

Recharging the batteries

Share Price: A\$0.014

A potential Lithium-Ion Battery Revolutionary

Anteo Diagnostics, having developed what is arguably the world's most versatile surface modification technology, spent many years evaluating the use of the technology in the Life Sciences sector. It remains interested in Life Science applications, but a huge potential upside lies in lithium-ion batteries. Battery developers have a strong interest in improving energy density and battery capacity, and one of the best strategies to achieve this is by using silicon in battery anodes. Currently, however, the silicon content in lithium-ion battery anodes is limited to ~6wt.% due to problems related to expansion and contraction at higher densities. Anteo believes that its technology can ultimately increase the silicon content to >40wt.%. Little wonder, then, that battery developers are now interested in collaborating with Anteo. Should any such collaborations transition into formal licensing deals, the upside could be significant given the rapid increase in Electric Vehicle uptake globally as well as the increasing use of lithium-ion batteries in consumer electronics, energy storage systems and drone and niche applications. Since our 20 March 2019 initiation report on Anteo, the company has secured two such collaborations. One with the Spanish company called Silicio Ferrosolar was announced on 25 June while another with a 'globally recognised battery anode producer' was announced on 8 July.

Investment Case

Anteo has decided to streamline its focus on high-value opportunities, including POC and batteries. The unmet need in both sectors is tremendously high and Anteo's technology aims to fulfill it. We believe Anteo's strategy to focus on important opportunities first is a great way to utilize its cash. The ongoing collaborations are expected to continue to drive the commercialization potential of this technology. Meanwhile, a licensing opportunity in other areas, such as medical devices, would be an added advantage. To that end Anteo's recently announced collaboration with Lumos Diagnostics is promising

Valuation

We currently value Anteo at 2.3 cents per share base case and 3.3 cents optimistic case using a probability weighted DCF valuation approach. We see Anteo being re-rated by the market as its Battery project yields highly efficient silicon composite anodes, and as the POC project moves towards commercialization.

ASX: ADO

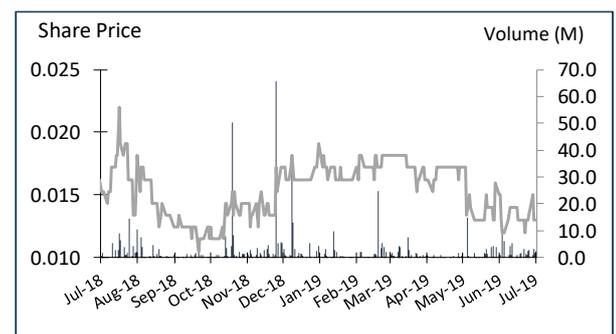
Sector: Healthcare

17 July 2019

Market Cap. (A\$ m)	20.9
# shares outstanding (m)	1,494.3
# share fully diluted	1,712.5
Market Cap Ful. Dil. (A\$ m)	24.0
Free Float	100%
12 months high/low	0.022 / 0.011
1 / 3 / 12-month performance	-19% / -15% / -15%
Website	anteotech.com

Source: Company, Pitt Street Research

Share price (A\$) and avg. daily volume (k, r.h.s.)



Source: Pitt Street Research

Valuation metrics	
DCF fair valuation range (A\$)	.023 / .033
WACC	14%
Assumed terminal growth rate	None

