



QUARTERLY ACTIVITIES REPORT



FOR THE PERIOD ENDED
31 DECEMBER 2024

Q2 FY2025 Update Contents:

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Introduction by CEO, Billy Blackburn

Over the past two years, the mattress industry has witnessed a decline in both unit sales and market value due to economic challenges, primarily higher interest rates which have impacted housing affordability and consumer spending. However, based on a recent forecast provided by the International Sleep Products Association (November 2024 Mattress Industry Forecast), a gradual market recovery is anticipated from 2025 onwards, driven by anticipated lower mortgage rates and a slight improvement in the housing sector, leading to modest growth in both unit sales and market value.

I started with Alexium in late 2022. During my tenure, the Mattress Industry has been in decline. Despite that, Alexium had to find a way to grow in its niche of the market. During this same period, the company remained overconcentrated in the textile mattress segment of the market, and overconcentrated with a single large customer. These concentrations restricted the Company's ability to deliver meaningful results. In previous Quarterlies, I detailed that we had changed our Strategy and Plan. Those changes have finally gained traction. In this update, you will read about advancements to our mPCM product technology and efficiencies realised in our manufacturing processes. These improvements allowed production of mPCM suitable for the foam mattress market segment, which has a much higher annual usage than the textile segment. These improvements have also afforded the business near-term opportunities globally. The Company finally has a clear path to realise its full potential for mPCM products in this space.

In addition to the mPCM improvements and opportunities, we sharply improved our supply chain, manufacturing approach, and go-to-market strategy for our flame-retardant ("FR") technologies. This required a shift in how Alexium presents its overall FR technology and products to customers. Instead of the previous approach of first promoting product benefits to end-user brand companies, then persuading their textile and foam component suppliers to purchase Alexium's products, we reversed the process. Now, Alexium directly offers finished components to end-user brands, allowing the full value of the Company's unique technology and intellectual property to be realised. Our customers' finished products stand out from the competition due to differentiation from integrating Alexium technology. This process reversal also allows for improved quality control, reduced sales cycle times, better commercial terms, and higher revenue per unit sold.

Put simply, we set out to quickly increase the size of our addressable market, reduce the length of our sales cycle, improve our global reach, and increase our revenue per unit sold. This was made possible by the Company's breakthrough developments detailed herein, and the business development efforts of the last six months. We will continue our efforts to diversify our markets, customer base, and product offerings. This is the path to delivering near-term value to all of Alexium's stakeholders. In summary, I am excited about the near future and our opportunities to deliver results.

FY25 Plan – Progress Update

As a recap: Alexium began FY25 executing the plan for the next phase of our *Grow and Diversify Strategy* – a plan to aggressively grow revenues in its Core Markets. The team was structured to deliver on the five critical focus areas set out below. An update on the progress on each is set out below as well.

- I. Maintaining the Company's key accounts and sales in the North American bedding market.
 - Update: As reported by ISPA's Market intelligence, the current North American bedding market has continued to operate at or below pre-2021/22 levels. As a result, the Company's PCM sales to this market are down in comparison to prior fiscal years. However, we do anticipate recovery of these sales volumes in 2025.
- II. Saturating the North American bedding market through diversification of product and customer mix.
 - Update: This part of the Company's plan represents most of our near-term growth opportunity. The new customer opportunities for mPCM sales hold significant potential. We have achieved positive results from several trials with new customers and are now negotiating terms for new sales in Q3 FY25. The Company is also moving forward with burn tests on mattresses on which customers have utilised FR socks co-developed with the Company's textile finishing partners.
- III. Breaking into new accounts abroad in the Asia Pacific, Latin America, and European bedding markets.
 - Update: The Company continues efforts to increase volumes to the existing textile customers for PCM in Europe. We also have new mPCM opportunities in that region. We are also engaged with four new potential customers for our thermal regulation products (AlexiCool®, BioCool®, Eclipsys®, & DelCool™) in the Asia Pacific region (primarily in Australia & New Zealand). While our efforts in the Latin American region are currently lagging behind those in other regions, we do have a new opportunity in the more developed Latin American countries for Eclipsys® technology, specifically applied to tactical gear for military and law enforcement personnel.

