Nanoco Group

FY20 results

Rebuilding organic value

Tech hardware & equipment

Nanoco is now focused on generating value from three core areas: nanomaterials for the sensor market, where it has a framework agreement with STMicroelectronics; quantum dots for TV displays where a number of development projects are underway; and pursuit of the patent infringement litigation against Samsung. Noting that net cash consumption is now c £0.3m per month, which management, led by Brian Tenner, estimates gives a cash runway to December 2022, we have reinstated our estimates.

Year end	Revenue (£m)	EBITDA (£m)	PBT* (£m)	EPS* (p)	DPS (p)	P/E (x)
07/19	7.1	(3.8)	(5.0)	(1.34)	0.00	N/A
07/20	3.9	(2.9)	(4.9)	(1.38)	0.00	N/A
07/21e	1.0	(2.9)	(4.4)	(1.14)	0.00	N/A
07/22e	2.6	(1.3)	(2.6)	(0.65)	0.00	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Cash runway extended to December 2022

Revenues decreased by £3.3m year-on-year during FY20 to £3.9m as the contract with the major US customer ended in December 2019. However, cost reductions meant that adjusted EBITDA losses narrowed slightly, from £3.1m (restated for IFRS 16) to £2.9m. Free cash outflow totalling £5.0m was partly offset by an equity raise in July which raised £3.2m (net), leaving £5.2m net cash (excluding £0.5m convertible loan and £1.2m IFRS 16 lease liabilities) at end July 2020.

Near-term opportunities in sensing and display

Nanoco's nanomaterials represent a cost-effective, proven way of improving the sensitivity of sensors used for facial recognition and augmented reality (AR) applications in mobile phones and for collision avoidance systems in autonomous vehicles. Its quantum dots (QDs) enhance the range of colours a TV display can show. Any one of the three key ongoing development programmes in sensing and display could potentially scale up to the £6m revenues required for break-even and lead to volume production of materials using the existing facilities in Runcorn. These facilities collectively have capacity to output materials worth £130m per year.

Valuation: Resolution of patent infringement key

The agreement with ST confirms that there remains significant potential for generating revenues from the supply of QDs for sensing and display applications. However, ahead of development projects moving to commercial production we believe that at this point Nanoco's value lies in a satisfactory resolution of the patent infringement dispute with Samsung. Although the value of the potential payout has not been disclosed, we calculate that lost revenue in the US attributable to the patent infringement to date could be in the region of US$200–250m. Any damages award could also make an additional allowance for future sales of Samsung TVs using QDs and sales in other territories.

16 October 2020

Price	**11.6p**
Market cap	**£35m**

Net cash (£m) at end July 2020 (excluding £0.5m convertible loan and £1.2m IFRS 16 lease liabilities)	5.2
Shares in issue	305.7m
Free float	67.6%
Code	NANO
Primary exchange	LSE
Secondary exchange	N/A

Share price performance

%	1m	3m	12m
Abs	(12.91)	(38.3)	8.41
Rel (local)	(12.13)	(36.83)	29.1
52-week high/low		29p	7p

Business description

Nanoco is a global leader in the development and manufacture of cadmium-free quantum dots and other nanomaterials. Its platform includes c 740 patents and specialist manufacturing lines. Focus applications are advanced electronics, displays, lighting and bio-imaging.

Next event

AGM	3 December 2020

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Edison profile page

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FY20 performance

Successful completion of major contract in H120

Nanoco successfully delivered the final milestones for the US customer during FY20, earning the contracted milestone payments in full. As the contract ended in December, revenues from the US customer were £2.5m compared with £6.5m in FY19, so total revenues fell by £3.3m year-on-year to £3.9m. Despite the drop in revenues, adjusted EBITDA losses narrowed slightly, from £3.1m (restated for IFRS 16) to £2.9m. This demonstrates the benefit of the restructuring programmes that took place in Q419 and H220, which reduced employee and administrative costs, as well as the absence of costs associated with the initial commissioning of the Runcorn facility, a substantial part of which fell in FY19.

