at the end of the year	17	**7,005**	**97**	10,729	43

Notes to the financial statements

1. Reporting entity

Nanoco Group plc ("the Company"), a public company limited by shares, is on the premium list of the London Stock Exchange. The Company is incorporated and domiciled in England, UK. The registered number is 05067291 and the address of its registered office is 46 Grafton Street, Manchester M13 9NT.

These Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group" and individually as "Group entities") for the year ended 31 July 2019.

The financial statements of Nanoco Group plc and its subsidiaries ("the Group") for the year ended 31 July 2019 were authorised for issue by the Board of Directors on 16 October 2019 and the statements of financial position were signed on the Board's behalf by Dr Michael Edelman and Brian Tenner.

The Company has elected to take the exemption under section 408 of the Companies Act 2006 not to present the Parent Company's income statement.

The significant accounting policies adopted by the Group are set out in note 3.

2. Basis of preparation

(a) Statement of compliance

The Group's and Parent Company's financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS") and IFRS Interpretations Committee ("IFRS IC") interpretations as they apply to the financial statements of the Group for the year ended 31 July 2019.

(b) Basis of measurement

The Parent Company and Group financial statements have been prepared on the historical cost basis.

(c) Going concern

All of the following matters are taken into account by the Directors in forming their assessment of going concern. The Group's business activities and market conditions, the principal risks and uncertainties and the Group's financial position are described in the Financial Review. Furthermore, note 27 summarises the Group's financial risk management objectives, policies and processes. The Group funds its day-to-day cash requirements from existing cash reserves (as is common with businesses at a similar stage of development, the Group does not currently have access to any debt facilities).

For the purposes of their going concern assessment and the basis for the preparation of the 2019 Annual Report, the Directors have reviewed the same trading and cash flow forecasts and sensitivity analyses that were used by the Group in the Viability Assessment noted earlier in this report. The same base case and downside sensitivities were also used.

The base case represents the Board's current expectations. The key assumptions underpinning the base case are:

- the existing agreement with the US Customer runs its course through to December 2019;
- new commercial contracts are based on the existing pipeline of opportunities or agreements already under negotiation in display and IR sensing applications;
- the Group's variable costs remain in line with manufacturing activities;
- the overhead base benefits from a full £0.6 million of savings in FY20 following the restructuring exercise in the fourth quarter; and
- the installed cost base is capable of supporting significant increases in revenue above those assumed in the base case so there is no immediate requirement for short-term increases or new capital expenditure.

The base case produces a cash flow forecast that demonstrates that the Group has sufficient cash throughout the period of the forecast.

However, the Board acknowledges that the base case includes an element of risk that some or all of these non-contracted projects may not convert to sales during the forecast period. Accordingly, the Board has considered the downside scenario in which no revenue, except that already contracted or under contractual negotiation, was achieved during the period.

In this scenario, the Group runs out of cash in July 2020 if management takes no action to adjust the cost base or secure an alternative source of strategic funding. Management has identified a series of mitigating actions, including cost savings and a reorganisation of its operations that could be undertaken in the event additional sales contracts do not materialise.

These actions would be enough to preserve funding for the two years of the viability assessment and the 12 months of the going concern assessment.

On the basis that no new sales beyond those noted above have occurred, the Group would enact its cost reduction plans on a timely basis aimed at protecting the core R&D capability of the business as well as the valuable IP portfolio. Use would be made of existing licensees in the event of significant demand for our materials (pending re-establishing our own production capability). All of the potential cost savings are under the direct control of the Board and the Board has the ability and intention to make such changes on a timely basis.

IAS 1 Presentation of Financial Statements requires the Directors to disclose "material uncertainties related to events or conditions that may cast significant doubt upon the Group's ability to continue as a going concern". The Directors consider that the delivery of any restructuring of the cost base on a timely basis is a material uncertainty which may cast significant doubt about the Group and the Parent Company's ability to continue as a going concern. Nevertheless, considering the mitigating actions that are within management's control and can be taken and after making enquiries and considering the uncertainties described above, the Directors have a reasonable expectation that the Company has access to adequate resources to continue in operational existence for the foreseeable future. Accordingly they continue to adopt the going concern basis in preparing the Consolidated Financial Statements. The financial statements do not reflect any adjustments that would be required to be made if they were prepared on a basis other than the going concern basis.

(d) Functional and presentational currency

These financial statements are presented in Pounds Sterling, which is the presentational currency of the Group and the functional currency of the Company. All financial information presented has been rounded to the nearest thousand.

(e) Use of estimates and judgements

The preparation of financial statements requires management to make estimates and judgements that affect the amounts reported for assets and liabilities as at the reporting date and the amounts reported for revenues and expenses during the year. The nature of estimation means that actual amounts could differ from those estimates. Estimates and judgements used in the preparation of the financial statements are continually reviewed and revised as necessary. While every effort is made to ensure that such estimates and judgements are reasonable, by their nature they are uncertain and, as such, changes in estimates and judgements may have a material impact on the financial statements.

In the process of applying the Group's accounting policies, management has made the following estimates and judgements, which have the most significant effect on the amounts recognised in the consolidated financial statements.

Estimates

Equity-settled share-based payments

The determination of share-based payment costs requires: the selection of an appropriate valuation method; consideration as to the inputs necessary for the valuation model chosen; and judgement regarding when and if performance conditions will be met. Inputs required for this arise from judgements relating to the future volatility of the share price of Nanoco and comparable companies, the Company's expected dividend yields, risk-free interest rates and expected lives of the options. The Directors draw on a variety of sources to aid in the determination of the appropriate data to use in such calculations. The share-based payment expense is most sensitive to vesting assumptions and to the future volatility of the future share price factor. Further information is included in note 3.

Impairment of intellectual property and tangible fixed assets

As the Group has not to date made a profit, the carrying value of these assets may need to be impaired. Impairment exists where the carrying value of an asset exceeds its recoverable amount, which is the higher of its fair value less costs of disposal and its value in use. The value in use calculation uses cash flows based on budgets that have been approved by the Directors. The Directors also use available information to assess whether the fair value less costs of disposal of the Group's non-current assets, including intellectual property, is less than their carrying amount. Furthermore, during the year another extensive review was undertaken to identify which patents are of no further value to Nanoco and should be allowed to lapse. As a consequence, patents with a value of £26,000 (2018: £nil) have been fully impaired in these financial statements. Judgements are based on the information available at each reporting date, which includes the progress with testing and certification and progress on, for example, establishment of commercial arrangements with third parties. The Group does not believe that any of its patents in isolation are material to the business. Management has adopted the prudent approach of amortising patent registration costs over a ten-year period, which is substantially shorter than the life of the patent. For external patents acquired the same rule is adopted unless the remaining life of the patent is shorter, in which event the cost of acquisition is amortised over the remaining life of the patent.

In light of the decision of the US Customer, and the lack of any signed or near-term commercial production prospects, the new production facility has been impaired in the year by £3.3 million (2018: nil).

Impairment of investment and inter-company receivable

Judgement is required to assess the carrying value of the Company investment and inter-company receivable at each reporting date. Accounting standards (IAS36, Impairment of Assets) require investments in subsidiary undertakings (equity and loans) to be carried at the lower of cost or recoverable value. Recoverable value is defined as the higher of fair value less costs of disposal (effectively net sale proceeds) and value in use. Indicators of potential impairment noted in IAS36 (Para 12), include, but are not limited to, situations where the carrying amount of the net assets of the entity are more than its market capitalisation (as was the case at the year end and continues to be so at the date of these Financial Statements, prior to any impairment charges) and where significant changes with an adverse effect on the entity have taken place during the period (the decision by the US Customer not to extend the current contract).

As set out in the Viability Statement, the Board has considered a number of scenarios, being base, downside and worst cases. Given the uncertainty and risk over future income streams, and the associated potential impact on the discount rate to be used in the discounted cash flow, the Board has concluded that the appropriate valuation basis to use at this time for the total investments by Nanoco plc in Nanoco Technologies Limited (loans and equity above and the short term loan as disclosed in Note 16), should be fair value rather than value in use. For the avoidance of doubt, in the base case set out in the Viability Report there would be no impairment required to the assets above.

Consistent with IAS36 and the indicator of impairment noted above in respect of net assets exceeding market capitalisation, therefore, the Directors have used the Company's market capitalisation as at 31 July 2019 as its fair value less costs of disposal.

