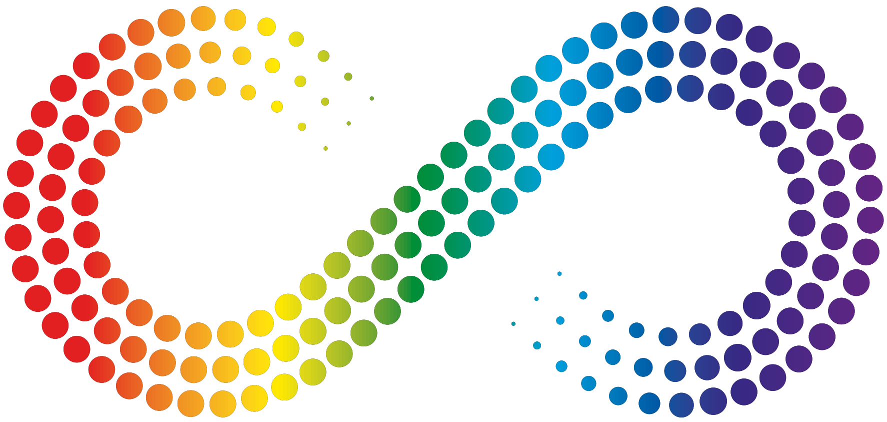


possibilities

NANOCO GROUP

Annual Report
and Accounts 2019

Infinite possibilities

Our platform technology can be customised for almost any application, from sensing to display, and from horticultural lighting to medical applications. That's what we mean by infinite possibilities.

Strong foundations in our technology platform

Nanoco is the market leader in the research, development, licensing and large scale manufacture of novel nanomaterials for use in various commercial applications.

Platform technology

We can design and create nanomaterials for a host of different applications

→ more on p5

IP portfolio

Our IP portfolio protects our unique production process and materials, with significant process know-how

→ more on p20

Volume production

Our unique production process allows controllable manufacture on a large scale

→ more on p23

Experienced team

Our R&D team has many years of specialist experience creating novel nanomaterials

→ more on p39

Our year in brief

We have successfully delivered a number of critical objectives this year

→ Completed Runcorn facility expansion for infra-red nanomaterials

→ Delivered all technical milestones for US Customer

→ Major improvements in CFQD® quantum dot performance on FWHM and EQE

→ Added a further 91 patents and patents pending

→ US Customer decision not to extend contract not connected with our performance

Revenue

£7.1m

+115%

→ Highest revenue in the Group's history, more than double FY18.

→ Underpinned by service income from US Customer.

Loss after tax

£4.4m

-27%

→ Best result since listing on AIM in 2009.

→ Strong gross margins from R&D services, with close control of our cost base.

Billings

£9.6m

+48%

→ Significant billings in the year, with £3.5 million of FY19 revenues already contracted.

→ New Runcorn production facility fully funded by customer.

Cash

£7.0m

-35%

→ Strong cash position at the period end.

→ Operating broadly cash breakeven to December 2019.

For more on Nanoco, visit our new website:
www.nanocotechnologies.com

Contents

Nanoco at a glance

We design, develop, scale up and manufacture novel nanomaterials for use in a huge range of potential applications

Our core competencies

- We can custom design new nanomaterials to exploit their emissive, absorption and other properties
- Our materials can be used in a variety of commercial applications
- Our IP protected processes allow close quality control of manufacturing on a large scale
- Significant amount of know-how and business secrets

World-class talent

- 76 employees
- 30 staff with PhDs
- 10 nationalities of staff: American, British, German, Irish, Indian, Italian, Polish, Portuguese, Syrian and Ukrainian

Respected globally

- R&D and HQ functions in Manchester, UK
- Twin production facilities in Runcorn, UK
- Business development in Boston, USA, and Seoul, South Korea

Why invest in Nanoco?

- Platform technology gives access to a wide range of large and rapidly growing end markets such as sensing (Internet of Things), display, specialist lighting and medical

Pioneer in cadmium-free quantum dot technology

Large and defensible IP portfolio
745
patents granted or pending

Market opportunity for QD materials
$25bn*
by 2022

Diverse channel partners

Significant manufacturing scale
£75m
revenue capacity

Continuing investment in R&D
£4.4m
invested in 2019

Highly innovative employees
19
listed inventors

CEO Report p10

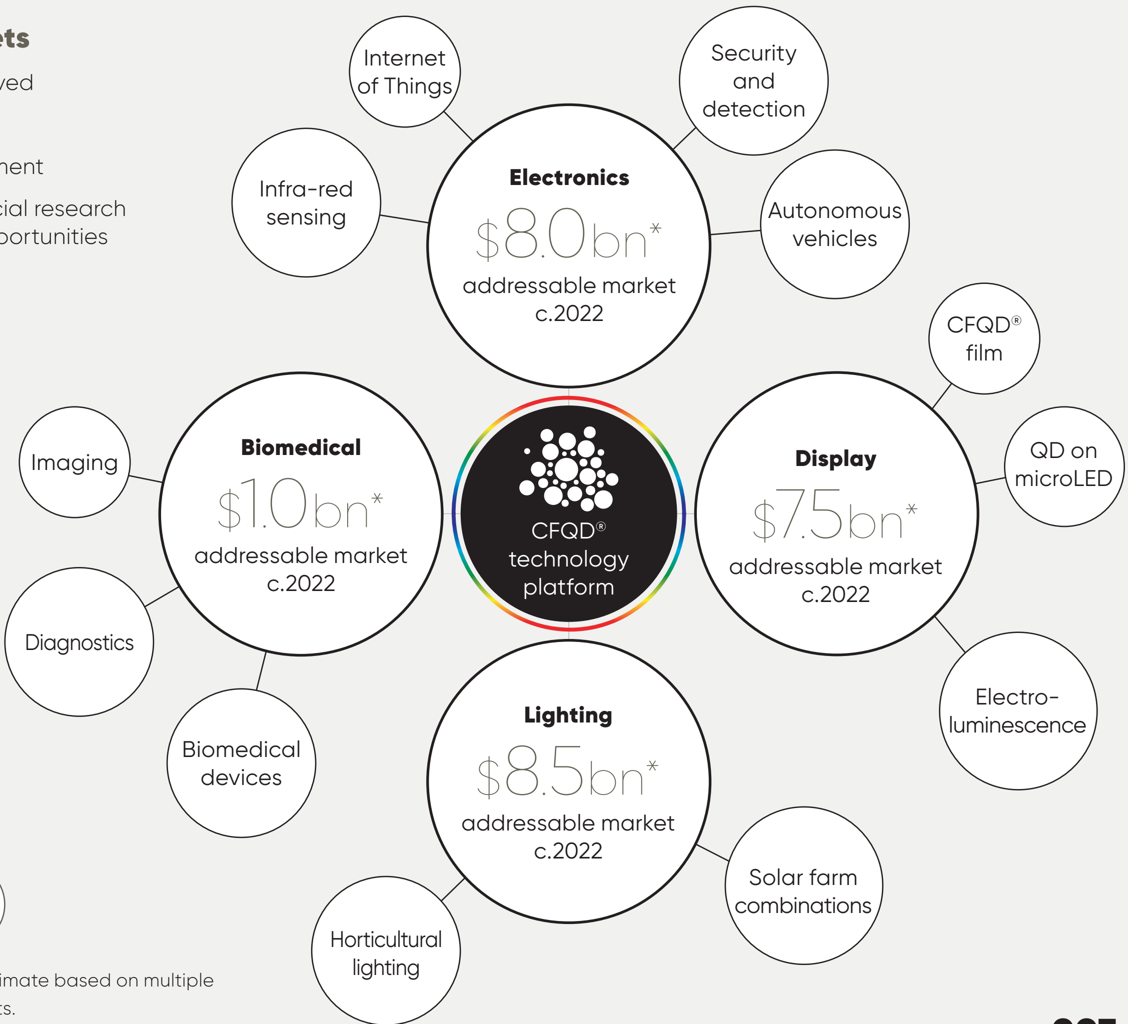
* Source – management estimate based on multiple independent market reports.

World firsts at our manufacturing centre

- Based at Runcorn, UK. An area with extensive chemical industry expertise and supply chains
- Doubled production footprint in the year to 22,000ft^2
- Dedicated facilities for CFQD® quantum dots used in display, lighting and life sciences
- New separate facility for nanomaterials for use in electronic applications (sensing, IoT, automotive)

Large and growing addressable markets

- 4 major industries served
- 3 major licensees
- 1 major supply agreement
- A number of commercial research and development opportunities under discussion



Business model p20

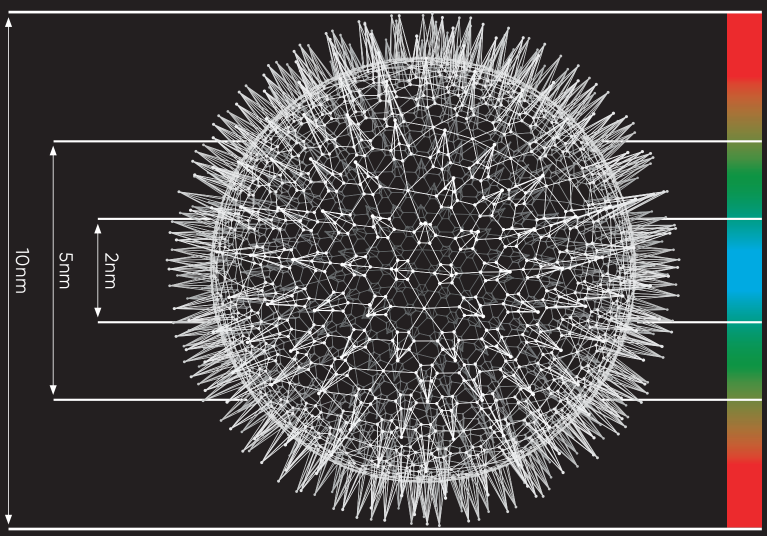
* Source – management estimate based on multiple independent market reports.

Infinite possibilities

What are nanomaterials and what is a quantum dot?

Nanomaterials are any material that has a dimension or structure measured at the nanoscale, typically 10,000 to 100,000 times narrower than human hair (1–100 nm). Nanomaterials have unique optical, electrical and mechanical properties often not accessible in the bulk material. This can enhance properties such as light absorption, emission, strength, reactivity and conductivity.

Quantum dots are a subclass of nanomaterials whose optical and electronic properties depend on their size, shape and composition.

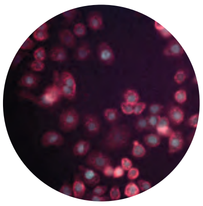


What this all means...

The Group's platform technology means that we can design and manufacture a bespoke material for a customer's requirements across a wide range of applications and industry sectors. For example, highly absorptive dots can be used in infra-red sensing or solar energy applications. Efficient emission dots can be used in high end displays to create fantastic colour clarity and a brilliant range of colours. In addition Nanoco's CFQD® quantum dots are free of cadmium and other toxic heavy metals; therefore they can be used in medical imaging applications.

About our CFQD® platform

Our technology has a vast range of applications and we have the expertise and knowledge to exploit them



Emit light in precisely controlled wavelengths

Emission wavelength of CFQD® quantum dots can be tuned to nanometre resolution simply by adjusting the size of the particle, thereby improving efficiency and effectiveness.

- Increases colour gamut of displays by allowing high specificity of LCD pixel emission
- Allows for precise optical barcoding based on wavelength for security markers
- Enables tuning of lighting fixtures to increase the range of visible colours illuminated underneath
- Enhances plant growth with improved tuning of horticulture lighting to target specific molecules in different plant species

Improved energy efficiency

CFQD® quantum dots' nanometre precision and narrow width of emission improve efficiency over conventional phosphors.

- Less light lost to subpixel colour filters in high colour gamut displays
- No emission loss to non-visible near infra-red wavelengths in high colour rendering general lighting fixtures
- Lower loss of output gives the ability to reduce energy input

Nanosecond lifetime enables increased modulation

Emission lifetimes 1,000 times faster than conventional phosphors open up applications requiring high light modulation speeds.

- Improved screen refresh rates on displays for gaming and virtual reality
- Opportunities to integrate LiFi into conventional light fittings for secure data connections

Reduces production cost and complexity

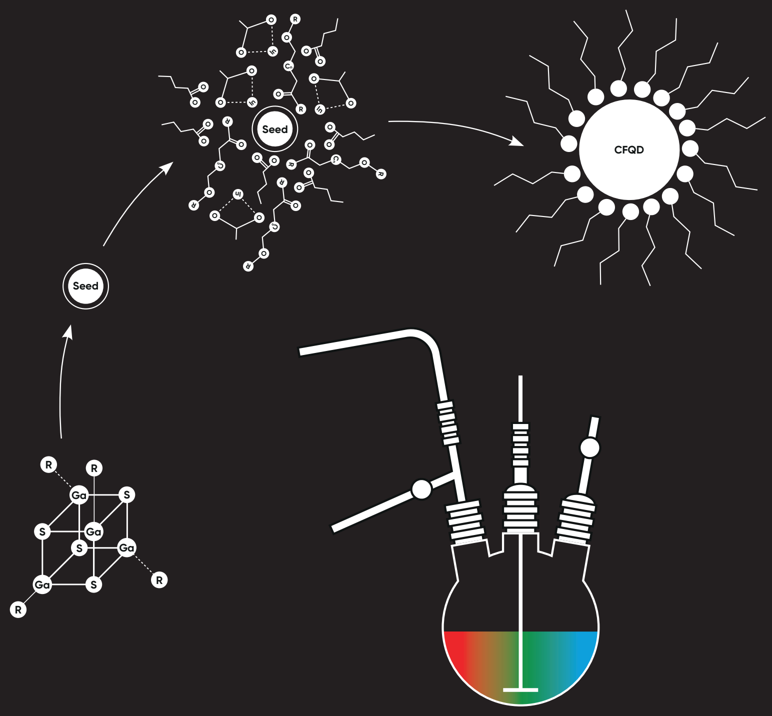
Wide excitation absorbance band and flexibility in product form factors allow CFQD® quantum dots to be easily integrated into applications.

- Less stringent binning required on blue excitation LEDs for display applications reducing component cost and improving supplier availability
- Sheet form factor allows for simple drop in integration to current electronics, eliminating retooling costs
- Ink jet and spin coat processing allow for low cost manufacture of next generation µLED and OLED/QD hybrid devices

Infinite possibilities

A unique technology for high volume production

Cadmium-containing QDs, such as CdSe, can be readily produced by a process known as "high temperature dual injection". For cadmium-free QDs based on III-V semiconductors, it is more difficult to achieve high quality QDs on a large scale using this process. Nanoco developed its patented "molecular seeding" process as a reproducible route to the production of high quality QDs. The inherent control in the molecular seeding process offers ease of process scaling for large volume manufacturing.



What this all means...

We have a clear competitive advantage twofold over our QD manufacturing rivals: our dots are heavy metal free and we can manufacture them in bulk.

Chairman's statement

Leveraging our platform technology

DR CHRISTOPHER RICHARDS
Chairman

Summary

- Successful delivery of major contract milestones for the US Customer and completion of the expanded Runcorn production facility.
- US Customer decided not to extend the current contract beyond December 2019, for reasons unrelated to Nanoco, presenting funding challenges and uncertainty in the year ahead.
- Reorganisation of delivery resources to be able to support commercial production of both CFQD® quantum dots and nanomaterials for use in the electronics industry, in particular with respect to infra-red sensing.
- Significant changes made to the Board, Executive team and workforce during the year.
- The best financial results in the Group's history with a contracted order book underpinning revenue expectations for H1 FY20.

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 platform technology and deep IP portfolio have significant value and are relevant across a wide range of markets and commercial applications."

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.

Chairman's statement continued

Strategy and business activity continued

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 2021/22 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 £6.0 million 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 KPIs 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

"The successful delivery of a series of complex and challenging technical milestones has justifiably led to our best financial results ever. Our focus is now on leveraging our increased know-how and new production facility with other potential electronics customers."

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 a member of the Remuneration and 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 infra-red 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 £6.0 million 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 twelve 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

Increased interest in potential markets and applications

DR MICHAEL EDELMAN
Chief Executive Officer

ABOVE:
Laboratories at Nanoco.

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 services 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 infra-red 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.

"We should not let a year of excellent technological and financial performance by our hugely talented and committed team be obscured by disappointment with the decision by the US Customer not to progress the current programme."

Infinite possibilities

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 nanomaterials 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, current status of each contract and associated extensions with our US Customer.

Contract	Timeframe 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 of £3.4 million to pay for Runcorn facility entitled customer to discounted material price for commercial production materials (now waived); plus → £4.2 million earned for delivery of the milestones.
	Contract extension signed January 2019 covering period to December 2019.	→ Extension valued at just under £8.0 million, £1.2 million 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 £1.1 million earned in full in FY18 and FY19 including all four technical milestones.

Q&A

Q: Are you still excited by the opportunities for Nanoco?

Absolutely. The last year shows that our technology and know-how can be used in so many different applications – beyond even those we are targeting today.

Q: This year has been more of a rollercoaster ride than most. How do you manage a business in that environment?

Flexibility and innovation. You need to be ready to adapt if you don't know what the future is going to throw at you. Our teams have the skills to be able to work on more than one type of project and that our platform technology can be used across multiple markets.

Q: What is Nanoco's greatest asset?

The contribution of our IP, know-how and people! In a technology business built on the skills and knowledge of employees, that's a pretty easy one to answer. Many of our customers just say they respect and enjoy working with the team at Nanoco.

Q: What next for Nanoco with the contract not being extended by the US Customer?

In moving to a "dot only" strategy, we have focused the business back to what we do best: designing, scaling and manufacturing novel nanomaterials. We aim to win new commercial contracts to mitigate the end of the contract with the US Customer. We are now seeing growing market appetite to exploit the unique characteristics of our materials.

Chief Executive Officer's statement continued

LEFT:
Quantum dots under a UV light.

Business performance continued

Electronics continued

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 infra-red 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 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 infra-red 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 makes Nanoco an attractive partner for a wide range of participants with whom we are actively engaged in the rapidly growing infra-red 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 Group's intellectual property ("IP") has grown to 745 patents and patent applications, an increase of 91 over the past twelve 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 31 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 allow 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 nanomaterial 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 £0.6 million 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 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 for the second half.

Our challenge now is to rebuild 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

Revenue streams

We have significant potential capacity for revenue generation from our multiple revenue streams

Products

Our Runcorn facility has the capacity to make high volumes of CFQD® quantum dots and HEATWAVE™ nanomaterials for IR sensing applications. The revenue generation capacity can be easily scaled by adding additional shifts with the overall potential return on the asset base being extremely attractive, and benefiting strongly from operational leverage if extra shifts and volumes were added. Revenue potential: HIGH.

Services

Our highly skilled R&D and Scale Up teams are able to design, develop and scale new materials for customer-specific applications. We are able to charge customers for professional services when we carry out these sorts of development activities for them with rewards often linked to achieving technical milestones or outcomes. The last two financial years have seen significant revenue generated in this area. Revenue potential: MEDIUM.

Licences

When a channel partner initially acquires a right of access to or use of Nanoco technology and IP, they typically pay a one-off licence fee. These fees reflect the costs already previously incurred by Nanoco in developing our technology and IP and hence represent a return on those historical investments. Revenue potential: LOW–MEDIUM.

Royalties

As well as the ability to make and sell materials directly to our customers, the agreements with our channel partners (DuPont, Merck and Wah Hong) allow them to manufacture our materials themselves (or source from elsewhere under further licences) and then pay a royalty on the value of their sales to their customers. This revenue stream has the potential for very high leverage since it is not constrained by Nanoco's own manufacturing scale and also has minimal costs associated with incremental sales via this channel. Revenue potential: HIGH.

Our strategy p22

Strategy in action

Cutting-edge nanomedicine

Following the successful demonstration of the safety and clinical suitability of our red biocompatible CFQD® quantum dots (Vivodots™ nanoparticles), the Life Sciences team, supported by Innovate UK grants, pursued several unique applications related to photodynamic therapy and medical imaging. Preclinical translational studies were continued in vitro and in vivo to confirm effectiveness in the diagnosis and treatment of skin, pancreatic and colorectal cancers. Newly developed targeting ligands are being evaluated with very promising results. We have also enhanced our business reach and networking, and made our productised Vivodots™ brand available for sales to interested customers. As always, our goal is to unlock the potential of our biocompatible quantum dots and develop nano diagnostics and therapeutics that can truly answer unmet medical needs.

Cancer overtakes CVD as leading cause of death in wealthy nations (Medscape Medical News, 4 Sep 2019)

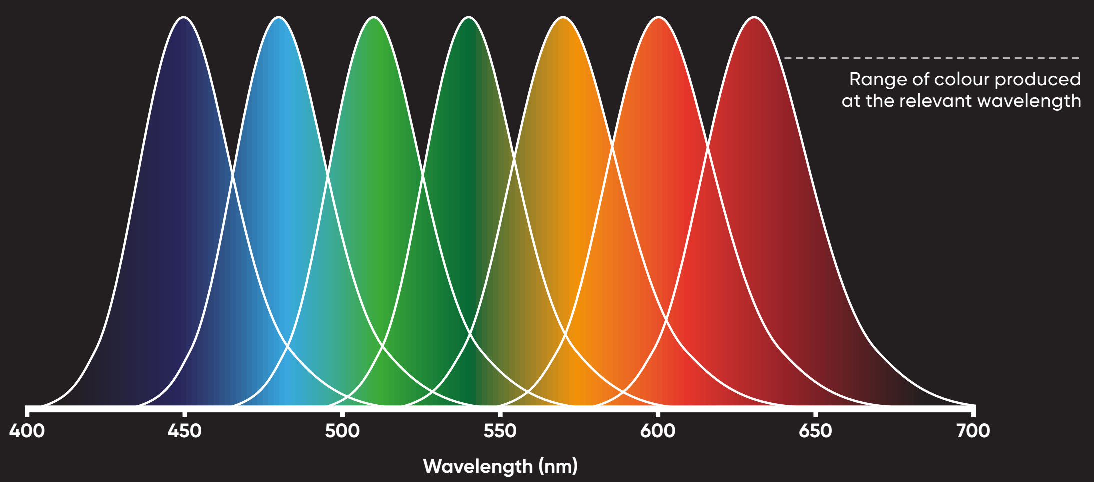
The global cancer diagnostics market size was valued at USD 144.4 billion in 2018 and a CAGR of 7.0% (Market Research Report, Grand View Research, Feb 2019)

Infinite possibilities

Fine-tuning light quality with CFQD® quantum dots technology

Large improvements have been seen by the research team in CFQD Fine Color Film™ Deep Red product this year. Combining the latest generation CFQD® quantum dots with improvements to our resin technology has yielded huge gains in the photon conversion efficiency of the film. For customers this has translated to a >40% increase in photosynthetic active radiation, enabling even more efficient plant growth.

In usage we are continuing to find innovative new applications with our partners. Latest interest has come from utilising CFQD Fine Color Film™ Deep Red product as a solar concentrator for use in commercial greenhouses. The film tunes daylight to increase the red component, known to optimise plant growth. This can also be combined with PV technology to allow greenhouse roof panels to generate electricity with no compromise on the growth rate of the plants within, moving us closer to carbon neutral food manufacture.



What this all means...

Fine-tunable, high purity light for a variety of different applications ranging from mass market consumer electronics to high specification machine vision to enabling bio-imaging for cancer treatments.

Focus on R&D

We are pushing the boundaries of nano-materials with our investment in 2D materials

Nanoco 2D Materials Limited has been established as a wholly owned subsidiary of Nanoco Group PLC to address the rapidly changing landscape of two-dimensional ("2D") electronic materials and to commercially exploit their unique properties. 2D materials such as graphene and transition metal dichalcogenides ("TMDCs") are of great interest for electronics applications. However, most commercially available "graphene" is not pure graphene. Thus, there is a need to develop and supply electronic-grade 2D materials. By adopting a similar approach to that which we have successfully developed for our CFQD® quantum dot materials, we plan to deliver high quality Quantum Disc™ 2D nanomaterials to this growing market.

Quantum Disc™ 2D nanomaterials may be suitable for a range of applications, from photoluminescent and electroluminescent displays and lighting to photovoltaics, biomedical imaging and therapeutics, catalysis, sensing and next generation heterostructure devices. The ability of Quantum Disc™ 2D nanomaterials to address some of the current limitations of commercial graphene opens up a significant market opportunity for these novel materials.

Our efforts in 2D are supported by close collaboration with the University of Manchester and Nobel Laureate Konstantin Novoselov.

Near-term developments

Display and sensor materials

→ **OLED colour conversion** can be achieved with CFQD® quantum dots materials allowing for the development of hybrid display devices, combining the improved colour gamut capabilities of quantum dots with the superior blacks achievable with current OLED TVs.

→ **Near Infra-red ("NIR") materials** can be used to revolutionise the sensor market extending the range of CMOS camera sensors from the visible through to the near IR. This would open up consumer device cameras to allow depth sensing on top of traditional photography all from a single sensor array.

→ **Short wave Infra-red ("SWIR") materials** look to have a large impact in the machine vision sector by providing a low cost alternative to traditional InGaAs technology sensors. Reduction of cost of these sensors opens up a wide range of potential uses from inspection of food materials on factory production lines to improved diagnostic capabilities of wearable smart watches.

R&D

→ **µLED colour conversion** can be used to truly enable wearable augmented reality ("AR") devices in the near future. CFQD® quantum dots will be capable of converting single colour blue µLED projectors to full RGB capability, allowing full colour images to be displayed on heads up displays at high brightness with low power consumption.

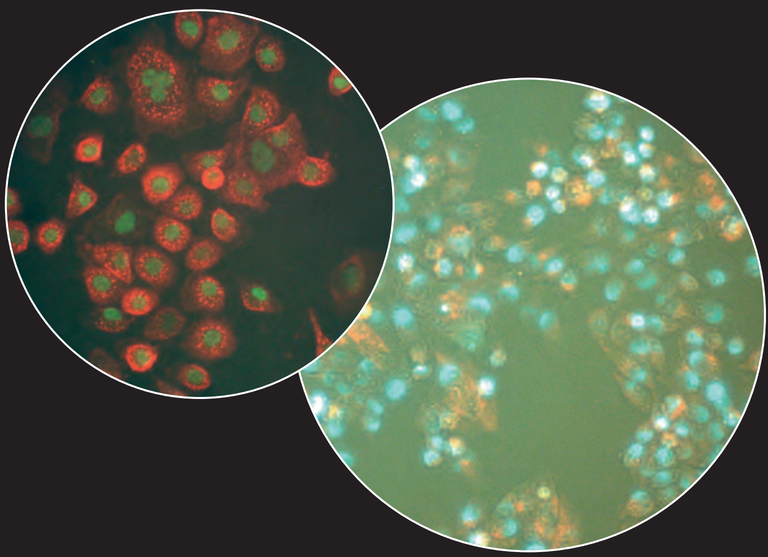
→ **QD-LED self-emissive display technology** can uniquely offer excellent colour performance, high brightness, and power efficiency alongside low cost printing production techniques. Displays with novel form factors, flexible or large area printable displays hold great potential for the next generation of screens.

Our markets p3

Infinite possibilities

Targeting breast cancer cells

Below are examples where red and green Vivodots™ nanoparticles (biological CFQD® quantum dots) were conjugated to anti-EGFR antibodies (red signal) or to a nuclear targeting ligand (bluish green signal), respectively, and used to treat cultured breast cancer cells.



What this all means...

The specific targeting of cancer cells using Vivodots™ nanoparticles (biological CFQD® quantum dots) demonstrates the potential of our quantum dots in solving unmet needs in medical and biological applications.

Focus on the future

Customised CFQD® quantum dots can be used in a multitude of life sciences applications

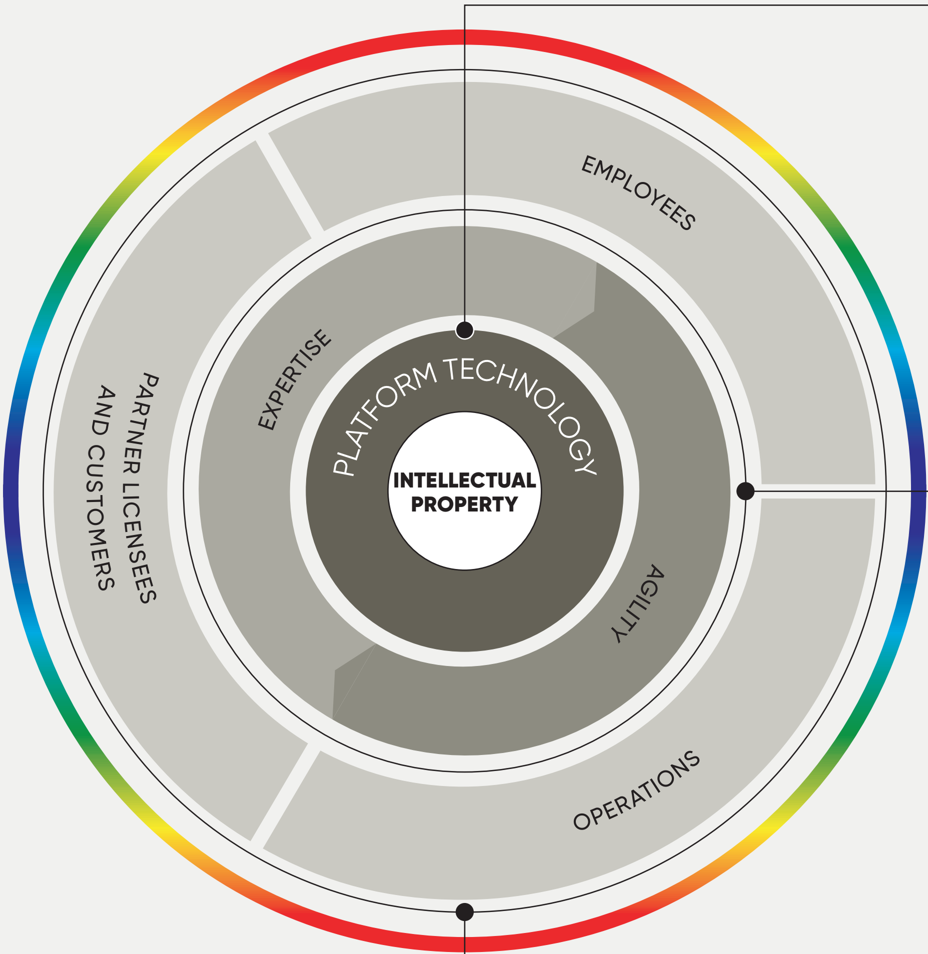
Unlike previous generations of QDs, our biological CFQD® quantum dots (Vivodots™ nanoparticles) provide an ideal platform for achieving both purposes of early detection and precise surgery. Major preclinical safety studies were conducted and results proved the non-toxic nature of Vivodots™ nanoparticles and their suitability for use in clinical applications. Several constructs of cancer targeting molecules linked to Vivodots™ nanoparticles are under development and being tested in vitro and in vivo.

