



**ALEXIUM**

**QUARTERLY ACTIVITIES REPORT  
FOR THE PERIOD ENDED  
30 JUNE 2018**

## HIGHLIGHTS FROM THE QUARTER

- Alexium appointed Dr. Robert (Bob) Brookins as interim CEO, and after the end of the quarter announced the appointment of Dr. Brookins as CEO and Managing Director and Mr. Richard Estes as Vice President of Research and Development.
- Alexium appointed Sue Thomas as Non-Executive Chairperson.
- The management team led by Bob Brookins commenced a complete review of the business to implement measures for achieving profitability and growing the business. This review yielded the following key strategic objectives:
  - To optimize and bolster Alexium's work in the three cornerstone initiatives;
  - To revitalize the Sales and Marketing teams with increased focus in the core phase change material (PCM) business;
  - To ensure effectiveness of operational expenses.
- Over the next six months, Alexium's bedding customers are expected to launch more than 10 new products based on Alexicool® technology.
- Alexium is focused on achieving profitability in the PCM business within the current cash facility and to optimize the potential of the Alexium's flame retardant treatment for nylon/cotton blends (FR NyCo).
- Technical advances on flame retardant nylon/cotton blends (FR NyCo) have progressed extremely well over the past quarter and have pushed Alexium ahead of schedule on key development milestones.
- Alexium is positioned to capitalize on the work and developments over the past several years which have positioned the Company well in terms of the three cornerstone initiatives.



# QUARTERLY RESULTS OVERVIEW

AU \$ (Thousands)	Q4 2018	Q3 2018	\$ Variance	% Variance	YTD Average	\$ Variance	% Variance
Receipts from Customers	2,545	4,269	(1,724)	↓ -40%	3,992	(1,447)	↓ -36%
A) Research and Development	(214)	(418)	204	↑ 49%	(220)	6	↑ 3%
B) Product Manufacturing and Operating Costs	(3,010)	(3,456)	446	↑ 13%	(3,297)	287	↑ 9%
C) Advertising and Marketing	(12)	(14)	1	↑ 11%	(52)	40	↑ 76%
D) Leased Assets	-	-	-	0%	-	-	N/A
E) Staff Costs	(1,124)	(973)	(151)	↓ -16%	(954)	(171)	↓ -18%
F) Administration and Corporate Costs	(893)	(1,025)	132	↑ 13%	(925)	(32)	↑ 3%
Net Cash From/(Used In) Operating Activities	(3,294)	(1,965)	(1,329)	↓ -68%	(1,814)	(1,481)	↓ -82%
Net Cash From/ (Used In) Investing Activities	(276)	(26)	(250)	↓ -946%	(199)	(77)	↓ -39%
Net Cash From/ (Used In) Financing Activities	213	1,593	(1,380)	↓ -87%	4,614	(4,401)	↓ -95%
Cash and Cash Equivalents	14,375	17,155	(2,780)	↓ -16%	14,565	(190)	↑ 1%

## Cash Receipts

Q4 had a drop in cash receipts to \$2.5M. This decrease is driven by two factors:

- The decision by management, as announced on 18 June 2018, to discontinue sales which were not profitable to Alexium; and
- The reduction in sales of an Alexicool® product by a major customer. Alexium has reviewed the reasons for the reduction and is working to address this and grow sales of the product through the following initiatives:
  - Developed a scientific method to measure the cooling effect of our innovative Alexicool® product so that we can scientifically demonstrate its value. Alexium is working to have this method adopted as an industry standard; and
  - Changed the structure of the Sales team to ensure that they engage with customers' product development as well as their purchasing departments.

## Research and Development

As discussed below, capitalization of intangible assets developed internally had a sizeable impact on the total cash outflows related to research and development. For the quarter ended 30 June 2018, capitalized expenditures represented \$264K whereas adjustments to prior quarters totaled \$473K. The change in accounting treatment has reduced research and development operating cash outflows by 47% for the fiscal year.