The Directors do, however, consider that the current share price is at a significant discount to the value that could be achieved if the business was to be sold. This view is by reference to similar businesses operating in the same markets and with smaller IP portfolios than Nanoco. The quantum of this provision will be reviewed at each reporting date.

Taxation

Management judgement is required to determine the amount of tax assets that can be recognised, based upon the likely timing and level of future taxable profits together with an assessment of the effect of future tax planning strategies. Further information is included in note 10.

Judgements

Research and development

Careful judgement by the Directors is applied when deciding whether the recognition requirements for development costs have been met. This is necessary as the economic success of any product development is uncertain until such time as technical viability has been proven and commercial supply agreements are likely to be achieved. Judgements are based on the information available at each reporting date which includes the progress with testing and certification and progress on, for example, establishment of commercial arrangements with third parties. In addition, all internal activities related to research and development of new products are continuously monitored by the Directors. Further information is included in note 3.

Revenue recognition

Judgement is required in reviewing the terms of development agreements to identify separate components of revenue, if any, that are consistent with the economic substance of the agreement and in turn the period over which development revenue should be recognised. Judgements are required to assess the stage of completion including, as appropriate, whether and when contractual milestones have been achieved. Management judgements are similarly required to determine whether services or rights under licence agreements have been delivered so as to enable licence revenue to be recognised. This matter is further complicated where a contract may have different elements which may result in separate recognition treatments under IFRS 15. Further information is included in note 3(d).

Assets held for sale

Judgements are required as to whether assets are still required within the business and, if not, whether they have a realisable value outwith the Group. This is particularly pertinent if a particular line of research and development is not likely to be commercialised by the Group. If such assets are identified they are separately identified within the financial statements.

Outlook

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, which have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are those relating to the estimation of the number of share options that will ultimately vest (note 23). The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

3. Significant accounting policies

The accounting policies set out below are consistent with those of the previous financial year and are applied consistently by Group entities.

(a) Basis of consolidation

The Group financial statements consolidate the financial statements of Nanoco Group plc and the entities it controls (its subsidiaries) drawn up to 31 July each year.

Subsidiaries are all entities over which the Group has the power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee), exposure, or rights, to variable returns from its involvement with the investee and ability to use its power over the investee to affect its returns. All Nanoco Group plc's subsidiaries are 100% owned. Subsidiaries are fully consolidated from the date control passes.

The acquisition method of accounting is used to account for the acquisition of subsidiaries by the Group. The costs of an acquisition are measured as the fair value of the assets given, equity instruments issued and liabilities incurred or assumed at the date of exchange, plus costs directly attributable to the acquisition. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at fair value at acquisition date irrespective of the extent of any minority interest. The difference between the cost of acquisition of shares in subsidiaries and the fair value of the identifiable net assets acquired is capitalised as goodwill and reviewed annually for impairment. Any deficiency in the cost of acquisition below the fair value of identifiable net assets acquired (i.e. discount on acquisition) is recognised directly in the consolidated statement of comprehensive income.

In the consolidated financial statements, the assets and liabilities of the foreign operations are translated into sterling at the exchange rate prevailing at the reporting date. Income and cash flow statement items for Group entities with a functional currency other than Sterling are translated into Sterling at monthly average exchange rates, which approximate to the actual rates, for the relevant accounting periods. The exchange differences arising on translation are recognised in other comprehensive income. See note 3(b).

All intra-group transactions, balances and unrealised gains on transactions between Group companies are eliminated on consolidation. Subsidiaries' accounting policies are amended where necessary to ensure consistency with the policies adopted by the Group.

(b) Foreign currency transactions

Transactions in foreign currencies are initially recorded in the functional currency by applying the spot rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies (including those of the Group's US subsidiary) are retranslated at the functional currency rate of exchange ruling at the reporting date. All differences are taken to the consolidated statement of comprehensive income.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined.

(c) Segmental reporting

An operating segment is a component of an entity that engages in business activities from which it may earn revenues and incur expenses, whose operating results are regularly reviewed by the entity's chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance, and for which discrete financial information is available. As at the reporting date the Company operated with only a single segment, being the research, development and manufacture of products and services based on high performance nanoparticles.

(d) Revenue recognition

Revenue is recognised to the extent that it is probable that economic benefits will flow to the Group and the revenue can be reliably measured. Revenue is measured at the fair value of the consideration received or receivable for the sale of goods or services, excluding discounts, rebates, VAT and other sales taxes or duties.

The Group's revenues to date comprise amounts earned under joint development agreements, individual project development programmes and material supply and licence agreements and revenue from the sale of quantum dot products.

Revenues received in advance of work performed from development programmes are recognised on a straight-line basis over the period that the development work is being performed as measured by contractual milestones. Revenue is not recognised where there is uncertainty regarding the achievement of such milestones and where the customer has the right to recoup advance payments.

Cash advances from customers for the funding of capital equipment are accounted for in accordance with IFRIC 18: Transfer of assets from Customers where the Company retains control over the related assets. The advances are taken to deferred revenue where they are expected to be repaid as a proportion of future revenue under the contract.

Contractual payments received from licence agreements are recognised as revenue when goods, services or rights and entitlements are supplied. Upfront licence fees, where control over the intellectual property has been retained by the Group, are taken to income on a straight-line basis over the initial period of the contract in accordance with the continuing obligations under the contract.

Revenue from the sale of products is recognised at the point of transfer of risks and rewards of ownership, which is generally on shipment of product.

IFRS 15 requires the identification of deliverables in contracts with customers that qualify as performance obligations. For any contracts in the financial year, we have used the five step process identified by IFRS 15 and applied this.

(e) Government grants

Government grants are recognised when it is reasonable to expect that the grants will be received and that all related conditions are met, usually on submission of a valid claim for payment.

Government grants of a revenue nature are recognised as other operating income in the consolidated statement of comprehensive income.

Government grants relating to capital expenditure are deducted in arriving at the carrying amount of the asset.

(f) Cost of sales

Cost of sales comprises the labour, materials and power costs incurred in the generation of revenue from products sold and the rendering of services.

Revenue from royalties and licences, which comprise payments from customers to gain preferential treatment in terms of supply or pricing, do not have an associated cost of sale.

(g) Operating loss

Operating losses are stated after research and development and administration expenses but before finance charges and taxation.

(h) Research and development

Research costs are charged in the consolidated statement of comprehensive income as they are incurred. Development costs will be capitalised as intangible assets when it is probable that future economic benefits will flow to the Group. Such intangible assets will be amortised on a straight-line basis from the point at which the assets are ready for use over the period of the expected benefit, and will be reviewed for impairment at each reporting date based on the circumstances at the reporting date.

The criteria for recognising expenditure as an asset are:

- it is technically feasible to complete the product;
- management intends to complete the product and use or sell it;
- there is an ability to use or sell the product;
- it can be demonstrated how the product will generate probable future economic benefits;
- adequate technical, financial and other resources are available to complete the development, use and sale of the product; and
- expenditure attributable to the product can be reliably measured.

Development costs are currently charged against income as incurred since the criteria for their recognition as an asset are not met, the exception being the costs of filing and maintenance of intellectual property as these are considered to generate probable future economic benefits and are capitalised as intangible assets (see note 13).

(i) Lease payments

Rentals payable under operating leases, which are leases where the lessor retains a significant proportion of the risks and rewards of the underlying asset, are charged in the consolidated statement of comprehensive income on a straight-line basis over the expected lease term.

Lease incentives received are recognised as an integral part of the total lease expense, over the term of the lease.

(j) Finance income and expense

Finance income comprises interest income on funds invested and changes in the fair value of financial assets at fair value through the consolidated statement of comprehensive income. Interest income is recognised as interest accrues using the effective interest rate method.

Finance expense comprises interest expense on borrowings. All borrowing costs are recognised using the effective interest method.

(k) Income tax

Income tax expense comprises current and deferred tax. Income tax expense is recognised in the consolidated statement of comprehensive income except to the extent that it relates to items recognised directly in equity or in other comprehensive income.

Current income tax assets (including research and development income tax credit) and liabilities for the current and prior periods are measured at the amount expected to be recovered from, or paid to, the tax authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the reporting date.

Deferred income tax is recognised on all temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements with the following exceptions:

- where the temporary difference arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss; and
- in respect of taxable temporary differences associated with investments in subsidiaries where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred income tax assets and liabilities are measured on an undiscounted basis using the tax rates and tax laws that have been enacted or substantively enacted by the balance sheet date and which are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred income tax assets are recognised to the extent that it is probable that future taxable profits will be available against which differences can be utilised. An asset is not recognised to the extent that the transfer of economic benefits in the future is uncertain.