Source: Pitt Street Research

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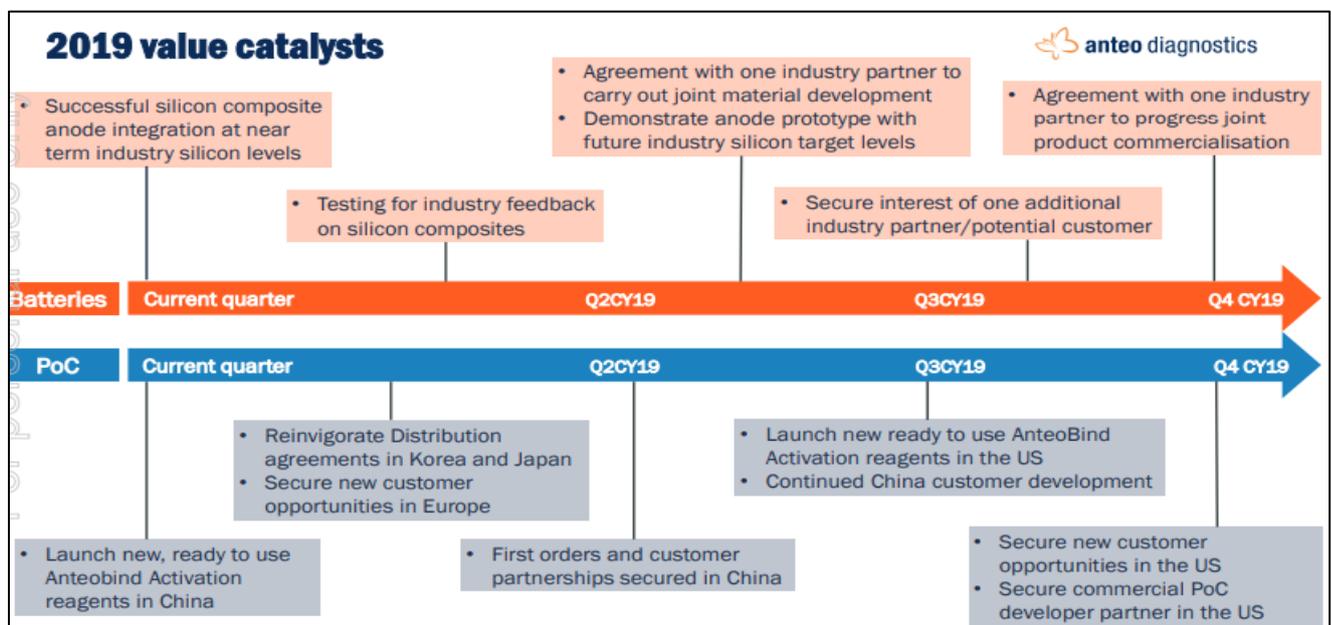


Anteo has disclosed its key priorities for 2019

Anteo has a busy second half of 2019 ahead

In 2019, it appears that Anteo will focus extensively on advancing development and securing commercial partners in both the battery and POC segments. The company has already demonstrated integration of silicon composite anode at levels that the battery industry will be looking to achieve in the near-term. In the next nine months, Anteo expects to test silicon composites and generate industry feedback and sign partnerships for joint development/commercialisation. Within the POC segment, Anteo anticipates focussing on China by launching AnteoBind-based products and securing customer partnerships. It also expects to reinvigorate existing distribution agreements in Korea and Japan and secure new customers in Europe and the US (in the latter half of the year) (Figure 1).

Figure 1: Anteo’s 2019 Value Catalysts



The company aims to focus on four key battery segments till 2025

Anteo outlined four key segments that it plans to target within the battery sector by 2025 – electric vehicles, consumer electronics, energy storage systems and drone and niche applications (The market potential of all these markets is immense, with electric vehicles being the most lucrative).



Figure 2: Anteo’s target markets



Source: Company

Anteo has made management changes in line with its focus on the battery segment

Anteo has made changes to its leadership team

In April 2019, Anteo appointed Harley Frankfurt as the company’s CEO to drive the expansion of its battery division. Frankfurt replaced Christopher Parker, who transitioned into an Executive Director role. Parker primarily focusses on driving expansion and development of Anteo’s Life Sciences segment operations, which have near-term growth catalysts.

Harley Frankfurt brings more than 25 years’ experience of working as part of leading companies in the field of development, design, construction, finance, operations and maintenance across global renewable energy, power generation, infrastructure, mining and oil industries. Previously, he worked as COO (Major Projects) at Enviromena Power Systems. In his past role, he was responsible for delivering US\$220m, 250MW PV solar farm in Egypt for stakeholders including IMF, World Bank and global pension funds. His extensive experience and understanding of the energy and renewable sector make him an extremely valuable asset for the company’s strategic foray into the battery segment.

On 28 February 2019, Duncan Cornish was appointed as the new CFO and company secretary, post the resignation of Julien McNally. Cornish brings extensive experience on all aspects of company financial reporting, corporate regulatory and governance areas, business acquisition and disposal due diligence, capital raising, company listings and company secretarial responsibilities. He previously served as the CFO and company secretary for several Australian and Canadian public companies.

Anteo and GeneDx partnership has made solid progress in creating sales pipeline

In February 2019, Anteo revealed that it is progressing well to tap the Chinese POC market through its partnership with Shanghai GeneDx Biotechnology Co. Ltd (signed in December 2018). In January 2019, Anteo’s team held commercial and technical meetings with four end customers of GeneDx in the IVD and POC markets. End customers included some of China’s largest and most well established diagnostics companies and local subsidiary of large, well-recognised Life Science Group. Also, Anteo’s newly developed particle



conjugation kits (NANO, MICRO and Gold) were well received by end customers. The companies were expected to undertake a full commercial launch of the specified AnteoBind products at the 16th China Association of Clinical Laboratory Practice Expo, which took place in March 2019.