The market available for exploitation is significantly broad and is worth billions of US Dollars and can be split into two segments, in vivo and in vitro. Nanoco Life Sciences ("NLS") is in a distinctive position to take advantage of these segments because of its ability to produce high quality and non-toxic next generation of QDs. Together, these advances give NLS an opportunity to be a forerunner in the multi-billion-Dollar field of image guided surgery, IVD and photodynamic therapy.

Other near-term developments p17

Our business model

We are focused on bringing our platform technology to market for our partners and customers through innovation and research



Intellectual property
Deep IP portfolio, a key investment proposition

Platform technology
High performing nanomaterials

Expertise

Our platform and people deliver novel solutions to new application challenges

Agility

Broad skill set and agile team structures enable rapid resource pivot to alternative commercial opportunities

Licence partner

Major channel partners with global reach to multiple markets and applications

Employees

Highly skilled staff with extensive technical knowledge and flexible skill set

Production capacity

Installed asset base capable of generating significant revenue in multiple markets

About our business model

Our business model has a number of key strengths. It also enjoys a diverse range of potential income streams. This was amply demonstrated over the last two years where services income featured strongly compared to previous years. Our medium-term goal is to maximise our revenue from direct product sales by Nanoco and also through royalty income on sales by our channel partners.

Intellectual property ("IP")

IP and process technology know-how are foundational assets for the Group and a key strength. Our technology is heavily patented to secure its use for the Group. New IP is continually generated through our R&D activities and all potential patents are reviewed by our internal Patent Review Board for commercial value before being filed.

It is worth noting that on top of our formal IP portfolio, we also have significant know-how around our methods and processes. We tend to hold this information as commercial secrets rather than as formally registered IP.

Platform technology

Our nanomaterials have a wide range of electronic properties, usually opto-electrical in nature. These include absorption of different forms of energy, its emission and potentially its conversion to a different form of energy (electricity to light, for example) or a different variety of the same energy (blue light to green light, for example).

One specific class of our materials is our CFQD® quantum dots which avoid the use of toxic cadmium in display applications. The same absence of toxic chemicals means we can also develop dots which can be applied in life sciences applications for use in the human body.

Expertise and agility

We take advantage of our extensive technical expertise and agile workforce to be able to respond to complex and challenging customer requirements. We can also do this much faster than many of our competitors. The example of the US Customer is a case in point: within eleven months of starting work, we solved a number of technical challenges to develop and scale up a novel nanomaterial and then built a new production facility capable of manufacturing that new nanomaterial (once the facility is commissioned and validated).

ABOVE:
Operator assessing the performance of test devices manufactured with Nanoco Heatwave™ material designed for use in infra-red sensors.

Licence partners

Our licence partners create an excellent opportunity for the Group to access very large global markets which our own scale might make difficult. Our partners have global scale and reach and in a number of cases are closer to potential end market uses which might go unnoticed by the Group.

Our licence partners also bring significant skill sets in the respective supply chains that would be too difficult or too costly for the Group to develop internally. This partner reach has allowed the Group to move to the "dot only" strategy where we focus our expertise and resources on our core capabilities and allow the licence partners to exploit their core strengths in collaboration with Nanoco.

Employees

Our staff are highly skilled in a number of specialist areas. There are 30 employees with PhDs and other postgraduate qualifications. In R&D our expertise ranges from chemistry to physics, and from biology to pharmacology. Staff are also adept at taking lab scale process and scaling them up to industrial production scale. We also have strong process improvement and yield optimisation skills that improve both production volumes and our input costs. It is this extensive range of specialist skills which makes our team such a valuable asset which, when combined with our IP portfolio, helps generate a compelling investment proposition.

Production capacity

Our Runcorn production facility has two distinct production labs. One is focused on CFQD® quantum dots for use in display, lighting and life sciences. The other, new and recently completed facility, is focused on nanomaterials for use in infra-red sensing applications. In combination they create an extensive revenue-generating capacity for the Group through direct product sales to our customers. The nature of the facilities means they also deliver strong operational leverage if additional volumes are added with additional shifts.

Our strategy

Our "dot only" strategy is to focus on producing the highest quality dots and meeting the needs of our customers through the application of innovative nanomaterials technology

Strategic objectives

1 Growth

Objective

- To become self-sustaining financially
- To continue to invest in R&D for future products

How

- Own manufacture and direct supply to customers
- Non-exclusive technology licensing
- Professional services
- Royalty income

Future focus

- Converting current opportunities into revenues with a strong emphasis on nanomaterials
- Exploring opportunities with a number of potential customers

KPIs

- Year-end cash and short-term deposits
- Revenue
- Loss after tax
- Total billings

Risks

- Strategic
- Operational
- Financial

2 Investment

Objective

- To maintain our competitive advantage

How

- Continue to create and patent new IP
- Continue to develop in-house manufacturing capabilities

Future focus

- Continuing to invest in R&D in order to remain at the forefront of this technology
- Exploring ways to open up new market opportunities

KPIs

- Year-end cash and short-term deposits
- Total investment in research and development

Risks

- Strategic
- Compliance

3 Licensing

Objective

- To bring significant extra capacity and resources to address expected market growth

How

- Assisting licensees in maximising their opportunities in manufacturing
- Working with licensees to create routes to market for our products

Future focus

- Continuing to support our licensing partners to maximise the benefit to all parties
- Giving partners the best performing dots

KPIs

- Portfolio of patents and patents pending

Risks

- Strategic

Strategy in action

Investment in manufacturing this year has seen a major increase in our capacity for direct product sales

Supported by payments for the US Customer, we built and commissioned a significant new production facility at our Runcorn site in the UK. The facility doubles the production area of our Runcorn site. More importantly, the new facility has the potential to generate revenue three to four times higher than the original CFQD® plant on its own (based on current price and yield expectation, around £60.0 million p.a.).

In the fourth quarter of FY19, the US Customer agreed to waive the liability to return the £4.2 million of capital funding for the nanomaterials production facility. This was to have been repaid through a discount against each unit shipped of commercial production material. The plant is therefore now financially unencumbered and creates a significant potential for own manufactured direct material sales to customers.

On the CFQD® plant we have also been developing plans to expand our capacity for direct production. Subject to demand from customers we will be able to increase the capacity of the CFQD® plant by around 50% with investments in a number of small scale projects totalling approximately £2.0 million.

RIGHT:
A selection of Nanoco products.

£60.0m
→ Revenue capacity in new nanomaterials facility

£15.0m
→ Revenue capacity in CFQD® facility

Our key performance indicators

We have improved operational reporting of key performance metrics and their timeliness during the year. We have also shared them more widely with the senior team, all of whom can individually help influence outcomes on one or more of them

Year-end cash and short-term deposits
£ million

£7.0m

-35%

2019	7.0
2018	10.7
2017	5.7
2016	9.5
2015	4.3

Measurement

Reconciled bank balances including committed but not yet cleared receipts and payments.

Why it is important

Historically the business operated on a cash consuming basis and this KPI indicates the duration of funding visibility.

What it means

In combination with the Group's operating plans and budgets, the current balance underpins the Directors' going concern and viability statements.

Strategy link 1 2

Revenue
£ million

£7.1m

+115%

2019	7.1
2018	3.3
2017	1.3
2016	0.5
2015	2.0

Measurement

The value of goods and services recognised as income in accordance with IFRS 15 Revenue Recognition.

Why it is important

Revenue (and its change year on year) shows the speed with which the business is growing.

What it means

In combination with gross margins and overheads it shows that the Group moved closer to a breakeven position in FY19.

Strategy link 1

Loss after tax
£ million

(£4.4m)

+26%

2019	(4.4)
2018	(6.0)
2017	(9.1)
2016	(10.6)
2015	(9.0)

Measurement

The statutory result after deducting all costs and tax from our revenue.

Why it is important

Achieving a profit after tax is a critical medium-term goal as it would significantly reduce the key risk of running out of cash before realising the Group's full potential.

What it means

The Group's loss after tax narrowed significantly in the year.

Strategy link 1

Key

Strategy link

1 Growth
2 Investment
3 Licensing

Billings

£ million

£9.6m

+47%

2019	9.6
2018	6.5
2017	1.1
2016	1.9
2015	2.0

Measurement

The value of invoices raised during the year for goods and services delivered or to be delivered to customers (excluding VAT).

Why it is important

If billings exceed revenue, it indicates a business that is growing. Billings are also a better indicator of cash flow than revenue which can be influenced by non-cash accounting estimates and judgements.

What it means

The Group had a healthy positive balance of billings over revenue. This means cash was received in advance of the delivery of services – being paid in advance is a positive outcome for any business.

Strategy link 1

Investment in R&D

£ million

£4.4m

+11%

2019	4.4
2018	4.0
2017	5.5
2016	6.0
2015	5.6

Measurement

The sum of all costs incurred in research and development activities. This includes salary costs and other direct R&D costs.

Why it is important

Nanoco prides itself on the scale and quality of our R&D efforts – which feed our IP portfolio and also commercial opportunity pipeline as we develop new materials for potential new markets and applications.

What it means

We continue to invest in our core R&D activities. Indeed during the year we pivoted some resource away from downstream application work back to enhancing the quality of our materials.

Strategy link 2 3

Portfolio of patents and patents pending

Number of patents

745

+14%

2019	745
2018	654
2017	600
2016	467
2015	360

Measurement

The Group's IP lawyers report monthly on patents granted or filed in the respective patent offices in various countries.

Why it is important

Our IP portfolio is a key strength of the Group and a strong reason to invest in Nanoco.

What it means

Our IP portfolio continues to grow and while size alone is not important, the growth shows the generation of new and protected ideas within Nanoco.

Strategy link 2 3

Financial review

Promising financial results with a focus on cash management

BRIAN TENNER
Chief Operating Officer and Chief Financial Officer

Summary

- Cash remains an area of focus, and the Company has taken a progressive step in being cash generative in the second half, with projections of cash being broadly neutral through to 31 December 2019.
- Whilst uncertainty exists in relation to the timing of future commercial revenues, our results are the best we have ever achieved.
- Revenue and other operating income increased by 108% to £7.3 million (2018: £3.5 million).
- Billings increased by £3.1 million to £9.6 million (2018: £6.5 million), driven by the agreement with the US Customer.
- The loss before tax reduced by £1.9 million to £5.5 million (2018: £7.4 million).

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 the 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 does 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 is above prior year at £4.0 million. This comprises 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 represent 84% (2018: 72.8%) 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 £0.6 million 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.

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.

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%)

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

	2019 £ million	2018 £ million
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. 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, creditworthy 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.

Brexit

The Board continues to monitor the proposals being made. Currently, the majority of the Group's revenues are services delivered in the UK with minimal Brexit impact. Going forward, the Group expects a significant portion of its revenues from material sales to be from non-EU countries where the government hopes to have in place equivalent trading arrangements as exist today. Specific conditions for trade with EU countries will be put in place once the shape of any deal is known.

Financial review continued

Significant accounting judgements

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

- → revenue recognition and deferred income;
- → carrying value of tangible and intangible assets;
- → going concern;
- → carrying value of Company investment and inter-company receivables 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.

"Cash remains our key focus and constraint, and it is therefore pleasing to have generated cash in the second half of the year."

Going concern

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 appropriately timely manner should budgeted revenues not be secured. Further details of this assessment are set out on pages 32 to 34.

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 whilst 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 our focus is firmly on pursuing near-term commercial opportunities.

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

Cash and cash equivalents
£ million

2019	7.0
2018	10.7

Net decrease in cash explained by:

Investment in capital spend
£ million

2019	2.1
2018	2.2

Continued investment in our Runcorn production facility during the year has improved our capacity and ability to respond to our customers' needs.

Investment in intellectual property
£ million

2019	1.0
2018	0.8

Continued investment in the development of the products and processes has meant our patents and patents pending have increased by 91 to 745.

R&D tax credit received
£ million

2019	1.4
2018	1.8

Our continued emphasis on R&D has resulted in a tax claim of £1.4 million (2018: £1.8 million) being repaid in the year.

Cash outflow from operating activities
£ million

2019	2.0
2018	2.2

An improved loss before tax has helped to reduce cash outflow from operating activities, offset by adverse working capital movements.

Principal risks and uncertainties

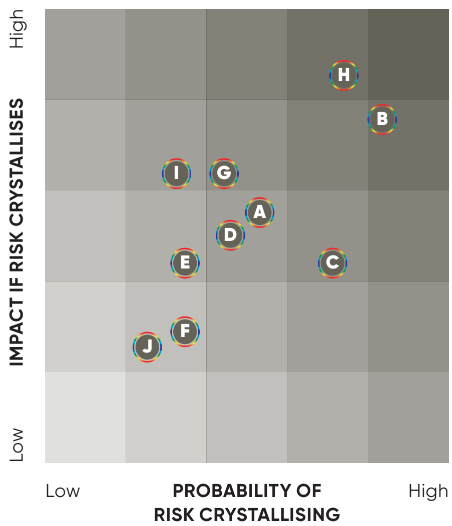
Managing risk in a dynamic business environment

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.

Likelihood and impact of principal risks



Risk management process

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 shown on the heat map below and are discussed in further detail in the pages following.

Principal overarching risk

The principal overarching 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 the viability statement, 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 the US Customer 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 viability statement on pages 32 to 34, management has identified the short-term actions that would need to be taken if no further sales contracts are agreed.

Principal risks

Risks are broadly categorised as strategic, operational, financial or compliance. The table overleaf focuses on those risks that the Directors believe are the most important currently faced by the business. Other risks may be unknown at present and some that are currently rated as low risk could become material risks in the future. The Group's risk management process tracks risks as they evolve and change.

Principal risks and uncertainties continued

Risk description	Potential causes and impact	Mitigation	Change	Link to strategy	Appetite
Strategic					
A **Weak adoption or further significant delays of CFQD® products in the display market** **Responsibility:** CEO	Any of the following factors would have a potentially adverse impact on the Group's prospects: → Nanoco technology does not become fully accepted by the market; → drawn-out qualification processes by display customers; → stronger than anticipated competition from non-CFQD® solutions; → Samsung dominates the display market, vertically integrated, inhibiting access to the market; and → licence partners are slow to generate their own sales with a knock-on effect on Nanoco royalties.	Actively pursue "dot only" strategy which is less reliant on any single particular application. High technical sales engagement with all the major display OEM brands and all parts of the display supply chain. Working actively to expedite customer approvals processes. Rapid product development. Cross training of teams to ensure flexibility to serve different markets and customers reduces risk of excess cost base.	This risk is gradually reducing as quantum dots are now featuring on a wider price range of TVs which will stimulate demand.	1	
B **Customer concentration risk** **Responsibility:** CEO	Reliance on a small number of key customers (one customer was 90% of revenue in FY19) exposes the Group to risk of delays in the customer's own supply chain over which the Group can exert limited influence. These delays can then have a knock-on adverse effect on the Group's expected revenue streams.	Commercial strategy in the medium term is to dilute customer concentration risk by selling into various markets, through various channels and to a range of customers. In the short term the customer concentration risk is partly mitigated by close project management to ensure the Group delivers on its contracts for revenues.	This risk crystallised during the year with the US Customer announcing the end of the current contract. Consequent impact on financial resource risk H.	1	
C **Rapid product commoditisation** **Responsibility:** CEO	Overcapacity for CFQD® products leads to price and profit margin erosion.	Phased capacity expansion available at Runcorn facility. Reduce time to market of new CFQD® products.	Volume will be stimulated with adoption growing in more TVs though we have seen price pressure to accompany this. Capacity expansion plans developed.	1	
D **Intellectual property** **Responsibility:** CTO	Competitors unlawfully infringing Nanoco's IP. Nanoco not getting value for its investment.	Nanoco constantly scans the market for signs of infringement. Prosecute infringers. Maintain process know-how as business secrets as opposed to patents.	We continue to monitor potential infringement of our IP. We also continue to file patents to protect new R&D outcomes where appropriate.	1 3	
Operational					
E **Meeting product specifications** **Responsibility:** COO	Technical specifications are increasing as QD technology matures. If Nanoco fails to meet specification then competitor products will be selected.	Active product life cycle management with new generations of each product to operate within new specifications. Similar approach to production process improvements.	During the year we passed the technical specifications for our new nanomaterials. We have also enhanced the performance of our CFQD® quantum dots.	1	

Key

Risk change	Strategy	Appetite
↑ Up	1 Growth	Acceptable
– Neutral	2 Investment	Review
↓ Down	3 Licensing	Unacceptable

Risk description	Potential causes and impact	Mitigation	Change	Link to strategy	Appetite
Operational continued					
F **Manufacturing capacity is unable to fulfil customer demand** **Responsibility:** COO	Customer markets are large and a significant demand request would require additional capacity. Failure to meet demand could harm commercial relationships.	Capacity flexibility can be delivered by additional shifts, use of scale-up labs for smaller overrun quantities and access to tolling manufacturers and also to licensee production capacity. Conservative plant design to reduce technical risks. Accelerating R&D trials with extended hours working.	↓ Manufacturing capacity significantly increased with the new Runcorn facility and the development of investment plans for the CFQD® facility.	1, 3	
G **Loss of key personnel** **Responsibility:** COO	While the Group maintains a high level of protected documented IP, our staff remain a critical asset with significant levels of technical and sector know-how. Loss of key personnel would have an adverse impact on the Group's development and commercialisation.	The Group offers rewarding careers that allow staff to develop new skills while pursuing interesting research ideas. The Group reviews remuneration to ensure that appropriate reward packages accompany the fulfilling work environment.	↑ Uncertainty around the US Customer and the reductions in our headcount in the fourth quarter have unsettled staff with some departures for more certain environments.	1	
Financial					
H **Lack of adequate resources to sustain the Group until it becomes self-sustaining** **Responsibility:** COO	Revenues from own product sales, services rendered and licensee royalties do not materialise as planned. The Group is unable to carry out its operations and hence cannot deliver on medium-term or strategic goals.	Cash will continue to be prudently managed. Opportunities with the US Company potentially provide additional cash milestones/revenues. Cost reduction actions identified if necessary.	↑ US Customer's decision not to extend the current contract after December 2019 increases the pressure to find replacement revenue. Failing that, contingency plans exist to reduce our cost base in the second half of FY20.	1	
Compliance					
I **Major Environmental Health and Safety ("EHS") issue** **Responsibility:** COO	Failure to follow existing procedures or a new unforeseen risk could result in injury to staff, equipment, reputation and finances and potential loss of operating licences.	Extensive and ongoing efforts to continuously improve procedures. Renewed leadership focus on the "tone at the top" and cultural change. Continuous training of staff in risks and how to mitigate risks.	↓ Performance on safety has been good this year with an increase in the number of safety opportunities identified in a growing number of leadership audits.	2	
J **Legislation to ban cadmium in displays is delayed (RoHS Exemption 39)** **Responsibility:** COO	Cadmium-based quantum dots ("CdQDs") are a key competitive product and any delay to them being phased out adversely impacts the Group's ability to generate revenues in the estimated timescales.	The use of cadmium-based quantum dots was to be phased out in Europe in October 2019 (subject to appeals for an extension).	– Nanoco and other industry players responded to the most recent request for views on a further extension. The results of the extension request are awaited.	1, 2	

Viability statement

The Directors have a reasonable expectation that the Group has access to adequate resources to continue in operational existence for the foreseeable future

In accordance with the provisions in the UK Corporate Governance Code (C.2.2 of the 2016 revision), the Directors have assessed the viability of the Group's business model and determined that a two-year period continues to be a suitable period to be utilised. A two-year period is considered appropriate given the rapidly evolving nature of the markets for the Group's products. As noted in the section on principal risks and uncertainties, market wide adoption of quantum dot technology is still in its infancy and, until well established in multiple applications, forecasting time horizons will be necessarily short.

The Directors' assessment has been made with reference to the current position of the Group, the Group's current strategy and principal risks as described in this Strategic report.

Changes during the year

The most significant changes since the prior year relate to the US Customer. On the one hand the Group now has a longer period of higher contracted revenue with the US Customer than last year (revenue being contracted until 31 December 2019). On the other hand, it was announced in the fourth quarter of FY19 that the US Customer will not be proceeding to commercialisation of the current programme after 31 December 2019. It remains the case that the Group will trade on a broadly neutral cash flow basis until the current contract with the US Customer expires in December 2019. Described opposite are the sources of alternate revenue being explored, the different scenarios that result and potential management responses if new revenue or sources of funds are not secured in the new financial year ending 31 July 2020.

Various sensitivity analyses have been performed to reflect the possible downside scenarios as referred to above. The downside scenario assumes that only revenues under contract or those currently at a contract drafting stage are included in the period of the assessment.

The results of the assessment were that the Group's base case scenario shows adequate resources for the period of the viability assessment. In the downside scenario described above, significant management action would be required to reduce the Group's cost base and capital expenditure to match this much reduced revenue scenario and hence maintain the Group's viability while retaining our core R&D capabilities and IP portfolio. Even in the worst case of no new revenue beyond that which is currently contracted, the Group can take action to protect our core IP assets while retaining viability.

The viability assessment process

In assessing the viability of the Group, the Directors have utilised their forecasts for the period to 31 July 2021 which take into account the Group's current and expected business activities, current cash resources (£7 million as at 31 July 2019) the contracted revenue for FY20, and the principal risks and uncertainties it faces. These inputs were then used to create reasonably plausible downside stress tests which included:

- Very low CFQD® quantum dots sales volumes (whether due to lower customer demand or supply chain issues with the Group's channel partners)
- An inability to replace the revenues provided by the US Customer
- The Group's ability to reduce costs in a timely manner
- Continued investment in R&D and our IP portfolio

Key issues considered by the Directors in evaluating the viability of the Group's business model

Is the display market a viable market for the Group's CFQD® technology?

The technology for display continues to evolve. However, we believe our technology is some of the best in the world, and as such display will continue to be an important market for us to explore.

Volumes of TVs containing quantum dots are likely to increase as the technology is now available in a wider range of price points and this will help stimulate wider adoption and demand.

We continue in active discussion with a number of parties on display applications in first, second and third generations of quantum dot enabled displays.

Are there potential other sources of funding for the Group beyond commercial contracts?

The Directors consider that the markets for quantum dots are an attractive and growing investment proposition. The Group's expertise, production capability and know-how, as well as our IP portfolio, would be attractive to potential new investors in the business. The Board is aware of our funding constraints and will consider alternative sources of strategic funding to supplement our efforts to win new commercial revenues.

Will any further commercial agreements be entered into to underpin the revenue of the Group?

The agreement with the US Customer provides a source of revenue and cash until December 2019.

Following on from our work with the US Customer, we are exploring a number of options in relation to applying our nanomaterials into IR sensing applications within the consumer electronics, automotive, and Internet of Things markets. We continue to explore other collaborative agreements with the US Customer, and alternative commercial agreements are under discussion with other potential customers.

Are the Group's partners likely to be able to effectively manufacture and distribute CFQD® products?

The Group has a number of non-exclusive licence agreements in place with a number of customers focused on the display market. Dow and Merck are licensed to manufacture CFQD® products and they can sell their own manufactured products as well as CFQD® products purchased from the Group. Wah Hong is licensed to produce and sell film containing CFQD® products purchased from Nanoco. All three licence partners have access to multiple customers of their own which significantly extends the commercial opportunities for the Group. Hence the Group is not dependent on one partner or channel for potential future sales in the display market.

If the channel partners are successful in generating their own sales of materials, the Group will benefit in the form of royalty payments on a percentage of revenue achieved by the partner.

The Directors' understanding of the current primary channel partners and their market preparedness are as follows:

- DuPont's (formerly Dow) Cheonan facility is fully operational for supply of CFQD® quantum dots for display. Nanoco is working closely with DuPont to support its efforts.
- Merck is actively exploring next-generation applications for the display market.
- The Directors believe that Wah Hong will be able to produce good quality CFQD® film and that it will be able to identify and create suitable OEM customers.
- The Group is also working with a number of other Asian film coaters to deliver CFQD® film into the market.

In addition, the Directors are confident that they would be able to appoint new partners to replace any of the Group's current partners should the existing licences terminate for any reason. If this was not possible, the Directors believe the Group would be able to scale up its own manufacturing capabilities to react to any demand requirements.

Viability statement continued

Conclusion

As a result of the assessment outlined above, the Directors have confirmed that they have a reasonable expectation that the Group will remain viable and able to continue in operation and meet liabilities as they fall due over the two-year period of their assessment.

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 are set out on pages 2 to 16. The principal risks and uncertainties are shown on pages 29 to 31 while the Group's financial position is described in the Financial review on pages 26 to 28.

Furthermore, note 27 to the accounts 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 as noted earlier in this report. The same base case, downside and worst case sensitivities were also used.

The base case represents the Board's current expectations. Assumptions in 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;
- → revenue from lighting and other business lines is limited to amounts already under contract or repeat orders as well as grant income already won;
- → 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 adequate to preserve funding for the two years of the viability assessment and the twelve 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.

Going concern conclusion

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's 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 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. 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.

Nanoco recognises that providing a safe, secure and healthy working environment is essential and contributes to productivity and improved performance

The Group recognises that, although its primary responsibility under UK corporate law is to its shareholders, it also has responsibilities towards its employees, customers, suppliers and also, ultimately, those consumers who benefit from its products, the broader public and the environment.

Health and safety

Nanoco recognises that providing a safe, secure and healthy working environment is essential and contributes to productivity and improved performance. The health, safety and welfare of all of our employees, contractors and visitors is taken seriously across the entire organisation, with ultimate responsibility lying with the CEO. Health and safety performance is a standing item on each Board and Executive team agenda, and is also discussed within departmental meetings. The Group's health and safety policy is reviewed annually. In addition, the Board has established an Environmental, Health and Safety ("EHS") Committee to oversee the implementation of policy and involve staff in generating improvement plans.

There are various improvement and reporting systems in place to monitor the performance of the Group's health and safety management system. These initiatives include:

i) reporting all incidents (including near misses) with appropriate ownership, root cause analysis and action tracking systems;

ii) communication of relevant topics and incidents via weekly toolbox talks to all departments;

iii) monthly and quarterly leadership safety and observation audits with the focus on immediate action resolution by the executive or senior manager leading the audit;

iv) monthly departmental audits with assigned action tracking processes in place to address issues;

v) monthly health and safety reports issued across the organisation to communicate performance against annual metrics and progress on key improvement initiatives and projects;

vi) annual health checks for staff, including tests for chemical exposure where required; and

vii) annual occupational chemical exposure tests using fixed and personal monitors.

A risk assessment programme is in place to identify and mitigate the risks from our operations. These assessments include but are not limited to:

i) the storage, handling and processing of hazardous substances;

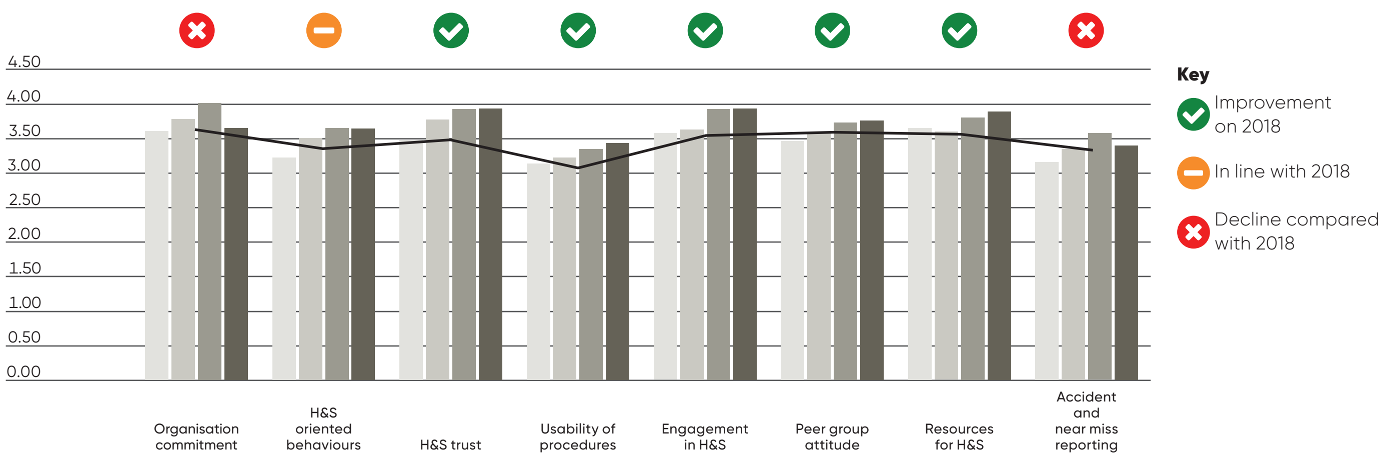
ii) fire safety and emergency evacuation;

iii) use of mechanical and electrical equipment; and

iv) other workplace operations involving manual handling and ergonomic risks, working at height and other hazards identified as part of the EHS improvement programme.