Strong levels of investor appetite in July subscription

Net cash (excluding £0.5m convertible loan and £1.2m IFRS 16 lease liabilities) fell by £1.8m during the period to £5.2m at end July 2020. Investment in tangible assets was minimal (£0.1m vs £2.1m in FY19) as the new nanomaterials production facility in Runcorn was completed during FY19. However, cash consumption was exaggerated by a £1.0m decrease in deferred revenue relating to the contract with the major US customer and a £0.8m decrease in provisions. Free cash outflow totalling £5.0m (including payment of lease liabilities) was partly offset by an equity fundraise in July. This subscription raised £3.2m (net) through the issue of 19.5m new shares at 17.5p per share, which was a 2.8% discount to the closing price at the time. The oversubscribed subscription was initially intended to raise a minimum of £2.2m (gross), indicating strong levels of investor appetite.

Outlook

Pursuing near-term opportunities in sensing and display

Although the major US customer decided not to progress to volume production of nanomaterials for use in infra-red (IR) sensors, successful commissioning of the nanomaterials production facility in Runcorn clearly demonstrates that Nanoco is able to deliver this material in commercial volumes. There is continued interest in using these nanomaterials to improve the sensitivity of silicon-based IR sensors. This is because nanomaterial-enhanced silicon sensors potentially provide a cost-effective route for improving the range and sensitivity of sensors currently used for facial recognition and AR applications in mobile phones, and for collision avoidance systems in autonomous vehicles. Enhanced sensitivity results in lower power consumption, which for a mobile phone user means longer time between charges.

Nanoco and STMicroelectronics (ST) were part of a supply chain for the major US customer, with Nanoco manufacturing nanomaterials which ST used to improve the sensitivity of its silicon IR sensors. Now that the US customer has withdrawn from the scene, at least for the moment, and the exclusivity agreement with it has lapsed, we understand that ST is able to offer these enhanced, proven, near IR sensors across its extensive, global customer base. In May, Nanoco signed a framework agreement with ST that covers both development work and commercial supply of nanomaterials for use in multiple IR sensing applications over a five-year period. Subsequent purchase orders cover the supply of small-scale volumes of nanomaterials for the proven sensing application. It also covers a development project extending from April to December 2020 on a new generation of nanomaterials for potential use in other IR sensing applications. The agreement also commits ST to taking the majority of its nanomaterials from Nanoco if the enhanced sensors gain market traction and commercial volumes are required. These nanomaterials would be produced at the existing facility in Runcorn. Given the time taken to qualify devices, we expect this to be late calendar 2021 at the earliest.

In addition, Nanoco's next-generation cadmium-free QDs for organic light emitting diode – quantum dot (OLED-QD) hybrid TV display systems are currently being tested by a number of OEMs.

These development activities could potentially lead to volume production of materials using the existing facilities in Runcorn. The facility dedicated to sensing applications has the capacity to manufacture c £100m of materials each year, while the facility dedicated to display applications has the capacity to manufacture c £30m of materials each year. This development activity is not impaired by either the social distancing measures introduced during the COVID-19 pandemic or cash conservation measures (see below). The R&D facility in Manchester operated throughout the first wave of lockdowns. While the volume production facility for sensor materials in Runcorn was closed temporarily, it has since been reopened. The volume production facility for display materials has been mothballed but could be brought back into production within a month.

Patent infringement lawsuit against Samsung

In February Nanoco announced that it had filed a patent infringement lawsuit against Samsung. The lawsuit alleges that Samsung has wilfully infringed the patents relating to Nanoco's unique synthesis and resin capabilities for QDs. Nanoco is seeking a permanent injunction from further acts of infringement and unspecified but significant monetary damages. Nanoco and Samsung initially worked together to develop cadmium-free QDs based on Nanoco's IP. However, Samsung ended the collaboration and launched its QD-based televisions without entering into a supply or licensing agreement with Nanoco.

Nanoco has engaged US-based international IP law firm Mintz, Levin, Cohn, Ferris, Glovsky and Popeo to represent it in patent enforcement and litigation. The company has also signed a litigation funding agreement with a very large, undisclosed US litigation finance specialist with extensive experience in financing technology-based IP patent litigation matters. The finance specialist will fund the costs of the litigation against Samsung, which is likely to cost many millions of dollars to prosecute. The finance specialist undertook extensive due diligence, including the use of independent experts, before signing the agreement, giving management greater confidence in the likelihood of winning the case. The agreement means that Nanoco will be able to actively progress the lawsuit without adversely affecting its cash consumption. Management estimates that the lawsuit could proceed to trial in calendar H122.