Deferred income tax assets and liabilities are offset only if a legally enforceable right exists to set off current tax assets against current tax liabilities, the deferred income taxes relate to the same taxation authority and that authority permits the Group to make a single payment.

(l) Property, plant and equipment

Property, plant and equipment assets are recognised initially at cost. After initial recognition, these assets are carried at cost less any accumulated depreciation and any accumulated impairment losses. Cost comprises the aggregate amount paid and the fair value of any other consideration given to acquire the asset and includes costs directly attributable to making the asset capable of operating as intended.

Depreciation is computed by allocating the depreciable amount of an asset on a systematic basis over its useful life and is applied separately to each identifiable component.

The following bases and rates are used to depreciate classes of assets:

Laboratory infrastructure - straight line over remainder of lease period (two to ten years)

Fixtures and fittings - straight line over five years

Office equipment - straight line over three years

Plant and machinery - straight line over five years

The carrying values of tangible fixed assets are reviewed for impairment if events or changes in circumstances indicate that the carrying value may not be recoverable, and are written down immediately to their recoverable amount. Useful lives and residual values are reviewed annually and where adjustments are required these are made prospectively.

A tangible fixed asset item is derecognised on disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the de-recognition of the asset is included in the consolidated statement of comprehensive income in the period of de-recognition.

Assets under construction, which principally relate to leasehold improvements and plant and machinery, are not depreciated until such time as they are available for use. If there are indications of impairment in the carrying value, then the recoverable amount is estimated and compared to the carrying amount. The recoverable amount is determined as the value that will ultimately be capitalised as an asset, based upon IAS 16 recognition and capitalisation criteria.

(m) Intangible assets

Intangible assets acquired either as part of a business combination or from contractual or other legal rights are recognised separately from goodwill provided they are separable and their fair value can be measured reliably. This includes the costs associated with acquiring and registering patents in respect of intellectual property rights.

Where consideration for the purchase of an intangible asset includes contingent consideration, the fair value of the contingent consideration is included in the cost of the asset.

Where intangible assets recognised have finite lives, after initial recognition their carrying value is amortised on a straight-line basis over those lives. The nature of those intangibles recognised and their estimated useful lives are as follows:

Patents - straight line over ten years

(n) Impairment of assets

At each reporting date the Group reviews the carrying value of its plant, equipment and intangible assets to determine whether there is an indication that these assets have suffered an impairment loss. If any such indication exists, or when annual impairment testing for an asset is required, the Company makes an assessment of the asset's recoverable amount.

An asset's recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying value of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs of disposal, an appropriate valuation model is used and these calculations are corroborated by valuation multiples or other available fair value indicators. Impairment losses on continuing operations are recognised in the consolidated statement of comprehensive income in those expense categories consistent with the function of the impaired asset.

An assessment is made at each reporting date as to whether there is any indication that previously recognised impairment losses may no longer exist or may have decreased. If such indication exists, the recoverable amount is estimated. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. If that is the case the carrying amount of the asset is increased to its recoverable amount. That increased amount cannot exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the consolidated statement of comprehensive income unless the asset is carried at a revalued amount, in which case the reversal is treated as a valuation increase. After such a reversal the depreciation charge is adjusted in future periods to allocate the asset's revised carrying amount, less any residual value, on a systematic basis over its remaining useful life.

Impairment charges have been posted during the year in relation to Group tangible assets, Group intangible assets and Company only investments and intercompany balances. See the relevant note for more information.

(o) Assets held for sale

Non-current assets are classified as held for sale if their carrying amounts will be recovered principally through a sale transaction, rather than through continuing use. They are measured at the lower of carrying amount and fair value less costs to sell, which are incremental costs directly attributable to the disposal of the asset. The carrying value is assessed at each reporting period.

Property, plant and equipment and intangible assets are not amortised once classified as held for sale. Assets classified as held for sale are presented separately as current assets in the statement of financial position.

(p) Investments in subsidiaries

Investments in subsidiaries are stated in the Company statement of financial position at cost less provision for any impairment.

(q) Inventories

Inventories are stated at the lower of cost and net realisable value. Cost based on latest contractual prices includes all costs incurred in bringing each product to its present location and condition. Net realisable value is based on estimated selling price less any further costs expected to be incurred to disposal. Provision is made for slow-moving or obsolete items.

(r) Financial instruments

Financial assets and financial liabilities are recognised when the Group becomes party to the contractual provisions of the relevant instrument and derecognised when it ceases to be party to such provisions. Such assets and liabilities are classified as current if they are expected to be realised or settled within twelve months after the balance sheet date. Financial assets and liabilities are initially recognised at fair value and subsequently measured at either fair value or amortised cost including directly attributable transaction costs.

The Group has the following categories of financial assets and liabilities:

Loans and receivables

(i) Trade and other receivables

Trade receivables, which generally have 30 to 60-day terms, are recognised and carried at the lower of their original invoiced value and recoverable amount. The time value of money is not material.

Provision is made when there is objective evidence that the Group will not be able to recover balances in full. Significant financial difficulties faced by the customer, probability that the customer will enter bankruptcy or financial reorganisation and default in payments are considered indicators that the trade receivable is impaired. The amount of the provision is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. The carrying value of the asset is reduced through the use of an allowance account, and the amount of the loss is recognised in the consolidated statement of comprehensive income within administrative expenses.

When a trade receivable is uncollectable, it is written off against the allowance account for trade receivables.

(ii) Cash, cash equivalents and short-term investments

Cash and cash equivalents comprise cash at hand and deposits with maturities of three months or less. Short-term investments comprise deposits with maturities of more than three months, but no greater than twelve months.

Financial liabilities at amortised cost

(i) Trade and other payables

Trade and other payables are non-interest bearing and are initially recognised at fair value. They are subsequently measured at amortised cost using the effective interest rate method.

(ii) Loans and Convertible loan notes

Obligations for loans and borrowings are measured initially at fair value and subsequently interest-bearing loans are measured at fair value. Convertible loan notes are presented as financial liabilities as rights of the note holder to convert the loan notes into equity are within the control of the Company.

(s) Share capital

Proceeds on issue of shares are included in shareholders' equity, net of transaction costs. The carrying amount is not re-measured in subsequent years.

(t) Shares held by the Employee Benefit Trust ("EBT")

Following the exercise on 2 August 2016 upon which jointly owned shares were transferred to the sole beneficiary, there are no further shares held in the EBT. The Trust was closed during the financial year.

(u) Share-based payments

Equity-settled share-based payment transactions are measured with reference to the fair value at the date of grant, recognised on a straight-line basis over the vesting period, based on the Company's estimate of shares that will eventually vest. Fair value is measured using a suitable option pricing model.

At each reporting date before vesting, the cumulative expense is calculated, representing the extent to which the vesting period has expired and management's best estimate of the achievement or otherwise of non-market conditions and the number of equity instruments that will ultimately vest. The movement in cumulative expense since the previous reporting date is recognised in the consolidated statement of comprehensive income, with a corresponding entry in equity.

Where the terms of an equity-settled award are modified or a new award is designated as replacing a cancelled or settled award, the cost based on the original award terms continues to be recognised over the original vesting period. In addition, an expense is recognised over the remainder of the new vesting period for the incremental fair value of any modification, based on the difference between the fair value of the original award and the fair value of the modified award, both as measured on the date of the modification. No reduction is recognised if this difference is negative.

Where awards are granted to the employees of the subsidiary company, the fair value of the awards at grant date is recorded in the Company's financial statements as an increase in the value of the investment with a corresponding increase in equity via the share-based payment reserve.

(v) Defined contribution pension scheme

The Group operates a defined contribution pension scheme. The assets of the scheme are held separately from those of the Company in an independently administered fund. The amounts charged against profits represent the contributions payable to the scheme in respect of the accounting period.

(w) Provisions

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Provision is not made for future operating losses. Provisions are discounted where the impact is deemed to be material.

(x) Exceptional items

Items of income and expenditure which are material and non-recurring are presented separately in the Consolidated Statement of Total Comprehensive Income. The separate reporting of exceptional items helps to provide an indication of the underlying performance of the Group.

(y) New accounting standards and interpretations

The following amendments to IFRSs became mandatory in this reporting period. The Group has applied the following standards and amendments for the first time for the reporting period commencing 1 August 2018:

- IFRS 9 Financial Instruments
- IFRS 15 Revenue from Contracts with Customers
- Amendments to IFRS 2 Classification and Measurement of Share-based Payment Transactions

The adoption of these standards did not have a material impact on the current period or any prior period.