Safety culture survey

Nanoco 2016–2019 and industry mean



Whole portfolio carbon generation (energy use)

		2019 tCO_2e	2018 tCO_2e	Change
Scope 2	Electricity	267	407	-34.4%
	Natural gas	336	212	+58.5%
Scope 3	Air travel	104	166	-37.3%
	Total	707	785	-9.9%

Intensity (tCO_2e/average number of employees)

2019	2018	Change
7.7	9.1	-15.4%

Data notes

Reporting period	1 August 2018 to 31 July 2019
Baseline period	1 August 2015 to 31 July 2016
Boundary	Operational control
Reporting method	The Greenhouse Gas ("GHG") Protocol Corporate Accounting and Reporting Standard
Emissions factor source	Department for Business, Energy & Industrial Strategy, Standard Set 2017
Data changes and restatements	None

Health and safety continued

All risk assessments are documented and actions assigned and reviewed according to the defined frequency. All research and development functions are actively encouraged to, wherever possible, eliminate or reduce the levels of hazardous substances used in our products and processes. All relevant chemical legislation and regulatory frameworks are used to assess the suitability of a substance prior to use as part of the risk assessment process. Standard operating procedures are documented and regularly reviewed.

All controlled documents are reviewed and approved via the electronic document management system. A health and safety induction programme is in place for all new staff and visitors/contractors performing work on our premises. Staff are trained in standard operating procedures, hazard awareness, generic workplace health and safety risks and behavioural safety expectations applicable to their role within the Group.

Each stakeholder has different interests, some of which are listed below:

Employees

Nanoco acknowledges its responsibilities for the health and safety of its employees, for their training and development and for treating them fairly. Further information about its employment policies is outlined overleaf.

Customers

Nanoco is responsible for the quality and safety of its products and for the performance of its research and development projects.

Shareholders

Nanoco seeks to increase shareholder value over the long term.

A serious H&S incident could jeopardise our "licence to operate" and threaten shareholder value.

A cross-functional employee health and safety team meets on a monthly basis with representation from all areas of the Group, including the Executive team. Effective inputs and outputs from the team are designed to facilitate a greater focus on health and safety and to actively encourage discussions within respective groups.

The Group has an excellent safety record and there has only been one reportable incident to the respective UK authorities across all our operations. Nanoco is committed to the continuous improvement of the health and safety management system and has completed a fourth annual HSL Safety Culture survey in August 2019.

The latest survey shows that, across the eight factors in the HSL model, all our results continue to exceed the average scores for chemical and pharmaceutical industry companies. In six of the eight factors our scores were the same or better than 2018. Two of the factors showed a small decline compared to 2018, but still higher than 2017. These results will again be used to identify specific improvement actions, especially for the three factors that declined, which will be tracked via the health and safety management plan and reported to all staff, the Executive team and the Board.

Environment

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 on 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 31 October 2019, 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.

Sustainability continued

Environment continued

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.

The Group's environmental policy aims to foster a positive attitude towards the environment and to raise the awareness of employees towards responsible environmental practices at all sites operated by the Group. The Group endeavours to ensure compliance with all relevant legislation and regulatory requirements and, where practical and economically viable, standards are developed in excess of such requirements.

The CEO has responsibility for reporting on relevant environmental matters to the Board. There have been no environmental incidents to report to the authorities across all our operations. Shareholders and other interested parties are encouraged to use the online version of the Annual Report and Accounts rather than requesting hard copies. Interested parties are encouraged to visit the Group's website or use the regulatory news services instead of a hard copy. Employees are also encouraged to recycle paper, plastic, glass, cardboard and cans wherever possible.

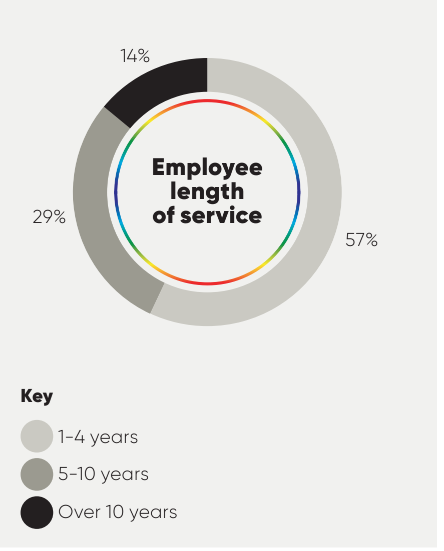
Greenhouse gas ("GHG") reporting

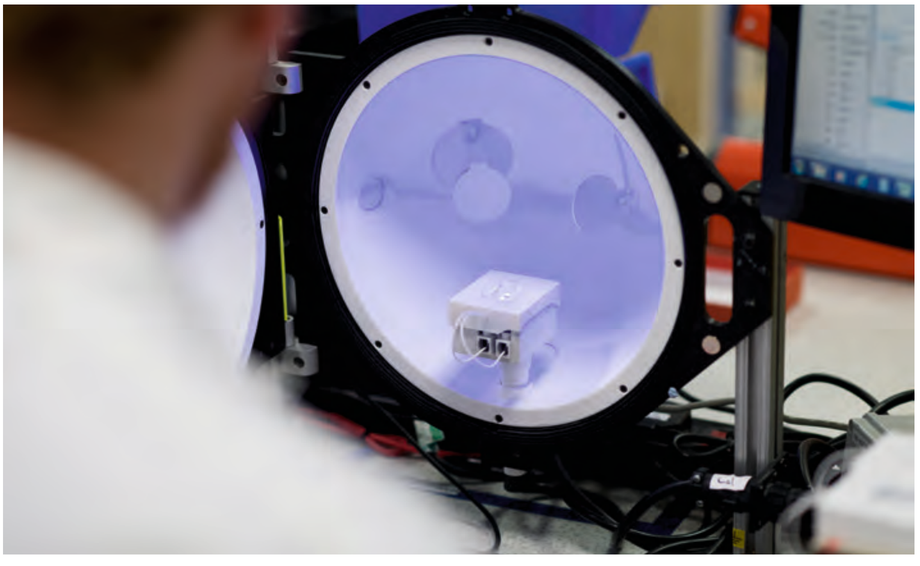
Under the Companies Act 2006 (Strategic and Directors' Reports) Regulations 2013, the Group is required to state the annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which the business is responsible, including the combustion of fuel and the operation of its facilities and resulting from the purchase of electricity, heat, steam or cooling by the business for its own use.

As both of the Group's UK premises are in multi-occupancy sites we place reliance upon their respective landlords to provide the data needed to determine emissions. Our laboratories require continuous negative pressure environments and, consequently, it is not possible to set realistic reduction targets in the consumption of electricity.

Our gas consumption is used for heating premises and site costs are shared between tenants on the basis of area of occupancy. In the absence of significant amounts of revenue from the sale of commercial products, the emissions of the business primarily arise from the occupation of its research and administration facilities rather than from revenue related production operations.

Emissions in respect of the Group's US office are considered to be negligible. Our emissions, based on appropriate conversion factors published by the Department for Business, Energy & Industrial Strategy for the current year are shown in the table on page 37.





LEFT:
Lifespan testing of nanomaterials.

LEFT:
Analytical testing of raw materials.

Waste

During the year, the Group generated 57.7 tonnes of waste (2018: 37.7 tonnes) and recycled 46.8 tonnes of this (2018: 11.8 tonnes). The Group engages a specialist contractor to incinerate batches of chemicals and dispose of other materials no longer required. All waste contractors are assessed to ensure the waste hierarchy approach is applied to all of our materials handled, and that their operations and systems are compliant with the relevant legislation. Audits are performed every three years in line with our duty of care as a waste producer.

Other environmental matters

Consideration of the benefits to the environment is a significant factor in decisions regarding investments to upgrade the Group's research and development facilities in Manchester and Runcorn.

Video conferencing is used where possible instead of physical travel in order to reduce the Group's environmental footprint through fewer flights and other means of travel.

The Group's display, lighting and solar technologies all sit in the energy efficiency and low environmental impact arena and, as such, will enable customer companies to increase the uptake of their products while reducing their impact on the environment.

Attraction and retention

Recruiting technical specialists has always been key to Nanoco's success. In a highly competitive market this means that we strive to offer a competitive benefits package and an attractive workplace culture to ensure that we attract and retain the best of the best. The number of long-serving employees demonstrates Nanoco's ability to retain top talent; out of 79 employees at 31 July 2019, 14% had over ten years' length of service and a further 29% had between five and ten years' service.

Nanoco operates an employee referral scheme for recruiting new talent. Referrals from existing employees are a valued source of new recruits, typically introducing high quality candidates with a better cultural fit. In 2019, 37% of new recruits were introduced by a current employee.

Nanoco has introduced a new and more comprehensive onboarding process for new joiners which includes H&S, HR, intellectual property, IT, finance and corporate induction sessions. The aim of this is to get employees engaged from their first day at Nanoco, and fully equipped to work towards Nanoco goals from the very beginning of their Nanoco career.

We are committed to inspiring future careers in science and technology, offering a range of internships and work experience placements throughout the year. We make the effort to offer these placements to students who might not necessarily have a network which would offer an opportunity for work experience in the sector, and these students might not otherwise get insight into a career in science.

Employees with disabilities

It is Nanoco's policy that people with disabilities, including job applicants and employees, should be able to participate in all of Nanoco's activities fully on an equal basis with people who are not disabled. Nanoco strives to promote an environment free from discrimination, harassment and victimisation.

Nanoco has a disability inclusion policy that states that Nanoco will not, on the grounds of a person's disability, or for a reason relating to a person's disability, treat that person less favourably than it treats, or would treat, others to whom the same reason does not or would not apply, unless genuinely justified.

At the point of appointment, Nanoco obtains occupational health advice as to reasonable adjustments. For disabled employees we put together a "Reasonable Adjustment Action Plan" to support employees with disabilities or health conditions by removing or minimising workplace barriers. These plans are reviewed collaboratively between managers and employees to ensure that they remain relevant. Culturally, we believe that it is important to offer adjustments in a proactive manner where appropriate rather than waiting for our employees to request these.

Sustainability continued

Learning experiences at Nanoco

Nanoco recognises that it is to the benefit of the organisation that individuals are given the opportunity to pursue professional qualifications, and therefore offers a number of opportunities for further study across all areas of the business and at all levels

LEFT:
Max Martin, apprentice analyst
Joao Teles, Head of IT

Academic sponsorship allows our colleagues to achieve on-the-job skills, from the fundamentals all the way up to masters and PhD opportunities. We asked two colleagues to talk about their learning journeys as both are studying for qualifications which are fully funded by Nanoco.

Max Martin is an apprentice analyst; he joined Nanoco in 2015 and spent his first three years at Nanoco completing a BTEC level 3 in applied science with an NVQ in lab practice apprenticeship. After this he jumped at the chance to study further and went on to become an apprentice analyst as part of the M&QC team, and is now studying for a BA in Chemical Science with Manchester Metropolitan University. Max is one of a number of Nanoco employees enrolled on this course.

Joao Teles (Head of IT) has been at Nanoco for 9 years, holds a number of IT qualifications and has over 20 years' experience working in IT; last September he enrolled on an online course (MSc Information System Management) with the University of Liverpool.

What motivated you to pursue a qualification?

Max: The opportunity Nanoco gave me was too good to pass up! Being able to work and study is ideal for me and I know that I need a Chemistry degree to advance further in my career. I was considering leaving Nanoco to go to university before I started this course but this is so much better for me. Unlike some of my friends I won't have a mountain of student debt at the end of the course and will have the practical on-the-job experience that someone coming straight from a full time university course would not have. The course at MMU involves more workplace-based modules such as H&S and lab skills which wouldn't be in a standard chemistry BA; it's specially designed for more practical students who are in industry.

Joao: I wanted to consolidate my experience with a recognised formal qualification whilst also learning what is new out there in the field. I have a lot of practical knowledge but wanted to learn more on the theory side. I didn't want a practical certificate; I wanted something which goes beyond this. Academic research gives the background to why you would do something a certain way. I am particularly interested in novel research and new things – there are new studies all the time which are of great interest to me! The module on Transformational Leadership really opened my eyes; there are so many different approaches and there is a huge body of research behind each of these.

"I wanted to consolidate my experience with a recognised formal qualification whilst also learning what is new out there in the field."

How has studying benefited you in your current role?

Joao: I look at things differently and have a deeper understanding. Nanoco has introduced OKRs (organisational objectives and key results) and I had been studying leadership frameworks at the same time, so I understood the theory behind this. I could feed what I was doing at work into my course and vice versa. I think I also behave differently; I am thinking about my communication and interactions. I have made improvements to some of our processes and my course gave me the knowledge and clarity to do this.

> "IT should work in harmony with business objectives, providing the tools the business needs, and I can see areas where we can bring more value."

I am particularly thinking more about business and IT alignment; our department is about more than just keeping the computers up and running! We need our services to be a value added function. IT should work in harmony with business objectives, providing the tools the business needs, and I can see areas where we can bring more value. The modules I am studying challenge me and make me think; they make me step outside the day to day and question why I am doing things a certain way.

Max: There is a practical focus to many of the units I am studying, and I am also doing a work-based project on improving one of our processes. This has allowed me to dig deeper into that process. I looked at our ICP and how we could reducing the time of running testing on this (overall improving the process). It was great to see the impact when my improvements were implemented, and I felt really proud of the work I had done when I could see how it was benefiting my team and the service we offer to the wider business.

What support do you receive from Nanoco beyond financial support?

Max: I have a workplace mentor who keeps me focused and supports me in completing my university work. In general my team and manager are really supportive. I get 20% of my time in work to study. I can bring in examples from my current role into my course.

Joao: Beyond the financial sponsorship, I am given the autonomy to manage my time so that I can balance working and studying, and my manager is supportive of this. I will also do data collection when it comes to my dissertation next year, although I am still working out what this specific project will be. I might do a consultancy dissertation; this makes some practical recommendations.

How do you integrate studying and working?

Joao: This can be challenging; balancing work, home and studying can be difficult. I found it was more difficult in the beginning but you learn to be disciplined with your time and to set priorities. Nanoco gives me the flexibility to manage this. You have to make the commitment and the support of your employer is invaluable to doing this. I knew what I was in for when I applied and HR supported me to research and choose the right course. I chose one that was distance learning and coursework based (no exams) so that I could balance my time. I study for around 20 hours per week (some weeks as little as five, sometimes more). This is split between watching videos, reading research papers and working on assignments. I also speak to my course mates and have built a support network. I have met a really diverse group of people and it has been great getting to know them. I get a lot of support from others sharing the learning experience.

Max: This can be challenging but also rewarding and the support from my team is there. My manager is flexible and helps me to meet the requirements of my course. I feel like everyone wants me to do well. It's also good that others at Nanoco are doing a similar thing or have done this before so they understand the demands. I have a lot of flexibility with study days, for example saving up some study hours to take around exam times, and I have planned with my mentor how to use my study time effectively.

How do you think this qualification will benefit you in the long term?

Max: This will allow me to progress in the field. Having a degree is really important in the current job market and it gives me the skills to have the jobs I want in the future. I can see that there will be opportunities to progress in my team once I have a qualification.

Joao: Beyond the benefits I have already mentioned, in the long term this will allow me to expand my current role and the value add proposition of the IT department. Having a recognised qualification has the added benefit of increasing my earning potential and opening up new career paths for me.

Max: I don't have a set career path in mind. I didn't expect to be here four years ago and I now have so many more options, and I still have another three years of the course (just finishing second year). I will use these next few years to think about where I want to go next having obtained my degree. I can very much foresee a career in science, be that R&D or analytical chemistry that I do now.

Joao: As Nanoco has grown my role has grown with it. I feel I am prepared to take our department to the next level in terms of providing value and improving the services we provide. The more staff you have the more complex the problems are that you need to solve. I am ready to step up my leadership and my role as part of the senior team; I want to really change how people work and interact with our IT systems and drive the business forward. I want to work towards being a Chief Information Officer in the long term. Earlier in my career I was hands on and practical; now I work on a more strategic level.

Would you recommend opportunities for study at Nanoco to your colleagues?

Max: Yes, most definitely. It has helped me to progress so much and I am sure it would do the same for others.

Joao: Yes, I would. Despite the challenges of combining work and study the rewards of doing so are immense.

Sustainability continued

Engagement and wellbeing

Communication channels at Nanoco include all-Company meetings, leadership meetings, and senior team meetings which then cascade information down. Communication media used includes the Group intranet, all-Group email briefings and online meeting software. Our line managers hold regular team meetings, cross-functional working group meetings and management one-to-one updates with their team members.

Nanoco is committed to a policy of engaging employees in the activities and growth of the Group. Human resources and senior management review communication channels via the use of employee surveys and plan communication activities to ensure employees are fully informed of current business strategy and financial results or corporate news.

Corporate communication is key to the engagement of our workforce. We have focused on improving the look, feel and content of Company-wide electronic communications in order to make these more engaging to employees. Nanoco has a huge number of exciting opportunities in front of it and very ambitious goals. In order to help us communicate, measure and achieve our goals we use a process called objectives and key results ("OKRs").

Aligning the entire Nanoco organisation to ensure that we focus on what is import to achieve our goals is critical to our success. In order to help us navigate the exciting opportunities in front of us it is crucial that as Nanoco employees and managers we make conscious, careful and informed choices about how we allocate our time and energy – as individuals and members of teams. OKRs are the result of those careful choices, and the means by which we co-ordinate the actions of individuals to achieve great collective goals.

We use OKRs to plan what people are going to produce, track their progress vs. plan, and co-ordinate priorities and milestones between people and teams. We also use OKRs to help people stay focused on the most important goals, and help them avoid being distracted by urgent but less important activities.

The Board has considered the new Corporate Governance Code requirements relating to employee engagement and approved a proposal to enhance existing employee engagement. This will involve a designated Employee Voice Champion at Board level and the launch of an employee voice committee. Employees can raise any ideas or concerns to a committee member, and these can be discussed directly with the Employee Voice Champion at quarterly meetings.

We believe that building a positive partnership between strategic management and the wider workforce is crucial to Nanoco's success. Our people are our best problem solvers and possess the insight on how we can make Nanoco a top organisation to work for. A meaningful employee voice will support us as an organisation undergoing change and responding to industry changes. A direct link with the Board also enables our Board members to better understand the diverse nature of the Company, allowing them to execute their roles more effectively.

Recognition

Nanoco recognises that it has a duty to ensure the health, safety and welfare of its employees as far as reasonably practicable. This includes physical, mental and social wellbeing. It is also required to have in place measures to mitigate as far as practicable factors that could harm employees' physical and mental wellbeing, which includes work related stress. This year we introduced compliments postcards for on the spot recognition.

Nanoco, as part of its wellbeing strategy, puts particular focus on mental health. It does so through a variety of means including events such as Mental Health Awareness Week, mindfulness sessions and charity events to raise awareness of the support available to those that suffer from mental health issues. We encourage an open door policy where employees are able to disclose and receive support for any mental health issues they may face.

The employee assistance programme, as part of the wellbeing policy, provides caring and compassionate support to help people cope and build resilience. Both telephone counselling and face-to-face counselling are available to all employees through the programme. This support aims to reduce absence and improve wellbeing by addressing issues head on and reducing their impact.

Wellbeing survey results

Nanoco conducted its annual wellbeing survey in August 2019.

82%

→ of survey respondents reported that they were often or always clear about goals and objectives for their department.

81%

→ of the employees who completed the survey often or always understand how their work fits in to the overall aims of Nanoco.

77%

→ of respondents felt that they often or always had the help and support that they needed from colleagues.

84%

→ of the responses indicated that line managers were often or always engaged with their teams.

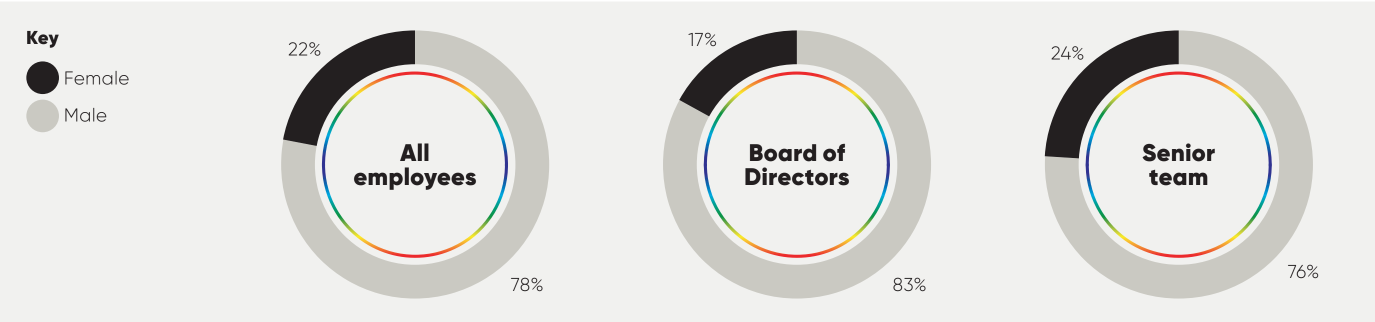
One

→ employee commented: "I really enjoy the working environment here at Nanoco and feel all staff are well supported by colleagues and managers."

72%

→ of the respondents reported that Nanoco often or always fosters an open and inclusive working environment.

Gender diversity at Nanoco



Equality and diversity

Racial and geographical diversity

The Group's employees are from many different backgrounds, including ten different nationalities: American, British, German, Irish, Indian, Italian, Polish, Portuguese, Syrian and Ukrainian.

In addition, Group employees come from a range of business backgrounds, not purely research and development. Indeed, of the Board members, previous roles and responsibilities include those in the supply of chemicals and the engineering, electronics, life sciences, fast-moving consumer goods, publishing and financial industries.

Nanoco has business development people in America, Taiwan, Korea and the UK, also covering Europe and China. Increasingly Nanoco seeks individuals with experience in the business and geographic markets in which the Group operates in order to support its employees and job applicants equally. Nanoco will appoint, train, develop, reward and promote on the basis of merit and ability. Nanoco's equal opportunities policy states that employees will not receive less favourable treatment or consideration on the grounds of age; disability; gender or gender reassignment; marriage and civil partnership status; pregnancy and maternity; race; religion or belief; sex; sexual orientation; or part-time status, nor will they be disadvantaged by any conditions of employment that cannot be justified as necessary on operational grounds relevant to the performance of the job.

The Group's equal opportunities policy is reviewed annually and is available to employees on the Group intranet. A copy can be obtained upon request from the Company Secretary.

Ethics

Nanoco aims to demonstrate and promote high standards of honest and ethical conduct throughout the Group. Formal policies and procedures are reviewed annually and the policies listed below are available on the Group intranet or upon request from the Company Secretary. All Group employees are required to adhere to specified codes of conduct, policies and procedures, including, but not limited to the:

- anti-bribery and corruption policy;
- whistleblowing policy; and
- equal opportunities policy.

Nanoco is a member of the Chemical Industries Association ("CIA") and applies the principles of Responsible Care® to all of its operations.

All Nanoco employees are required to complete annual training in the areas of cyber security, GDPR and information security to ensure they remain up to date and alert to the signs of fraud and unethical practices.

10

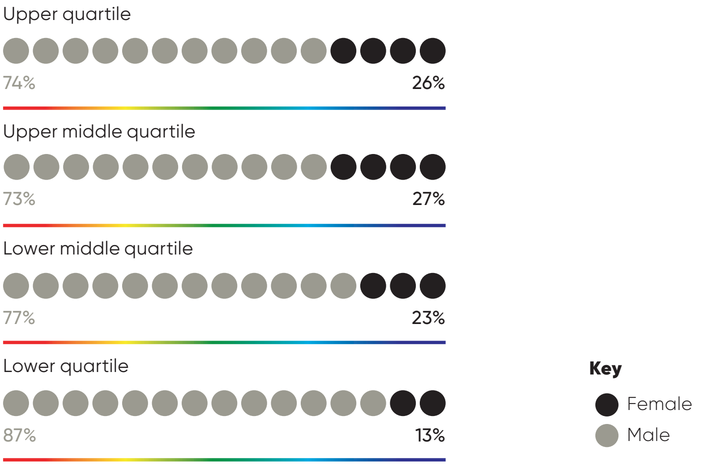
→ nationalities represented by our employees

2

→ nationalities represented by our Board

Sustainability continued

Proportion of males and females in each income quartile



Gender pay gap

Mean hourly earnings	Median hourly earnings
£22.49 Total*	**£18.35** Total*
£21.78 Male*	**£18.21** Male*
£25.06 Female*	**£18.56** Female*

* Excluding NEDs.

LEFT:
Scale up chemists running small scale reactors for the production of CFQD® quantum dots.

Gender pay gap

Scientific research is a sector challenged by a lack of gender diversity, but we feel that we have an opportunity to challenge this status quo. Nanoco believes in being an inclusive and diverse organisation where everyone is able to reach their full potential. The challenge in our organisation and across Great Britain is to eliminate any gender pay gap; we therefore voluntarily analysed gender pay gap data as at 5 April 2019. We can use these results to assess the levels of gender equality in our workplace and the balance of male and female employees at different levels.

At the snapshot date of 5 April 2019, Nanoco employed 90 employees (2018: 77) in the UK, of whom 22% were female (2018: 25.9%). Employees work across a variety of roles in research and production environments.

Overall female representation across the quartile pay bands corresponds fairly closely to the percentage of female to male employees overall.

The median gender pay gap for all Nanoco employees, excluding NEDs is -2% (2018: 2.56%). This means that for every £1 the median man earns at Nanoco, the median woman earns £1.02. The national average pay gap in 2018 for all UK employees is 17.9%*. We would attribute this change from the previous year to the improved gender diversity of our leadership and senior teams. In 2019 Nanoco improved female representation in the Leadership team and appointed a woman to the team (2018: nil). The Nanoco senior team consists of 4 female members (2018: 2) out of 17 (2018: 14) as at 31 July 2019. There is one female representative on the Board as a Non-Executive Director ("NED") (2018: one). Increasing the gender diversity of these teams in 2019 demonstrates that the Group is committed to providing equal opportunities for all employees regardless of gender.

* Source: Annual Survey of Hours and Earnings ("ASHE") – Office for National Statistics.

On behalf of the Board

Dr Christopher Richards
Chairman

Dr Michael Edelman
Chief Executive Officer
16 October 2019

Strategic report approval

The Strategic report on pages 7 to 45 incorporates:

Dr Michael Edelman
Chief Executive Officer
16 October 2019

RIGHT:
Inspection of large scale production equipment at the Nanoco manufacturing site in Runcorn.

Board of Directors

Our Board comprises experienced and talented people from scientific, chemical and industrial backgrounds

Dr Christopher Richards

Non-Executive Chairman

Appointed
Chris was appointed Chairman of Nanoco Group plc in May 2016, having joined the Board as a Non-Executive Director in November 2015.

Skills and experience
Following a successful international career in the agrochemical and life sciences industries, Chris has become a highly experienced non-executive director and business adviser. Chris is the former Chief Executive Officer of Arysta LifeScience, a Japan-based agrochemical business which grew rapidly under his leadership. After stepping down as CEO in 2010, he became Arysta LifeScience's Non-Executive Chairman until the sale of the business in 2015 to Platform Specialty Products.

After gaining his DPhil from the University of Oxford in Biological Science, Chris worked as a research scientist for four years. He began his executive career in 1983 in the Plant Protection division at Imperial Chemical Industries plc, which later became Syngenta. For 20 years, he has lived in various countries including Colombia and Japan and led international marketing and commercial functions.

Other roles
Chris currently holds a number of executive and non-executive roles at quoted and private businesses. He is the Interim CEO and Executive Chairman of Plant Health Care plc (AIM: PHC) and a Non-Executive Director of Origin Enterprises plc (AIM: OGN).

Committees
N R

Dr Michael Edelman

Chief Executive Officer

Appointed
Nanoco has been led by Dr Michael Edelman since September 2004. Michael led the initial fundraising and spin-out from the University of Manchester, floated the Group on the London Stock Exchange in 2009 and grew Nanoco into the world-leading quantum dot player it is today.

Skills and experience
Prior to Nanoco, Michael held a number of executive roles, including having responsibility for licensing the technology developed by GE/Bayer joint venture Exatec LLP, Vice President and Managing Director at yet2.com, Commercial Director at Colloids Ltd and Business Manager at Brunner Mond & Co Ltd.

Michael started his career with ICI and has a PhD in Organometallic Chemistry from the University of Sussex, UK, and an undergraduate degree in Classics and Chemistry from Tufts University, Boston, MA, USA.

Other roles
None.

Dr Nigel Pickett

Chief Technology Officer

Appointed
Nanoco's technology team is led by Nigel, who is a co-founder of Nanoco and inventor of Nanoco's key quantum dot scale-up technology. In 2000 he moved to Manchester where he co-founded Nanoco Technologies in 2001.

Skills and experience
Nigel has co-authored over 70 academic papers and is an inventor on 150 patents and pending applications. He has a passion and experience in taking research work from the academic bench through to full commercialisation. Nigel graduated from Newcastle University in 1991 and chose to remain at Newcastle to pursue a PhD in the field of Main Group Organometallics and is a Fellow of the Royal Society of Chemistry. After graduation in 1994 he undertook a postdoctoral fellowship at St Andrews University, Scotland, in the field of precursor design for metalorganic vapour phase epitaxy ("MOVPE") growth and synthesis of nanoparticles using chemical vapour deposition ("CVD") techniques. In 1996 he won a Japan Society for the Promotion of Science ("JSPS") fellowship and spent the following year working at Tokyo University of Agriculture and Technology, Japan. In 1998 he became a Research Fellow at Georgia Institute of Technology, US, working on the design and evaluation of precursors used in MOVPE.

Other roles
None.

Key

- A Audit Committee
- N Nominations Committee
- R Remuneration Committee
- Chair

Brian Tenner

Chief Operating Officer and Chief Financial Officer

Appointed
Brian leads the Group's operations and supporting functional teams. Brian joined the Board as Chief Operating Officer and Chief Financial Officer on 20 August 2018. Brian also serves as the Company Secretary.