## QUARTERLY RESULTS OVERVIEW-CONTINUED

### **Staff Costs**

Staff costs increased in the period as a result of changes within the management team and restructuring of corporate leadership. This impact is expected to be short lived and the change in organizational makeup will result in a sizeable decrease in staff expenditures beginning in Q1FY19 and fully materializing in Q2FY19.

### **Administration and Corporate Costs**

Efforts by management to reduce all but essential and development-oriented expenses continue to drive corporate costs downward. Corporate costs were down 13% over the prior quarter and further reductions to non-essential spending are continuing.

### **Interest Paid**

Interest paid in the quarter represents a 40% increase as a result of a timing issue that resulted in an additional interest payment during the period. In the coming quarter, the corresponding decrease will be shown as only two interest payments will be paid.



## INTRODUCTION

Over the past quarter, Alexium has undertaken the process to cut costs and position the Company for profitability and growth. There have been significant changes in the management of the Company, including the appointment of Dr. Bob Brookins as Chief Executive Officer and Managing Director, and the appointment of Sue Thomas as Chairperson.

We believe that the review of the business and changes undertaken better position Alexium to successfully execute its three cornerstone initiatives in order to achieve profitability and grow the business.

The following sections outline Alexium's work in the three cornerstone initiatives:

1. Expansion of Alexicool® products in phase change material (PCM) markets for bedding;
2. Application of flame retardant nylon cotton blends (FR NyCo) for military uniforms; and
3. Commercialization of Alexiflam NF.

These initiatives are the core of Alexium's business with success in any one providing the basis for Alexium to reach profitability and grow the business.

# 1. Expansion of Alexicool® Products in Phase Change Material (PCM) Markets

There are 3 major milestones for this initiative:

- A. Development and Acceptance of Analytical Methods for PCM-Based Products
- B. Integration into Additional Bedding Components; and
- C. Expansion into Higher Volume Mattress Tiers.

Alexium believes that the pipeline of new clients and business in this area positions us well to achieve profitability.

## A. Development and Acceptance of Analytical Methods for PCM-Based Products

Prior to Alexium, work on PCM applications to textiles have been driven by aesthetics more than science/metrics. While a “cool to the touch” effect is the ultimate goal, this cannot be the basis for reliable product development and quality control.

Alexium has developed a testing protocol using a standard industry tool to quantify the cooling capacity, or enthalpic cooling, of PCM products when applied to pillows and other bedding fabrics. Alexium believes that this tool is essential for Alexium’s growth in these markets, in the further expansion of the Alexicool® product line, and to Alexium’s position as ‘the science of PCM.’

## B. Integration into Additional Bedding Components

With the growth of PCM products in the bedding industry, the range of applications has grown and continues to expand into multiple components in the bed. Alexium’s chemical and process expertise positions us well to capitalize on this trend.

These extensions of our technology will generate a greater range of revenue streams and opportunities for further differentiation of Alexium’s products in the market. Alexium has had significant success in this area with customers expected to launch multiple new product lines into the bedding market over the next six months in addition to new products being launched by pillow customers such as Pegasus.



## C. Expansion Into Higher Volume Mattress Tiers

Along with the previously described expansion of PCM products, mattress manufacturers now have the opportunity to expand these products into higher volume mattress tiers. Alexium is working to drive that expansion by the introduction of innovative new products and leveraging the strength of Alexium's price-performance ratio. Again, these extensions of our technology allow for greater range of revenue streams and opportunities for further differentiation of Alexium's products in the market.

### Key Milestones Achieved This Quarter

- Alexium's global product manager initiated the establishment of a committee within the American Association of Textile Chemists and Colorists (AATCC) to develop the test method standardization for quantitative assessment of thermal regulation properties of textiles;
- Developed and adapted new and current Alexicool® products for application to additional bedding components;
- Established key relationships in the bedding industry to further extend this model;
- Significant joint development with large bedding and top-of-bed manufacturers; and
- Jointly working on 10 new bedding projects across these manufacturers.