New standards not yet adopted

The IASB has published three new accounting standards relevant to the Group that will be mandatory in future periods. These standards have not been early adopted in these consolidated financial statements. The Group's initial assessment of the future impact of these new standards is as follows:

IFRS 16 Leases (effective for annual periods beginning on or after 1 January 2019)

The new leases standard changes the previous lease accounting model so a lessee will now reflect more assets and liabilities arising from leases on its balance sheet. This can substantially affect key financial ratios, including ratios related to debt covenants or debt-to-equity ratios.

Under the new standard all lease contracts, with limited exceptions, are recognised in financial statements by way of right to use assets and corresponding lease liabilities. The Group has undertaken an assessment of the impact of IFRS 16 and currently expect that the Group will apply the modified retrospective approach, which means that the cumulative effect of initially applying the standard is recognised at the date of initial application and there is no restatement of comparative information. Compared with the existing accounting for operating leases, application of the standard will have a significant impact on the classification of expenditures and consequently the classification of cash flow from operating activities, cash flow from investing activities and cash flow from financing activities. It will also impact the timing of expenses recognised in the statement of income. The adoption of the new standard at 1 August 2019 is expected to have a negligible impact on equity following the recognition of lease liabilities and right of use and lease assets totalling approximately £1.8m.

4. Segmental information

Operating segments

At 31 July 2019 and 2018 the Group operated as one segment, being the research, development and manufacture of products and services based on high performance nanoparticles. This is the level at which operating results are reviewed by the chief operating decision maker (i.e. the Chief Executive Officer) to make decisions about resources, and for which financial information is available. All revenues have been generated from continuing operations and are from external customers.

	31 July 2019 £'000	31 July 2018 £'000
Analysis of revenue		
Products sold	**186**	168
Rendering of services	**6,488**	3,000
Royalties and licences	**449**	147
	7,123	3,315

There was one material customer who generated revenue of £6,461,000 (2018: one material customer amounting to £3,000,000).

The Group operates in four main geographic areas, although all are managed in the UK. The Group's revenue per geographical segment based on the customer's location is as follows:

	31 July 2019 £'000	31 July 2018 £'000
Revenue		
UK	**1**	9
Europe (excluding UK)	**485**	42
Asia	**141**	176
USA	**6,496**	3,088
	7,123	3,315

All the Group's assets are held in the UK and all of its capital expenditure arises in the UK. The loss before taxation and attributable to the single segment was £5,509,000 (2018: £7,405,000).

5. Other operating income

	31 July 2019 £'000	31 July 2018 £'000
Government grants	**204**	136

6. Operating loss

	31 July 2019 £'000	31 July 2018 £'000
Operating loss is stated after charging:		
Depreciation of tangible fixed assets (see note 12)	**613**	504
Amortisation of intangible assets (see note 13)	**552**	476
Impairment of tangible fixed assets (see note 12)	**3,325**	-
Impairment of intangible assets (see note 13)	**26**	-

Staff costs (see note 8)	**5,961**	5,577
Foreign exchange losses	**63**	64
Research and development expense*	**4,385**	3,960
Share-based payments	**232**	257
Operating lease rentals (see note 26):		
Land and buildings	**760**	867

* Included within research and development expense are staff costs totalling £3,522,000 (2018: £3,076,000) also included in note 8.

Auditor's remuneration

Audit services:	**31 July 2019 £'000**	31 July 2018 £'000
- Fees payable to Company auditor for the audit of the Parent and the consolidated accounts	**50**	82
- Auditing the accounts of subsidiaries pursuant to legislation	**26**	58
Fees payable to Company auditor for other services:		
- Assurance services in connection with the review of interim results	**15**	12
- Services relating to corporate finance transactions not covered above	**-**	25
Total auditor's remuneration	**91**	177

7. Exceptional items

During the financial year, the Group incurred a number of charges which are considered to be exceptional in nature. These have been aggregated and disclosed separately in the Consolidated statement of comprehensive income.

Income / (charge)	**FY 19 £'000**
Customer contract liability waived	**4,245**
Financial impairment of production facility	**(3,325)**
Onerous lease provision	**(663)**
Provision for contract specific stock	**(261)**
Other US Customer contract liabilities	**(134)**
Sub-total US Customer net exceptional items	**(138)**
Restructuring cost following display resource pivot	**(128)**
Total net exceptional items	**(266)**

During the year, the US Customer confirmed that the project would not continue beyond the current contract which completes in December 2019. As a result, the following financial adjustments have been posted:

- an outstanding contract liability owed by Nanoco Group to the US Customer has been waived, resulting in an exceptional credit of £4.245m;
- given the lack of any signed or near term commercial prospects for the new production facility, a tangible asset impairment has been posted of £3.3m;
- linked to the above, an onerous lease provision has been recognised in relation to the new production facility from the end of the existing contract with the US Customer to the expiry of the lease;
- other liabilities or costs incurred in the period relating to the US Customer are a provision against stock purchased specifically for the US Customer and other existing non-cancellable purchase commitments.

Further to the US Customer items above, following the resource pivot in our display business in the second quarter, we initiated a restructuring exercise reflecting our dots only focus in display activities. This exercise completed in the fourth quarter and will generate £0.6m per annum of savings, including in FY20.

8. Staff costs

The Group's cost for employees, including Directors, during the year were as follows:

	31 July 2019 £'000	31 July 2018 £'000
Wages and salaries	**5,030**	4,587
Social security costs	**433**	445
Other pension costs	**133**	288
Share-based payments	**232**	257
	5,828	5,577
Directors' remuneration (including benefits in kind) included in the aggregate remuneration above comprised:		
Emoluments for qualifying services	**1,158**	1,015

Emoluments for Directors of the Group (excluding social security costs and long-term incentives, but including benefits in kind) disclosed above include £505,000 paid to the highest paid Director (2018: £312,000). Details of the compensation of key management personnel are described in note 29.

The Group made contributions to money purchase pension schemes for three current Directors (2018: four).

Aggregate gains made by Directors during the year following the exercise of share options and jointly owned EBT shares were £89,000 (2018: £nil).

Not included in the costs reported above are share awards to be made to Directors under the Deferred Bonus Plan amounting to £386,000 (2018: £nil) which are included in the Directors' remuneration report. The awards are recognised in the income statement by way of a share-based payment charge over the deferral period as required by IFRS 2.

An analysis of the highest paid Director's remuneration is included in the Directors' remuneration report.

Then monthly average number of employees during the year (including Directors) was as follows:

Group	**31 July 2019 Number**	31 July 2018 Number
Directors	**7**	7
Laboratory and administrative staff	**85**	79
	92	86

9. Finance income and expense

Group	**31 July 2019 £'000**	31 July 2018 £'000
Finance income		
Interest receivable	**12**	11
Finance expense		
Loan note interest	**(28)**	(7)
Other interest payable	**(10)**	-
	(26)	4

10. Taxation

The tax credit is made up as follows:

Group	**31 July 2019 £'000**	31 July 2018 £'000
Current income tax		
Research and development income tax credit receivable	**(1,128)**	(1,400)
Adjustment in respect of prior years	**(23)**	-
Overseas corporation tax	**-**	-
	(1,151)	(1,400)

Deferred tax		
Charge for the year	**-**	-
Total income tax credit	**(1,151)**	(1,400)

The adjustments in respect of prior years relate to research and development income tax credits. The research and development income tax for the year ended 31 July 2018 was submitted in January 2019 and the repayment was received in April 2019. The income tax receivable shown in the statement of financial position is the R&D tax credit receivable reported above.

The tax assessed for the year varies from the standard rate of corporation tax as explained below:

Group	**31 July 2019 £'000**	31 July 2018 £'000
Loss before taxation	**(5,509)**	(7,405)
Tax at standard rate of 19% (2018: 19%)	**(1,047)**	(1,407)
Effects of:		
Expenses not deductible for tax purposes	**16**	3
Capital allowances in excess of depreciation	**243**	(62)
Additional deduction for research and development expenditure	**(1,022)**	(1,037)
Surrender of research and development relief for repayable tax credit	**1,446**	1,839
Research and development tax credit receivable	**(1,128)**	(1,400)
Share options exercised (CTA 2009 Pt 12 deduction)	**(26)**	-
Losses and share-based payment charges carried forward not recognised in deferred tax	**390**	669
Adjustment in respect of rate changes	-	(5)
Adjustment in respect of prior years	**(23)**	-
Tax credit in income statement	**(1,151)**	(1,400)

The Group has accumulated losses available to carry forward against future trading profits of 32.6 million (2018: £32.2 million).