Skills and experience
Prior to joining Nanoco, Brian held a number of senior finance positions with both publicly listed and private multinational companies. His roles have typically focused on broad ranging operational finance with an emphasis on leading change and transformation programmes. Brian's previous roles include Interim CEO and subsequently CFO of NCC (LSE: NCC) from 2017 to 2018 (cyber security professional services), CFO of Renold plc (LSE: RNO) from 2010 to 2016 (engineering manufacturing), Scapa plc (AIM: SCPA) from 2007 to 2010 (speciality chemicals) and British Nuclear Group (hi-tech chemicals and large-scale decommissioning projects) from 2003 to 2007. Brian qualified as a Chartered Accountant with PwC in 1994 and holds a Law degree (LLB Hons) from Edinburgh University.

Other roles
Brian served as a Non-Executive Director and Senior Independent Director of Velocity Composites plc (AIM: VEL), a leading supplier of advanced aerospace composite material kits. Brian served as the chair of the audit committee at Velocity. He stood down in July 2019.

Dr Alison Fielding

Non-Executive Senior Independent Director

Appointed
Alison was appointed to the Board in April 2017.

Skills and experience
Alison holds an MBA from Manchester Business School, a PhD in Organic Chemistry and a first-class degree in Chemistry from the University of Glasgow and an MSc in Mindfulness from the University of Aberdeen.

Alison started her career at Zeneca PLC (now Astra Zeneca) followed by five years at McKinsey & Company and later co-founded Techtran Group Limited, which was acquired by IP Group in 2005, where she held the role of Director and COO until 2013. Whilst at IP Group, she also sat on the board of and advised several early stage and quoted IP Group-backed technology companies.

Other roles
Alison is currently a Non-Executive Director of Getech Group plc and a Non-Executive Director of Maven Income and Growth VCT PLC.

Committees
A N R

Chris Batterham

Non-Executive Director

Appointed
Chris Batterham was appointed to the Board in April 2019.

Skills and experience
Chris holds a Natural Sciences degree from Cambridge University. He then qualified as a Chartered Accountant with Arthur Andersen LLP in 1979 where he spent his early career.

Chris has considerable financial and operational experience and became the Finance Director of Unipalm Group plc, from 1996 to 2001. He then went on to become CFO of Searchspace Group Limited from 2001 until 2005. Chris then went on to hold a number of non-executive roles across a range of companies with a technology focus in many cases.

Other roles
Chris is currently a Non-Executive Director of Blue Prism Group plc and NCC Group plc.

Committees
A N R

Other Directors holding office during the year

All of the Directors who held office during the financial year and at the date of this report are listed above. In addition, David Blain (CFO and Company Secretary) resigned from the Board on 20 August 2018 and Brendan Cummins (Non-Executive Director) stepped down from the Board on 19 April 2019.

Corporate governance statement

The Board believes that good governance is fundamental to the successful growth of our business

DR CHRISTOPHER RICHARDS
Chairman

I am pleased to present the Corporate governance report for the year ended 31 July 2019. This section of the Annual Report describes our corporate governance structures and processes and how they have been applied throughout the year ended 31 July 2019.

The Board's views on corporate governance

The UK Corporate Governance Code embodies core principles of accountability, transparency, probity and a focus on long-term success. As I said in my letter to shareholders in last year's report, the Board firmly believes that a company governed in accordance with these principles will be a successful and well-managed business.

The Board and its Committees play a central role in the Group's governance by providing an external and independent perspective on matters material to Nanoco's stakeholders, and by seeking to ensure that effective internal controls and risk management processes are in place.

The Board also promotes a culture of good governance throughout the Group by creating an environment of openness, transparency and accountability.

The members of the Board bring a wide range of skills and experience to the Group as set out on pages 46 and 47. This diverse skill set allows the Board to appropriately challenge and lead the Group's strategy.

Board focus during the year

During the year, the Board has focused on a number of key areas:

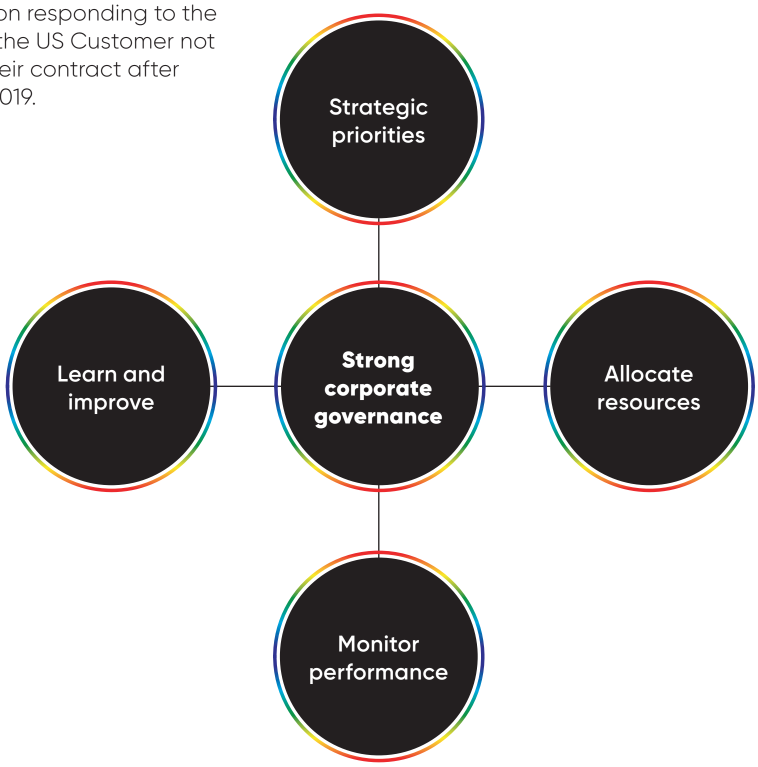
Agreeing strategic priorities with the Executive Directors

This has been particularly important in the current year as we have re-emphasised the platform nature of our technology and moved closer to a "dot only" strategy. This seeks to leverage our core skills and IP in the creation of novel nanomaterials for use in a wide range of applications.

The Board has also had extensive discussions on responding to the decision by the US Customer not to extend their contract after December 2019.

Monitoring the performance of the new Executive team structure

Last year we announced a change in the Executive team to combine the roles of COO and CFO. It was important to ensure this year that those changes were effective and that the new member of the Executive team (Brian Tenner) was enhancing the overall performance.



Attendance	Board	Audit Committee	Nominations Committee	Remuneration Committee
Number of meetings	9	3	1	3
Executive Directors				
Dr Michael Edelman	9	2	–	2
Dr Nigel Pickett	9	1	–	–
Brian Tenner	9	2	–	1
Non-Executive Directors				
Dr Christopher Richards	9	3	1	3
Dr Alison Fielding	9	3	1	3
Chris Batterham	1	–	–	1
Former Directors				
Brendan Cummins (NED)	7	3	1	2
David Blain (CFO)	–	2	–	–

The Non-Executive Directors met six times during the year without any Executive Directors present.

Board focus during the year
continued

Overall management of change within the Group

With the Group delivering significant operating revenues for the first time, it was critical to ensure that the impact of the necessary changes to transition from an R&D focus to a more operational footing was being properly managed. This included new organisational structures, roles and responsibilities, as well as new systems.

These focus areas were in addition to the normal ongoing responsibilities for approving the annual operating and capital expenditure budgets and any material changes to them. Finally, the Board continues to play an active role in approval of the half-yearly report, trading updates, the preliminary results announcement and the Annual Report and Accounts.

A typical Board agenda

Each full Board meeting is structured around a standard agenda of standing items that then includes a number of additional specific focus items for that month's meeting. These focus items are either recurring items (such as risk management) or are in response to emerging issues in our markets, regulation, or the business itself. An example of an agenda taken from the February 2019 meeting is shown below:

→ minutes and matters arising from previous meetings (standing item);

→ CEO report on business performance (standing item);

→ CFO report on financial performance and rolling forecasts (standing item);

→ CTO report on technical and IP matters (standing item);

→ CTO update on progress on "dot only strategy" to enhance dot performance (standing item);

→ COO report on progress and deliverables for customers (recurring item);

→ Company Secretary report including any material litigation (standing item);

→ investor relations update (standing item);

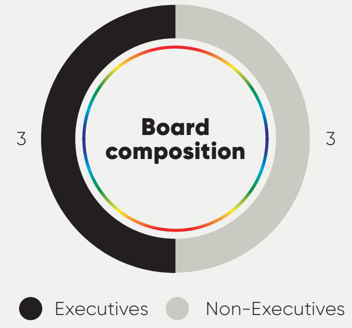
→ reports from Committee Chairs (Audit, Nominations, Remuneration and EHS) (recurring item);

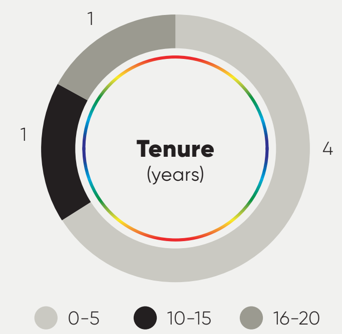
→ break for interviews of new NED candidates (focus item); and

→ any other business (standing item).

Certain key senior management members are invited to give presentations at Board and Committee meetings where appropriate.

Other areas, including the review of the Group risk register, the strategic plan, the annual budget, contentious matters, succession planning, etc. are reviewed by the Board during each year at intervals commensurate with their importance.





Expertise

Strategy	6
Corporate governance	5
Chemicals	4
HR	2
Financial management	4
M&A	3

Corporate governance statement continued

My role as Chairman

The structure of the Board, its Committees and their respective responsibilities are summarised on pages 52 to 55. The key focus of my role is to ensure that Nanoco has an effective Board which is collectively responsible for the long-term success of the Group. One of my most important jobs is to ensure that the Board and its Committees have the right balance of skills, experience and knowledge suitable for Nanoco's evolving strategy and growth aspirations as we progress through a new phase of our development.

Board and Committee evaluation

Regular and appropriate Board and Committee evaluation is vital to improving Board effectiveness. This year, given recent changes in the membership of the Board, it was felt that an external performance review would not be as value adding as it could be next year with a more settled Board. Therefore, I once again conducted an internal Board evaluation process, which was discussed by the Board. Overall, it was concluded that the slimmed down Board and Executive team were performing at an improved level. The quality of information, focus and discussion had improved and Directors felt fully able to voice their differing opinions. In addition, the review identified areas of potential improvement to further enhance the Board's performance.

Once again it was felt that the balance of time allocated to strategy, operations and functional areas and governance was broadly correct. However, following the observation in the prior year that Board members would like to have additional time devoted to the development of operational strategy and its implementation, a full off-site strategy session for the Board was held lasting a day and a half and covering a broad spectrum of topics. This session led to a more tightly focused set of strategic priorities for the year ahead and these were then embedded in the annual operating budget for 2020.

Each of the Audit Committee, Remuneration Committee and Nominations Committee carried out an internal self-evaluation of their effectiveness during the year. The conclusion from the Committee reviews is that, overall, the Committees are working well.

Longer-term viability statement

The Group utilised the forecast for the next two years to assess its long-term viability. The two-year period was chosen due to the inherent difficulty and uncertainties in preparing forecasts for the Group at its current stage of development. Further details are provided on pages 32 to 34.

Statement of compliance with the Code

I am pleased to confirm that the Board considers that it has been in compliance with the Code throughout the year ended 31 July 2019 in all material areas.

Whilst in compliance with the Code, we believe that the ratio of Non-Executive Directors to Executive Directors is not ideal in that the number of Non-Executive Directors matches the number of Executive Directors. As at 31 July 2019, as permitted by the Code due to the size of the Group, the Board comprised the Non-Executive Chairman, two independent Non-Executive Directors and three Executive Directors. The Board considers that the size and composition of the Board is appropriate for the Group's current stage of development and it has sufficient depth and breadth of experience amongst its current Board members.

Dr Christopher Richards
Chairman
16 October 2019

> "The Board firmly believes that a company governed in accordance with these principles will be a successful and well-managed business."

Governance works best when it is active and dynamic

Shareholder engagement activities

The Group has an active annual calendar of engagement with shareholders and potential investors.

2018

September 2018
→ Institutional site visit to facilities in Manchester and Runcorn

October 2018 Full Year Results
→ Analyst meeting, webcast and institutional roadshow in London, Edinburgh and New York

December 2018
→ AGM

2019

January 2019
→ Needham Annual Growth Conference, New York

March 2019
→ Marketing to institutions in Chicago

March 2019
→ Deutsche Bank Small and Mid Cap Conference, London

April 2019
→ Interim results analyst meeting, webcast and roadshow in London, Edinburgh and Paris

Board induction

Getting up to speed quickly emphasises the importance of a strong induction process

CHRIS BATTERHAM
Non-Executive Director

Following the selection process, our new Non-Executive Director was quickly immersed in the Group's governance structures, policies and processes. Chris received a thorough health and safety briefing and visited both UK facilities soon after his appointment.

Corporate governance statement continued

Governance framework

The different parts of the Company's governance framework are shown below, with a description of how they operate and the linkages between them.

Board

The Board provides leadership and is responsible for the overall management of Nanoco, its strategy, long-term objectives and risk management.

It ensures the right Company structure is in place to deliver long-term value to shareholders and other stakeholders.

Board Committees

Support the Board in its work with specific areas of review and oversight objectives and risk management. They ensure the right Company structure is in place to deliver long-term value to shareholders and other stakeholders.

Audit Committee

Primary function is to assist the Board in fulfilling its financial and risk responsibilities. It also reviews financial reporting and the internal controls in place and the external audit process.

Nominations Committee

Responsible for considering the Board's structure, size, composition and succession planning.

Remuneration Committee

Responsible for determining the overall remuneration of the Executive Directors and the remuneration of senior managers within the broader institutional context of remuneration practice.

Chief Executive

Has responsibility for managing the business and overseeing the implementation of the strategy agreed by the Board.

Executive Committee

The Executive Committee currently comprises the Group's most senior business and operational executives. It is responsible for assisting the Chief Executive in the performance of its duties including:

- developing the annual operating plan;
- monitoring the performance of the different divisions of the Company against the plan;
- carrying out a formal risk review process;
- reviewing the Company's policies and procedures;
- prioritisation and allocation of resources; and
- overseeing the day-to-day running of the Company.

Board composition and division of responsibilities

Role profiles are in place for the Chairman and Chief Executive Officer, which clearly set out the duties of each role.

Role	Responsibilities
Chairman of the Board (Dr Chris Richards)	Is responsible for the running of the Board and promoting a culture of openness and debate. The Chairman, in conjunction with the CEO and other Board members, plans the agendas, which are issued with the supporting Board papers in advance of the Board meetings. These supporting papers provide appropriate information to enable the Board to discharge its duties which include monitoring, assessing and challenging the executive management of the Group.
Chief Executive Officer (Dr Michael Edelman)	Together with the senior management team, is responsible for the day-to-day running of the Group and regularly provides performance reports to the Board. The role of CEO is separate from that of the Chairman to ensure that no one individual has unfettered powers of decision.
Chief Operating Officer and Chief Financial Officer (Brian Tenner)	Works closely with the CEO and CTO to support them in the delivery of their roles. Key objectives are to ensure the smooth running of all production processes and back office functions. Includes responsibility for all financial matters including costings and plant efficiencies as well as commercial margins. The role has oversight of all reporting and key performance metrics to ensure management and the Board have an accurate, timely and relevant suite of KPIs to give a full balanced scorecard of all aspects of business performance.
Chief Technical Officer (Dr Nigel Pickett)	Responsible for all research and development activities of the Group. Includes stewardship of the Group's IP portfolio, new additions and maintenance. Takes leadership position on critical new research areas.
Senior Independent Director (Dr Alison Fielding)	Provides a sounding board for the Chairman and serves as an intermediary for other Directors, employees and shareholders when necessary. The main responsibility is to be available to the shareholders should they have concerns that they have been unable to resolve through normal channels or when such channels would be inappropriate.
Other Non-Executive Directors (Chris Batterham)	Maintains an ongoing dialogue with the Executive Directors which includes constructive challenge of performance and the Group's strategy.
Company Secretary (Brian Tenner)	Ensures good information flows within the Board and its Committees and between senior management and Non-Executive Directors. The Company Secretary is responsible for facilitating the induction of new Directors and assisting with their professional development as required. All Directors have access to the advice and services of the Company Secretary to enable them to discharge their duties as Directors. The Company Secretary is responsible for ensuring that Board procedures are complied with and for advising the Board through the Chairman on governance matters. The appointment and removal of the Company Secretary is a matter for the Board as a whole.

Experience of the Board

The members of the Board bring a wide range of skills and experience to the Group. This diverse skill set allows the Board to appropriately challenge and lead the Group's strategy.

The chart below summarises its key areas of significant experience.

Name	Strategy development	Chemical	Human resources	Corporate governance	Financial management	M&A
Dr Christopher Richards	✓	✓	✓	✓	–	✓
Dr Michael Edelman	✓	✓	–	✓	✓	–
Dr Nigel Pickett	✓	✓	✓	–	–	–
Brian Tenner	✓	–	–	✓	✓	✓
Dr Alison Fielding	✓	✓	–	✓	✓	–
Mr Chris Batterham	✓	–	–	✓	✓	✓

Dr Christopher Richards
Chairman
16 October 2019

Corporate governance statement continued

This section of the Corporate governance report contains the Group's other reporting disclosures on corporate governance required by the Companies Act 2006, the 2016 UK Corporate Governance Code of the Financial Reporting Council (the "Code") and the UKLA's Disclosure and Transparency Rule 7 including the required statement of compliance. A copy of the Code is publicly available at http://www.frc.org.uk.

Disclosure and Transparency Rule 7

This statement complies with sub-sections 2.1, 2.2(i), 2.3(i), 2.5, 2.7 and 2.10 of Rule 7 of the UK Listing Authority Disclosure Rules. The information required to be disclosed by sub-section 2.6 of Rule 7 is shown in the Statement of Directors' responsibilities on pages 91 and 92 and is incorporated in this section by reference.

The Board

The Group is controlled through its Board of Directors. The Board's main responsibilities and those of its various sub-committees are set out on pages 52 and 53 and are summarised opposite.

To enable it to discharge its key responsibilities as set out above, the Board receives appropriate and timely information prior to each meeting. A formal agenda is set by each Chair and Committee papers are distributed several days before meetings take place. Any Director may challenge Group proposals, and decisions are taken democratically after discussion. Any Director who feels that any concern remains unresolved after discussion may ask for that concern to be noted in the minutes of the meeting. Specific actions arising from meetings are agreed by the Board and then appropriately followed up.

The terms of reference of the Committees are publicly available at www.nanocotechnologies.com. The same pages of the Annual Report show the key officers and the division of responsibilities and duties between each role holder.

The Directors

There is a formal, rigorous and transparent procedure for the appointment of new Directors to the Board, which is led by the Nominations Committee.

All Directors are then subject to election by the shareholders at the next general meeting following appointment to the Board. In accordance with best practice, they are then subject to annual re-election thereafter. The contracts of the Non-Executive Directors are available for inspection by shareholders at the AGM.

The Chairman has sufficient time to devote to his duties as Chairman and this has been demonstrated by his active participation in the Group's activities.

The Non-Executive Directors constructively challenge and help develop proposals on strategy and bring strong, independent judgement, knowledge and experience to the Board's deliberations.

The Directors are given access to independent professional advice at the Group's expense when the Directors deem it is necessary in order for them to carry out their responsibilities.

The Group maintains, for its Directors and officers, liability insurance for any claims against them in that capacity.

Donations

During the year the Group made no political donations.

Independence and conflicts of interest

The Group has effective procedures in place to deal with potential conflicts of interest. The Board is aware of the other commitments of its Directors and changes to these commitments are reported to the Board. The Companies Act 2006 requires Directors to avoid situations where they have, or could have, a direct or indirect interest that conflicts or potentially conflicts with the interests of the Group.

Directors are required to declare in advance of a Board meeting whether any of the business to be discussed in that meeting gives rise to a conflict or potential conflict. That Director will then be excluded from the relevant discussions unless agreed otherwise by the Directors of the Group in the limited circumstance specified in the Articles of Association. They will not be counted in the quorum or permitted to vote on any issue in which they have an interest.

The Board considers its independent Non-Executive Directors to be independent in character and judgement. No Non-Executive Director has been an employee of the Group; has had a material business relationship with the Group; receives remuneration other than a Director's fee; has close family ties with any of the Group's advisers, Directors or senior employees; or holds cross-directorships.

Professional development

On appointment, each Director takes part in an induction programme in which they receive comprehensive information about the Group; the role of the Board and the matters reserved for its decision; the terms of reference and membership of the Board and Committees and the powers delegated to those Committees; the Group's corporate governance practices and procedures, including the powers reserved to the Group's most senior Executives; and the Group's latest financial information. Throughout their period in office the Directors are updated on the Group's business, the competitive environment in which it operates, corporate social responsibility matters and other changes affecting the Group and the industry it operates in as a whole.

Professional development
continued

The Group acknowledges the importance of developing the skills of the Directors to run an effective Board. To assist in this, Directors are given the opportunity to attend relevant courses and seminars to acquire additional skills and experience to enhance their contribution to the ongoing progress of the Group. All of the Directors are given briefings on trends and developments in corporate governance.

Performance evaluation

The Board has established a formal process for the annual evaluation of the performance of the Directors. This evaluation is based on a performance evaluation questionnaire completed by each Director. The Chairman's performance is reviewed annually by the Non-Executive Directors and led by the Senior Non-Executive Director, Dr Alison Fielding. The evaluation of the Chief Executive Officer is performed by the Chairman and the evaluation of the other Executive Directors is performed by the Chief Executive Officer.

Director dealings in the Group's shares

The Group has adopted a model code for Directors' dealings in securities of the Group which is appropriate for a company quoted on the premium list of the London Stock Exchange. The Directors comply with the rules relating to Directors' dealings and also take all reasonable steps to ensure compliance by the Group's "applicable employees" as defined in the rules.

The Directors' interests in the ordinary share capital and in options over such shares of the Company are shown in the Directors' remuneration report on pages 71 to 87.

Investor communications

Nanoco recognises the importance of good and timely communication. Its primary communication channel is the internet. All press releases are published on the Company's website shortly after they are issued via the regulatory news service in the United Kingdom. In addition, a broad range of other relevant information is available on the Group's website.

The Group also endeavours to ensure that all published information is capable of being readily understood on a stand-alone basis without the need for a one-to-one meeting. This is an extension of the "fair, balanced, and understandable" requirement inherent in the Annual Report and Accounts.

Investor engagement

Meetings with analysts and institutional shareholders are held following the interim and preliminary results and on an ad hoc basis. These are usually attended by the Chief Executive Officer and Chief Financial Officer.

Engagement during the year	Number
One-to-one meetings	74
Conference calls	16
Group meetings	5
Investor conferences	2

The Group takes care to ensure that meetings with shareholders or potential investors are structured around information that is already available to all shareholders on an equal footing.

Feedback from these meetings and regular market updates are prepared by the Group's broker and are shared with the Board.

The Chairman and other Non-Executive Directors are available to shareholders to discuss strategy and governance issues at a shareholder's request.

Corporate governance statement continued

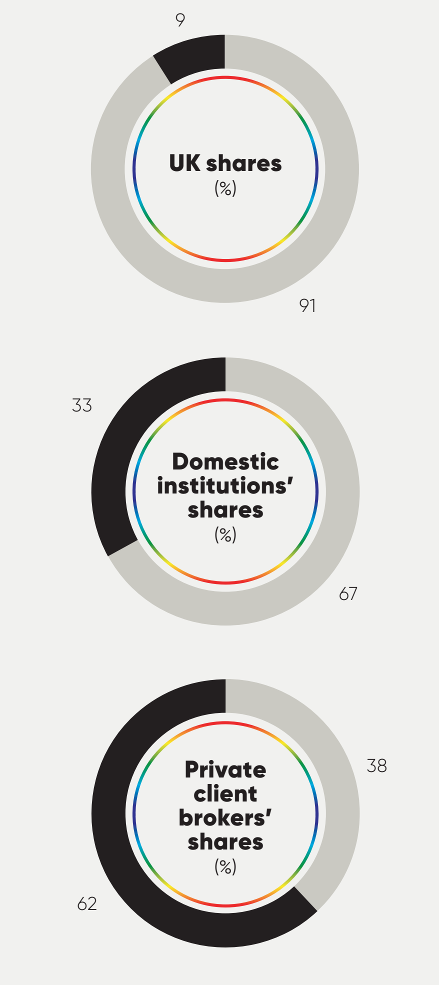
Shareholder analysis

Shareholders at 31 July 2019 are analysed as follows:

Territory	Shares (m)	%
UK	261,321,320	91.30%
Europe (ex UK)	4,740,649	1.66%
North America	14,584,015	5.10%
Asia	62,968	0.02%
Rest of World	3,418,030	1.19%
Below analysis threshold	2,092,264	0.73%
Total	**286,219,246**	**100%**

Type of holder	Shares	%
Domestic institutions	191,989,923	67.08%
Hedge funds	1,423,800	0.50%
Private investors	35,891,504	12.54%
Domestic brokers	18,923,377	6.61%
Employees	17,834,074	6.23%
Corporate stakeholders	10,402,109	3.63%
Foreign brokers	7,895,970	2.76%
Foreign institutions	8,525,729	2.98%
Unanalysed (below analysis threshold)	(7,306,709)	(2.55%)
Unidentified holdings	639,469	0.22%
Total	**286,219,246**	**100%**

Investment style	Shares	%
GARP	7,826,583	2.73%
Growth	1,575,012	0.55%
Hedge	1,423,800	0.50%
Index	10,773,348	3.76%
Multi-style	12,566,274	4.39%
Private client	109,291,318	38.18%
Quant	24,395	0.01%
Value	155,670	0.05%
Non-institutional	149,250,086	52.15%
Unanalysed (below analysis threshold)	(7,306,709)	(2.55%)
Unidentified holdings	639,469	0.22%
Total	**286,219,246**	**100%**



Annual General Meeting ("AGM")

At the AGM, separate resolutions will be proposed for each substantially different issue. The outcome of the voting on AGM resolutions is disclosed by means of an announcement on the London Stock Exchange.

All shareholders are encouraged to attend the Annual General Meeting and talk to the Directors there. All Directors, including the Chairs of the Audit, Remuneration and Nomination Committees, are available at the meeting to answer questions.

Shareholders not attending the AGM can contact the Group via email at info@nanocotechnologies.com.

The table below shows the different resolutions proposed at the 2018 AGM, the proportions of possible votes that were cast and the proportions in favour of and against each resolution (resolutions 1 to 13 were passed as ordinary resolutions and resolutions 14 to 17 were passed as special resolutions).

The Board takes steps to ensure that the views of major shareholders are considered through regular contact.

As appropriate, the Board takes due note of their views insofar as these are relevant to the Group's overall approach to corporate governance. This is achieved, as noted previously, through feedback from meetings with significant shareholders and feedback from the Group's brokers. Significant shareholders were consulted regarding the changes to the remuneration policy which were proposed at the 2018 AGM and that policy became effective for three years (until 31 July 2021).

		Votes for			Votes against			Votes withheld	
No.	resolution	Votes	% of total votes cast	% of total voting rights	Votes	% of total votes cast	% of total voting rights	Votes	% of total voting rights
1	To receive the Report and Accounts	148,015,330	100.0%	51.8%	400	0.0%	0.0%	8,614,044	3.0%
2	To re-appoint the auditors	156,616,287	100.0%	54.8%	12,835	0.0%	0.0%	652	0.0%
3	Authority to agree the auditors' fee	156,622,315	100.0%	54.8%	7,407	0.0%	0.0%	52	0.0%
4	To elect Brian Tenner	155,434,460	99.2%	54.4%	1,187,662	0.8%	0.4%	7,652	0.0%
5	To re-elect Dr Christopher Richards	155,092,095	99.0%	54.2%	1,537,027	1.0%	0.5%	652	0.0%
6	To re-elect Dr Michael Edelman	155,428,654	99.2%	54.4%	1,199,394	0.8%	0.4%	1,726	0.0%
7	To re-elect Dr Nigel Pickett	155,428,654	99.2%	54.4%	1,200,468	0.8%	0.4%	652	0.0%
8	To re-elect Dr Alison Fielding	154,058,586	98.4%	53.9%	2,570,536	1.6%	0.9%	652	0.0%
9	To re-elect Brendan Cummins	154,058,186	98.4%	53.9%	2,570,936	1.6%	0.9%	652	0.0%
10	Approval of Directors' remuneration report	136,644,432	87.2%	47.8%	19,970,668	12.8%	7.0%	14,674	0.0%
11	Approval of Directors' remuneration policy	151,068,120	96.5%	52.8%	5,546,980	3.5%	1.9%	14,674	0.0%
12	Approval for political donations	151,566,320	96.8%	53.0%	5,059,303	3.2%	1.8%	4,151	0.0%
13	Authority to issue and allot shares	154,682,382	98.8%	54.1%	1,947,340	1.2%	0.7%	52	0.0%
14*	Disapplication of pre-emption rights	151,692,921	96.9%	53.1%	4,931,025	3.1%	1.7%	5,828	0.0%
15*	Disapplication of pre-emption rights for specific investment purposes	153,697,687	98.1%	53.8%	2,925,178	1.9%	1.0%	6,909	0.0%
16*	Authority to purchase own shares	156,609,325	100.0%	54.8%	17,768	0.0%	0.0%	2,681	0.0%
17*	Authority to reduce notice of general meetings (excluding the AGM)	151,850,551	97.0%	53.1%	4,771,971	3.0%	1.7%	7,252	0.0%

* Proposed as special resolutions.