- IV. Diversifying revenue growth through the sale of the Company's existing technologies into adjacent markets (Eclipsys®, DelCool™, AlexiFlam®, & AlexiShield).
- Update: While we have lessened the team's focus on Adjacent Markets, we do have progress on sales initiatives for the following technologies:
 - AlexiFlam®-treated fabrics to the US Military. - the testing and product improvements efforts have continued to progress for AlexiFlam® chemistry applied to nylon-cotton apparel fabrics for the US Military. We are now entering Phase 2 of that testing where we will collaborate with our textile partner to dial in the secondary properties beyond flame retardant performance that are important for final product success.
 - Eclipsys® products to the tactical gear and furniture markets - we have a customer testing and conducting field user trials for Eclipsys® technology in tactical gear in multiple Latin American countries.
- V. Forming strategic alliances with key supply chain partners to co-develop products to take to market which leverage the strengths of each partner's key value proposition.
- Update: This is a key element to the change in strategy and is also a major driver in the new FR growth opportunities outlined in item II above. We are now progressing to the mattress burn test stage with prospective customers for multiple FR barriers and socks in H2 FY25. We have reached agreement on pricing and aesthetics for many of these prototypes with the mattress burns being the final qualification step. With successful burn results, we anticipate closing these opportunities which drive near-term revenue in 2025.

Product Strategy Highlights

As a recap, the Company made noteworthy progress against our product diversification strategy throughout FY24 and into the first half of FY25. This led to new, immediate opportunities for growth within our Core Market focused on bedding. We also made considerable progress in FR military apparel fabric development. We paused development efforts for thermal regulation in athletic gear, cold chain packaging and FR work wear to concentrate the team's focus on the achievement of the Company's near-term growth objectives.

Flame Retardant (FR) Products

- ***FR NyCo Treatment for Military Fabrics***

- In Q2, the Company completed Phase I of the project to improve upon the aesthetics of the FR NyCo requested by the Army. Fabric samples were produced, submitted, and tested. Many of the target attribute improvements were met. The remaining attributes for printing, NIR, and SWIR heat signature improvements are targeted for Phase II. Work on Phase II improvements is expected to commence in Q3 FY25. Currently, the timing for a request for quote or proposal for large-scale adoption by the US Military is unknown. We are awaiting the directives of the new US Administration's Executive Branch on military spending and expediting the restocking and enhancements of the US military's supply chain.

- **AlexiShield:**

- As first introduced in the previous quarterly report, the Company has launched a new line of flame-retardant products marketed under the brand name AlexiShield. These products are designed to provide enhanced flame resistance for mattress and foundation applications tested under 16 CFR part 1633. While previous work by the Company in FR applications for mattresses has focused on the FR sock, this new platform can provide an FR solution for multiple components including the sock, mattress borders, mattress bottoms and foundations. Introduction of AlexiShield products to mattress suppliers in the industry is well underway with design and trial work with these parties. Customer feedback has been extremely positive, and work is progressing to the next stages with prospective customers.

Cooling and Thermal Management Products

- ***PCM – Maintain and Grow North American share, Penetrate Global Markets***
 - The Company made a breakthrough in FY24 in improving the performance of its microencapsulated phase change materials (mPCM). This breakthrough resulted in an mPCM that has superior cooling capacity (up to three times cooler in certain cases) compared to competitive products in the bedding market. This development led to new opportunities for near-term placements, with production anticipated to commence in H2 FY25. Pricing has been accepted for a running change in an existing mattress brand program. That project has been through textile trials with results pending approval.
 - The Company achieved improvements in its mPCM formulations in late FY24. The refinements of these formulations continued throughout H1 FY25. The effort led to a higher percentage of solids in our products to allow for slurry and wet cake offerings, as well as improvements which significantly increase the product's thermal stability so the mPCM can be dried for new placements as dry powder. These developments have opened several new pipeline opportunities for significant revenue growth in H2 FY25. Terms are being negotiated now for new sales that commence in Q3.
 - Alexium's work with international bedding market participants in Europe and Australasia has increased with the Alexium team supporting product development efforts by these parties. The Company is working on two new placements in Asia, and four in the Australasia region. The Europe opportunity is for a new AlexiCool formulation paired with moisture wicking. The Australasia opportunities are in the material evaluation and testing phases for AlexiCool, Eclipsys®, DelCool™, AlexiShield, and the Alexium luxury pillow.
- ***AlexiCool® mPCM Commercialisation***
 - Over the past few years, the Company's core business has been based on sales of biobased mPCM to the bedding market. This commercial effort was driven by the strong market pull for biobased cooling technologies in this market. To strengthen its position in the market for other opportunities, the Company has developed a second line of non-biobased mPCM products branded as AlexiCool® mPCM. The AlexiCool® product line helps to open new market segments by leveraging lower-cost raw

materials, a domestic supply chain, and yielded product with new cooling benefits. The AlexiPCM products will be manufactured to suit a wide range of market applications including both wet and dry applications. Notably, mPCM for dry applications will be a new market segment.