Deferred tax liabilities/(assets) provided/(recognised) at a standard rate of 17% (2018: 17%) are as follows:

	31 July 2019 £'000	31 July 2018 £'000
Accelerated capital allowances	**480**	407
Tax losses	**(480)**	(407)
	-	-

The Group also has deferred tax assets, measured at a standard rate of 17% (2018: 17%), in respect of share-based payments of £8,000 (2018: £23,000) and tax losses of £5,486,000 (2018: £5,486,000) which have not been recognised as an asset as it is not yet probable that future taxable profits will be available against which the assets can be utilised.

11. Earnings per share

Group	**31 July 2019 £'000**	31 July 2018 £'000
Loss for the financial year attributable to equity shareholders	**(4,344)**	(6,005)
Share-based payments	**232**	257
Loss for the financial year before share-based payments	**(4,112)**	(5,748)
Weighted average number of shares		
Ordinary shares in issue	**286,025,561**	271,964,590
Adjusted loss per share before share-based payments (pence)	**(1.44)**	(2.11)
Basic loss per share (pence)	**(1.52)**	(2.21)

Diluted loss per share has not been presented above as the effect of share options issued is anti-dilutive.

12. Tangible fixed assets

Group	Assets under construction £'000	Laboratory infrastructure £'000	Office equipment, fixtures and fittings £'000	Plant and machinery £'000	Total £'000
Cost					
At 1 August 2017	-	2,655	395	4,770	7,820
Additions	1,391	748	44	32	2,215
Reclassified from assets held for sale	-	-	-	203	203
At 31 July 2018	1,391	3,403	439	5,005	10,238
Additions	1,882	-	113	86	2,081
Transfers	(3,273)	-	-	3,273	-
At 31 July 2019	**-**	**3,403**	**552**	**8,364**	**12,319**
Accumulated Depreciation					
At 1 August 2017	-	2,614	263	4,078	6,955
Provided during the year	-	12	66	426	504
Reclassified from assets held for sale	-	-	-	175	175
At 31 July 2018	-	2,626	329	4,679	7,634
Provided during the year	-	82	77	454	613
Impairment	-	664	-	2,661	3,325
At 31 July 2019	**-**	**3,372**	**406**	**7,794**	**11,572**
Net book value					
At 31 July 2019	**-**	**31**	**146**	**570**	**747**
At 31 July 2018	1,391	777	110	326	2,604

The aggregate original cost of tangible assets now fully depreciated but considered to be still in use is £7,777,000 (2018: £6,790,000). Assets under construction (plant and machinery) in prior year relate to the expansion of our Runcorn facility and these assets commenced depreciation in the current year.

During the year, the Group posted an impairment charge against the new facility in Runcorn due to the lack of firm customer orders (£3,325,000, 2018: £nil).

13. Intangible assets

Group	Patents £'000
Cost	
At 1 August 2017	4,291
Additions	782
Reclassified from assets held for sale	597
At 31 July 2018	5,670
Additions	1,043
At 31 July 2019	**6,713**
Amortisation	
At 1 August 2017	1,672
Provided during the year	476
Impairment charge	-
Reclassified from assets held for sale	90
At 31 July 2018	2,238
Provided during the year	552
Impairment charge	26
At 31 July 2019	**2,816**
Net book value	
At 31 July 2019	**3,897**
At 31 July 2018	3,432

Contingent consideration of $150,000 is payable in respect of a purchase of patents made during a previous period. The amount is payable if the Group reaches a revenue target in a future reporting period. The addition is recorded above at the Directors' estimate of fair value of the consideration payable.

Intangible assets are amortised on a straight-line basis over ten years. Amortisation provided during the period is recognised in administrative expenses. The Group does not believe that any of its patents in isolation are material to the business. The aggregate original cost of intangible assets now fully depreciated but considered to be still in use is £556,000 (2018: £471,000).

During the year an extensive review was undertaken to identify which patents are of no further value to Nanoco and should be allowed to lapse. Two patent families were identified. As a consequence, patents with a value of £26,000 (2018: £Nil) have been fully impaired in these financial statements. The impairment charge is recognised within administrative expenses.

14. Investment in subsidiaries

Company	Shares £'000	Shares impairment £'000	Loans £'000	Loan impairment £'000	Total £'000
At 1 August 2017	63,235	-	23,615	(20,286)	66,564
Increase in respect of share-based payments	-	-	257	-	257
At 31 July 2018	63,235	-	23,872	(20,286)	66,821
Increase in respect of share-based payments	-	-	232	-	232
Cash transfer	-	-	71	-	71
Impairment	-	(24,006)	-	(3,889)	(27,895)
At 31 July 2019	**63,235**	**(24,006)**	**24,175**	**(24,175)**	**39,229**

By subsidiary					
Nanoco Tech Limited	63,235	(24,006)	-	-	39,229
Nanoco Life Sciences Limited	-	-	20,286	(20,286)	-
Nanoco Technologies Limited	-	-	3,889	(3,889)	-
At 31 July 2019	**63,235**	**(24,006)**	**24,175**	**(24,175)**	**39,229**

Accounting standards (*IAS36, Impairment of Assets*) require investments in subsidiary undertakings (equity and loans) to be carried at the lower of cost or recoverable value. Recoverable value is defined as the higher of fair value less costs of disposal (effectively net sale proceeds) and value in use. Indicators of potential impairment noted in IAS36 (Para 12), include, but are not limited to, situations where the carrying amount of the net assets of the entity are more than its market capitalisation (as was the case at the year end and continues to be so at the date of these Financial Statements) and where significant changes with an adverse effect on the entity have taken place during the period (the decision by the US Customer not to extend the current contract).

As set out in the Viability Statement, the Board has considered a number of scenarios, being base, downside and worst cases. Given the uncertainty and risk over future income streams, and the associated potential impact on the discount rate to be used in the discounted cash flow, the Board has concluded that the appropriate valuation basis to use at this time for the total investments by Nanoco plc in Nanoco Technologies Limited (loans and equity above and the short term loan as disclosed in Note 16), should be fair value rather than value in use. For the avoidance of doubt, in the base case set out in the Viability Report there would be no impairment required to the assets above.

Consistent with IAS36 and the indicator of impairment noted above in respect of net assets exceeding market capitalisation, the Directors have used the Company's market capitalisation as at 31 July 2019 as its fair value less costs of disposal. This has resulted in an impairment of £27,895k in relation to the investments (2018: £nil) and an impairment of £10,383k in relation to the inter-company short-term loan disclosed in note 16 (2018: £50,000k).

The Directors do, however, consider that the current share price is at a significant discount to the value of its IP, by reference to similar businesses operating in the same markets and with smaller IP portfolios than Nanoco.

Loans to subsidiary undertakings carry no interest and are repayable on demand. Further information in relation to these loans is given in note 28.

Subsidiary undertakings	Country of incorporation	Principal activity	Share of issued ordinary share capital **31 July 2019**	31 July 2018
Nanoco Life Sciences Limited	England and Wales	Research and development	**100%**	100%
Nanoco Tech Limited	England and Wales	Holding company	**100%**	100%
Nanoco Technologies Limited*	England and Wales	Manufacture and development of nanoparticles	**100%**	100%
Nanoco 2D Materials Limited	England and Wales	Research and development	**100%**	100%
Nanoco US Inc.**	USA	Management services	**100%**	100%

All subsidiaries incorporated in England and Wales are registered at 46 Grafton Street, Manchester M13 9NT. Nanoco US Inc. is registered at 33 Bradford Street, Concord, MA 01742.

With the exception of the two companies footnoted below all other shareholdings are owned by Nanoco Group plc.

* Share capital is owned by Nanoco Tech Limited.
** Nanoco US Inc. is a wholly owned subsidiary of Nanoco Tech Limited. It was formed in July 2013 primarily in order to provide the services of US-located staff to the rest of the Group.

15. Inventories

	31 July 2019 Group £'000	**31 July 2019 Company £'000**	31 July 2018 Group £'000	31 July 2018 Company £'000
Raw materials, finished goods and consumables	**226**	**-**	217	-

A total of £316,000 (2018: £144,000) was included in cost of sales with respect to the cost of inventory expensed during the year.