Nominations Committee report

Successfully managing changes in the Board and Executive team to ensure the right mix of skills and experience is our key responsibility and is critical to creating long-term shareholder value

DR CHRISTOPHER RICHARDS
Nominations Committee Chairman

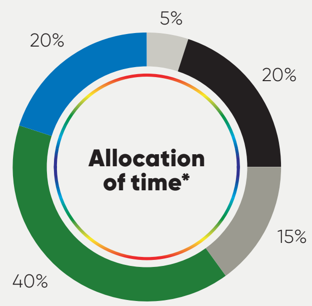
The Board deeply believes that strong, responsible, balanced leadership with an appropriate mix of skills for the challenges the Group faces are critical to creating long-term shareholder value and business success. The Committee met four times during the year.

Roles and responsibilities

The Committee is primarily responsible for assisting the Board in ensuring the appropriate composition of the Board and any Committees of the Board. It is also responsible for periodically reviewing the Board's structure and identifying potential candidates to be appointed as Directors or Committee members as the need may arise within the parameters illustrated below:

Members

- → Dr Christopher Richards (Chairman)
- → Dr Alison Fielding
- → Christopher Batterham



- Performance evaluation
- Succession planning
- Board committee composition
- NED recruitment
- Induction

* Estimated

Roles and responsibilities
continued

The Nominations Committee is responsible for evaluating the balance of skills, knowledge and experience and the size, structure and composition of the Board and Committees of the Board, and retirements and appointments of additional and replacement Directors and Committee members, and makes appropriate recommendations to the Board on such matters.

Governance

The responsibilities of the Committee were expanded in recent years to include an additional focus on governance. This change was made in order to enhance the Group's focus on, and improvement plans for, governance issues. The Committee's terms of reference now include:

- review and consider the Company's compliance with recommended corporate governance practices and the Company's procedures and controls for ensuring compliance with:
  - the UK Corporate Governance Code;
  - the FCA Disclosure Guidance and Transparency Rules, the Market Abuse Regulation, and any other applicable rules and regulations that apply to the Group; and
  - the timely and accurate disclosure of all information that is required to be disclosed in order to satisfy the Company's legal and regulatory obligations under the Corporate Governance Requirements;
- recommend any proposed changes in the management of corporate governance to the Board;
- report on such compliance to the Board;
- review potential conflicts of interest involving Directors and determine whether such Director or Directors may vote on any issue as to which there may be a conflict; and
- review all related party transactions and determine whether such transactions are appropriate for the Company to undertake and advise the Board accordingly.

Committee membership

In accordance with the UK Corporate Governance Code the Nominations Committee consists of Non-Executive Directors. It is chaired by me, Dr Christopher Richards, since my appointment as a Non-Executive Director in November 2015. I have continued in this role after having been made Chairman of the Board in May 2016. The Board considers it appropriate for me to chair the Nominations Committee in order to achieve a balance with the Audit and Remuneration Committees, which are each chaired by other Non-Executive Directors.

The Committee's other members are Dr Alison Fielding and Christopher Batterham. Christopher Batterham joined the Committee on 1 April 2019 when he was also appointed to the Board. This change was made following the decision by Brendan Cummins to step down from the Board. All members of the Committee are considered to have experience and competence relevant to the duties and responsibilities of the Committee.

Summary biographies of all members of the Committee are detailed on pages 46 and 47.

Meeting frequency and attendance

The terms of reference of the Committee require at least two meetings per year. When specific issues or changes need to be addressed, such as the appointment of a new Board member, the Committee meets on additional occasions. The Committee met four times during the financial year and was attended as shown in the table below:

Committee member	Meetings/ attended
Dr Christopher Richards (Chair)	**4/4**
Chris Batterham	2/4[1]
Dr Alison Fielding	4/4
Brendan Cummins	3/4[2]

1 Chris Batterham joined the Board on 1 April 2019 and attended all Committee meetings since that time.

2 Brendan Cummins attended all meetings held until he stepped down from the Board in April 2019.

As well as the members of the Committee, the meetings are usually attended on an invitational basis by the Chief Executive Officer and the Chief Financial Officer where there are no perceived conflicts of interest (such as the appointment of Christopher Batterham as a Non-Executive Director during the year). On matters of remuneration of new appointees the Chair works closely with the Chair and members of the Remuneration Committee.

Meetings of the Nominations Committee are either scheduled around existing Board meetings or else on an ad hoc basis such as during a recruitment process. The Committee Chair provides the next Board with a full briefing on all relevant matters.

Committee activities during the year

During the year the Nominations Committee discussed a range of topics including Board structure, its independence and skill set. In addition, the Committee discussed options to enhance employee engagement with the Board, in line with recent trends in corporate social responsibility. The key activities are set out in more detail below.

Board structure

Following the decision of Brendan Cummins to step down from the Board, the Committee discussed the appropriate shape, size and skill set of the Board at this current time. While noting that the number of Executive and Non-Executive Directors was balanced as opposed to having a majority of Non-Executive Directors, it was felt that this continued to be the appropriate size for the Board. Therefore the decision was taken to seek a one-for-one replacement for Brendan Cummins.

At that time, Dr Alison Fielding indicated her wish to take over Brendan's responsibility as Chair of the Remuneration Committee. Alison also took over Brendan's responsibility as the Senior Independent Director. These changes were agreed and we therefore began the search for the new Non-Executive Director with a skill set that would allow the individual to take on the responsibility as Chair of the Audit Committee.

We therefore took the decision, remaining as a member of the Audit Committee and the Nominations Committee. Alison will also assume Brendan's responsibilities as Senior Independent Director.

Nominations Committee report continued

Committee activities during the year continued

Board membership

As noted above, during the year the Board carried out a search for a new Non-Executive Director who would chair the Audit Committee. The graphic above summarises the rigorous process the Committee adopted in the search for the new Board member.

The whole Board was delighted to welcome Chris Batterham, who joined us in April 2019. The Committee ensured that he had an appropriate induction programme that has allowed him to quickly get up to speed with the business and activities of Nanoco.

We disclosed last year the appointment of Brian Tenner in the combined role of COO and CFO and were pleased to welcome Brian to the Board in August 2018. He has already made a strong impact in enhancing the effectiveness of the Executive team and, as expected, quickly became a fully engaged member of the Board.

With the creation of the combined COO and CFO role, and the appointment of a new Non-Executive Director, the Board considers that the size and composition of the Board is appropriate for the Group's current stage of development and it has sufficient depth and breadth of experience amongst its current Board members.

Employee engagement

The Committee discussed at some length options to enhance employee engagement, with options ranging from an employee director to more opportunities for employees to meet with and put their views to the Non-Executive Directors. I am pleased to announce that the Committee concluded that we would establish an employee representative body who would formally meet with a designated member of the Board at least twice a year. Recognising her strong skills and experience in this area, the Board agreed that Alison Fielding should be the designated Non-Executive Director responsible for formal engagement with the employee body.

Structure, dynamics and performance of the Executive team

Towards the end of the prior year, and following the resignation of Keith Wiggins as COO, the Nominations Committee considered the overall dynamics and performance of the executive management team. The decision was taken to combine the roles of COO and CFO into one role and reduce the Executive team to three. During the current year the Committee has reviewed the impact of these changes. I am pleased to report that the three-person Executive team is performing well. The team is better suited to the current operating environment which requires swift and joined up management of a rapidly changing set of challenges.

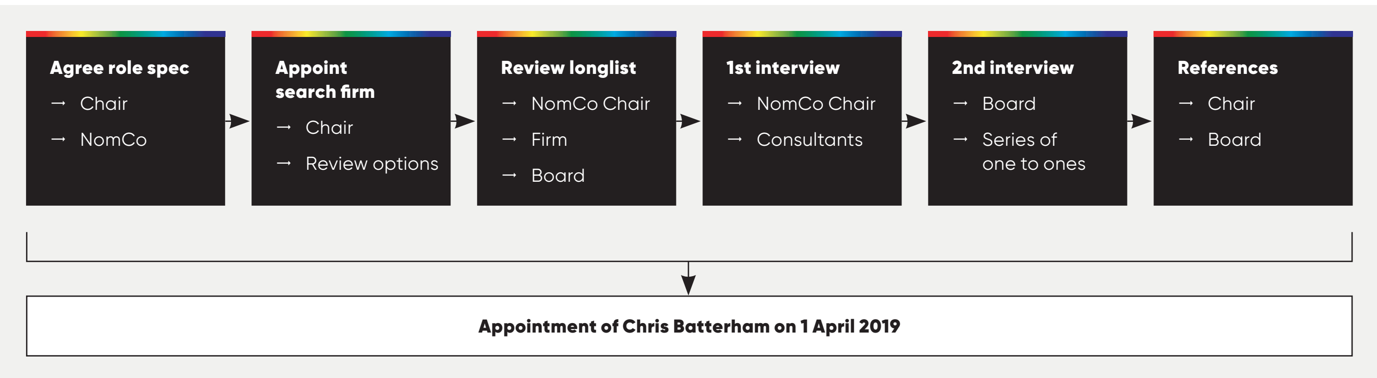
Diversity

The Group pursues diversity, including gender diversity, throughout the business. When recruiting at Board level, the Nominations Committee requires that any executive search firms used by the Group have signed up to its industry's voluntary code of conduct (prepared in response to the Davies Review of Women on Boards). The Group follows a policy of appointing talented people on merit at every level and does not have a specific target for numbers of female Directors. The Board will also ensure that its own development in this area is consistent with its strategic objectives and enhances Board effectiveness. Other aspects of diversity in the Group are commented on in the Report on corporate social responsibility on pages 35 to 45.

Review of the Nominations Committee's effectiveness

The Committee has reviewed and considered the effectiveness of its performance during the year. The review included the views of members of the Committee and of regular attendees at the various meetings (including the Executive Directors). I am satisfied that the degree of rigour and challenge applied in performing the Committee's responsibilities is appropriate, effective and continues to improve.

Dr Christopher Richards
Nominations Committee Chairman
16 October 2019



Ensuring the Group's growth and development are matched by appropriate risk management, internal controls and financial reporting

CHRIS BATTERHAM
Audit Committee Chairman

The Audit Committee plays a central role in the review of the Group's financial reporting, internal control and risk management processes. Its aim is to ensure that these processes deliver high quality and timely information.

The Audit Committee monitors internal and external risk factors on behalf of the Board. These are maintained in the Group's risk register. The status and assessment of matters in the risk register also inform the drafting of the viability report. As a Committee it seeks not just to respond to external factors but to support and challenge management to anticipate future risks and opportunities.

Committee membership

The composition of the Committee currently comprises me, Chris Batterham (Chair), and Dr Alison Fielding. Brendan Cummins also served as a member of the Committee until stepping down from the Board and all Committees in April 2019. In accordance with the provisions of the Code, the Committee is made up of independent Non-Executive Directors. The Board considers that I have recent and relevant financial experience to act as Chair of the Committee, by virtue of being a qualified Chartered Accountant with extensive relevant experience as a former CFO and Finance Director of a number of private and public companies. All members of the Committee are considered to have experience and competence relevant to the material science sector.

Summary biographies of all members of the Committee are detailed on pages 46 and 47.

Meeting frequency and attendance

The terms of reference of the Committee require at least four meetings per year. The Committee met four times during the financial year. As well as the members of the Committee, the meetings are usually attended on an invitational basis by the Chairman, the Chief Executive Officer, the Chief Financial Officer and the Group Financial Controller. The external auditors attend each meeting unless the business of the meeting does not need them to be present. The Committee also has meetings with the external auditors without the Executive Directors being present. Attendance of each member is set out below:

Committee member	Meetings/ attended
Chris Batterham (Chair)	**2/4[1]**
Dr Alison Fielding	4/4[2]
Brendan Cummins	3/4[3]

1 Chris Batterham joined the Board on 1 April 2019 and attended all Committee meetings since that time.

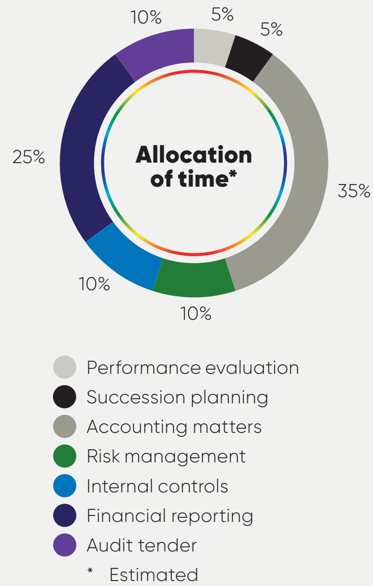
2 Dr Alison Fielding was the Chair of the Committee until 1 April 2019 when Chris Batterham joined the Board. She therefore chaired all meetings until that time (being two meetings).

3 Brendan Cummins attended all meetings held until he stepped down from the Board.

Members

→ Chris Batterham (Chair)

→ Dr Alison Fielding



Audit Committee report continued

Audit Committee responsibilities

The key areas of focus for the Audit Committee are set out below. This includes specific duties of the Committee in each area, how it operates and any changes and improvements made over time. The subjects referred to are a mix of annual recurring areas and also specific issues that have arisen or been reviewed during the last year.

Financial reporting

The primary objective here is to ensure that internal and external financial information is robust, relevant, reliable, and a firm basis for decision making by management and external stakeholders alike. These activities are typically carried on throughout the year. They lend themselves to a "continuous improvement" mindset that means we are always looking to do better.

Our responsibilities in this area include:

- → reviewing and monitoring the integrity of the Group's annual and interim financial statements;
- → ensuring the appropriateness of accounting policies;
- → reviewing and challenging the critical judgements and estimates used in financial reporting. This includes assessing any potential impact of accounting judgements and estimates on executive remuneration;
- → ensuring that the financial information being provided internally to the Board and to management is as robust as that reported externally and evolves to meet the changing needs of the business;
- → ensuring the Group remains up to date with developments in accounting and reporting requirements; and
- → the Committee advises the Board on whether or not the financial statements, when taken as a whole, is fair, balanced and understandable. In simple terms this means that shareholders receive adequate information to assess the Group's strategy, business model and performance.

External audit

The primary objective in this area is to ensure that the Group is subject to an appropriately robust, risk focused external audit from a qualified and independent firm of auditors.

Our responsibilities in this area include:

- → advising the Board on the appointment of the external auditor;
- → reviewing and monitoring the performance of the external auditor, which includes the planning and effective execution of the external audit process itself;
- → setting the audit and non-audit fees of the auditors to avoid any potential conflicts of interest with executive management (non-audit fees are set out in note 6 to the financial statements); and
- → controlling the award of non-audit work to the external auditors to ensure that there is no actual or perceived threat to its independence.

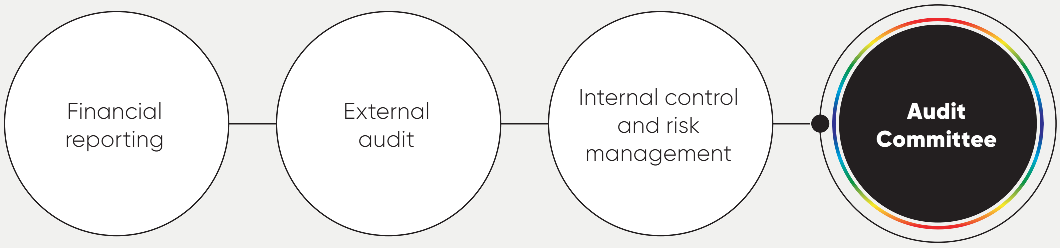
Internal control and risk management

Our internal control and risk management processes are a fundamental part of the over-arching framework used to safeguard the assets of the business and to ensure that investments represent an appropriate balance of risk and return. We work to ensure that these are as good as they can be for our business.

Our responsibilities in this area include:

- → continual monitoring of the appropriateness and effectiveness of internal controls (including whether an internal audit function is required);
- → review of lessons learned and management remediation plans for any shortcomings or improvement plans to internal control processes;
- → review of progress and commitment to addressing control improvement opportunities identified by the external auditors;
- → review and challenge of the models and assumptions underlying the going concern and viability statements;
- → oversight of whistleblowing and fraud detection and prevention mechanisms; and
- → ongoing review of the Group's risk management processes and systems, including a substantive review and challenge of management's assessment of key risks.

The Audit Committee also assists the Board in ensuring the overall corporate governance framework is appropriate by giving due consideration to laws and regulations, the provisions of the UK Corporate Governance Code and the requirements of the Listing Rules.



Meeting frequency and attendance continued

Meetings of the Audit Committee are scheduled to occur in the run up to key events in the Group's reporting calendar. Each meeting precedes a Board meeting to allow the Committee Chair to fully brief the Board on all relevant matters.

The Committee has a pre-determined series of subjects and issues to be reviewed each year. These are then supplemented by additional review of emerging issues or changes in the financial reporting or governance regimes. In this way the Committee ensures that key recurring themes are regularly reviewed while maintaining the flexibility to adapt to changing circumstances.

In addition to the scheduled Committee meetings, the members of the Committee meet and discuss emerging issues for the business with the CFO and Group Financial Controller to ensure that the work of the Committee remains appropriately focused on the risks and needs of the business.

Improvements in the quality, relevance and timeliness of information being provided to the Committee and the Board as a whole have allowed an enhanced level of review, challenge and scrutiny by the Committee.

Activities of the Audit Committee

The Committee discharged its obligations in response to the financial year as follows:

Significant issues considered during the year in respect of the financial statements

The Committee assessed the following matters in respect of financial reporting and in the preparation of the Interim Report and the Annual Report and Accounts:

→ continuing appropriateness of the Group's accounting policies;

→ continuous development in the quality and transparency of the Group's external reporting;

→ a review of key judgements and estimates made by management (see table below);

→ considering if the financial statements, when taken as a whole, is fair, balanced and understandable;

→ the impact of the implementation of the new revenue recognition standard, IFRS 15, which applies in full for the first time in this year's financial statements;

→ the impact of the implementation of IFRS 9, the new standard dealing with financial instruments, which also applies in full for the first time in this year's financial statements; and

→ an initial assessment of the impact of adopting IFRS 16, the new leases standard, which applies to accounting periods beginning after 1 January 2019 and on which the Group is giving an indication of the impact on the current year's financial statements if the standard had been adopted this year.

Our approach to materiality

The financial statements must present a true and fair view of the performance and financial position of the Group. They must also present a fair, balanced and understandable view. These are both aimed at ensuring that a user of the accounts can gain an accurate picture of the underlying performance and position of the business. To achieve this all material matters need to be addressed. Material matters are those that are considered by the Directors to be likely to influence the decisions of a reader of the accounts.

The Directors take a range of quantitative and qualitative matters into account in assessing whether or not a matter is deemed to be material. These include the absolute size of a potential adjustment by reference to the overall income statement or the financial position statement but also by reference to an individual component. Qualitative judgements include whether an issue would reverse or materially alter a trend (such as turning a profit into a loss, or growth into a decline).

In this way, the Directors aim to make sure as wide a range of issues as possible are considered without over-burdening the reader of the financial statements with insignificant or immaterial matters.

Significant accounting matters and areas of significant management judgement

The Committee, together with the Board, considered what were the significant accounting matters and areas of management judgement in relation to the financial statements and how these would be addressed. Set out below are the key accounting matters and judgements assessed by the Committee during the year, their relevance to and potential impact on the financial statements and the degree of estimation or subjectivity involved in arriving at the eventual financial treatment and disclosures:

Matter	Relevance	Scale	Degree of judgement
Revenue recognition and deferred income under IFRS 15 Revenue from Contracts with Customers	Revenue	£7.1m	Medium (in first year of adoption)
	Profit/(loss) before tax	(£5.5m)	
	Deferred revenue	£1.8m	
	Contract liabilities	–	
Carrying values of intangible assets	Intangible assets	£3.9m	High
Going concern	Basis of preparation of the financial statements	–	High
Matters relating to the US Customer project	Tangible assets	£0.7m	Low
	Contract liabilities	–	
	Stock	£0.2m	
IFRS 9 Financial Instruments	Carrying value of trade debtors	£0.2m	Low

Audit Committee report continued

Significant accounting matters and areas of significant management judgement continued

Each item is considered in further detail below.

Revenue recognition and deferred income (recurring item)

The Committee reviewed the revenue recognition policies and management judgements made in the preparation of the financial statements. Where revenue relates to the sale of products or services to customers, there is little need for judgement or estimates as these types of revenue are recognised either on the transfer of risks and rewards of ownership of goods or on a time and material basis for delivery of services.

The more material judgements required under the new accounting policy and financial reporting standard (IFRS 15) primarily relate to:

- separately identifying individual performance obligations (the different distinct services under a contract). In a number of existing and new contracts signed during the year, Nanoco provides a number of services and judgement is required to assess if these are separate performance obligations or if they should be grouped because the benefits from one are inseparable from another;
- allocating revenue under a contract to the individual performance obligations. In some contracts the revenue applicable to each service obligation is not stated explicitly and therefore a judgement is required to estimate the stand-alone price or value of that individual performance obligation; and
- deciding the method and timeframe to recognise the revenue for each performance obligation. Nanoco contracts have instances where there is a specific milestone or deliverable which is not certain to be achieved. Hence the material judgement is to assess the likelihood that a specified deliverable or customer milestone will be achieved.

For Nanoco, the other steps required in IFRS 15 to identify the contract and the total contract price are relatively straight forward and require minimal judgement.

The contracts with our US Customer and the long-term licence agreements with our channel partners, Dow and Merck, are examples of the material contracts which require judgement to be exercised, particularly so since they represent over 95% of the current year revenue for the Group.

The Committee concluded that the judgements and estimates made by management in respect of revenue recognition and the treatment of deferred income and contract liabilities were reasonable and appropriately disclosed in the financial statements.

Carrying value of intangible assets (recurring item)

The Group holds a number of intangible assets, primarily relating to IP. At the end of the year these had a value of £3.9 million (2018: £3.4 million). Given that the Group is yet to make a profit, management must exercise judgement in assessing whether or not this value can be recovered from the ongoing operation of the business or through disposal. Actual market disposal values achieved for equivalent IP technology-based businesses are one data point used in this assessment. Management performs an annual assessment of whether or not these assets should be impaired.

The Committee challenged and reviewed the results of the assessment carried out by management. The Committee agreed with management that no impairment of these assets was required in the current year.

Going concern (recurring item)

The Committee considered the use of the going concern basis for preparing the financial statements. This is currently an annual recurring activity given the ongoing losses incurred by the business in advance of generating full scale production levels of commercial revenues.

The review by management takes into account existing available cash resources, run rates on operating costs and cash burn, as well as probability weighted assessments of potential income streams. The Group's base case forecasts (which are approved by the Board) are then subject to downside scenario modelling and sensitivity analysis. This includes identifying different management action plans in response to a downside scenario crystallising. The analysis is performed for the twin purposes of preparing the viability statement and also assessing whether or not the going concern basis for the preparation of the financial statements remains appropriate. The going concern analysis is effectively a subset of the two-year period used for viability analysis.

The assessment by management and the Committee includes reference to the material potential risks identified in the Group's risk register and any mitigating actions and controls as shown on pages 29 to 31.

The Committee concluded that, although there is a material uncertainty around the timing and implementation of cost savings should sales not materialise, it remains appropriate to adopt the going concern basis for the preparation of the financial statements. Given the nature of the risks and the importance of this assessment, the Committee instructed management to ensure that there is an appropriately high level of disclosure of this matter in the financial statements – as set out in the sections on risk, viability and going concern on pages 29 to 34.

Matters relating to the US Customer project (current year item)

As noted in the Finance review, the decision by the US Customer not to extend the then current project beyond 31 December 2019 led to a review of a number of closely linked significant financial assets and liabilities. These items and their proposed treatment by management were as follows:

- the contract liability (£4.2 million exceptional credit) being waived by the US Customer;
- the impairment of the new production facility (which remains available to the Group with no restrictions on its use) (£3.3 million exceptional charge); and
- the impairment of some dedicated raw material stocks which are unlikely to be able to be used in other production (£0.3 million exceptional charge).

All of the above items were non-cash items. The Committee was satisfied that all three items fell under one combined umbrella of the non-continued project for the US Customer. The Committee was also satisfied that the US Customer had formally given up its right to the contract liability. Furthermore, while the new facility remains under the unencumbered ownership of Nanoco and can be used to produce materials for other potential customers, the lack of any signed or near-term commercial production prospects means the asset is validly impaired.

Significant accounting matters and areas of significant management judgement continued

Matters relating to the US Customer project (current year item) continued

The Committee agreed that all of the items above should be treated as exceptional items due to their scale and rarity of occurrence to allow readers of the accounts to have a much clearer picture of the underlying performance of the business. In some cases, these items would have been significantly bigger than the underlying trading items and wholly obscured that performance.

Financial reporting on a fair, balanced and understandable ("FBU") basis

The Committee reviewed the interim and annual financial statements. As part of that review process, the members of the Committee were provided with a draft of the full Annual Report enabling them to ensure that the numbers therein were consistent with those in the financial statements or were sourced from appropriate data and their knowledge gained from the monthly management accounts.

The Committee also assessed whether the narrative description of the Group's activities and performance was consistent with its own understanding obtained through Board and Audit Committee meetings and other interactions it had with management.

The impact of IFRS 9 Financial Instruments (new current year item)

IFRS 9 deals with the different types of financial instruments shown in the table above. The table also summarises the relevance of the standard to Nanoco.

It is clear from the table that the only potentially and meaningfully impacted asset class at present for Nanoco is that of trade debtors.

The Committee reviewed the technical accounting paper prepared by management and audited by PwC. The Committee was satisfied that the carrying value of trade debtors was properly stated and that the other asset classes covered by the standard were not relevant to Nanoco.

Financial asset	Nanoco relevance	Nanoco estimated impact
Loans and receivables	Trade debtors (£0.2 million)	Nanoco has never had a credit loss – therefore the expected credit loss is £nil
Redeemable preference shares and "puttable" instruments	Not relevant for Nanoco	None
Free standing derivatives	Not relevant for Nanoco	None. May become relevant if the Group hedges large future foreign currency cash flows from production revenue
Investments in equity instruments	Plc has subsidiary shareholdings	IFRS 9 explicitly does not apply where IFRS 10, IAS 27 and IAS 28 apply regarding interests in subsidiaries

The CFO advised the Committee of the findings of independent readers of the draft Annual Report and Accounts. These reviews are carried out by Nanoco senior managers who have not been closely involved in drafting but whose knowledge of the business allows them to form an opinion if the document conveys a fair, balanced and understandable view of business performance in the current year.

Drawing on this knowledge of the Group's activities and its own industry knowledge and experience, supplemented by advice received from external advisers during the drafting process, the Board determined that the Annual Report and Accounts are fair, balanced and understandable.

> "The Board determined that the Annual Report and Accounts are fair, balanced and understandable."

Audit Committee report continued

External audit

Audit tender process

In last year's Audit Committee report we noted the period of time which had elapsed since the appointment of its previous auditors (EY LLP) in 2008. We also signalled the Committee's intent to run a formal external tender process. That process was completed shortly after the year-end results and subsidiary statutory accounts were completed.

The graphic opposite illustrates the steps undertaken in the process and the eventual outcome.

The Committee is satisfied that the new audit firm has an appropriate range of skills and capabilities to service the needs of Nanoco and its expertise will bring added value as part of the audit process.

External audit plan

During the tender process the Committee reviewed the proposed audit plans of both firms in the final stages and subsequent to the award to PwC approved the actual scope and timetable for the interim review and final audit.

Safeguarding auditor independence

The independence of the external auditors is essential to the provision of an objective opinion on the true and fair view presented in the financial statements. The Committee reviews the policies and status of the independence of the external auditors consistent with the ethical standards published by the Auditing Practices Board.

Auditor independence and objectivity are also safeguarded by limiting the nature and value of non-audit services performed by the external auditors (see later section). The Group has a policy of not recruiting senior employees of the external auditors who have worked on the audit in the past two years. The Group works with the external auditors to achieve the rotation of the lead engagement partner at least every five years. With the change in auditors, the current lead engagement partner is in their first year of this position.

The external auditors are also required periodically to assess whether, in their professional opinion, they are independent and those views are shared with the Audit Committee. The Committee has authority to take independent advice as it deems appropriate in order to resolve issues on auditor independence. No such advice has to date been required.

For the current year, the Committee has concluded that the external auditors remain independent and objective for the purposes of their role.

Non-audit services provided by the external auditors

The Audit Committee will only approve the provision of non-audit services by the external auditors where they do not represent a threat (by their nature or scale) to this requirement for independence. The aim is to ensure that no material risk is taken of the auditors both advising on and auditing the same information in the financial statements.

The Audit Committee's approval is required for any fees for non-audit work paid to the auditors in excess of £10,000 in any financial year. However, the Group recognises that it can receive particular benefit from certain non-audit services provided by the external auditors due to its technical skills and detailed understanding of the Group's business and hence some non-audit work is allowed.

The only fees paid for non-audit services during the year related to a review of the interim results. This additional piece of work is not considered at risk of jeopardising its independence. Separate external firms are engaged for taxation advice.

Internal controls and risk management

The Board has overall responsibility for the Group's system of internal controls as one critical part of the overall corporate governance framework. This includes reviewing the effectiveness of these controls and the processes in place for risk management. In accordance with the Internal Control Guidance for Directors issued by the Financial Reporting Council, there is an ongoing process for identifying, evaluating and managing the significant risks faced by the Group. This process was introduced during 2015 and is summarised on pages 29 to 31.

Audit tender

Tender decision

- → Incumbent EY LLP had been in post since 2009
- → Good practice to tender every ten years

Selection criteria

- → Focus on understanding Nanoco-specific issues and challenges
- → Fit with management team culture

Invite to tender

- → Formal letters telling potential auditors of Nanoco's requirements
- → Followed up with one-to-one meetings

Shortlist

- → Following meetings with a number of firms
- → Two shortlisted for detailed data room and management process

Meet team

- → Management hosted meetings and visits to sites and operations

Final pitch

- → Final presentations from two firms
- → Whole audit team presenting on their roles

Select winner

- → Committee recommended PwC be appointed
- → Appointment approved by the Board

Internal controls and risk management continued

The role of the Executive Directors is to implement the Board's policies on risk and control and to provide assurance on compliance with these policies. The processes and procedures in place are designed to manage rather than eliminate risk and operate within the Board's defined risk appetite. They therefore can only provide a reasonable and not absolute assurance against material misstatement or loss.