- Successful production trials of the AlexiCool® products were completed in the reporting period. Full commercialisation of the wet product line is expected in Q3 FY25 with full commercialisation of the dry product line expected shortly thereafter.
- ***DelCool™ fabric sales growth in bedding***
 - Mattresses: Product development continues for a DelCool™- based luxury mattress with a major bedding brand. This development effort is proceeding very well and has the potential to deliver a significant revenue stream for FY26. Production of floor models and other promotional mattresses are scheduled to commence in late 2025.
 - Pillows: Development of a high-tech pillow utilising Alexium's DelCool™ and mPCM technologies has progressed well. The product is being offered to brands under a private label arrangement. The Company has presented finished prototypes to several brands and product reviews are commencing. The initial feedback on the product, the technology, the market, and the pricing have all been favourable. Note that this initiative is a paradigm shift from selling the Company's technologies through textile and foam producers who then sell the finished goods to the brands. Alexium has qualified the initial textile and foam producers to incorporate these technologies into a finished product. Alexium will sell the finished goods to the brand via private label licenses. Initial pricing has been accepted, and testing is underway for a branded retail placement in the APAC region. This approach will lead to a significant increase in revenue per unit sold and greater control of the end customer relationship.
- ***New Eclipsys® fabric placements in bedding underway***
 - For mattresses as well as top-of-bed applications, numerous US and international brands are evaluating the Eclipsys® fabric for additional product lines. These new opportunities have been driven by greater market awareness of Eclipsys® technology and increased sales activity by the Alexium team.
 - The Company has four active opportunities in the pipeline for mattress launches in Calendar 2025.

FY25 Q2 Results

Q1 FY25 marked a slow start to the fiscal year. However, there was a 16% increase in sales moving into Q2 FY25. The Company experienced lower revenues than anticipated. While significant efforts were made over the last several quarters to diversify revenues from the over-concentrations in North America, the bedding market, and PCM; the results have not yet materialised.

With the number and size of near-term opportunities in the Company's pipeline, it remains that the low revenues of Q2 and H1 can be significantly increased in H2. This will be driven by the mPCM and FR textile opportunities detailed in this report. The team at Alexium remains focused and committed to delivering these results in FY25.

Shareholder Loan

On 23 December 2024, the Company entered an unsecured loan with its two largest shareholders, Colinton Capital Partners Pty Limited (“CCP”) and Wentworth Williamson Management Pty Limited (“WW”) to provide working capital funding. The facility carries a face value of \$932,550 (A\$1,500,000 in total with A\$1,250,000 funded by CCP and A\$250,000 funded by WW). The loan matures on 23 June 2026 and carries an interest rate of 15%.

FY25 Q2 Cash Flow Commentary

Alexium remains focused on pursuing short-term revenue opportunities while also working on secondary new business ventures to support its medium- to long-term growth goals. At the same time, the Company maintains a disciplined approach to managing expenses, timing of raw material purchases, and the overall cash conversion cycle. According to ISPA’s November 2024 Mattress Industry Forecast, unit shipments of mattresses and foundations decreased 14.7% in calendar year 2022, a further 8.0% in 2023 and is forecast to be down another 7.5% for calendar year 2024 (data to be finalised for 2024). However, ISPA is forecasting that these volumes will increase by modest amounts in 2025 (+1.5%) and 2026 (4.0%).

Sales for the quarter at US\$1.4 million were up 16% or US\$0.2 million versus the prior quarter (FY25 Q1). Overall, US mattress market conditions remained soft amid inflationary concerns, high interest rates, and geopolitical concerns. The US Federal Open Market Committee (FOMC) has reduced the US official interest rate by fifty basis points in FY25 Q1 and another twenty-five basis points in the current quarter, but it is still high at 4.5%. These reductions in the rate are the first since March 2020 and have ended a period of unprecedented interest rate increases in the US. From March 2022 – July 2023, there were a total of eleven increases in the official rate (total of 525 basis points) at which time the official interest rate reached 5.25% (the highest rate since 2001) and remained there until September 2024. Although U.S. short-term interest rates have fallen, the long-term mortgage rates have yet to fall, and it may take some time before consumer confidence rises enough to positively affect discretionary spending, which is crucial for the recovery of the bedding market.

Cash receipts for the period were US\$1.4 million with revenue of US\$1.2 million. Compared to the previous quarter, cash receipts decreased by US\$0.1 million due to the timing of receipts.