16. Trade and other receivables

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Trade receivables	**202**	**-**	290	-
Prepayments and accrued income	**383**	**-**	435	-
Inter-company short-term loan to subsidiary	**-**	**60,383**	-	60,508
Less impairment provision		**-(60,383)**	-	(50,000)
Other receivables	**532**	**-**	690	-
	1,117	-	1,415	10,508

The impairment of the short term loan is explained in Note 14. The quantum of this provision will be reviewed at each reporting date.

Trade receivables are non-interest bearing and are generally due and paid within 30 to 60 days. The Directors consider that the carrying amount of trade and other receivables approximates to their fair value and that no impairment is required at the reporting date. Therefore there is no provision for impairment at the balance sheet date (2018: £nil).

Trade receivables are denominated in the following currency:

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
US Dollars	**158**	**-**	10	-
Euros	**-**	**-**	-	-
Sterling	**44**	**-**	280	-
	202	**-**	290	-

At 31 July the analysis of trade receivables that were past due but not impaired was as follows:

	Not yet due £'000	Due but not impaired £'000	Past due but not impaired >90 days £'000	Past due but not impaired 120 to 150 days £'000	Total £'000
2019	**133**	**69**	**-**	**-**	**202**
2018	279	11	-	-	290

17. Cash and cash equivalents

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Cash and cash equivalents	**7,005**	**97**	10,729	43

Under IAS 7, cash held on long-term deposits (being deposits with original maturity of greater than three months and no more than twelve months) that cannot readily be converted into cash must be classified as a short-term investment. There were no such deposits at 31 July 2019 (2018: same).

An analysis of cash, cash equivalents and deposits by denominated currency is given in note 27.

18. Trade and other payables

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Current				
Trade payables	**1,764**	**-**	2,016	-
Other payables	**101**	**-**	126	-
Accruals	**688**	**-**	878	-
	2,553	**-**	3,020	-

The Directors consider that the carrying amount of trade and other payables approximates to their fair value. The average credit period taken is 38 days (2018: 41 days).

19. Provisions

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Current				
Onerous lease provision	**663**	**-**	-	**-**
Other commitments	**134**	**-**	**-**	-
	797	**-**	**-**	**-**

Provisions relate to the contract with the US Customer. Details are included in note 7.

20. Financial liabilities

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Non-current				
Long-term loan from subsidiary	**-**	**450**	-	450
Convertible Series A Loan note 2028	**400**	**-**	400	-
Accrued interest	**33**	**-**	7	-
	433	**450**	407	450

The loan note issued by Nanoco 2D Materials Limited is unsecured, bears a fixed interest at 6.5% pa and is fully repayable with accrued interest in 2028 unless options to convert into shares of that company have been exercised. The note holders have a right to convert the loan note into shares of the subsidiary in certain circumstances but these are within the control of the Company. Interest is not charged on inter-company loans (2018: no interest).

There have been no changes in liabilities arising from financing activities other than described in this note.

21. Deferred revenue

	31 July 2019 Group £'000	31 July 2019 Company £'000	31 July 2018 Group £'000	31 July 2018 Company £'000
Current				
Upfront licence fees	**103**	**-**	102	-
Milestone payments	**1,359**	**-**	298	-
	1,462	**-**	400	-
Non-current				
Upfront licence fees	**353**	**-**	450	-
Contract liabilities	**-**	**-**	2,885	-
	353	**-**	3,335	-
	1,815	**-**	3,735	-

Deferred revenue arises under IFRS where upfront licence fees are accounted for on a straight-line basis over the initial term of the contract or where performance criteria have not been satisfied in the accounting period. The contract liability balance in prior year related to the US Customer. This has since been waived.

22. Issued equity capital

Group	Number	Share capital £'000	Share premium £'000	Reverse acquisition reserve £'000	Total £'000
Allotted, called up and fully paid ordinary shares of 10p					
At 1 August 2017	238,291,328	23,829	112,648	(77,868)	58,609
Shares issued on placing	47,655,821	4,766	3,812	-	8,578
Costs of placing	-	-	(629)	-	(629)
At 31 July 2018	285,947,149	28,595	115,831	(77,868)	66,558
Shares issued on exercise of options	**272,097**	**27**	**-**	**-**	**27**
At 31 July 2019	**286,219,246**	**28,622**	**115,831**	**(77,868)**	**66,585**

The balances classified as share capital and share premium include the total net proceeds (nominal value and share premium respectively) on issue of the Company's equity share capital, comprising ordinary shares.

The retained loss and other equity balances recognised in the Group financial statements reflect the consolidated retained loss and other equity balances of Nanoco Tech Limited immediately before the business combination which was reported in the year ended 31 July 2009. The consolidated results for the period from 1 August 2008 to the date of the acquisition by the Company are those of Nanoco Tech Limited. However, the equity structure appearing in the Group financial statements reflects the equity structure of the legal parent, including the equity instruments issued under the share-for-share exchange to effect the transaction. The effect of using the equity structure of the legal parent gives rise to an adjustment to the Group's issued equity capital in the form of a reverse acquisition reserve.

Shares issued on placing

On 15 December 2017, 47,655,821 shares were issued at 18 pence each.

Company	Number	Share capital £'000	Share premium £'000	Total £'000
Allotted, called up and fully paid ordinary shares of 10p				
At 1 August 2017	238,291,328	23,829	112,648	136,477
Shares issued on placing	47,655,821	4,766	3,812	8,578
Costs of placing	-	-	(629)	(629)
At 31 July 2018	285,947,149	28,595	115,831	144,426
Shares issued on exercise of options	272,097	27	-	27
At 31 July 2019	**286,219,246**	**28,622**	**115,831**	**144,453**

23. Share-based payment reserve

Group and Company	£'000
At 1 August 2017	2,957
Share-based payments	257
At 31 July 2018	3,214
Issue of share capital on exercise of share options	(27)
Share-based payments	232
At 31 July 2019	**3,419**

The share-based payment reserve accumulates the corresponding credit entry in respect of share-based payment charges. Movements in the reserve are disclosed in the consolidated statement of changes in equity.

A charge of £232,000 has been recognised in the statement of comprehensive income for the year (2018: charge of £257,000).

Share option schemes

The Group operates the following share option schemes, all of which are operated as Enterprise Management Incentive ("EMI") schemes insofar as the share options being issued meet the EMI criteria as defined by HM Revenue & Customs. Share options issued that do not meet EMI criteria are issued as unapproved share options, but are subject to the same exercise performance conditions.

Nanoco Group plc Long Term Incentive Plan ("LTIP")

Grant in November 2011

Share options were granted to staff and Executive Directors on 25 November 2011. The options granted to Executive Directors were subject to commercial targets being achieved. The exercise price was set at 50 pence, being the average closing share price on the day preceding the issue of the share options. The fair value benefit is measured using a binomial model, taking into account the terms and conditions upon which the share options were issued. Share options issued to staff vest over a three-year period from the date of grant and are exercisable until the tenth anniversary of the award, but are not subject to performance conditions.

Grant in October 2012

Share options were granted to staff and Executive Directors on 22 October 2012. The options granted to Executive Directors were subject to commercial targets being achieved. The exercise price was set at 57 pence, being the average closing share price on the day preceding the issue of the share options. The fair value benefit is measured using a binomial model, taking into account the terms and conditions upon which the share options were issued. Share options issued to staff vest over a three-year period from the date of grant and are exercisable until the tenth anniversary of the award, but are not subject to performance conditions.

Grant in May 2014

Share options were granted to certain staff on 23 May 2014. The exercise price was set at 89 pence, being the average closing share price on the day preceding the issue of the share options. The fair value benefit is measured using a binomial model, taking into account the terms and conditions upon which the share options were issued. The options vest at the end of three years from the date of grant and are exercisable until the tenth anniversary of the award. The awards are not subject to performance conditions. Vesting of the award is subject to the employee remaining a full-time member of staff at the point of vesting. No options were granted to Executive Directors.

Grant in October 2014

Share options were granted to an Executive Director on 14 October 2014. The exercise price was set at 10 pence, being the nominal value of the share. The fair value benefit is measured using a binomial model, taking into account the terms and conditions upon which the share options were issued. The options vest at the end of three years from the date of grant and are exercisable until the tenth anniversary of the award. The awards are subject to performance conditions which were amended during the year so as to be in line with the 2015 LTIP scheme. As a result of the modification, the fair value of the award was reduced. However, in accordance with IFRS 2 no change was made to the charge in the financial statements. Vesting of the award is subject to the employee remaining a full-time member of staff at the point of vesting.