Executive Directors have a close involvement with all day-to-day operations. They also meet with staff on a regular basis to identify and review business risks, the controls needed to minimise those risks and the effectiveness of controls in place. Business risks are monitored and discussed on a regular basis at meetings of the leadership and senior management teams. The principal risks faced by the Group and other aspects of how they are individually assessed and managed are set out below and on pages 29 to 31.

Internal controls

Key features of the internal control system are summarised below:

(i) annual budgets and rolling forecasts are reviewed and approved by the Board;

(ii) monthly management accounts are reviewed and challenged by comparison to the budget;

(iii) written operational, accounting and employment policies in place;

(iv) the Board actively identifies and evaluates the risks inherent in the business and ensures that appropriate controls and procedures are in place to manage these risks;

(v) expenditure approval limits and approval processes in place to cover all major commitments;

(vi) quality assurance processes overseen and audited by the internal quality assurance department, with a particular focus on non-financial processes and procedures which drive financial performance; and

(vii) compliance with control procedures is monitored by the Audit Committee through its reviews of internal and external audit findings and its reviews of exceptions.

The Committee considers that the need for an internal audit function is not currently warranted due to the size and complexity of the business but will reconsider this need not less than annually.

Whistleblowing and confidential reporting procedures

The Group operates a confidential reporting and whistleblowing procedure. The policy aims to support the stewardship of the Group's assets and the integrity of the financial statements as well as protecting staff welfare. The procedure is reviewed annually by the Committee to ensure that it remains fit for purpose.

The Committee did not receive any notifications through the whistleblowing process during the year. The Committee has recommended that staff are reminded of the whistleblowing process as part of ongoing engagement with staff on compliance issues such as anti-bribery training.

Internal accountability

The Board has overall responsibility for the Group's system of risk management and internal control. The Audit Committee reviews the effectiveness of the system at least annually on behalf of the Board and, having carried out this review, the Board continues to believe that the system is effective in safeguarding shareholders' interests and the Group's assets. Such a system can only provide reasonable and not absolute assurance against material misstatement or loss, nor can it eliminate the risk of failure. The Committee notes any control improvement opportunities identified by the external auditors and is overseeing a programme of continuous improvement to our control environment in a rolling plan developed by the finance team.

Review of the Audit Committee's effectiveness

The Committee has reviewed and considered the effectiveness of its performance during the year. The review included the views of members of the Committee and of regular attendees at the various meetings (including the Executive Directors). We specifically considered the effectiveness of the onboarding process and handover of the Chair role between Alison and myself. We also reviewed the audit tender process ran by the Committee. I am satisfied that the degree of rigour and challenge applied in performing the Committee's responsibilities is appropriate, effective and continues to improve.

Christopher Batterham
Audit Committee Chairman
16 October 2019

Remuneration Committee report

Balancing the interests of shareholders with the need to retain and incentivise management in line with our strategic goals

DR ALISON FIELDING
Remuneration Committee Chair

Dear shareholder

As the Chairman of Nanoco's Remuneration Committee (the "Committee"), I am pleased to present our Directors' remuneration report for the year ended 31 July 2019. The Committee's report seeks to deliver an appropriate balance between the required regulatory disclosures, commercial sensitivities, and the context for our approach and decisions.

This report is presented in three parts:

(1) an overview of the year from me, the Committee Chair, including prospective matters for the new year ending 31 July 2020;

(2) the Directors' remuneration policy setting out the framework approved by shareholders at the AGM in December 2018; and

(3) the Annual report on remuneration, which sets out the actual results of applying the policy to executive remuneration over the year ended 31 July 2019.

Our remuneration policy is designed to promote the long-term success of the business by ensuring a focus on performance related pay that drives our transformation from an R&D focus to a commercial production focus and provides a clear emphasis on long-term sustainable performance. The Remuneration Committee seeks to ensure that the Directors' remuneration arrangements continue to be aligned to the strategic direction of the Group and to our stakeholder philosophy.

This Directors' remuneration report for the year ended 31 July 2019 complies with the requirements of the Listing Rules of the UK Listing Authority, Schedule 8 of the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 and the provisions of the UK Corporate Governance Code (September 2014). The Regulations require the auditors to report to the Company's members on certain parts of the Directors' remuneration report and to state whether, in their opinion, those parts of the report have been properly prepared in accordance with the accounting regulations. Items that are audited throughout this report are clearly marked as audited in the heading of the section.

Board changes

As reported last year, David Blain stepped down from the Board on 20 August 2018. The remuneration arrangements related to David leaving the business are set out on page 84 and were in line with the shareholder approved Directors' remuneration policy.

Brian Tenner joined the Board in a new combined role of Chief Operating Officer and Chief Financial Officer with effect from 20 August. The Committee agreed a remuneration package to recruit Brian which reflected his calibre, experience and the additional responsibilities of the role reflecting its combined nature.

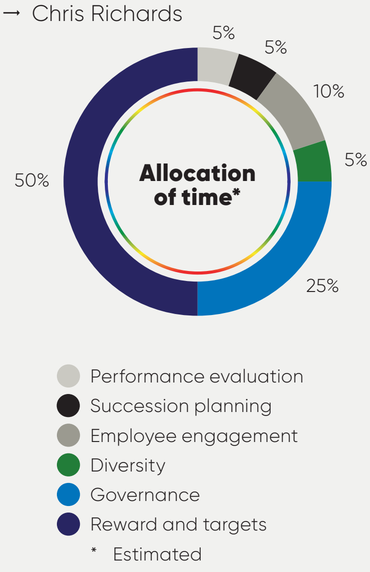
A summary of his remuneration arrangements is set out opposite:

Members

→ Dr Alison Fielding (Chair)

→ Chris Batterham

→ Chris Richards



→ agreed a notice period with Brian of six months (the policy allows us to set a notice period of up to twelve months);

→ agreed a recruitment award would be made as part of the LTIP scheme to ensure alignment with shareholders' interests; and

→ agreed a two-year holding period for the recruitment award following the end of the three-year performance period to ensure that it is appropriately aligned with the longer-term performance of the Company.

Board changes continued

Base salary	£215,000 – the salary level was positioned to reflect the additional responsibilities and scope of the role reflecting its combined nature.
Pension	5% of base salary (policy allows for up to 10%).
Annual bonus	Up to 100% of salary.
LTIP	Participation in the LTIP at the same level as other Executive Directors.
Recruitment award	Award over 400,000 shares which will vest subject to the same performance conditions as apply to the LTIP awards to be granted in respect of FY19 as referred to on page 81 and subject to a two-year holding period following the end of the performance period.

Relating remuneration to current business performance

This year the Committee has had to juggle a number of competing challenges in assessing performance and executive remuneration. On the one hand the Group has delivered its best financial performance in terms of revenue, adjusted EBITDA and operating cash flow that would ordinarily merit relatively high outcomes on variable pay. On the other hand, the Group still faces short-term challenges to manage and preserve cash balances that would be adversely impacted by significant annual cash bonuses. In addition, the decision by the US Customer not to continue the current contract beyond 31 December 2019 had a significant adverse impact on shareholder value.

One consequence of these competing factors was our decision to go ahead and award annual bonuses in respect of FY19 but to pay 100% in deferred shares to preserve cash. Our previous practice was to pay 50% in cash and 50% in deferred shares. The Committee is certain that modifying this practice is in the best interests of all stakeholders. While this is within the formal rules of the shareholder approved deferred bonus plan, it exceeds the currently approved policy and therefore the payment of the additional half of the bonus in shares will be subject to shareholder approval at the AGM in December 2019.

During the year the Committee, in consultation with the Executive Directors, agreed fee increases for the Chairman and the other Non-Executive Directors. Their fees were out of date and significantly at odds with market rates. The Chairman subsequently requested that his second of two step increases be deferred until such time as the Group's financial position improved.

As we noted on the appointment of Brian Tenner, being able to hire a candidate that allowed us to combine two roles into one allowed us to make a significant financial saving for the Group even though Brian's initial salary was slightly higher than either of the previous role holders he replaced.

Changes in Directors' remuneration policy

Our Directors' remuneration policy was last approved by shareholders at the 2018 Annual General Meeting, with more than 96% of votes cast being in favour of it. That policy was applied during the year ended 31 July 2019, as described in the Annual report on remuneration, and will be applicable for the three years ending 31 July 2021, subject to any changes in legislation or corporate governance. The Remuneration Committee believes that the policy approved in 2018 provides an appropriate alignment to both the Group's strategy and shareholders.

Element	Changes, rationale and summary of current position
Base salary	**No change to policy.** The Executive Directors' salaries were increased by 3.0% with effect from 1 August 2019, being the same as the average increase awarded to the wider workforce.
Benefits	**No change to policy.** Life insurance being the only benefit currently provided.
Retirement benefits	**No change to policy.** Contributions remain at 5% of salary compared to a policy limit of 10%. The Board agreed to increase Company pension contributions for all staff from 3% to 4% in the current year and then to 5% in 2020 to be fully aligned with the Executive Directors.
Annual bonus	**One minor change to policy.** Maximum remains 100% of salary. Previously, up to 50% deferred for two years in shares or options with the balance paid in cash. As noted above, the Board is recommending a change in policy to allow up to 100% of any annual bonus to be paid in deferred shares as a way of conserving Group cash resources. 80% of the annual bonus is based on financial measures and 20% on stretching personal objectives.
LTIP	**No change to policy.** The maximum award remains at 100% of salary or up to 250% of salary in exceptional circumstances.
Shareholding guideline	**No change to policy.** All Executive Directors to acquire and retain shares with a value equal to 200% of salary (increased in 2018 from the 100% level for others than the CEO in the 2015 policy).
Other changes	**No change to policy.** Malus and clawback provisions were extended in the policy approved in 2018 to permit the application of malus and clawback in the event of a material corporate failure.

Remuneration Committee report continued

Annual report on remuneration

The Annual report on remuneration section of this report provides details of the amounts earned by Directors in respect of the year ended 31 July 2019 and how the Directors' remuneration policy will be operated for the year commencing 1 August 2019. This will be subject to an advisory vote at the 2019 AGM.

Remuneration decisions in respect of the year ended 31 July 2019

As referred to in the 2018 Directors' remuneration report, our Executive Directors' salaries for the year ended 31 July 2019 were increased by 2.5% in line with the average increase for all other staff and followed a year of no increase in 2017.

The 2019 bonus opportunity for the Executive Directors was based on a combination of financial and corporate measures and challenging personal objectives. The Remuneration Committee determined that both of the corporate financial targets were partially achieved. This then triggered a review of the Executive Directors' personal targets which were also partially achieved. Further information is set out on pages 80 and 81.

Long-term incentive awards were granted in the year under the LTIP and further information is set out on page 81. Awards in the form of nil-cost options, granted on 22 November 2016 as part of the Deferred Bonus Plan, vested in the financial year. No other long-term incentive awards vested. The LTIP awards granted in November 2016 were subject to performance conditions assessed over the three financial years ended 31 July 2019; the targets were not achieved and consequently the awards have all lapsed.

Remuneration in the year commencing 1 August 2019

With no changes to the Directors' remuneration policy approved at the AGM in December 2018, the Directors' remuneration policy will be applied as follows in the year commencing 1 August 2019:

- The Committee reviewed the remuneration with respect to the Executive team based on up to date market data and market comparisons. The analysis indicates that the Executive Directors' base salaries are in the third and fourth quartiles. The Committee believes that this reflects the Company's scale and stage of development. It is also in part compensated for with annual bonus and long-term incentive opportunities that are in line with the median. This will remain an area for review.
- The Board approved an increase in salary of 3.0% for the Executive Directors, in line with the average increase of all other staff. The increase across the wider workforce acknowledges inflation and supports motivation and retention for staff below the Executive Director level in a market that is seeing accelerating wage inflation (the relevant market being scientific professional services).
- For the year commencing 1 August 2019, employer pension contributions above the amount of any salary sacrifice (and the associated employer National Insurance contribution savings) will continue to be capped at 5% of salary.
- The annual bonus opportunity for Executive Directors will remain at 100% of salary, subject to the achievement of stretching performance conditions. The Board is recommending that the 50% limit on the amount of annual bonus to be paid in shares rather than cash, increases to 100%. The Board is confident that this flexibility is important at a time when we are trying to conserve cash; further information is given on page 86. The details of the proposed targets, to the extent they are not disclosed on page 86, will be disclosed once they are not commercially sensitive.
- LTIP awards for the year commencing 1 August 2019 will be set in line with the approved policy which specifies an award level of 100% (and up to 250% in exceptional circumstances). LTIP awards are ordinarily made in the period following the announcement of the Group's annual results though the approved policy also allows for the Board to vary this timing at its discretion. The Committee also notes the lapsing in full of the awards made in 2016. Given the recent fall and current volatility in the Group's share price, the targets and weightings for any award in FY20 will be announced if and when any awards are made.
- Following a review of the Non-Executive Director fees during the year it was identified that the overall rates paid by Nanoco were significantly below market comparators for similar size listed businesses (FTSE SmallCap). The Board therefore approved an increase in Non-Executive Director base fees with effect from 1 January 2019 from £25,000 p.a. to £41,000 p.a. while simultaneously reducing the additional fee paid for chairing the Remuneration and Audit Committees from £10,000 p.a. to £5,000 p.a. The revised rates of pay are still at the low end of market comparators.
- The same review identified that the Chairman's fees were significantly below market rate. The Board therefore agreed a two stage increase with effect from 1 January 2019 from £75,000 p.a. to £100,000 p.a. and a further increase to market median of £134,000 p.a. on 1 January 2020. Following the reductions to the Group's headcount over the year, the Chairman asked that his fees be frozen at the level of £100,000 and not increased in 2020. The second increase will therefore not be made in the new financial year.

As a Committee, we believe that ongoing dialogue with our major shareholders is of key importance. Should you have any queries or feedback in relation to the Directors' remuneration report, please contact me through the Company Secretary.

Dr Alison Fielding
Remuneration Committee Chair
16 October 2019

Directors' remuneration policy

This part of the report sets out the Company's forward-looking Directors' remuneration policy that was subject to a binding vote at the AGM on 13 December 2018 and is expected to continue in operation for three years, subject to legislative and corporate governance code changes. The Directors' remuneration policy is not audited.

The table describes each of the elements of the remuneration package for the Executive Directors approved at the 2018 AGM.

Element and purpose	Operation	Maximum opportunity	Performance measures
Base salary Core element of fixed remuneration that provides the basis to recruit and retain talent necessary to deliver the business strategy.	Normally reviewed annually; applied from 1 August (or more frequently if required). Consideration is given to the following: → the role, responsibility and experience of the individual; → corporate and individual performance; → market comparators such as equivalent roles – by size and complexity; and → other Nanoco salary increases.	No maximum. Annual increase normally in line with the wider workforce. Larger increases: → on promotion or changes in scope or responsibility; → an individual's development or performance in a role; → where there has been a change in market practice; or → if a change in the size and/or complexity of the business.	N/A
Benefits Provide a market-competitive benefits package and promote the wellbeing of employees.	The Company provides life assurance of eight times salary, for all Executive Directors. Directors are reimbursed for out-of-pocket expenses incurred on Company business and any associated tax where the expenses are wholly and necessarily for business purposes. Benefits are reviewed periodically, taking individual circumstances into consideration. Benefits provided may include, for example, medical insurance, relocation expenses, expatriate allowances and travel expenses.	No absolute maximum. The value of benefits is set at a level which the Committee considers to be appropriately positioned taking into account relevant market factors based on the nature and location of the role, the level of benefits provided to other employees in the Group and individual circumstances.	N/A
Retirement benefits Provide market-competitive post-employment benefits to recruit and retain Directors of the calibre required for the business.	The Company currently operates a salary sacrifice pension arrangement under which Executives may elect to sacrifice salary and the Company pays an amount equal to the amount of the salary sacrifice, together with the employer National Insurance saved, into a private pension scheme. Executive Directors are also eligible to participate in the Company's defined contribution scheme (or such other pension plan as may be deemed appropriate). In appropriate circumstances, such as where the lifetime allowance is protected, Executive Directors are permitted to take an equal cash supplement (this would not count towards the bonus or LTIP opportunity).	For the year commencing 1 August 2019, employer pension contributions above the amount of any salary sacrifice and employer NIC saved have again been capped at 5.0% (2018: 5.0%) of salary. An overall contribution limit of up to 10% of base salary may be made in future years (in addition to the amount of any salary sacrifice and employer NIC saved) to take account of circumstances including, but not limited to, a change in the scope of the role, increase in responsibility and/or a change in the size and/or complexity of the business.	N/A

Directors' remuneration report continued

Directors' remuneration policy continued

Element and purpose	Operation	Maximum opportunity	Performance measures
Annual bonus Rewards and incentivises the achievement of annual objectives which are aligned with key financial and strategic goals that support the enhancement of shareholder value.	Performance targets are set annually and payout levels are determined after the year end following the Committee's assessment of actual performance against set targets. Previously, up to 50% of any bonus earned is paid in deferred shares under the DBP which vest after two years and the balance is awarded in cash. The Committee is asking shareholders at the AGM in December 2019 to approve an increase to 100% as a means of conserving cash. This will also apply to the award for FY19. Deferred share awards may incorporate the right to receive (in cash or shares) the value of the dividends that would have been paid on the shares that vest; this may assume the reinvestment of dividends into shares on such terms as the Committee determines.	Maximum annual bonus opportunity is 100% of salary. The percentage of maximum bonus payable for the different levels of performance would be no greater than: Below threshold 0% On-target 60% Maximum 100% On target performance pays out at 60% (and not 50%) as the Committee includes an element of stretch when setting targets.	Stretching performance targets are set each year, reflecting the business priorities that underpin Group strategy. Ordinarily, at least 75% will be subject to achievement of financial and/or corporate measures and the balance will be based on challenging personal objectives. The Committee retains discretion to apply different weightings in relevant circumstances.
Long Term Incentive Plan ("LTIP") To reflect stakeholder philosophy, provide a longer-term retention mechanism and provide alignment with shareholders.	Under the LTIP, awards of conditional shares, restricted stock or nil-cost options (or similar cash equivalent) can be made with vesting dependent on the achievement of performance conditions, normally over a three-year performance period. Under the LTIP, there will be no retesting of performance following the end of the performance period. After the end of the performance period the vested awards would normally be subject to a two-year holding period. LTIP awards may incorporate the right to receive (in cash or shares) the value of the dividends that would have been paid on the shares that vest; this may assume the reinvestment of dividends into shares on such terms as the Committee determines.	The maximum value of shares over which an individual can be granted an award in respect of a financial year is normally 100% of base salary, although this limit may be increased to 250% of base salary in exceptional circumstances. 25% of awards will vest for threshold levels of performance, rising to 100% for maximum performance.	The vesting of LTIP awards is subject to the satisfaction of performance targets set by the Committee. The performance measures are reviewed regularly to ensure they remain relevant but will be based on financial measures which link directly or indirectly to the creation of shareholder value (such as share price, revenue and EPS) and/or the achievement of strategic milestones. The relevant metrics and the respective weightings may vary each year based on Company strategic priorities.
Shareholding requirement To align Directors to shareholder interests.	A requirement to build up and hold a shareholding of at least 200% of base salary. 50% of vested shares under the DBP or LTIP (post-tax) are to be retained until the shareholding requirement has been met.	N/A	N/A

Notes to the policy table

Application of clawback and malus to variable remuneration

Under the Deferred Bonus Plan ("DBP"), during the two-year deferral period, the Committee has the right to reduce any deferred bonus awards which have not yet been released in the event of a material misstatement of the Group's financial results, a material misconduct on the part of the participant, a material corporate failure as determined by the Board or a material failure of risk management by the Group (i.e. a malus provision). For up to two years following the payment of a cash bonus award, the Committee may also require the repayment of some or all of the award in these circumstances (i.e. a clawback provision).

Under the 2015 LTIP, at any time prior to the end of the holding period for LTIP awards, the Committee in its discretion may reduce, cancel or impose further conditions on LTIP awards which have not yet been released in the event of a material misstatement of the Group's financial results, a material misconduct on the part of the participant, a material corporate failure as determined by the Board or a material failure of risk management by the Group.

Directors' remuneration policy continued

Notes to the policy table continued

Explanation of performance measures chosen

Selected performance measures for the annual bonus and LTIP awards reflect the Group's strategy. Stretching performance targets are set each year by the Committee taking into account a number of different factors.

Annual bonus

At least 75% of the potential maximum annual bonus will be subject to achievement of a combination of financial and corporate measures, whilst the balance will be based on challenging personal objectives. The Committee will disclose the metrics and performance against these on a retrospective basis to the extent that these are not commercially sensitive.

LTIP

The Company historically used commercial revenue targets as its primary measure for LTIP awards for Executive Directors. However, the Committee recognises that the Company's transition from a research and development company to a commercial, product-driven organisation presents a number of challenges to defining meaningful and appropriate performance metrics and targets. The Committee has opted therefore for awards granted under the LTIP in 2018 and 2019 to be based on share price growth which has the benefit of being absolutely aligned to long-term shareholder interests and is not subject to the same risk of unearned reward or absence of reward due to unforeseen one-off significant contracts. This metric will be subject to a performance underpin to ensure that the share price metric for the LTIP does not lead to behaviours that are divergent from the core commercialisation strategy and that appropriate developments are made in all areas of the business. It is the Committee's view that this combination is the most appropriate performance measure at present for determining LTIP vesting for the awards on the basis that share price growth is a key measure of value delivered to shareholders and should reflect the achievement of commercial milestones. This ensures that this element only vests where significant value is delivered to shareholders.

The Committee intends to review each year the performance metrics for future awards taking into account the business priorities and strategy at that time.

The Committee also retains the discretion to adjust or set different performance measures or targets where it considers it appropriate to do so (for example, to reflect a change in strategy, a material acquisition and/or a divestment of a Group business or a change in prevailing market conditions) and to assess performance on a fair and consistent basis from year to year.

Operation of the LTIP and DBP

The LTIP and DBP are operated by the Committee in accordance with their respective rules, including the ability to adjust the number of shares subject to awards in the event of a variation of share capital, demerger, delisting, special dividend, rights issue or other event which may, in the opinion of the Company, affect the current or future value of shares. The "market value" of a share for the purposes of determining the number of shares subject to the LTIP or DBP award will be the average share price over the three dealing days following the announcement of results preceding the grant date, unless the Committee determines that an alternative basis should apply but would still be by reference to market prices such as the average price over the three-day period leading up to an award at a different date.

Early vesting of awards

As described on page 77, awards under the DBP and LTIP may vest earlier than anticipated in "good leaver" circumstances.

On a change of control of the Company or other relevant corporate event (such as a demerger, delisting, special dividend or other event which may affect the value of an award), the extent to which unvested awards will vest will be determined in accordance with the rules of the relevant plan.

Awards under the DBP will vest in full in the event of a takeover, merger or other relevant corporate event.

Awards under the LTIP may vest early on a takeover, merger or other relevant corporate event. The Committee will determine the level of vesting taking into account the extent to which the performance conditions are satisfied and the perceived value created as a result of such an event. Such vesting would ordinarily be on a time pro-rata basis, although the Committee has discretion not to apply time pro-rating.

Directors' remuneration report continued

Directors' remuneration policy continued

How the Executive Directors' remuneration policy relates to the Group

The remuneration policy summarised above provides an overview of the structure that operates for the Executive Directors. The same broad structure also operates for the members of the senior management team, although with lower levels of participation in the annual bonus, DBP and/or the LTIP. For other employees, the same remuneration principles are applied and the Company aims to provide a remuneration package that is competitive in an employee's country of employment and which is appropriate to promote the long-term success of the Group.

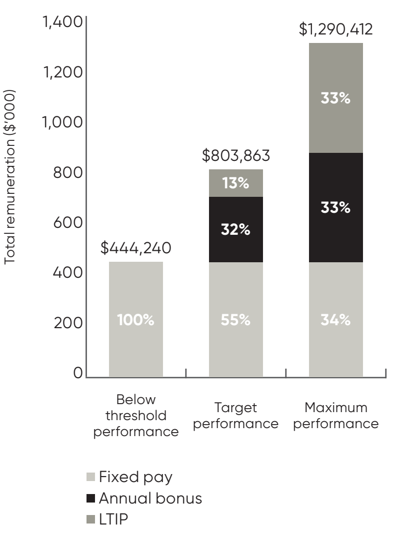
Remuneration outcomes in different performance scenarios

The charts below set out an illustration of the remuneration policy for FY20. The charts provide an illustration of the proportion of total remuneration made up of each component of the remuneration policy and the potential value of each component.

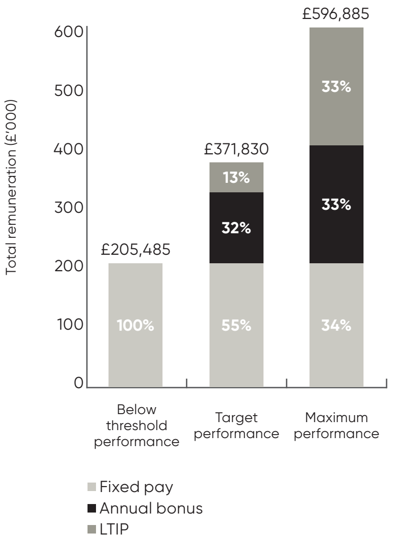
Three scenarios have been illustrated for each Executive Director:

Below threshold performance	Fixed remuneration No annual bonus payout No vesting under the LTIP
Target performance	Fixed remuneration 60% annual bonus payout 25% vesting under the LTIP
Maximum performance	Fixed remuneration 100% annual bonus payout 100% vesting under the LTIP

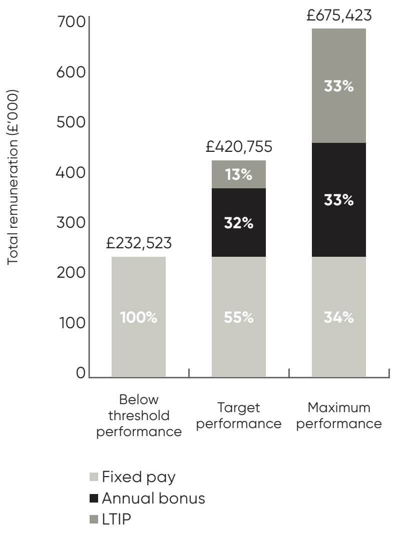
Dr Michael Edelman



Dr Nigel Pickett



Brian Tenner



Directors' remuneration policy continued

Remuneration outcomes in different performance scenarios continued

Fixed pay currently comprises the following elements:

	Current base salary	Benefits*	Pension**	Total
Chief Executive Officer – Dr Michael Edelman	$423,086	$–	$21,154	$444,240
Chief Technical Officer – Dr Nigel Pickett	£195,700	£–	£9,785	£205,485
Chief Operating Officer and Financial Officer – Brian Tenner	£221,450	£–	£11,073	£232,523

* No benefits are currently provided to the Executive Directors other than under the Group life assurance scheme.

** Based on 5% employer pension contribution/cash supplement in lieu of pension which applies for the year ended 31 July 2020.

The values illustrated assume a constant share price from the time of grant of LTIPs and do not take into account share price fluctuation or dividend equivalents that may be received under the share plans. The ultimate amounts received by the Directors may be higher or lower than the amounts illustrated above.

Remuneration policy for Non-Executive Directors

Purpose and link to strategy	Operation	Other items
To enable the Company to attract and retain Non-Executive Directors of the required calibre by offering market-competitive rates.	The Chairman's fee is determined by the Committee and the fees of the other Non-Executive Directors are determined by the Board. Fees take into account several factors, including the size and complexity of the business, fees paid at companies of a similar size and complexity, and the expected time commitment and contribution for the role. Overall fees paid to Non-Executive Directors will remain within the limits set by the Company's Articles of Association.	Non-Executive Directors are provided with directors' and officers' insurance and indemnity protection and are eligible to be reimbursed any reasonable hotel and travelling expenses and other reasonable expenses incurred in the performance of their duties. The Non-Executive Directors do not participate in the Company's annual bonus, share plans or pension schemes.

Remuneration policy on recruitment

When hiring a new Executive Director, the Committee will seek to align the remuneration package with the above policy. When determining appropriate remuneration arrangements, the Committee may include other elements of pay which it considers are appropriate and necessary in the circumstances. However, this discretion is capped and is subject to the limits referred to below:

- base salary will be set at a level appropriate to the role and the experience of the appointee. We may agree future increases up to a market rate, in line with increased experience and/or responsibilities, subject to good performance;
- benefits and pension contributions will only be provided in line with the above policy;
- the Committee will not offer non-performance related incentive payments (for example a "guaranteed sign-on bonus");
- other elements may be included in the following circumstances:
  - an interim appointment being made to fill an Executive Director role on a short-term basis;
  - if exceptional circumstances require the Chairman or a Non-Executive Director to takes on a short-term executive function;
  - if an Executive Director is recruited at a time in the year when it would be inappropriate to provide a bonus or long-term incentive award for that year as there would not be sufficient time to assess performance. Subject to the limit on variable remuneration set out below, the quantum in respect of the months employed during the year may be transferred to the subsequent year so that reward is provided on a fair and appropriate basis; and
  - if the Director will be required to relocate in order to take up the position, it is the Company's policy to allow reasonable relocation, travel and subsistence payments. Any such payments will be at the discretion of the Committee;
- the Committee may also alter the performance measures, performance period and vesting period of the annual bonus or LTIP, if the Committee determines that the circumstances of the recruitment merit such alteration. The rationale for any such alterations will be clearly explained in the next Directors' remuneration report; and
- the maximum level of variable remuneration which may be granted (excluding "buyout" awards as referred to below) is 350% of salary, in line with the policy set out on pages 71 and 72.