Anteo's recent deals within the POC and battery segments indicate strong focus on commercialisation

Within the POC segment, in June 2019, Anteo signed a collaboration agreement with a California-based POC company that specialises in lateral flow assay development and reader design, Lumos Diagnostics (a spin-off of medical technology firm Planet Innovation). Through the collaboration, the two companies plan to develop high-sensitivity, lateral flow tests for the detection of very low concentrations of clinically important biomarkers. We expect the deal to provide an opportunity to assess the performance advantages of AnteoBind for the commercial development of lateral flow assays. Anteo had previously collaborated with Lumos on a medical countermeasures project, which won the National Innovation Award at the 2018 International Land Forces Exposition.

Within the battery segment, in June 2019, Anteo signed an MoU with Spain-based Silico FerroSolar SLu (SFS), a subsidiary of Ferroglobe – a leading producer of silicon metal, silicon- and manganese-based alloys and ferroalloys. As per the MoU, both companies agreed to work together to explore a range of opportunities to integrate SFS' silicon into anodes for Li-ion batteries using Anteo's technology and processes. Through this agreement, Anteo has secured ongoing access to high-quality silicon materials to pursue the development and commercialisation of its technology.

The developments in both the sectors indicate a solid runway to deliver commercial outcomes.

Anteo is now working with a 'globally recognised battery anode producer'

On 8 July 2019 Anteo announced that it had signed its third battery sector collaboration with an unnamed 'leading global battery materials and component manufacturer'. All we know about 'Collaborator 3' at this stage is that this company sells into the Electric Vehicle market. The opportunity here, is, obviously, the rapid-growth nature of EVs as well as this sector's high profile. By 2018 there were 5.1 million EVs on the road globally, up 2 million from the previous year with EV sales having almost doubled during the year¹. This kind of growth profile can lead to massive upside for established players optimizing any technology that can achieve what Anteo can potentially achieve with silicon anodes.

Anteo is funded for the next stage of its journey

Anteo recently completed a heavily oversubscribed 1:5 rights issue at 1.1 cents which raised \$2.55m. It chose to make a placement at \$1.1m to one investor at the same price which took in another \$1.1m. We adjusted our 20 March 2019 model for the new capital just taken in, as well as the lower discount rate (14% versus 15% previously) that reflected the recent decline in the

The number of electric vehicles in service grew rapidly in 2018

¹ See the IEA report headlined 'Global EV Outlook 2019' and dated 27 May 2019.



Australian ten-year bond rate. We previously assumed, purely for valuation purposes, that Anteo raises another A\$7.5m at 1.5 cents per share (obviously, a higher share price could alter this assumption). That figure now changes to \$3.85m at 1.5 cents. As a result of these changes our valuation range changes from 2.9 cents per share base case and 4.0 cents per share optimistic case to 2.3 cents base case and 3.3 cents optimistic case.

Risks for Anteo

Risks specific to Anteo. We see five major risks for Anteo as a company and as a listed stock:

Licensing risk. Anteo is now focusing on developing nanoscale technology for a specific segment – POC – within the IVD sector. This entails the risk of its technology failing to gain much interest in this segment from particle companies or LFIA manufacturers.

Sentiment risk. Biotech investors tend to prefer drug development stocks with late-stage pipeline drugs rather than a new technology where regulatory or commercial payoff may be less understood.

Cash risk. There is the risk that Anteo's current cash flow may exhaust faster than expected and that it may not have enough funds to take its R&D efforts forward in its strategic segments – energy and POC.

Collaboration risk. Anteo could fail to secure a partner for exploring the AnteoRelease technology in the medical device segment.

Timing risk. There is a possibility that the commercialization of products based on Anteo's technology may take longer than expected.

Risks related to pre-revenue life sciences companies in general. The stocks of biotechnology and medical device companies without revenue streams from product sales or ongoing service revenue should always be regarded as speculative in character. As most biotechnology and medical device companies listed on the Australian Securities Exchange fit this description, the term 'speculative' can reasonably be applied to the entire sector. The fact that the intellectual property base of most biotechnology and medical devices lies in science not generally regarded as accessible to layman adds to the risk associated with the sector.

Caveat emptor. Investors are advised to be cognizant of the abovementioned specific and general risks before buying any the stock of any biotechnology and medical device company mentioned in this report, including Anteo Diagnostics.

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