Nanoco Group plc 2015 Long Term Incentive Plan ("LTIP")

Grant in December 2015

Following approval of the new scheme at the 2015 AGM, share options were granted to four Executive Directors at nil cost. The fair value benefit is measured using a stochastic model, taking into account the terms and conditions upon which the share options were issued. The options vest at the end of the three-year performance period subject to meeting the performance criteria and are exercisable after a two-year holding period until the tenth anniversary of the award.

Grant in April 2016

Share options were granted to an employee on 12 April 2016 at nil cost. The fair value benefit is measured using a stochastic model, taking into account the terms and conditions upon which the share options were issued. The options vest at the end of a three-year performance period subject to meeting performance criteria and are exercisable until the tenth anniversary of the award.

Grant in November 2016

Options were granted to the Executive Directors and all eligible staff on 22 November 2016 at nil cost. The fair value benefit is measured using a stochastic model, taking into account the terms and conditions upon which the share options were issued and are subject to a two-year holding period. The options vest at the end of a three-year performance period subject to meeting performance criteria and are exercisable until the tenth anniversary of the award.

Grant in December 2017

Options were granted to the Executive Directors and certain eligible staff on 6 December 2017 at nil cost. The fair value benefit is measured using a stochastic model, taking into account the terms and conditions upon which the share options were issued and are subject to a two-year holding period.

The options vest at the end of a three-year performance period subject to meeting performance criteria and are exercisable until the tenth anniversary of the award.

Grant in November 2018

Options were granted to the Executive Directors and certain eligible staff on 6 November 2018 at nil cost. The fair value benefit is measured using a stochastic model, taking into account the terms and conditions upon which the share options were issued and are subject to a two-year holding period. The options vest at the end of a three-year performance period subject to meeting performance criteria and are exercisable until the tenth anniversary of the award.

Other awards

Share options are awarded to management and key staff as a mechanism for attracting and retaining key members of staff. The options are issued at either market price on the day preceding grant or, in the event of abnormal price movements, at an average market price for the week preceding grant date. On 14 October 2015, unapproved options were granted to a member of staff with an exercise price of 56.5 pence. These options vest over a three-year period from the date of grant with performance conditions and are exercisable until the tenth anniversary of the award. Vesting of the award is subject to the employee remaining a full-time member of staff at the point of vesting. The fair value benefit is measured using a binomial valuation model, taking into account the terms and conditions upon which the share options were issued.

Deferred Bonus Plan ("DBP")

On 22 November 2016, awards in the form of nil-cost options were granted to the Executive Directors in respect of 50% of their bonuses for the year ended 31 July 2016 which are delivered in the form of a share award under the Deferred Bonus Plan. The awards vested during FY19, after the required two year holding period.

Shares held in the Employee Benefit Trust ("EBT")

The Group historically operated a jointly owned EBT share scheme. This was closed during the financial year.

The following tables illustrate the number and weighted average exercise prices of, and movements in, share options during the year.

Group and Company	**2019 total Number**	2018 total Number
Outstanding at 1 August	**17,253,479**	16,136,316
Granted during the year	**4,693,566**	3,787,608
Exercised during the year	**(274,096)**	-
Forfeited/cancelled/lapsed	**(3,522,644)**	(2,670,445)
Outstanding at 31 July	**18,150,305**	17,253,479
Exercisable at 31 July	**7,647,247**	10,076,620

Weighted average exercise price of options

Group and Company	**2019 Pence**	2018 Pence
Outstanding at 1 August	**35.9**	38.6
Granted during the year	**-**	-
Exercised during the year	**-**	-
Forfeited/cancelled	**-**	-
Outstanding at 31 July	**24.5**	35.9

The weighted average exercise price of options granted during the year to 31 July 2019 was nil (2018: nil). The range of exercise prices for options outstanding at the end of the year was nil-110 pence (2018: nil-110 pence).

For the share options outstanding as at 31 July 2019, the weighted average remaining contractual life is 5.83 years (2018: 6.0 years). The aggregate fair value of options issued in the year was £0.9m (2018: £0.5m)

The following table lists the inputs to the models used for the years ended 31 July 2019 and 31 July 2018.

	Market performance-linked grants		Non-market performance-linked grants	
Group and Company	**2019**	2018	**2019**	2018
Expected volatility	**63%**	62%	**N/A**	62%
Risk-free interest rate	**0.82%**	0.52%	**N/A**	0.52%
Expected life of options (years average)	**3**	3	**N/A**	3
Weighted average exercise price	**Nil**	nil	**N/A**	nil
Weighted average share price at date of grant	**44p**	26p	**N/A**	26p
Model used	**Stochastic**	Stochastic	**N/A**	Binomial

The expected life of the options is based on historical data and is not necessarily indicative of exercise patterns that may occur. The expected volatility reflects the assumption that the historical volatility is indicative of future trends, which may also not necessarily be the actual outcome.

Certain awards are subject to a holding period after vesting. A Finnerty model has been used to determine a discount for the lack of marketability of the shares.

24. Merger reserve and capital redemption reserve

Merger reserve

Group	£'000
At 1 August 2017, 31 July 2018 and 31 July 2019	**(1,242)**

The merger reserve arises under section 612 of the Companies Act 2006 on the shares issued by Nanoco Tech Limited to acquire Nanoco Technologies Limited as part of a simple Group reorganisation on 27 June 2007.

Capital redemption reserve

Company	£'000
At 1 August 2017, 31 July 2018 and 31 July 2019	**4,402**

The capital redemption reserve arises from the off-market purchase of deferred shares on 4 May 2005 and their subsequent cancellation.

25. Movement in accumulated losses

Group	Profit & loss £'000	Foreign currency translation reserve £'000	Treasury shares £'000	Total retained earnings £'000
At 1 August 2017	(49,857)	-	(20)	(49,877)
Loss for the year	(6,005)	-	-	(6,005)
Other comprehensive expense	-	(13)	-	(13)
At 31 July 2018	(55,862)	(13)	(20)	(55,895)
Loss for the year	(4,358)	-	-	(4,358)
Other comprehensive income	-	14	-	14
At 31 July 2019	**60,220**	**1**	**(20)**	**(60,239)**

Profit & loss represents the cumulative loss attributable to the equity holders of the Parent Company.

Historically, treasury shares included the value of Nanoco Group plc shares issued as jointly owned equity shares and held by the Nanoco Group-sponsored EBT jointly with a number of the Group's employees. At 31 July 2019 no shares in the Company were held by the EBT (2018: nil). In addition there are 12,222 (2018: 12,222) treasury shares not held by the EBT.

Company	Retained deficit £'000	Treasury shares £'000	Total revenue reserve £'000
At 1 August 2017	(25,075)	(20)	(25,095)
Loss for the year	(50,025)	-	(50,025)
At 31 July 2018	(75,100)	(20)	(75,120)
Loss for the year	(38,278)	-	(38,278)
At 31 July 2019	**(113,378)**	**(20)**	**(113,398)**

26. Commitments

Operating lease commitments

The Group leases premises under non-cancellable operating lease agreements. The future aggregate minimum lease and service charge payments under non-cancellable operating leases are as follows:

	31 July 2019 Group £'000	31 July 2018 Group £'000
Land and buildings:		
Not later than one year	**798**	988
After one year but not more than five years	**1,156**	2,027
After five years	**-**	-
	1,954	3,015

Capital commitments

At 31 July 2019, the group had capital commitments amounting to nil in respect of orders placed for capital expenditure (2018: £1,940,000).

27. Financial risk management

Overview

This note presents information about the Group's exposure to various kinds of financial risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital.

The Board of Directors has overall responsibility for the establishment and oversight of the Group's risk management framework. The Executive Directors report regularly to the Board on Group risk management.

Capital risk management

The Company reviews its forecast capital requirements on a half-yearly basis to ensure that entities in the Group will be able to continue as a going concern while maximising the return to stakeholders.

The capital structure of the Group consists of equity attributable to equity holders of the Parent, comprising issued share capital, reserves and retained earnings as disclosed in notes 22 to 25 and in the Group statement of changes in equity. At 31 July 2019 total equity was £8,523,000 (2018: £12,635,000).

The Company is not subject to externally imposed capital requirements.