Directors' remuneration report continued

Directors' remuneration policy continued

Remuneration policy on recruitment continued

The Committee may make payments or awards in respect of hiring an employee to "buy out" remuneration arrangements forfeited on leaving a previous employer. In doing so, the Committee will take account of relevant factors, including any performance conditions attached to the forfeited arrangements and the time over which they would have vested or been paid. The Committee will generally seek to structure buyout awards or payments on a comparable basis to the remuneration arrangements forfeited. Any such payments or awards are excluded from the maximum level of variable remuneration referred to above. "Buyout" awards will ordinarily be granted on the basis that they are subject to forfeiture or "clawback" in the event of departure within twelve months of joining the Company, although the Committee will retain discretion not to apply forfeiture or clawback in appropriate circumstances.

Any share awards referred to in this section will be granted as far as possible under the Company's existing share plans. If necessary, and subject to the limits referred to above, recruitment awards may be granted outside of these plans.

Where a position is filled internally, any ongoing remuneration obligations or outstanding variable pay elements shall be allowed to continue in accordance with their terms.

Fees payable to a newly appointed Chairman or Non-Executive Director will be in line with the policy in place at the time of appointment.

External appointments

The Company recognises that Executive Directors may be invited to become non-executive directors of other companies and that this can help broaden the skills and experience of a Director. Subject to the approval of the Board, Executive Directors are normally permitted to accept external appointments and may retain fees for such appointments where no significant actual or potential conflict of interest arises and provided that the Director is able to maintain his time commitment to the Company.

Payment for loss of office

The Company's policy is that Executive Directors' service contracts should be capable of termination on not more than twelve months' notice. The principles on which the determination of payments for loss of office will be approached are set out below:

Element	Policy
Payment in lieu of notice	The Company has discretion to make a payment in lieu of notice which would include base salary and benefits for the unexpired period of notice, up to a maximum of twelve months' notice.
Annual bonus	At the Committee's discretion, on an individual basis, any annual bonus award will be dependent on a number of factors, such as the circumstances of departure and their contribution to the business during the period. Any bonus will normally be pro-rated for time and will be paid at the usual time (although the Committee retains discretion to pay the annual bonus award earlier in appropriate circumstances). Any such bonus can, at the discretion of the Committee, be paid wholly in cash.
DBP	Determined in accordance with the rules of the DBP. Unvested awards will normally lapse on cessation of employment. However, at the Committee's discretion, if a participant is deemed to be a "good leaver" (such as leaving due to death, ill health, injury, disability, redundancy or the sale of his employer), the Committee shall determine whether any unvested award will vest at cessation or at the normal vesting date. In either case, the extent of vesting will be determined by the Committee, taking into account, unless the Committee determines otherwise, the period of time elapsed from the date of grant to the date of cessation relative to the deferral period. Awards may then be exercised during such period as the Committee determines. Awards (in the form of nil-cost options) which have vested but remain unexercised at the date of cessation may be exercised if a participant is a good leaver at the discretion of the Committee. Awards may then be exercised for such period as the Committee determines.

Directors’ remuneration policy continued

Payment for loss of office continued

Element	Policy
LTIP	Determined in accordance with the rules of the shareholder approved LTIP. Unvested awards will normally lapse on cessation of employment. However, if a participant is deemed to be a good leaver, the Committee shall determine whether the award is released on the normal release date or the date of cessation (or on some other date). The extent of vesting will be determined by the Committee taking into account the extent to which the performance condition is satisfied and, unless the Committee determines otherwise, the period of time elapsed from the date of grant to the date of cessation relative to the performance period. Awards may then be exercised during such period as the Committee determines. If a participant leaves for any reason (other than summary dismissal) after an award has vested but before it has been released (i.e. during the holding period), his award will ordinarily continue to the normal release date when it will be released to the extent it vested. The Committee retains discretion to release awards when the participant leaves. If the participant is summarily dismissed, their award will lapse. Awards (in the form of nil-cost options) which have vested and been released but remain unexercised at the date of cessation may be exercised if a participant is deemed to be a good leaver. Awards may then be exercised for such period as the Committee determines.
Mitigation	The Committee’s practice is that if an Executive Director’s employment is terminated any compensation payment will be calculated in accordance with normal legal principles including the application of mitigation to the extent appropriate to the circumstances of the termination.
Other payments	In appropriate circumstances, payments may also be made in respect of accrued holiday, outplacement and legal fees.

Where a buyout award had been made, the leaver provisions would be determined at the time of the award.

The Committee reserves the right to make additional exit payments where such payments are made in good faith in discharge of an existing legal obligation (or by way of damages for breach of such an obligation) or by way of settlement or compromise of any claim arising in connection with the termination of a Director’s office or employment.

Where the Committee retains discretion it will be used to provide flexibility in certain situations, taking into account the particular circumstances of the Director’s departure and performance.

There is no entitlement to any compensation in the event of Non-Executive Directors’ fixed-term agreements not being renewed or the agreement terminating earlier.

Consideration of employees’ pay

The Committee generally considers pay and employment conditions elsewhere in the Company when considering the Directors’ remuneration. When considering base salary increases, the Committee reviews overall levels of base pay increases offered to other employees. Employees are not actively consulted on Directors’ remuneration. Employee share ownership is fundamental to the Company’s culture and is reflected in the wide participation in our share incentive plans.

Existing contractual arrangements

The Committee retains discretion to make any remuneration payment and/or payment for loss of office outside the policy in this report:

→ where the terms of the payment were agreed before the policy came into effect provided that, in the case of any payment agreed on or after 13 December 2018, they are in line with the Directors’ remuneration policy approved at the 2018 AGM;

→ where the terms of the payment were agreed at a time when the relevant individual was not a Director of the Company and, in the opinion of the Committee, the payment was not in consideration of the individual becoming a Director of the Company; and

→ to satisfy contractual commitments under legacy remuneration arrangements.

For these purposes, “payments” includes the satisfaction of awards of variable remuneration and, in relation to an award over shares, the terms of the payment are agreed at the time the award is granted.

Consultation with shareholders

The Committee considers shareholder feedback received on remuneration matters, as well as any additional comments received during any other meetings with shareholders. The Committee consulted with major shareholders in respect of the changes to the remuneration policy that was proposed and agreed at the 2018 AGM.

Directors’ remuneration report continued

Annual report on remuneration

This report sets out details of the amounts earned during 2019 and provides details as to how the Committee intends to implement the policy during 2020. This part of the report will be subject to an advisory shareholder vote at the 2019 AGM. This report contains unaudited information except where stated that it is audited.

Remuneration Committee

The Committee comprises Dr Alison Fielding, who is Chairman of the Committee, Christopher Batterham, and Dr Christopher Richards, each of whom is considered to be independent. The Committee may invite anyone it deems appropriate to attend and advise at meetings, including the Chief Executive Officer and the Chief Financial Officer, although no Director is present when their own remuneration is being discussed. The Committee is responsible for establishing a formal and transparent procedure for developing policy on executive remuneration and for setting the remuneration of the Directors and certain senior management, as well as reviewing the performance of the Executive Directors of the Company. The terms of reference of the Remuneration Committee can be found in the Investor section of the Group’s website.

The Committee met three times during the year, its meetings are minuted and its recommendations are presented to the Board.

Policy on other appointments

The Board believes that Directors should be able to accept other appointments where no significant actual or potential conflicts of interest arise and provided that the Director is able to maintain his time commitment to the Company. These other appointments enable Directors to accrue further skills and experience from which the Company benefits. This policy is reviewed annually. None of the Executive Directors had any other external appointments during the year ended 31 July 2019 except Brian Tenner who was appointed as a Non-Executive Director of Velocity Composites plc prior to joining Nanoco. Brian served as its Chair of Audit and Senior Independent Director until stepping down from the board of Velocity in July 2019. The Board was satisfied that this appointment did not create any potential conflict of interest or reduce his time commitment to the Company.

Advisers to the Committee

The Chief Executive Officer is consulted on the remuneration of those who report directly to him and also of other senior executives. No Executive Director or employee is present or takes part in discussions in respect of matters relating directly to their own remuneration. During the year, the Committee was assisted in its work by the following external consultants:

Adviser	Details of appointment	Services provided by the adviser	Fees paid for remuneration advice	Other services in FY19
Deloitte LLP (“Deloitte”)	Appointed by the Remuneration Committee in June 2015.	Various advice on executive remuneration.	The fees for advice provided to the Committee during the financial year were £10,600 (2018: £12,500). Charged on a time/cost basis or fixed fee depending on project.	None.

Deloitte is a member of the Remuneration Consultants Group and, as such, voluntarily operates under its Code of Conduct in relation to executive remuneration consulting in the UK. The Remuneration Committee took into account the Code of Conduct when reviewing the appointment of Deloitte. The Committee is satisfied that the remuneration advice provided by Deloitte is objective and independent.

Annual report on remuneration continued

Single total figure of remuneration for 2019 – Executive Directors (audited information)

The remuneration of the Directors who served on the Board of Nanoco Group plc during the year to 31 July 2019 is as follows (footnotes for both tables are below the second table):

	Base salary and fees[6] £'000	Benefits in kind[7] £'000	Annual bonus in cash £'000	Annual bonus in shares £'000	Long-term incentives £'000	Pension[9] £'000	**Total 2019 £'000**
Executive Directors							
Dr Michael Edelman[1]	322	–	–	167	–	16	**505**
Dr Nigel Pickett	190	–	–	100	–	10	**300**
Brian Tenner[2]	205	–	–	119	–	10	**334**
Total Executive Directors	**717**	**–**	**–**	**386**	**–**	**36**	**1,139**
Former Executive Directors							
David Blain[3]	146	–	–	–	–	–	**146**
Keith Wiggins[8]	80	–	–	–	–	4	**84**
Non-Executive Directors							
Dr Christopher Richards	90	–	–	–	–	–	**90**
Dr Alison Fielding	41	–	–	–	–	–	**41**
Christopher Batterham[4]	15	–	–	–	–	–	**15**
Brendan Cummins[5]	29	–	–	–	–	–	**29**
Total Non-Executive Directors	**175**	**–**	**–**	**–**	**–**	**–**	**175**
Total	**1,118**	**–**	**–**	**386**	**–**	**40**	**1,544**

The remuneration of the Directors who served on the Board of Nanoco Group plc during the year to 31 July 2018 was as follows:

	Base salary and fees[6] £'000	Benefits in kind[7] £'000	Annual bonus in cash £'000	Annual bonus in shares £'000	Long-term incentives £'000	Pension[9] £'000	Total 2018 £'000
Executive Directors							
Dr Michael Edelman[1]	297	–	–	–	–	15	312
Dr Nigel Pickett	173	–	–	–	–	9	182
David Blain[3]	181	–	–	–	–	9	190
Total Executive Directors	651	–	–	–	–	33	684
Former Executive Directors							
Keith Wiggins[8]	177	–	–	–	–	9	186
Non-Executive Directors							
Dr Christopher Richards	75	–	–	–	–	–	75
Brendan Cummins	35	–	–	–	–	–	35
Dr Alison Fielding	35	–	–	–	–	–	35
Total Non-Executive Directors	145	–	–	–	–	–	145
Total	973	–	–	–	–	42	1,015

1 Dr Michael Edelman's remuneration is paid in US Dollars but reported in Sterling for the purpose of this table. The exchange rate used for this purpose varied throughout the year. The rates used were in the range of 1.215 to 1.336 in FY19 and 1.3042 to 1.4195 in FY18.

2 Brian Tenner was appointed to the Board on 20 August 2018.

3 David Blain resigned from the Board on 20 August 2018 and left employment on 15 October 2018 after an orderly handover to Brian Tenner. Information in relation to payments made in respect of loss of office is set out on page 84.

4 Christopher Batterham was appointed to the Board on 1 April 2019.

5 Brendan Cummins resigned from the Board on 19 April 2019. As a Non-Executive Director he received no payments in respect of loss of office.

6 If less than a year was served, salary or fees are from the date of appointment or to the date of retirement. Directors' salaries are shown before any salary sacrifice pension contributions.

Directors’ remuneration report continued

Annual report on remuneration continued

Single total figure of remuneration for 2019 – Executive Directors (audited information) continued

7 Benefits in kind are shown at the taxable value of benefits received in the year. The life cover provided to Executive Directors is contained within a policy covering all employees and it is not possible to identify the proportion of the premium in respect of either Directors individually or as a whole.

8 Keith Wiggins resigned on 10 June 2018. The single total figure of remuneration above details remuneration earned by Keith Wiggins in the financial year to the end of his employment on 31 December 2018. Information in relation to payments for loss of office and other payments made is set out in last year’s Annual Report and Accounts.

9 The pension figure represents the cash value of Company pension contributions and/or cash in lieu of pension contributions. This does not include the amount of the salary sacrifice paid as a pension but does include the employer National Insurance saved that is paid into a private pension scheme.

Individual elements of remuneration for the year ended 31 July 2019

Base salary

Base salaries were increased by 2.5% in line with all other staff in the year ended 31 July 2019.

Annual bonus

For the year ended 31 July 2019, the maximum bonus for Dr Michael Edelman, Dr Nigel Pickett and Brian Tenner was 100% of salary. The annual bonuses comprise two elements: achievement of financial and corporate measures (80% of salary) and achievement of personal objectives (20% of salary). Bonus for personal objectives is only payable if corporate objectives are achieved.

The Committee is acutely aware that the year ended with the disappointing decision by the US Customer, which had a material adverse impact on the Group’s share price and hence shareholder value. However, the Committee considers it appropriate to recognise the excellent annual performance in financial and personal objectives. Annual bonus awards have therefore been made as shown in the table below. Of these, 100% has been paid in deferred shares in order to preserve cash for the Group, subject to the additional 50% being approved by shareholders at the AGM in December 2019.

The Remuneration Committee determined that 37% of salary should be awarded as a bonus for each Director in relation to achievement of corporate objectives (compared to a maximum of 80%).

The financial and corporate measures and their weighting as a percentage of salary for the year ended 31 July 2019 were:

Measure and weighting as a percentage of salary	Threshold performance level	Maximum performance level	Performance achieved	Bonus earned as a percentage of salary
Revenue and other operating income (60%)	£6.3m	£10.4m	£7.3m	26%
Adjusted EBITDA (20%)	Loss of £5.3m	Loss of £3.0m	Loss of £3.8m	11%

The personal objectives and amounts payable in respect of them are set out in the table below.

Specific bonus targets have not been disclosed by the Committee where they are considered to be commercially sensitive. The current stage of the Group’s development means certain retrospective information could still give competitors insight into the strategic plans of the business, which is not in the interest of shareholders.

Director	Measure	Weighting (% of maximum bonus opportunity)	Achievement (% of salary)
Dr Michael Edelman	**Financial and corporate measures**	80	37%
	Personal objectives	20	15%
	Develop new platform technology strategic plan		Achieved
	Deliver new contracts for 2019 with US Customer		Partially achieved
	Spin out Nanoco Life sciences		Ongoing
Dr Nigel Pickett	**Financial and corporate measures**	80	37%
	Personal objectives	20	15%
	Significantly enhance CFQD® quantum dots’ performance		Partially achieved
	Grow the IP portfolio meaningfully		Partially achieved
	Deliver validated material to US Customer		Achieved

Individual elements of remuneration for the year ended 31 July 2019 continued

Annual bonus continued

Director	Measure	Weighting (% of maximum bonus opportunity)	Achievement (% of salary)
Brian Tenner	**Financial and corporate measures**	80	37%
	Personal objectives	20	17%
	Organisational, operational and process change		Partially achieved
	Implement new X3 system		Achieved
	Upskill and streamline finance and HR teams		Achieved
	Outperform overhead and cash budgets		Achieved
	Support CEO to develop a new strategy		Achieved

Long-term incentives vesting in respect of the year ended 31 July 2019

No long-term incentives vested during the year ended 31 July 2019. The LTIP awards granted in December 2016 were subject to performance conditions assessed over the three financial years ended 31 July 2019. The threshold targets were not achieved and consequently all of the awards have lapsed:

	Threshold target	Maximum target	Outcome
Three-year revenue	£28.0m	£58.0m	No awards vest
Share price	£1.00	£1.65	No awards vest

LTIP awards granted in 2019

Awards to the Executive Directors made on 7 November 2018 were as follows:

Director	Type of award	Percentage of salary %	Number of shares	Face value* at grant £'000	Face value at grant less exercise price £'000	% of award vesting at threshold	Performance period Years
Dr Michael Edelman	Share award	100	923,824	319	319	25	3
Dr Nigel Pickett	Share award	100	549,398	190	190	25	3
Brian Tenner	Share award	100	1,021,086	353	353	25	3

* Face value has been calculated using the average closing share price for the three dealing days following the release of the Company's results for the preceding financial year of £0.3458 in accordance with the rules of the LTIP approved by shareholders at the 2015 AGM. Dr Michael Edelman's grant was computed using an exchange rate of $1.28/£1.00.

These awards are subject to the following share price growth and Group revenue performance conditions measured over three financial years ending 31 July 2021.

100% based on compound annual growth in share price measured over three financial years ending 31 July 2021

% of share price element vesting	CAGR %	Equivalent share price target
25	15%	£0.60
100	32%	£1.00

The Company's share price will be averaged across a three-month period (unless the Committee decides to apply a different averaging period) to avoid rewarding for short-term spikes in performance.

Under the performance underpin requirement, if the Committee believes that behaviours divergent from the core commercialisation strategy have been prevalent, it will have the discretion to cancel all or some of the LTIP award.

Directors' remuneration report continued

Annual report on remuneration continued

Statement of Directors' shareholding and share interests (audited information)

Directors' interests in share options to acquire ordinary shares of 10 pence in the Company as at 31 July 2019 (or, if earlier, the date on which they stepped down from the Board) were, including Deferred Bonus Plan:

Share options	Date granted	Exercise price	At 1 August 2018	Exercised during the year	Lapsed	Granted during the year	**At 31 July 2019[1]**
Dr Michael Edelman	25 Nov 2011	50.00p	500,000[2]	–	–	–	**500,000**
	22 Oct 2012	57.00p	1,000,000[2]	–	–	–	**1,000,000**
	23 Dec 2015	Nil	443,548[4]	–	(443,548)	–	**–**
	22 Nov 2016	Nil	841,145[5]	–	(841,145)	–	**–**
	22 Nov 2016	Nil	108,181	(108,181)	–	–	**–**
	6 Dec 2017	Nil	1,149,106[3]	–	–	–	**1,149,106**
	7 Nov 2018	Nil	–	–	–	923,824[3]	**923,824**
Dr Nigel Pickett	25 Nov 2011	50.00p	500,000[2]	–	–	–	**500,000**
	22 Oct 2012	57.00p	750,000[2]	–	–	–	**750,000**
	23 Dec 2015	Nil	284,193[4]	–	(284,193)	–	**–**
	22 Nov 2016	Nil	505,164[5]	–	(505,164)	–	**–**
	22 Nov 2016	Nil	66,576	–	–	–	**66,576**
	6 Dec 2017	Nil	653,137[3]	–	–	–	**653,137**
	7 Nov 2018	Nil	–	–	–	549,398[3]	**549,398**
Brian Tenner	7 Nov 2018	Nil	–	–	–	1,021,086	**1,021,086**
David Blain[6]	23 Dec 2015	Nil	350,000[4]	–	(350,000)	–	**–**
	22 Nov 2016	Nil	690,913[5]	–	(690,913)	–	**–**
	22 Nov 2016	Nil	69,794	(69,794)	–	–	**–**
	6 Dec 2017	Nil	684,708[3]	–	–	–	**684,708**

1 Or, if earlier, the date on which the individual stepped down from the Board.

2 Vested but unexercised share options.

3 Unvested share options still subject to performance conditions.

4 Lapsed in the year as vesting conditions were not met.

5 Lapsed at the year end as vesting conditions not met.

6 The treatment of David Blain's share awards on leaving the business is described on page 84.

Deferred Bonus Plan awards granted in FY17

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.

Director	Number of shares	Face value of award at date of grant £'000
Dr Michael Edelman	108,181	57
Dr Nigel Pickett	66,576	34
David Blain	69,794	36

Annual report on remuneration continued

Director shareholdings

In order to align the interests of Executive Directors with those of shareholders and to demonstrate the Executive Directors' ongoing personal financial commitment to the business, Executive Directors will be expected to build up a shareholding. Under the policy approved by shareholders at the 2018 AGM, the required holding was standardised at 200% of salary for all Executive Directors. Previously, other than the CEO, the required level was 100%. Executive Directors are expected to retain 50% of any post-tax shares that vest under any share incentive plans until this shareholding is reached.

Dr Nigel Pickett holds shares substantially in excess of the shareholding guideline (circa 1,625% of salary using the three-month average closing share price to the end of July 2019). Dr Michael Edelman holds shares equivalent to 108% of salary on the same basis. At the time of his initiating his disposal of shares in May 2019, his residual holding would have been 209% of salary and hence in compliance with the stated guideline. However, since that time, the considerable movement in the share price of the Company means that his equity holding has fallen to 108% of salary. Mr Tenner, having joined the Company in August 2018, is building up a holding which currently stands at 69% of salary.

Non-Executive Directors are not subject to the shareholding requirement.

Directors' interests in the shares of the Company, including family and beneficial interests, at 31 July 2019 (or, if earlier, the date on which they stepped down from the Board) were:

	Ordinary shares of 10p each			
	31 July 2019[1] Number	**31 July 2019[1] %**	31 July 2018 Number	31 July 2018 %
Current Directors				
Dr Christopher Richards	**571,587**	**0.20**	285,496	0.05
Dr Michael Edelman	**1,324,734**	**0.46**	3,124,350	1.09
Dr Nigel Pickett	**11,074,119**	**3.87**	11,112,347	3.89
Brian Tenner	**535,232**	**0.19**	–	–
Dr Alison Fielding	**210,586**	**0.07**	–	–
Christopher Batterham	**125,000**	**0.04**	–	–
Total for current Directors	**13,841,258**	**4.83**	14,522,193	5.03
Former Directors				
David Blain	**153,588**	**0.05**	153,588	0.05
Brendan Cummins	**277,777**	**0.10**	277,777	0.10
Total for former Directors	**431,365**	**0.15**	431,365	0.15

1 Or, if earlier, the date on which the individual stepped down from the Board.

None of the Directors in office as at 31 July 2019 had any interests at that date in shares of any other Group company.

The market price for Nanoco shares as at 31 July 2019 was 13.75 pence per share; the highest and lowest prices during the year were 55.0 pence and 8.5 pence respectively.

Details of share options are set out in note 23 to the financial statements.

Dilution

The Company complies with the relevant institutional investor guidelines on employee share plans which state that in any ten-calendar-year period the Company may not issue more than 10% of the issued ordinary share capital of the Company under the LTIP or any other employee share plan adopted by the Company. Including only option grants post admission to AIM and excluding any awards that have lapsed, the current dilution is 7.3%.

Directors' remuneration report continued

Annual report on remuneration continued

Payments to past Directors and for loss of office (audited information)

David Blain

David Blain stepped down from his position as Chief Financial Officer on 20 August 2018 as a result of a structured reorganisation of the Company's Executive team following the resignation of Keith Wiggins as Chief Operating Officer. David remained with Nanoco until 15 October 2018 to facilitate an orderly handover of his duties. Details of the remuneration payments made or to be made to David are set out below. The Committee determined the remuneration arrangements and, in particular, the treatment of David's 2016 and 2017 LTIP awards, having regard to David's contribution to the Company, his ongoing support to the Company up to 15 October, and his departure as a result of the reorganisation of the Executive team. Hence he was deemed a "good leaver".

1. Salary and benefits

David received his normal remuneration payments up to 15 October 2018 (the "termination date").

After the termination date, David was paid £94,675, being the equivalent of six months' salary and pension contributions as payment in lieu of notice, £13,500 in respect of untaken holiday and a statutory redundancy payment, and a contribution of £1,500 plus VAT in relation to legal fees incurred by him connected with the termination of his employment.

2. Bonus for the year ended 31 July 2018

No bonus was earned for the year ended 31 July 2018. None was payable in respect of his service during the year ended 31 July 2019.

3. Share awards

In respect of David's outstanding share awards, he was treated as a good leaver as specified in the rules of the relevant plans. Taking into account the circumstances of the cessation and David's contribution to the Company, the Remuneration Committee determined not to reduce the LTIP awards to take account of the date of cessation and that it would be appropriate not to impose the post-vesting holding period, should either of the awards vest.

→ Deferred Bonus Plan. The award made under the Deferred Bonus Plan in 2016 over 69,794 shares vested following the end of the two-year holding period announcement of the FY18 results in accordance with the rules of the plan.

→ LTIP 2016 award. Options over 690,913 shares granted in 2016 under the LTIP were held until the performance period ended on 31 July 2019. All of them lapsed as the performance conditions were not achieved.

→ LTIP 2017 award. Options over 684,708 shares granted in 2017 under the LTIP will continue to be held and will vest and be released following 31 July 2020, subject to satisfaction of the performance conditions and the rules of the LTIP.

Other than the amounts disclosed above, David was not eligible for any remuneration payments or payments for loss of office.

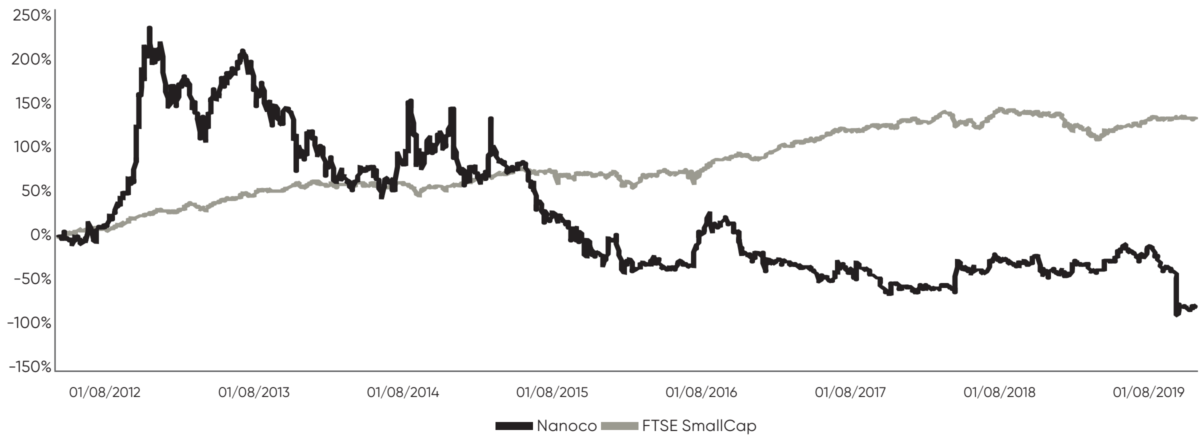
Unaudited information

Historical comparative TSR performance graph

The performance graph below shows the Company's total shareholder return ("TSR") against the FTSE SmallCap over the period from 1 August 2010 to 31 July 2019. In the opinion of the Board, the FTSE SmallCap is the most appropriate index against which the TSR of the Company should be measured because it represents a broad equity market index of which the Company is a constituent member.

Total shareholder return

The graph shows the value at 31 July 2019 of £100 invested in the Company's shares on 1 August 2010 compared with the value of £100 notionally invested in the FTSE SmallCap index. The other points plotted are the values at intervening financial year ends.



Annual report on remuneration continued

Unaudited information continued

Ten-year view of CEO remuneration

Chief Executive Officer remuneration	2011	2012	2013	2014	2015	2016	2017	2018	**2019**
Total remuneration (£'000)*	175	182	707	293	635	406	327	312	**541**
Annual bonus (% of maximum vesting)	33	25	73	56	56	40	–	–	**42**
LTIP (% of maximum vesting)	–	–	–	–	100	–	–	–	**8**

* Dr Michael Edelman's remuneration is paid in US Dollars but reported in Sterling for the purpose of this table. The exchange rate used for this purpose varied during the year.

Percentage change in the remuneration of the CEO

The table below shows the movement in the salary, benefits and annual bonus for the Chief Executive Officer between the current and previous financial year compared with the cost for the same elements for all employees in the Group.

	Salary			Taxable benefits			Bonus		
	2019 £'000	2018 £'000	Change %	**2019 £'000**	2018 £'000	Change %	**2019 £'000**	2018 £'000	Change %
CEO*	**322**	297	8%	**–**	–	–	**167**	–	100%
Average for all other employees	**46**	48	(4%)	**–**	–	–	**3**	3	–

* Dr Michael Edelman's remuneration is paid in US Dollars but reported in Sterling for the purpose of this table. The exchange rate used for this purpose varied during the year. Dr Edelman's salary was $410,000 in 2019 (2018: $400,744), an increase of 2.5%. The percentage change above includes the impact of exchange rate.

Relative importance of spend on pay

The following table sets out the percentage change in dividends and the overall expenditure on pay (across the whole Company).

	Year ended 31 July 2019 £'000	Year ended 31 July 2018 £'000	% change
Dividends	**–**	–	–
Overall expenditure on pay	**5,729**	5,320	7.7%
Average headcount	**92**	86	7.0%

The headcount data is included as the average pay rise for all staff in the prior year was 2.5% whereas the overall expenditure on pay increased by 7.7%. The difference between the two is largely explained by the average headcount during each year.

Implementation of policy for the year commencing 1 August 2019

Base salary

Base salaries are reviewed annually with effect from 1 August. For the year commencing 1 August 2019 Executive Directors will receive a base salary increase of 3.0% which is the same as given to the wider workforce.

	2020	2019	% change
Chief Executive Officer – Dr Michael Edelman	**$423,086**	$410,763	3.0
Chief Technical Officer – Dr Nigel Pickett	**£195,700**	£190,000	3.0
Chief Operating Officer and Chief Financial Officer – Brian Tenner	**£221,450**	£215,000	3.0

Directors' remuneration report continued

Annual report on remuneration continued

Unaudited information continued

Implementation of policy for the year commencing 1 August 2019 continued

Changes to Non-Executive Directors' fees

The changes to the Non-Executive Directors' fees which occurred with effect from 1 January 2019 are set out and explained on page 70.