### Target Future Milestones

- Conduct marketing campaign to educate bedding manufacturers on new testing protocol and Alexium PCM differentiation;
- Initiate testing studies as part of the AATCC committee work;
- Increased sales as a result of product launch resulting from joint development work; and
- Expand the next-generation PCM product to a wider segment of this market.



## **2. Application of flame retardant nylon cotton blends (FR NyCo) for military uniforms**

### **A. Application for Flame Retardant Active Combat Uniform (FRACU)**

For over 40 years, the textile industry has sought a flame-retardant solution for 50:50 nylon cotton blends; however, this combination is a significant flammability challenge. Thus, providing a cost-effective flame retardant for these fabrics has proven difficult. Alexium is the first commercially viable and production ready process for FR NyCo. Alexium is currently engaged with fabric partners on design prototypes, internal testing, limited user evaluations, and specification modifications.

#### **Key Milestones Achieved This Quarter**

- Manufactured production goods with new fabric prototypes; and
- Cut-and-sewn garments for testing.

#### **Target Future Milestones**

- Perform Pyroman® test and pass flammability requirements; and
- Proceed to minimum 90-day limited user evaluation (field trial) testing.

### **B. Application for Other Military Uniforms**

The United States Senate Report to S. 2943, the Senate National Defense Authorization Act for Fiscal Year 2017, states that the military services continue to evaluate emerging flame-resistant technologies that may have the potential to provide a more cost-effective level of protection to a wider range of service members. Alexium is currently engaged with fabric partners on design prototypes, internal testing, limited user evaluations, and specification modifications.

#### **Key Milestones Achieved This Quarter**

- Finalized laboratory prototype which passes all performance specifications; and
- Third-party validation was confirmed, and production preparations initiated.

#### **Target Future Milestones**

- Reproduce prototype on manufacturing scale with supply chain partner; and
- Finalize terms for agreement with supply chain partner.

### 3. Commercialization of Alexiflam NF

Alexiflam NF is a proprietary solution that provides eco-friendly FR treatment for cotton and cotton-polyester blend fabrics. In Europe, the United States, China, and many other developed countries stringent environmental regulations are being implemented to address the production and use of chemical substances, and their potential impact on both human health and the environment.

Alexiflam NF provides the first formaldehyde-free, durable FR treatment for these fabrics while providing a range of unique flame retardant properties relative to the incumbent products.

#### Key Milestones Achieved This Quarter

- First stage of ecological/toxicological testing was successfully completed.

#### Target Future Milestones

- Finalize customer validation and move to 3<sup>rd</sup> party trials with potential licensees and partners; and
- Potential customers are currently conducting trials and evaluating the product.

## FURTHER GROWTH OF ALEXIUM'S TECHNOLOGY

### Product Portfolio Update

In addition to the products and markets as discussed above, Alexium is engaged in multiple new products that offer a pipeline for future commercial opportunities.

These new developments are an evolution of the three cornerstone initiatives and include products for protective wood coatings, apparel, and medical products.

Whilst these are not the focus of Alexium's drive for profitability, some of these could provide significant new business upside in the future.

## FINANCE UPDATES

### USD Reporting

Due to the nature and location of the Group's operations, Management has determined that it is appropriate to change Alexium's presentation currency from the Australian Dollar to the US Dollar for the reporting period ended 30 June 2018 and moving forward. With Alexium's operations, employees, suppliers, and customers being almost entirely in the United States, this change will help provide a clearer picture of the financial results and reduce almost all volatility related to foreign exchange. While the financial results reported in this 4C are in Australian dollars, the annual financial statements will be presented in US dollars. For this period (Section 9), estimated cash outflows for next quarter will be displayed in US Dollars for comparative purposes with the Quarterly Activities Report for the Period Ended 30 September 2018.

