



ALEXIUM

**QUARTERLY ACTIVITIES REPORT
FOR THE PERIOD ENDED
30 September 2022**

Q1 FY2023 Highlights:

- **US Bedding Market starting to show signs of improvement**
- **Supply Agreement finalized with major US Bedding Manufacturer**
- **First program for Body Armor utilizing Alexium's Eclipsys technology**

Introduction by CEO, Billy Blackburn:

During my short tenure at Alexium, the potential of this business has become very obvious. The technical and professional team here is poised for success. The challenge we face is how to best commercialize all this potential. Alexium has delivered highly innovative technologies for three platforms:

- Thermal Management,
- Flame Resistance, and
- Dehumidification for thermal comfort (a new platform that we look forward to discussing at the upcoming AGM).

The tricky part has been prioritizing our efforts to best match the needs of our customers in retail markets and end-uses for military and law enforcement personnel. To tackle this, we have restructured Alexium's management to focus on commercializing the existing product portfolio in markets where the speed to market is optimal, the sustained sales growth supports our long-term goals, and we prevent our growth from becoming too concentrated in any single channel. The team is taking a pragmatic approach to the daily management of the business. In parallel, we are working on innovative applications of our products to the three platforms, and in certain cases, a combination of our products for cross-platform applications (higher-value). Said differently, we will dedicate ourselves to a disciplined approach that delivers near-term success from historical investments while allowing new innovations to run a parallel path that does not diminish our financial results.

Q1 FY2023 was a slow start to the fiscal year. Revenues were lower than this point in Q1 FY2022. It was a continuation of the weak bedding markets paired with a few specific customer setbacks in new product starts. We have seen a shift to top-of-bed accessory sales, which will culminate in sales growth in Q2 for Alexium's PCM and Eclipsys product lines. Many mattress customers are forecasting higher Q2 volumes for mattress production, but we are cautious not to call this a market recovery. Rather, it is more of a restocking of inventories that were reduced during the weak market conditions of the last 9-months. Alexium will produce its first significant volume of Eclipsys for body armor (law enforcement) in early 2023. Commercial production of mattresses utilizing the Eclipsys technology is expected to commence in earnest in Q2, then ramp throughout the remainder of FY2023. PCM sales have recovered in October FY2023, which supports the customer feedback of restocking empty stores. Two major FR projects remain active, and the technical trials are extremely promising. In summary, we are now seeing Alexium's results recover from those of late FY2022 and Q1 FY2023, and we expect this recovery to continue throughout the year.

Q1 FY2023 Cash Flow Commentary

Cash receipts for the period totalled US\$1.2m with sales of US\$1.4m. Sales were predominantly for use in the bedding market. Cash receipts decreased by US\$0.1m versus the previous quarter.

Q1 sales were up slightly by US\$0.1m from the prior quarter reflecting low US consumer confidence due to factors such as high inflation, Russian/Ukraine war, and US Federal Reserve interest rate increases in the quarter. As previously mentioned, customer retention remains strong, and the Company continues to grow market share in thermal management products for the bedding and body armour markets for programs that are initiating in FY2023.

Operating activity outflows (refer to Appendix 4C Item 1.2) primarily consist of raw material purchases, manufacturing costs, staffing costs, and corporate/administrative costs. Other cash outflows are in line with our typical quarterly expenses. During Q1 of each year we experience higher cash outlays for operating expenses for items such as the annual audit, insurance renewals, ASX annual fees and in this quarter the addition of Billy Blackburn as CEO in September. We also had increased raw material purchases and production related costs by US\$0.2M with uptick in demand and timing of raw material demand planning. Total aggregate payments to related parties for the quarter totalled US\$155K. This includes payments to directors and compensation for Bob Brookins, CTO, and Billy Blackburn, CEO, for a period of one month.

Line of credit - The outstanding balance at the end of the period was US\$449K on the total eligible borrowing base of US\$1,109K leaving US\$620K available for use. This line availability of US\$620K plus the cash on hand of US\$607K gives the company total available funding of US\$1,227K. In Q2, we will further increase our eligible borrowing with expected increase in sales in the coming months and in turn narrow the gap between actual and theoretical availability under the line.

Positive FY2023 Bedding Market Trends Support Alexium Growth

The Company is happy to report that the US bedding market is starting to show signs of strengthening over the next two quarters. One lead indicator of this is the recent ISPA Optimism Index from the Internal Sleep Products Association (ISPA). In their September report, this index indicated mattress producers are more optimistic about the short- and medium-term and the next six months across all factors tested. Index participants were more optimistic about future orders and the numbers of units to be produced. ISPA also reported that the six-month outlook from Index participants was significantly more positive.¹

At Alexium, similar trends have been observed. In recent weeks, Alexium has received stronger demand forecasts from bedding customers, the major suppliers to US mattress product manufacturers. Additionally, reports from manufacturers indicate they have de-stocked over the past 9 months, and there is an opportunity to fill this void in the supply chain in the medium term.