Operating activity outflows (refer to Appendix 4C Item 1) primarily consist of raw material purchases, manufacturing costs, staffing costs, and corporate/administrative costs. Staffing expenses decreased by \$0.2 million over the previous quarter due to headcount changes and the timing of bi-weekly pay periods. In addition, the previous quarter included the payment of year-end incentives. Other cash outflows are in line with typical quarterly expenses.

Total aggregate payments to related parties for the quarter equal US\$248 thousand which include payments to non-executive directors (directors fees and consulting fees) and compensation for executive directors William “Billy” Blackburn, CEO and Managing Director, and Robert “Bob” Brookins, CTO and Director.

Cash flows from financing activities for the quarter consisted of the shareholder loan discussed above and the normal activity on the Line of Credit. The outstanding balance on the Line of Credit at the end of the period was US\$508 thousand on the total eligible borrowing base of US\$490 thousand which is an allowable overdraw of US\$18 thousand on the LOC due to timing of customer payments (see Section 7.2 of the Consolidated Cash Flow Report below). This negative line availability is merely a timing matter. When combined with the cash on hand of US\$1.886 million, this gives the Company total available funding of US\$1.868 million, which provides for an estimated 9.8 quarters of funding at the current rate.

Name of Entity	
ALEXIUM INTERNATIONAL GROUP LIMITED	
ABN	Quarter ended
91 064 820 408	31-December-2024

Consolidated statement of cash flows	Current quarter \$US'000	Year to date (6 months) \$US'000
1. Cash flows from operating activities		
1.1 Receipts from customers	1,421	2,646
1.2 Payments for		
(a) research and development	(106)	(234)
(b) product manufacturing and operating costs	(709)	(1,497)
(c) advertising and marketing	(2)	(7)
(d) leased assets	(17)	(38)
(e) staff costs	(469)	(1,158)
(f) administration and corporate costs	(310)	(711)
1.3 Dividends received (see note 3)		
1.4 Interest received	12	24
1.5 Interest and other costs of finance paid	(32)	(59)
1.6 Income taxes paid		
1.7 Government grants and tax incentives		
1.8 Other (GST received)	22	43
1.9 Net cash from / (used in) operating activities	(191)	(991)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant, and equipment		(2)
(d) investments	(84)	(100)
(e) intellectual property		
(f) other non-current assets		

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

Consolidated statement of cash flows	Current quarter \$US'000	Year to date (6 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	(84)	(102)

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		(5)
3.5 Proceeds from borrowings	1,898	2,922
3.6 Repayment of borrowings	(1,046)	(1,940)
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	852	977

4. Net increase / (decrease) in cash and cash equivalents for the period		
4.1 Cash and cash equivalents at beginning of period	1,427	2,053
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(191)	(991)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(84)	(102)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	852	977
4.5 Effect of movement in exchange rates on cash held	(118)	(51)
4.6 Cash and cash equivalents at end of quarter	1,886	1,886

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	1,860	2,053
5.2 Call deposits	26	
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)	1,886	2,053

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	248
6.2 Aggregate amount of payments to related parties and their associates included in item 2	
6.1 Total payment of \$248K for non-Executive Directors fees, payroll for Mr. Blackburn, CEO & Managing Director and Dr Brookins, CTO & Director, and consulting fees for Mr. Lane	

7. Financing facilities	Total facility amount at quarter end \$US'000	Amount drawn at quarter end \$US'000
7.1 Loan facilities	933	933
7.2 Credit standby arrangements	490	508
7.3 Other (please specify) - Bridging Loan	-	-
7.4 Total Financing facilities	1,423	1,441
7.5 Unused financing facilities available at quarter end		(18)
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 - Shareholder term loan from Colinton Capital and Wentworth Williamson with interest rate of 15% maturing on 23 Jun 2026		
7.2 - Alterna CS - Asset based loan secured with working capital accounts with \$508K drawn on a total availability of \$490K as of the reporting date. Interest is variable based on the Wall Street Journal published Prime Rate + 5% spread until 1 Aug 2024 when the spread was changed to 3% above prime. The total rate at 31 December was 10.5%. Loan ends on 28 Feb 2026 but is auto-renewable for 1-year periods		

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

8.	Estimated cash available for future operating activities	\$US'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(191)
8.2	Cash and cash equivalents at quarter end (item 4.6)	1,886
8.3	Unused finance facilities available at quarter end (item 7.5)	(18)
8.4	Total available funding (item 8.2 + item 8.3)	1,868
8.5	Estimated quarters of funding available (item 8.4 divided by item 8.1)	9.8
	<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 January 2025

Authorised by: The Board of Directors
(Name of body or officer authorising release – see note 4)

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 – eg 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.