	2020	2019
Chairman	**£100,000**	£75,000
NED base fee	**£35,000**	£25,000
Chair of Committee fee	**£5,000**	£10,000

Pension

The Company operates a salary sacrifice pension arrangement. For the year commencing 1 August 2019, employer pension contributions above the amount of any salary sacrifice (and the associated employer National Insurance contribution savings) will remain capped at 5% of salary.

Annual bonus

For the year ending 31 July 2020, the maximum annual bonus potential will be 100% of base salary for Executive Directors. At least 50% of any such bonus earned will be paid as deferred shares under the DBP vesting after two years, in accordance with the policy adopted at the 2018 AGM, whilst the remainder will be paid in cash. This reflects our stakeholder philosophy, provides a longer-term retention mechanism and provides alignment with shareholders.

Consistent with the 2019 annual bonus, performance will be assessed on the basis of a balanced scorecard approach in respect of performance measures. The balance between corporate financial objectives (80%) and personal objectives (20%) will be unchanged. The corporate financial measures for FY19 will include annual revenue and EBITDA weighted 60%:20% respectively. The Committee will disclose the metrics and performance against these on a retrospective basis to the extent that these are not commercially sensitive.

Clawback will apply to any cash bonus paid and malus provisions to any unvested deferred bonus award.

As noted earlier, given the significant fall and recent volatility in the Company's share price, the Committee will agree targets if and when LTIP awards are made during FY20. Any award will be in line with the approved remuneration policy. This will include the performance underpin and two-year holding period.

Statement of voting

The Company is committed to ongoing dialogue with its shareholders and takes an active interest in trying to ensure that as many shareholders as possible submit their votes in time for any shareholder meetings. The following table sets out the actual voting in respect of the resolutions to approve the Directors' remuneration report and the Directors' remuneration policy at the Company's Annual General Meeting held on 6 December 2018.

Resolution	Votes for	% for	Votes against	% against	Votes withheld
To approve the Directors' remuneration report	136,644,432	87.2	19,970,668	12.8	14,674
To approve the Directors' remuneration policy	151,068,120	96.5	5,546,980	3.5	14,674

Annual report on remuneration continued

Unaudited information continued

Directors' contracts

Executive Directors

It is the Group's policy that Executive Directors should have contracts with an indefinite term, providing for one year's notice.

	Date of contract	Date of appointment	Notice from the Company	Notice from Director
Dr Michael Edelman	27 June 2006	27 June 2006	12 months	12 months
Dr Nigel Pickett	27 June 2006	27 June 2006	12 months	12 months
Brian Tenner	30 July 2018	20 August 2018	6 months	6 months

All Directors offer themselves for re-election at each AGM in accordance with the UK Corporate Governance Code.
Service contracts are available for inspection at the registered office of the Company.

	Date of letter of appointment	Date of appointment	Unexpired term of contract on 31 July 2019
Dr Christopher Richards (Chairman)	28 October 2015	11 November 2015	4 months
Dr Alison Fielding	20 March 2017	20 April 2017	9 months
Christopher Batterham	12 March 2019	1 April 2019	2.67 years

Non-Executive Directors

All Non-Executive Directors are appointed for an initial three-year term and then on a rolling annual term. Non-Executive Directors' appointments may be terminated on not less than three months' notice from either party.

On behalf of the Board

Dr Alison Fielding
Remuneration Committee Chair
16 October 2019

Directors' report

The Directors present their report and the audited financial statements for the Group and Parent Company for the year ended 31 July 2019.

Financial instruments

Details of the Group's financial risk management objectives and policies are disclosed in note 3 to the financial statements.

Research and development

The principal activity of the Group is research and development, a review of which is included in the Chairman's and Chief Executive Officer's statements on pages 7 to 9 and 10 to 13 respectively.

Total research and development spend was £4.0 million (2018: £4.0 million). No development expenditure was capitalised in the period (2018: £nil) for the reasons provided in note 3(h) to the accounts.

Dividends

The Directors do not recommend payment of an ordinary dividend (2018: £nil).

Disclosures reported elsewhere in the Annual Report

The strategic review of the business of the Company and its subsidiaries is given on pages 7 to 45. Certain information required for disclosure in this report is provided in other appropriate sections of this Annual Report. These are set out in the table below:

Disclosure requirement	Pages
Financial results and dividends	99 to 128
Board and Committee meetings and Directors' attendance	49
Directors' biographical details and date of appointment	46 and 47
Corporate governance	48 to 57
Approach to risk management and principal risks	29 to 31
Research and development activities	17 and 18
Directors' remuneration	71 to 87
Greenhouse gas emissions, employee engagement, disability, gender and human rights	35 to 45
Statement on disclosure to the external auditors	91
Statement of Directors' responsibilities	91 and 92
Future developments	19
Going concern statement	34
Disclosures on financial instruments (note 27 to the consolidated financial statements)	125 to 127

The disclosures are, accordingly, incorporated into this report by reference.

Requirements of the Listing Rules

The following table provides references to where the information required by the Listing Rule 9.8.4R is disclosed:

Listing Rule requirement	Location
Information required in relation to the publication of unaudited financial information	Not applicable
Details of any long-term incentive schemes	Remuneration report
Arrangements where a Director has waived historical or future emoluments from the Company	No such waivers
Details of any non-pre-emptive issues of equity for cash	Not applicable
Details of any non-pre-emptive issues of equity for cash by any unlisted major subsidiary	No such share allotments
Details of UK Parent participation in a placing by a listed subsidiary	No such share participations
Details of any contract of significance in which a Director is or was materially interested	No such contracts
Details of rules regarding the appointment and replacement of Directors	Remuneration report
Contracts of significance between the Company (or a subsidiary) and a controlling shareholder	No such contracts
Details of a waiver of dividends by a shareholder	No such waivers
Board statement in respect of relationship agreement with the controlling shareholder	No such agreements

Acquisition of the Company's own shares

The Company made no purchases of its own shares in the period under review. As at 31 July 2019 the authority given by the shareholders at the 2018 Annual General Meeting is for the Company to make market purchases of up to £2,859,349.30 of the nominal value of its ordinary shares at a price per share of not less than 10 pence, and not more than 5% above the average of the middle market quotations for ordinary shares of the Company for the five business days immediately preceding the day of purchase. This authority is being proposed for renewal at the 2019 Annual General Meeting.

Share capital and funding

Following shareholder approval at a general meeting held on 14 November 2017, 47,655,821 shares were issued on 15 November 2017 as a result of a placing of shares at 18 pence each raising cash of £8.0 million net of expenses.

As at 31 July 2019 share capital comprised 286.2 million ordinary shares of 10 pence each (2018: 285.9 million). There is only one class of share and all shares are fully paid. Full details of the Group's and Company's share capital movements during the period are given in note 22 to the financial statements.

Pursuant to the general provisions of the Articles of Association and prevailing legislation, there are no specific restrictions on the size of a holding. The Directors are not aware of any restrictions on the transfer of ordinary shares in the Company other than certain restrictions which may from time to time be imposed by law and regulations, e.g. insider trading laws, and pursuant to the Listing Rules of the Financial Conduct Authority whereby certain employees of the Company require prior approval from the Company to deal in the Company's securities.

The Company is not aware of any agreements between shareholders that may result in restrictions on voting rights and the transfer of securities.

Details of shares under option are provided in note 23 to the financial statements.

Directors and their interests

The following Directors held office throughout the year:

Dr Christopher Richards	
Dr Michael Edelman	
Dr Nigel Pickett	
David Blain	(resigned 20 August 2018)
Brian Tenner	(appointed 20 August 2018)
Brendan Cummins	(resigned 19 April 2019)
Christopher Batterham	(appointed 1 April 2019)
Dr Alison Fielding	
Keith Wiggins	(resigned 10 June 2018)

Directors' interests in the shares of the Company, including family and beneficial interests, at 31 July 2019 were:

	Ordinary shares of 10p each			
	31 July 2019 Number	**31 July 2019 %**	31 July 2018 Number	31 July 2018 %
Dr Christopher Richards	**571,587**	**0.20**	285,496	0.10
Dr Michael Edelman	**1,324,734**	**0.46**	3,124,350	1.09
Dr Nigel Pickett	**11,074,119**	**3.87**	11,112,347	3.89
Brian Tenner	**535,232**	**0.19**	–	–
Christopher Batterham	**210,586**	**0.07**	–	–
Dr Alison Fielding	**125,000**	**0.04**	–	–
Total Directors' interests	**13,841,258**	**4.83**	14,522,193	5.08

As at 31 July 2019, none of the Directors had any interests in shares of any other Group company.

No Director had an interest in any contract that was significant in relation to the Group's business at any time during the period.

Directors are formally subject to re-election at intervals of not more than three years but voluntarily submit themselves for re-election each year.

Directors' indemnity insurance

The Group has maintained insurance in the form of a qualifying third party indemnity provision throughout the year for its Directors and officers against the consequences of actions brought against them in relation to their duties for the Group. This provision was in force through the financial year and remains in force as at the date of approval of the financial statements.

Substantial shareholders

The Company is aware that the following had an interest in 3% or more of the issued ordinary share capital of the Company at 31 July 2019:

Substantial shareholder	**Number of ordinary shares at 31 July 2019**	**% of issued share capital**
Lombard Odier	**51,754,688**	**18.08**
Hargreaves Lansdown Asset Management	**40,948,854**	**14.31**
Mr Richard I Griffiths	**16,200,000**	**5.66**
Interactive Investor	**14,050,164**	**4.91**
Dr Nigel Pickett	**11,074,119**	**3.87**
Barclays Wealth	**9,936,835**	**3.47**
Halifax Share Dealing	**8,711,011**	**3.04**

Directors' report continued

Substantial shareholders continued

By 11 October 2019 the following parties had notified the Company that their shareholdings had changed since 31 July 2019 – Lombard Odier (23.0%) and Richard I Griffiths (8.8%). Apart from the foregoing, there were no other notified significant changes in the holdings between 31 July 2019 and the date the Annual Report and Accounts were signed.

Donations

No political donations were made in the year (2018: £nil). Charitable donations of £nil were made in the year (2018: £nil).

Additional information for shareholders

With regard to the appointment and replacement of Directors, the Company is governed by its Articles of Association, the UK Corporate Governance Code 2016, the Companies Act 2006 and related legislation.

The Articles themselves may be amended by special resolution of the shareholders. The Articles provide that Directors may be appointed by an ordinary resolution of the Company's members or by a resolution of the Directors, provided that, in the latter instance, a Director appointed in this way retires and stands for election at the first Annual General Meeting following his appointment.

The Articles also provide that at every Annual General Meeting at least one-third of the Directors retire by rotation and set out the circumstances in which and how they may be re-elected. The Company's members may remove a Director by passing an ordinary resolution of which special notice has been given. The office of a Director shall be vacated in any of the following events: (a) if (but in the case of a Director holding any executive office subject to the terms of any contract of service between him and the Company) notification in writing, signed by the Director or otherwise authenticated in such manner as the other Directors may accept, is received by the Company from the Director that he is resigning or retiring from office as a Director, and such resignation or retirement has taken effect in accordance with its terms, or if he shall in writing offer to resign or retire and the Directors shall resolve to accept such offer; (b) if he becomes bankrupt or has a receiving order made against him or makes any arrangement or composition with his creditors generally in satisfaction of his debts or shall apply to the court for an interim order under section 253 of the Insolvency Act 1986; (c) if a registered medical practitioner who is treating the Director gives a written opinion to the Company stating that he has become physically or mentally incapable of acting as a Director and may remain so for more than three months; (d) if he is absent from meetings of the Directors for six successive months without leave, and his alternate Director (if any) shall not during such period have attended in his stead, and the Directors resolve that his office be vacated; (e) if he shall be removed from office by notice in writing served upon him signed by all his co-Directors, but so that if he holds an appointment to an executive office which automatically determines, as a result, such removal shall be deemed an act of the Company and shall have effect without prejudice to any claim for damages for breach of any contract of service between him and the Company; or (f) if he ceases to be a Director by virtue of any provision of the Companies Act or becomes prohibited by law from being a Director.

The powers of the Directors are determined by applicable legislation and the Company's Articles of Association. As provided in those Articles, the Directors may exercise all the Company's powers provided that the Articles or applicable legislation do not stipulate that any such powers must be exercised by the Company's members. The Directors have been authorised to issue and allot ordinary shares, pursuant to the Articles, and have authority to make market purchases of shares. These powers are referred to shareholders at each Annual General Meeting for renewal. Any shares purchased may be cancelled or held as treasury shares.

Employment policies

The Group is committed to ensuring the health and safety of its employees in the workplace. This includes the provision of regular medical checks.

The Group supports the employment of disabled people where possible through recruitment, by retention of those who become disabled and generally through training, career development and promotion.

The Group is committed to keeping employees as fully informed as possible with regard to the Group's performance and prospects and seeks their views, wherever possible, on matters which affect them as employees.

Compliance with the UK Corporate Governance Code

The statements of compliance with the principles of the UK Corporate Governance Code published by the FRC in 2016 are set out on page 50.

Foreign branches

The Group has just one foreign location, a subsidiary in the United States, which provides management services to the UK business.

Auditors

PwC LLP were appointed during the year following an external tender process. PwC LLP have indicated their willingness to continue in office.

Ordinary resolutions to re-appoint PwC LLP as auditors and to authorise the Directors to agree their audit fee will be proposed at the forthcoming Annual General Meeting.

Annual General Meeting notice

The Annual General Meeting of the Company will be held on 5 December 2019 at 11.00am, at the Company's headquarters at 46 Grafton Street, Manchester M13 9NT. The notice convening the AGM, together with an explanation of the resolutions to be proposed at the meeting, will be sent to shareholders separately from this document.

On behalf of the Board

Dr Michael Edelman
Chief Executive Officer
16 October 2019

Statement of Directors' responsibilities

The directors are responsible for preparing the Annual Report and the financial statements in accordance with applicable law and regulation.

Company law requires the directors to prepare financial statements for each financial year. Under that law the directors have prepared the group financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and company financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union. Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and company and of the profit or loss of the group and company for that period. In preparing the financial statements, the directors are required to:

→ select suitable accounting policies and then apply them consistently;

→ state whether applicable IFRSs as adopted by the European Union have been followed for the group financial statements and IFRSs as adopted by the European Union have been followed for the company financial statements, subject to any material departures disclosed and explained in the financial statements;

→ make judgements and accounting estimates that are reasonable and prudent; and

→ prepare the financial statements on the going concern basis unless it is inappropriate to presume that the group and company will continue in business.

The directors are also responsible for safeguarding the assets of the group and company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the group and company's transactions and disclose with reasonable accuracy at any time the financial position of the group and company and enable them to ensure that the financial statements and the Directors' Remuneration Report comply with the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

The directors are responsible for the maintenance and integrity of the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Directors' confirmations

The directors consider that the annual report and accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the group and company's position and performance, business model and strategy.

Each of the directors, whose names and functions are listed in the Corporate governance report confirm that, to the best of their knowledge:

→ the company financial statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and loss of the company;

→ the group financial statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and loss of the group; and

→ the Directors' report includes a fair review of the development and performance of the business and the position of the group and company, together with a description of the principal risks and uncertainties that it faces.

In the case of each director in office at the date the Directors' Report is approved:

→ so far as the director is aware, there is no relevant audit information of which the group and company's auditors are unaware; and

→ they have taken all the steps that they ought to have taken as a director in order to make themselves aware of any relevant audit information and to establish that the group and company's auditors are aware of that information.

By order of the Board

Brian Tenner
Company Secretary
16 October 2019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Independent auditors' report to the members of Nanoco Group plc

Report on the audit of the financial statements

Opinion

In our opinion, Nanoco Group Plc's group financial statements and company financial statements (the "financial statements"):

- give a true and fair view of the state of the group's and of the company's affairs as at 31 July 2019 and of the group's loss and the group's and the company's cash flows for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and, as regards the company's financial statements, as applied in accordance with the provisions of the Companies Act 2006; and
- have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

We have audited the financial statements, included within the Annual Report and Accounts 2019 (the "Annual Report"), which comprise: the group and company Statements of financial position as at 31 July 2019; the Consolidated statement of comprehensive income, the group and company Cash flow statements, and the Consolidated and company statements of changes in equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the group or the company.

Other than those disclosed in note 6 to the financial statements, we have provided no non-audit services to the group or the company in the period from 1 August 2018 to 31 July 2019.

Material uncertainty related to going concern – Group and Company

In forming our opinion on the financial statements, which is not modified, we have considered the adequacy of the disclosure made in note 2 to the financial statements concerning the group's and company's ability to continue as a going concern. As explained by the directors in note 2 to the financial statements, there are a number of uncertainties with respect to the going concern status of the group and company. The principal uncertainty is in relation to the ability of management to deliver any savings and restructuring on a timely basis in the event of any adverse consequences of any restructuring on the business as management explore other options to secure the longer-term future of the operations. These conditions, along with the other matters explained in note 2 to the financial statements, indicate the existence of a material uncertainty which may cast significant doubt about the group's and company's ability to continue as a going concern. The financial statements do not include the adjustments that would result if the group and company were unable to continue as a going concern.

Independent auditors' report to the members of Nanoco Group plc continued

Report on the audit of the financial statements continued

Our audit approach

Overview

- Overall group materiality: £125,000, based on 1% of total expenses before exceptional costs.
- Overall company materiality: £81,000, based on 1% of total assets capped as a percentage of group materiality.

- Full scope audit of Nanoco Technologies Limited plus procedures over certain balances within three other Group companies.

- Recoverability of tangible and intangible assets (Group).
- Revenue recognition (Group).
- Recoverability of investments (Company).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Capability of the audit in detecting irregularities, including fraud

Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to the Companies Act 2006, the Listing Rules and UK tax legislation, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the preparation of the financial statements such as the Companies Act 2006. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to posting inappropriate journal entries to increase revenue or reduce expenditure, and management bias in accounting estimates. The group engagement team shared this risk assessment with the component auditors so that they could include appropriate audit procedures in response to such risks in their work. Audit procedures performed by the group engagement team and/or component auditors included:

- Discussions with management including consideration of known or suspected instances of non-compliance with laws and regulation and fraud;
- Challenging assumptions and judgements made by management in their significant accounting estimates, in particular in relation to recoverability of investments, tangible and intangible assets (see related key audit matters below);
- Identifying and testing journal entries, in particular any journal entries posted with unusual account combinations.

There are inherent limitations in the audit procedures described above and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. In addition to going concern, described in the Material uncertainty related to going concern section above, we determined the matters described below to be the key audit matters to be communicated in our report. This is not a complete list of all risks identified by our audit.

Report on the audit of the financial statements continued

Our audit approach continued

Key audit matters continued

Key audit matter	How our audit addressed the key audit matter
Recoverability of tangible and intangible assets - Group	
Refer to page 64 of the Audit Committee report, and notes 2, 12 and 13 of the Financial Statements. The tangible and intangible fixed asset balances, of £747,000 and £3,897,000 as at 31 July 2019 have been assessed for impairment during the year. As a result of the assessment performed, and linked to the decision from the US Customer not to extend their contract, impairment charges of £3,325,000 were recognised in relation to tangible fixed assets, and £26,000 in relation to intangible assets. The impairment charges were recognised in the Consolidated statement of comprehensive income as exceptional costs. We focused on these areas because the impairment assessment involved judgement and estimates that have a material impact on the amounts recognised in the Financial Statements, including: → In relation to the production facility, an assessment of whether the equipment can be used for any other purpose, and if it could not then an assessment of any recoverable value to be recognised; and → An assessment of the group's patent portfolio, to assess whether there is any indication that the carrying value of any patent is higher than its recoverable amount.	To assess the recoverability of tangible and intangible assets, performed by management, we performed the following: → Evaluated whether assumptions made regarding whether production facility equipment could be used for another purpose were reasonable; → Assessed the reasonableness of management's assumption regarding recoverable values; → Regarding patents, we assessed whether management's assessment for indicators of impairment was appropriate, including consideration of sales values of transactions involving similar technology portfolios. → Considered whether the impairment charges recognised were calculated correctly, and whether it was appropriate to recognise the amounts as exceptional costs.
Revenue recognition - Group	
Refer to page 64 of the Audit Committee report, and notes 2, 3 and 4 of the Financial Statements. The group has some complex commercial contracts which often require judgement to determine the value of revenue to be recognised, and these judgements could have a material impact on the financial statements. Such judgements include: → Separately identifying individual performance obligations (the different distinct services under a contract); → Allocating revenue under a contract to the individual performance obligations; and → Deciding the method and timeframe for recognising the revenue for each performance obligation.	To test revenue recognition, we: → Reviewed all significant commercial contracts, including any side-letters, to ensure that we understand the contract and determined any complexities which may impact on the required accounting treatment; → Reviewed management's assessment of the accounting treatment, including the assessment of performance obligations, revenue allocation and method and timing of recognition; → Recalculated, for a sample of revenue contracts, the revenue recognised and revenue deferred, for specific performance obligations; and → Agreed a sample of revenue transactions through to cash receipts, to ensure amounts recognised were accurate.
Recoverability of investments - Company	
Refer to notes 2, 3 and 14 of the Consolidated Financial Statements. As at 31 July 2018, the Company had an investment in subsidiaries of £63,235,000, which is required to be considered for indicators of impairment on an annual basis. An indicator of impairment was considered to exist, and therefore management has performed a full impairment review to compare the carrying value of investments to their recoverable amount. This exercise resulted in an impairment charge of £24,006,000 being recognised in the Company financial statements. There is judgement involved in the determination of the recoverable amount of the investment, including the appropriate valuation technique to use to calculate such amount, and the value of any inputs required in any calculation.	To assess the impairment assessment performed by the Directors' we have performed the following: → Evaluated the assumptions used in the cash flow and profit forecasts included in the value in use calculations; → Considered management's conclusion that it was more appropriate to use a fair value than value in use calculation; → Tested key inputs into management's fair value calculation, including number of shares in issue and share price; → Recalculated the impairment charges recognised; and → Reviewed the disclosure in the Financial Statements to ensure it was complete and accurate.

Independent auditors' report to the members of Nanoco Group plc continued

Report on the audit of the financial statements continued

Our audit approach continued

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group and the company, the accounting processes and controls, and the industry in which they operate.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Group financial statements	Company financial statements
Overall materiality	£125,000.	£81,000.
How we determined it	1% of total expenses before exceptional costs.	1% of total assets capped as a percentage of group materiality.
Rationale for benchmark applied	Total expenses before exceptional costs represents a measure of the rate at which the group is using its cash resources, is considered to be more appropriate than a revenue or a profit based measure, and is a generally accepted auditing benchmark.	Total assets is considered to be appropriate as it is not a profit oriented Company. The Company holds investments in subsidiaries and therefore total assets is deemed a generally accepted auditing benchmark. Overall materiality has been capped as a percentage of Group materiality.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between £110,000 and £81,000. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £6,000 (Group audit) and £6,000 (Company audit) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Going concern

In accordance with ISAs (UK) we report as follows:

Reporting obligation	Outcome
We are required to report if we have anything material to add or draw attention to in respect of the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and the directors' identification of any material uncertainties to the group's and the company's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.	We have nothing material to add or to draw attention to other than the material uncertainty we have described in the material uncertainty related to going concern section above. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the group's and company's ability to continue as a going concern. For example, the terms on which the United Kingdom may withdraw from the European Union are not clear, and it is difficult to evaluate all of the potential implications on the group's trade, customers, suppliers and the wider economy.
We are required to report if the directors' statement relating to Going Concern in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.	We have nothing to report.

Report on the audit of the financial statements continued

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 (CA06), ISAs (UK) and the Listing Rules of the Financial Conduct Authority (FCA) require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 July 2019 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. (CA06)

In light of the knowledge and understanding of the group and company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report. (CA06)

The directors' assessment of the prospects of the group and of the principal risks that would threaten the solvency or liquidity of the group

We have nothing material to add or further draw attention to regarding:

→ The Directors' confirmation on page 29 of the Annual Report that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity.

→ The disclosures in the Annual Report that describe those risks and explain how they are being managed or mitigated.

We also have nothing material to add to the Directors' explanation on pages 32 to 34 of the Annual Report as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions. However, we draw attention to the disclosures made within the Viability Statement on pages 32 to 34 of the Annual Report regarding the need in downside scenarios that significant management action would be required to reduce the Group's cost base and capital expenditure to match the much reduced revenue and retain the Group's core R&D capabilities and IP portfolio, in which circumstances the Group's viability may be impacted during the assessment period.

Other than drawing attention to the disclosures referred to above, we have nothing to report having performed a review of the Directors' statement that they have carried out a robust assessment of the principal risks facing the Group and statement in relation to the longer-term viability of the Group.

Our review was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the UK Corporate Governance Code (the "Code"); and considering whether the statements are consistent with the knowledge and understanding of the group and company and their environment obtained in the course of the audit. (Listing Rules)

Other Code Provisions

We have nothing to report in respect of our responsibility to report when:

→ The statement given by the directors, on page 91, that they consider the Annual Report taken as a whole to be fair, balanced and understandable, and provides the information necessary for the members to assess the group's and company's position and performance, business model and strategy is materially inconsistent with our knowledge of the group and company obtained in the course of performing our audit.

→ The section of the Annual Report on page 63 describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.

→ The directors' statement relating to the company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified, under the Listing Rules, for review by the auditors.

Independent auditors' report to the members of Nanoco Group plc continued

Report on the audit of the financial statements continued

Reporting on other information continued

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006. (CA06)

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the audit committee, we were appointed by the directors on 24 January 2019 to audit the financial statements for the year ended 31 July 2019 and subsequent financial periods. This is therefore our first year of uninterrupted engagement.

Jonathan Studholme (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
Manchester
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.

The notes on pages 103 to 128 form an integral part of these financial statements.

Consolidated statement of changes in equity

for the year ended 31 July 2019

Group	Issued equity capital £'000	Reverse acquisition reserve	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 for the year 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 for the year 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**

Group 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	11	**747**	**–**	2,604	–
Intangible assets	12	**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 103 to 128 form an integral part of these financial statements.

Dr Michael Edelman
Director
16 October 2019

Mr Brian Tenner
Director
16 October 2019

Group 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		**–**	**–**	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

The notes on pages 103 to 128 form an integral part of these financial statements.

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 are set out on pages 20 to 23. The principal risks and uncertainties are shown on pages 29 to 31 while the Group's financial position is described in the Financial review on pages 26 to 28. 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.

Notes to the financial statements continued

2. Basis of preparation continued

(c) Going concern continued

These actions would be adequate to preserve funding for the two years of the viability assessment and the twelve 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).

2. Basis of preparation continued

(e) Use of estimates and judgements continued

Estimates continued

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 (IAS 36 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 IAS 36 (para 12) include, but are not limited to, situations where the carrying amount of the net assets of the entity is 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 as disclosed 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 statement there would be no impairment required to the assets above.

Consistent with IAS 36 and the indicator of impairment noted 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.

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 were 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 9.

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 outside 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.

Notes to the financial statements continued

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 of 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.

3. Significant accounting policies continued

(d) Revenue recognition continued

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 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, does 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.

Notes to the financial statements continued

3. Significant accounting policies continued

(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 derecognition of the asset is included in the consolidated statement of comprehensive income in the period of derecognition.

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

3. Significant accounting policies continued

(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 tangible assets, intangible assets and Company only investments and inter-company 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.

Notes to the financial statements continued

3. Significant accounting policies continued

(r) Financial instruments continued

(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. Administration of the Trust has been maintained during the current period.

(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 Comprehensive Income. The separate reporting of exceptional items helps to provide an indication of the underlying performance of the Group.

3. Significant accounting policies continued

(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; and

→ 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 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 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 £1.8 million.

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).

Notes to the financial statements continued

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 £3,552,000 (2018: £3,076,000) also included in note 8.

Auditors' remuneration

	31 July 2019 £'000	31 July 2018 £'000
Audit services:		
– Fees payable to Company auditors 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 auditors 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 auditors' 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)	FY19 £'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)**

7. Exceptional items continued

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 £4.245 million;
- given the lack of any signed or near-term commercial prospects for the new production facility, a tangible asset impairment has been posted of £3.3 million;
- 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; and
- other liabilities or costs incurred in the period relating to the US Customer are a provision against stock purchased specifically for the US Customer, 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 "dot only" focus in display activities. This exercise completed in the fourth quarter and will generate £0.6 million per annum of savings, including in FY20.

8. Staff costs

The Group's costs 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 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.

The 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

Notes to the financial statements continued

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)**	–
	(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).

10. Taxation continued

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

Notes to the financial statements continued

12. Tangible fixed assets continued

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 the 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 (IAS 36 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 IAS 36 (para 12) include, but are not limited to, situations where the carrying amount of the net assets of the entity is 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 as disclosed 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 statement there would be no impairment required to the assets above.

Consistent with IAS 36 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.

			Share of issued ordinary share capital	
Subsidiary undertakings	Country of incorporation	Principal activity	**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.

Notes to the financial statements continued

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% p.a. 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.

Notes to the financial statements continued

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 (as detailed in the Directors' remuneration report on page 81) and are exercisable after a two-year holding period until the tenth anniversary of the award.

Notes to the financial statements continued

23. Share-based payment reserve continued

Share option schemes continued

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

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

23. Share-based payment reserve continued

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 £0.9 million (2018: £0.5 million).

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.

Notes to the financial statements continued

25. Movement in accumulated losses

Group	Profit and 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 and 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

Notes to the financial statements continued

27. Financial risk management continued

Categorisation of financial instruments continued

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**	9,395	(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

27. Financial risk management continued

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	2,986

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.

Notes to the financial statements continued

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.

Investor information

Directors

Dr Christopher Richards	Non-Executive Chairman
Dr Michael Edelman	Chief Executive Officer
Dr Nigel Pickett	Chief Technology Officer
Brian Tenner	Chief Operating Officer and Chief Financial Officer
Chris Batterham	Non-Executive Director
Dr Alison Fielding	Senior Independent Non-Executive Director

Secretary

Brian Tenner

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