Nanoco has not revealed its estimates of the potential payout if the litigation is successful, but has stated that since April 2015 Samsung had sold 14 million TVs deploying QDs based on Nanoco IP in the US. These TVs had an average sales price of US$2,200–2,500 compared with the average price of a top of the range TV without QDs of c US$1,000. The value of the lost revenue to Nanoco this represents has not been disclosed. Had the alleged patent infringement not taken place, we believe Nanoco would have collected royalties from its partners, primarily Dow Chemical, which would potentially be supplying QDs to Samsung in volumes higher than Nanoco could produce itself in Runcorn. If we assume that the cost of the QDs in each TV is equivalent to 10% of the uplift in price between QD and non-QD TV displays, and that Nanoco would have received a 12% royalty (as per our May 2017 initiation note) on these QDs, this represents US$14.4–18.0 in lost revenue per TV display or US$200–250m between April 2015 and the present This value excludes QDs in any future TV displays Samsung makes or TVs sold in other territories. We note that around one-third of Samsung's TV sales are attributable to the US market.

Cash conservation

Management had already taken action to reduce cash consumption from £0.8m/month in October 2019 to £0.6/month by March 2020. In April, it began to furlough some staff under the UK government's employment support scheme and implemented a company-wide reduction in salaries for non-furloughed staff with a gross salary above £25k pa. These actions reduced monthly cash consumption, including discretionary capex and rental payments, to c £0.4m. This programme was followed by a restructuring in September, cutting the number of staff to 45, over 20 fewer than a year previously. As part of the restructuring, Brian Tenner, who was formerly CFO and COO of Nanoco, became CEO and handed over most of his finance activities to the former group financial controller, Liam Gray. Former CEO Dr Michael Edelman stepped down. Taking into account contracted revenues and receipt of R&D tax credits, the restructuring programme has resulted in a reduction in net monthly burn rate to c £0.3m. This cost base should enable Nanoco to achieve cash break-even on annual revenues of c £6m, half what was required a year ago. Management's target is to progress nanomaterial development and scale-up programmes, so the company reaches this break-even level within three years. This may leave a gap between the existing cash runway and break-even point, but if one or more of the programmes does start to scale up, which would be likely in itself to extend the cash runway, we believe Nanoco would be well-placed to raise further finance at that point.

Management estimates that the combination of commercial activity, fund-raising and restructuring actions will give Nanoco enough cash to continue its existing business activities until December 2022. This assumes that one or more of the development programmes currently under way start to scale up before this point. If they do not, management has the option to remove the group's R&D, production and scale-up capabilities to focus on pursuing the lawsuit against Samsung. The cash runway extends to December 2022 in this scenario as well.

Reinstatement of estimates

Now that there is greater clarity regarding funding and cash burn, we have reinstated our estimates. These make the following assumptions:

- FY21 revenues are based on the c £1m of contracted revenues. Strong revenue growth in FY22 is predicated on one of more of the joint development programmes currently being worked on starting to scale up during the year as Nanoco moves towards its goal of break-even by calendar 2023. We note that scale-up is dependent not just on Nanoco's materials meeting the technical requirements, but also on an OEM deciding to launch a product incorporating the nanomaterials, so this revenue trajectory is not certain.
- Indirect costs (excluding depreciation and amortisation) are modelled at c £0.4m per month.
- We assume that Nanoco will continue to receive R&D tax credits.
- We assume that only minimal investment in capital equipment is required because Nanoco already has the production facilities to accommodate any scale-up programmes.
- All R&D activity is expensed rather than capitalised, so investment in intangible assets relates to the cost of IP protection. The rate of filing new IP has been reduced to preserve trade secrets and conserve financial resources, so the level of investment is lower in FY21 and FY22 than in FY20.