### IP Capitalisation

Throughout FY 2018, Alexium has invested significant internal resources towards the development of new intellectual property ("IP") within the FR and PCM markets. During the Group's annual review of research and development expenditures, management identified several projects which have or will result in intangible assets and as such has capitalized these costs. As a result, several expenditures were reclassified from operating expenses to investment activities. The impact of these changes on the Appendix 4C was a reduction in payments for research and development and an increase in payments to acquire intellectual property both in the 4th quarter and for the year. Given the Group's focus on its three cornerstone initiatives and the substantial investment being dedicated to generating proprietary technology for these efforts, the company will be examining these expenses on a more frequent basis in 2019 in order to provide more clarity around the development of this IP.



## Appendix 4C

### Quarterly report for entities subject to Listing Rule 4.7B

Introduced 31/03/00 Amended 30/09/01, 24/10/05, 17/12/10, 01/09/16

**Name of entity**

ALEXIUM INTERNATIONAL GROUP LIMITED

**ABN**

91 064 820 408

**Quarter ended ("current quarter")**

30 June 2018

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date ( 12 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	2,545	15,969
1.2 Payments for		
(a) research and development	(214)	(880)
(b) product manufacturing and operating costs	(3,010)	(13,186)
(c) advertising and marketing	(12)	(208)
(d) leased assets	-	-
(e) staff costs	(1,124)	(3,814)
(f) administration and corporate costs	(893)	(3,698)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	12	26
1.5 Interest and other costs of finance paid	(609)	(1,596)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (GST received)	11	125
1.8 Other (FX Effect on Intercompany Transfer)	-	(262)
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(3,294)</b>	<b>(7,524)</b>

Consolidated statement of cash flows	Current quarter \$A'000	Year to date ( 12 months) \$A'000
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(14)	(62)
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	(264)	(737)
(e) other non-current assets	-	-
2.2 Proceeds from disposal of:		
(a) property, plant and equipment	2	2
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	-	-
(e) 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)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(276)</b>	<b>(797)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	275	13,652
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	-	457
3.4 Transaction costs related to issues of shares, convertible notes or options	-	(679)
3.5 Proceeds from borrowings	-	12,161
3.6 Repayment of borrowings	(62)	(6,557)
3.7 Transaction costs related to loans and borrowings	-	(578)
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>213</b>	<b>18,456</b>

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date ( 12 months) \$A'000</b>
<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of quarter/year to date	17,155	3,410
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(3,294)	(7,524)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(276)	(797)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	213	18,456
4.5 Effect of movement in exchange rates on cash held	577	830
<b>4.6 Cash and cash equivalents at end of quarter</b>	<b>14,375</b>	<b>14,375</b>

<b>5. Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1 Bank balances	437	3,276
5.2 Call deposits	13,938	13,879
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>14,375</b>	<b>17,155</b>

<b>6. Payments to directors of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1 Aggregate amount of payments to these parties included in item 1.2	122
6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2	

N/A

<b>7. Payments to related entities of the entity and their associates</b>	<b>Current quarter \$A'000</b>
7.1 Aggregate amount of payments to these parties included in item 1.2	258
7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2	
N/A	

<b>8. Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
8.1 Loan facilities	14,594	14,326
8.2 Credit standby arrangements	-	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		
N/A		

<b>9. Estimated cash outflows for next quarter</b>	<b>\$US'000</b>
9.1 Research and development	188
9.2 Product manufacturing and operating costs	875
9.3 Advertising and marketing	48
9.4 Leased assets	16
9.5 Staff costs	729
9.6 Administration and corporate costs	433
9.7 Other (provide details if material)	-
<b>9.8 Total estimated cash outflows</b>	<b>2,289</b>

Management will begin reporting in USD beginning with the FY 2018 Annual Report and as such the above estimated cash outflows are represented in USD.

10. Acquisitions and disposals of business entities (items 2.1(b) and 2.2(b) above)	Acquisitions	Disposals
10.1 Name of entity		
10.2 Place of incorporation or registration		
10.3 Consideration for acquisition or disposal		
10.4 Total net assets		
10.5 Nature of business		

### Compliance statement

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

30 July 2018

Sign here: 
  
 .....  
 (Director/Company secretary)
 
Date: .....

Maja McGuire

Print name: .....

### Notes

- The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
- If this quarterly 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 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.
- 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.