To further strengthen the Company's position in this recovery, there has been a focus on increasing market penetration in the top-of-bed market (*i.e.*, pillows, mattress toppers) which is less impacted by the current economic conditions. The Company is pleased to announce that this has become a major area of new growth for the Company with major retailer related programs commencing in the current (December) Quarter.

¹ <https://bedtimesmagazine.com/2022/09/results-of-ispa-september-optimism-index-are-positive%E2%80%9C/>

While certain segments of the US economy continue to be soft and consumer confidence remains low, these specific indicators for the US bedding market are encouraging and are starting to be reflected in customer orders with the month of October shaping as the Company's strongest sales month since November last year.

Alexium Signs Supply Agreement for Eclipsys in Bedding Market

The Company has entered into a supply agreement with a multi-billion-dollar North American mattress manufacturer for the commercialization of mattresses utilizing the Eclipsys technology. This agreement is a major milestone targeted by the Board and management team as part of its FY2022 strategic plan.

The Eclipsys products are based on a patent pending technology which provides perpetual cooling throughout the night for a mattress. Under the supply agreement, the Company will provide a proprietary product based on a fusion of its Biocool and Eclipsys platforms which the mattress manufacturer will take across its brand portfolio. The supply agreement has a three-year term that may automatically renew for successive one-year terms. The supply agreement does not prohibit the Company from further commercialization of Eclipsys technology in mattresses with other manufacturers and does not include minimum sales volume for the mattress manufacturer; given these points, the Board considers this a positive commercial development for the Company but not a material contract. This supply agreement reinforces the Board's belief in the unique qualities of the Company's proprietary technology and its broad portfolio of thermal regulation products. Based on the customer's forecasts, ramp up stocking and initial products are expected to be manufactured in 1H CY2023 with regular ongoing sales in 2H CY2023.

First Major Program for Eclipsys-based Body Armour Products

A key market segment targeted by the Company is thermal regulation solutions for body armour applications. Due to the high heat & humidity retention of these products, wearers frequently suffer from significant thermal stress. To address this issue, the Company has developed an application of its Eclipsys technology for integration with body armour.

The Company is happy to report that Premier Body Armor (a distributor of Eclipsys products for body armour) is being awarded a program to provide Eclipsys-based body armour to the South Carolina Department of Corrections. This program is currently budgeted for the current fiscal year with approximately 3,500 units to be delivered in CY2023 and represents the first major program win for the provision of a product including Alexium technology in this market segment. Based on on-going prospective customer discussions, we anticipate that additional body armour manufacturers will be adopting the Eclipsys-based technology for their new product offerings to be brought to market over the next twelve months. This program is evidence of the Company's successful diversification strategy beyond the bedding market.

Quarterly Update on Flame Retardant Product Portfolio

In parallel with the Company's thermal management product portfolio, the Company has a number of efforts running in parallel for its flame-retardant product portfolio. The following is a summary of key activities during the reporting period:

Flame-retardant nylon/cotton fabrics (FR NyCo):

FR NyCo product development effort has been active and progressed well over the quarter. As previously reported, the US Military's evaluating body has requested that Alexium provide our FR NyCo fabric with a lower final fabric weight. This adaptation is in line with the US military's initiative to lower the weight burden on the warfighter.

To meet this target, Alexium has worked with a major nylon fabric supplier to source and validate the product performance at this lower fabric weight. We are pleased to announce that during the quarter Alexium received the new tailored fabric and successfully applied Alexium's FR NyCo treatment to it meeting key performance targets. This treated fabric is being submitted to the US Military for testing and evaluation and we look forward to receiving testing feedback in the coming months.

Alexiflam®-treatment for FR socks in mattresses: In a parallel development for FR NyCo, the Company has used the Alexiflam® technology for cotton-based fabrics for use as an FR sock in foam-based mattresses to act as a barrier fabric that impedes flame propagation. By utilizing a cotton fabric for this purpose, the Company can provide an ecologically friendly solution for this market.

The Company can report that a confluence of macroeconomic factors has put the Alexiflam® treatment in a less cost-competitive position in this market segment. These factors include tariffs levied between the US and China, high inflation rate, and continued high shipping costs since the COVID-19 pandemic. The Company will continue to monitor these factors for additional opportunities.

Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of Entity	
ALEXIUM INTERNATIONAL GROUP LIMITED	
ABN	Quarter ended
91 064 820 408	30-September-2022

Consolidated statement of cash flows	Current quarter \$US'000	Year to date (3 months) \$US'000
1. Cash flows from operating activities		
1.1 Receipts from customers	1,233	1,233
1.2 Payments for		
(a) research and development	(115)	(115)
(b) product manufacturing and operating costs	(794)	(794)
(c) advertising and marketing		
(d) leased assets	(20)	(20)
(e) staff costs	(484)	(484)
(f) administration and corporate costs	(366)	(366)
1.3 Dividends received (see note 3)		
1.4 Interest received	2	2
1.5 Interest and other costs of finance paid	(26)	(26)
1.6 Income taxes paid		
1.7 Government grants and tax incentives		
1.8 Other (GST received)	2	2
1.9 Net cash from / (used in) operating activities	(568)	(568)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant, and equipment	(3)	(3)
(d) investments		
(e) intellectual property	(64)	(64)

Appendix 4C
Quarterly report for entities subject to Listing Rule 4.7B

(f) other non-current assets			
Consolidated statement of cash flows		Current quarter \$US'000	Year to date (3 months) \$US'000
2.2	Proceeds from disposal of:		
	(a) entities		
	(b) businesses		
	(c) property, plant, and equipment		
	(d) investments		
	(e) intellectual property		
	(f) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
2.6	Net cash from / (used in) investing activities	(67)	(67)
3. Cash flows from financing activities			
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)		
3.2	Proceeds from issue of convertible debt securities		
3.3	Proceeds from exercise of options		
3.4	Transaction costs related to issues of equity securities or convertible debt securities		
3.5	Proceeds from borrowings	1,235	1,235
3.6	Repayment of borrowings	(1,006)	(1,006)
3.7	Transaction costs related to loans and borrowings		
3.8	Dividends paid		
3.9	Other (provide details if material)		
3.10	Net cash from / (used in) financing activities	229	229
4. Net increase / (decrease) in cash and cash equivalents for the period			
4.1	Cash and cash equivalents at beginning of period	1,027	1,027
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(568)	(568)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(67)	(67)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	229	229
4.5	Effect of movement in exchange rates on cash held	(14)	(14)
4.6	Cash and cash equivalents at end of quarter	607	607

Appendix 4C
Quarterly report for entities subject to Listing Rule 4.7B

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$US'000	Previous quarter \$US'000
5.1 Bank balances	607	1,027
5.2 Call deposits		
5.3 Bank overdrafts		
5.4 Other (provide details)		
5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)	607	1,027

6. Payments to related entities of the entity and their associates	Current quarter \$US'000
6.1 Aggregate amount of payments to related parties and their associates included in item 1	155
6.2 Aggregate amount of payments to related parties and their associates included in item 2	
6.1 Total payment of \$155K for non-Executive Directors fees and payroll for Mr Blackburn, Managing Director and Dr Brookins, Director	

7. Financing facilities	Total facility amount at quarter end \$US'000	Amount drawn at quarter end \$US'000
7.1 Loan facilities	2,819,436	2,819,436
7.2 Credit standby arrangements	1,109	489
7.3 Other (please specify)	-	-
7.4 Total Financing facilities	2,820,545	2,819,925
7.5 Unused financing facilities available at quarter end		620
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		
7.1 - Colinton Capital Partners - 4-year 6% A\$5.15M secured convertible note that matures on 24-Dec-23. The Company has elected to PIK this coupon at the agreed rate of 8%.		
7.2 - Alterna CS - Asset based loan secured with working capital accounts with \$489K drawn on a total availability \$1,109K as of the reporting date. Interest is variable based on Wall Street Journal published Prime Rate + 5% spread for a 21-Sep rate of 11.25%. Loan ends on 5-Apr-25.		

8.	Estimated cash available for future operating activities	\$US'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(568)
8.2	Cash and cash equivalents at quarter end (item 4.6)	607
8.3	Unused finance facilities available at quarter end (item 7.5)	620
8.4	Total available funding (item 8.2 + item 8.3)	1,227
8.5	Estimated quarters of funding available (item 8.4 divided by item 8.1)	2.2
	<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	
8.6	If item 8.5 is less than 2 quarters, please provide answers to the following questions.	
8.6.1	Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
	Answer: N/A	
8.6.2	Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
	Answer: N/A	
8.6.3	Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
	Answer: N/A	
	<i>Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.</i>	

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 31 October 2022

Authorised by: The Board of Directors

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 107: Statement of Cash Flows apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board." If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – e.g., Audit and Risk Committee]." If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee."
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.