Exhibit 1: Financial summary

£m	2019	2020	2021e	2022e
Year end 31 July	IFRS 17	IFRS 16	IFRS 16	IFRS 16
INCOME STATEMENT				
Revenue	7.1	3.9	1.0	2.6
Cost of Sales	(0.7)	(0.3)	(0.1)	(0.5)
Gross Profit	6.5	3.5	0.9	2.1
EBITDA	(3.8)	(2.9)	(2.9)	(1.3)
Operating profit (before amort. and except).	(5.0)	(4.8)	(4.3)	(2.5)
Amortisation of acquired intangibles	0.0	0.0	0.0	0.0
Exceptionals	(0.3)	(0.7)	0.0	0.0
Share-based payments	(0.2)	(0.4)	(0.4)	(0.4)
Reported operating profit	(5.5)	(5.9)	(4.7)	(2.9)
Net Interest	(0.0)	(0.1)	(0.1)	(0.1)
Joint ventures & associates (post tax)	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0
Profit Before Tax (norm)	(5.0)	(4.9)	(4.4)	(2.6)
Profit Before Tax (reported)	(5.5)	(6.0)	(4.8)	(3.0)
Reported tax	1.2	0.9	0.9	0.6
Profit After Tax (norm)	(3.9)	(4.0)	(3.5)	(2.0)
Profit After Tax (reported)	(4.4)	(5.1)	(3.9)	(2.4)
Minority interests	0.0	0.0	0.0	0.0
Net income (normalised)	(3.9)	(4.0)	(3.5)	(2.0)
Net income (reported)	(4.4)	(5.1)	(3.9)	(2.4)
Average Number of Shares Outstanding (m)	286	287	306	306
EPS - normalised (p)	(1.34)	(1.38)	(1.14)	(0.65)
EPS - diluted normalised (p)	(1.34)	(1.38)	(1.14)	(0.65)
EPS - basic reported (p)	(1.52)	(1.76)	(1.27)	(0.78)
Dividend per share (p)	0.00	0.00	0.00	0.00
Revenue growth (%)	114.9	0.0	0.0	0.0
Gross Margin (%)	90.7	91.1	91.0	80.8
EBITDA Margin (%)	(53.3)	(76.1)	(291.5)	(51.0)
Normalised Operating Margin	(70.0)	(124.0)	(431.3)	(97.0)
BALANCE SHEET				
Fixed Assets	4.6	4.6	3.9	3.5
Intangible Assets	3.9	3.7	3.5	3.2
Tangible Assets	0.7	0.9	0.4	0.3
Investments & other	0.0	0.0	0.0	0.0
Current Assets	9.5	7.2	4.2	2.6
Stocks	0.2	0.1	0.1	0.1
Debtors	1.1	1.0	1.0	1.0
Cash & cash equivalents	7.0	5.2	2.2	0.5
Other	1.1	0.9	0.9	0.9
Current Liabilities	(4.8)	(3.4)	(3.4)	(3.4)
Creditors	(2.6)	(2.1)	(2.1)	(2.1)
Tax and social security	0.0	0.0	0.0	0.0
Short term financial leases	0.0	(0.6)	(0.6)	(0.6)
Other	(2.3)	(0.6)	(0.6)	(0.6)
Long Term Liabilities	(0.8)	(1.3)	(1.1)	(1.0)
Long term financial leases	0.0	(0.5)	(0.3)	(0.2)
Other long-term liabilities	(0.8)	(0.7)	(0.7)	(0.7)
Net Assets	8.5	7.2	3.7	1.7
Minority interests	0.0	0.0	0.0	0.0
Shareholders' equity	8.5	7.2	3.7	1.7
CASH FLOW				
Op Cash Flow before WC and tax	(3.8)	(2.9)	(2.9)	(1.3)
Working capital	1.8	(1.5)	0.0	0.0
Exceptional & other	0.0	(0.2)	0.0	0.0
Tax	1.4	1.1	0.9	0.6
Net operating cash flow	(0.6)	(3.5)	(2.0)	(0.7)
Capex (including capitalised R&D)	(3.1)	(0.7)	(0.7)	(0.8)
Acquisitions/disposals	0.0	0.0	0.0	0.0
Net interest	(0.0)	(0.1)	(0.1)	(0.1)
Equity financing	0.0	3.2	0.0	0.0
Dividends	0.0	0.0	0.0	0.0
Other	0.0	0.0	(0.2)	(0.1)
Net Cash Flow	(3.7)	(1.1)	(3.0)	(1.7)
Opening net debt/(cash)*	(10.7)	(7.0)	(5.2)	(2.2)
FX	0.0	0.0	0.0	0.0
Other non-cash movements	0.0	(0.8)	0.0	0.0
Closing net debt/(cash)*	(7.0)	(5.2)	(2.2)	(0.5)

Source: Company data, Edison Investment Research. Note: *Excluding IFRS 16 financial leases.

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