Liquidity risk

The Group's approach to managing liquidity is to ensure that, as far as possible, it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

The Group manages all of its external bank relationships centrally in accordance with defined treasury policies. The policies include the minimum acceptable credit rating of relationship banks and financial transaction authority limits. Any material change to the Group's principal banking facility requires Board approval. The Group seeks to mitigate the risk of bank failure by ensuring that it maintains relationships with a number of investment-grade banks.

At the reporting date the Group was cash positive with no outstanding borrowings.

Categorisation of financial instruments

Financial assets/(liabilities)	**Loans and receivables £'000**	**Financial liabilities at amortised cost £'000**	**Group £'000**	**Loans and receivables Company £'000**
31 July 2019				
Trade receivables	**202**	**-**	**202**	**-**
Other receivables	**915**	**-**	**915**	**-**
Inter-company short-term loan to subsidiary	**-**	**-**	**-**	**60,383**
Less impairment provision	**-**	**-**	**-**	**(60,383)**
Trade and other payables	**-**	**(2,553)**	**(2,292)**	**-**
Provisions	**-**	**(797)**	**(1,058)**	**-**
Loan notes and accrued interest	**-**	**(433)**	**(433)**	**-**
Inter-company long-term loan from subsidiary	**-**	**-**	**-**	**(450)**
	1,117	**(3,783)**	**(2,666)**	**(450)**

Financial assets/(liabilities)	Loans and receivables £'000	Financial liabilities at amortised cost £'000	Group £'000	Loans and receivables Company £'000
31 July 2018				
Trade receivables	290	-	290	-
Other receivables	75	-	75	-
Inter-company short-term loan to subsidiary	-	-	-	60,508
Less impairment provision	-	-	-	(50,000)
Trade and other payables	-	(3,020)	(3,020)	-
Loan notes and accrued interest	-	(407)	(407)	-
Inter-company long-term loan from subsidiary	-	-	-	(450)
	365	(3,427)	(3,062)	10,058

The values disclosed in the above table are carrying values. The Board considers that the carrying amount of financial assets and liabilities approximates to their fair value.

The main risks arising from the Group's financial instruments are credit risk and foreign currency risk. The Board of Directors reviews and agrees policies for managing each of these risks which are summarised below.

Credit risk

The Group's principal financial assets are cash, cash equivalents and deposits. The Group seeks to limit the level of credit risk on the cash balances by only depositing surplus liquid funds with multiple counterparty banks that have investment-grade credit ratings.

The Group trades only with recognised, creditworthy third parties. Receivable balances are monitored on an ongoing basis with the result that the Group's exposure to bad debts is not significant. The Group's maximum exposure is the carrying amount as disclosed in note 16, which was neither past due nor impaired. All trade receivables are ultimately overseen by the Chief Financial Officer and are managed on a day-to-day basis by the UK credit control team. Credit limits are set as deemed appropriate for the customer.

The maximum exposure to credit risk in relation to cash, cash equivalents and deposits is the carrying value at the balance sheet date.

Foreign currency risk

The Group is exposed to currency risk on sales and purchases that are denominated in a currency other than the respective functional currency of the Company. These are primarily US Dollars ("USD") and Euros. Transactions outside of these currencies are limited.

Almost all of the Company's revenue is denominated in USD. The Group purchases some raw materials, certain services and some assets in USD which partly offsets its USD revenue, thereby reducing net foreign exchange exposure.

The Group may use forward exchange contracts as an economic hedge against currency risk, where cash flow can be judged with reasonable certainty. Foreign exchange swaps and options may be used to hedge foreign currency receipts in the event that the timing of the receipt is less certain. There were no open forward contracts as at 31 July 2019 or at 31 July 2018.

The split of Group assets between Sterling and other currencies at the year end is analysed as follows (Company assets are all in Sterling):

	31 July 2019				31 July 2018			
Group	**GBP £'000**	**EUR £'000**	**USD £'000**	**Total £'000**	GBP £'000	EUR £'000	USD £'000	Total £'000
Cash and cash equivalents	**6,552**	**342**	**111**	**7,005**	10,686	17	26	10,729

Trade receivables	**44**	**-**	**158**	**202**	280	-	10	290
Trade payables	**(887)**	**(3)**	**(874)**	**(1,764)**	(1,571)	(79)	(366)	(2,016)
	5,709	**339**	**(605)**	**5,443**	5,199	(62)	(330)	9,003

All other categories of assets and liabilities in the Statement of financial position are denominated in Sterling.

Sensitivity analysis to movement in exchange rates

The following table demonstrates the sensitivity to a reasonably possible change in the Sterling rate against other currencies used within the business, with all other variables held constant, of the Group's loss before tax (due to foreign exchange translation of monetary assets and liabilities) and the Group's equity.

Increase/(decrease)	**Impact on loss before tax and Group equity 2019 £'000**	Impact on loss before tax and Group equity 2018 £'000
10%	**(47)**	(54)
5%	**(22)**	(28)
(5)%	**20**	31
(10)%	**39**	65

Interest rate risk

As the Group has no significant borrowings the risk is limited to the reduction of interest received on cash surpluses held at bank which receive a floating rate of interest. The principal impact to the Group is to interest-bearing cash and cash equivalent balances held, which are as set out below:

	31 July 2019			31 July 2018		
Group	**Fixed rate £'000**	**Floating rate £'000**	**Total £'000**	Fixed rate £'000	Floating rate £'000	Total £'000
Cash and cash equivalents	**-**	**7,005**	**7,005**	-	10,729	10,729
Loan notes	**(400)**	**-**	**(400)**	(400)	-	(400)
Company						
Cash and cash equivalents	**-**	**97**	**97**	-	43	43

The exposure to interest rate movements is immaterial.

Maturity profile

Set out below is the maturity profile of the Group's financial liabilities at 31 July 2019 and 31 July 2018 based on contractual undiscounted payments, including contractual interest.

2019	**Less than one year £'000**	**One to five years £'000**	**Greater than five years £'000**	**Total £'000**
Financial liabilities				
Trade and other payables	**2,553**	**-**	**-**	**2,553**
Convertible loan (including contractual interest)	**-**	**-**	**433**	**433**
	2,553	**-**	**433**	**2,986e**

2018	Less than one year £'000	One to five years £'000	Greater than five years £'000	Total £'000
Financial liabilities				
Trade and other payables	3,020	-	-	3,020
Convertible loan (including contractual interest)	-	-	407	407
	3,020	-	407	3,427

Trade and other payables are due within three months.

The Directors consider that the carrying amount of the financial liabilities approximates to their fair value.

As all financial assets are expected to mature within the next twelve months, an aged analysis of financial assets has not been presented.

The Company's financial liability, a long-term loan from a subsidiary undertaking, is due after more than five years.

28. Related party transactions

The Group

There were no sales to, purchases from or, at the year end, balances with any related party.

The Company

The following table summarises inter-company balances at the year end between Nanoco Group plc and subsidiary entities:

	Notes	**31 July 2019 £'000**	31 July 2018 £'000
Long-term loans owed to Nanoco Group plc by			
Nanoco Life Sciences Limited		**20,286**	20,286
Nanoco Technologies Limited*		**3,889**	3,586
	14	**24,175**	23,872
Less provision against debt owed by Nanoco Life Sciences Limited	14	**(24,175)**	(20,286)
		-	3,586
Short-term loan owed to Nanoco Group plc by			
Nanoco Technologies Limited**	16	**60,383**	60,508
Less impairment provision	16	**(60,383)**	(50,000)
		-	10,508
Long-term loan owed by Nanoco Group plc to			
Nanoco Tech Limited	18	**(450)**	(450)

* The movement in the long-term loan due from Nanoco Technologies Limited relates to the recharge in respect of the expense for share-based payments for staff working for Nanoco Technologies Limited and is included in investments.

** The movement in the short-term loan due from Nanoco Technologies Limited relates to transfers of cash balances between the entities for the purposes of investing short-term funds and the funding of trading losses.

There are no formal terms of repayment in place for these loans and it has been confirmed by the Directors that the long-term loans will not be recalled within the next twelve months.

None of the loans are interest bearing.

29. Compensation of key management personnel (including Directors)

	2019 £'000	2018 £'000
Short-term employee benefits	**1,771**	1,242
Pension costs	**53**	77
Benefits in kind	**-**	-
Share-based payments	**232**	243
	2,056	1,562

The key management team comprises the Directors and four members of staff (2018: three) who are not Directors of the Company. The staff members of the team are the Supply Chain and Compliance Director, the Group Financial Controller, the HR Business Partner and the Production and Process Research Manager.

== Ends ==

END

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