



# Calix

Calix Limited  
ACN 117 372 540

## PROSPECTUS

For the offer of 15,094,340 shares  
in Calix Limited at an Offer Price  
of \$0.53 per Share.

**new Creating  
Solving materials  
global  
challenges**

### IMPORTANT INFORMATION

This is an important document that you should read in full.  
If you do not understand it, consult your professional Advisors.

Joint Lead Managers

ShawandPartners



Legal Advisor



# IMPORTANT NOTICES

## 1. Prospectus

This Prospectus is dated 25 June 2018 and was lodged with the Australian Securities and Investment Commission (**ASIC**) and the Australian Securities Exchange (**ASX**) on that date. Neither ASIC nor ASX, nor any of their respective officers take any responsibility for the contents of this Prospectus, or for the merits of the investment to which this Prospectus relates.

This Prospectus is issued by Calix Limited (**Calix**), a company incorporated in Australia.

Calix will apply to ASX within 7 days following the Prospectus Date for the Shares offered by this Prospectus to be listed for quotation by ASX. Calix will not issue any Offer Shares on the basis of this Prospectus later than 13 months after the Prospectus Date.

This Prospectus may be viewed in electronic form at [www.boardroom.com.au/calix](http://www.boardroom.com.au/calix) by Australian investors only. If you receive the electronic form of the Prospectus you should ensure that you download and read the entire Prospectus. A paper copy of the Prospectus may be obtained free of charge on request during the Offer Period by the Share Registry on 1300 737 760 or +61 2 9290 9600 from outside Australia. The information on Calix's website, [www.calix.com.au](http://www.calix.com.au), does not form part of this Prospectus.

Calix has not authorised any person to give any information or make any representation in connection with the Offers which is not contained in this Prospectus. Any information or representation not contained in this Prospectus should not be relied on as having been made or authorised by Calix or the Directors.

It is important that you read this Prospectus in its entirety and seek professional advice where necessary.

## 2. Exposure Period

This Prospectus is subject to an exposure period of 7 days from the date of its lodgement with ASIC. ASIC may extend this period by a further 7 days. The purpose of the exposure period is to enable the Prospectus to be examined by market participants prior to the raising of funds. The examination may result in the identification of deficiencies in the Prospectus, and in such circumstances, any Applications received during the exposure period may need to be dealt

with in accordance with section 724 of the Corporations Act. The Prospectus will be available online at Calix's website, [www.calix.com.au](http://www.calix.com.au) during the exposure period. Applications received during this time will only be processed, without preference, after the expiration of the exposure period.

## 3. Applications

Applications for Offer Shares may only be made on printed copies of an Application Form attached to or accompanying the Prospectus. The Corporations Act prohibits any person from passing an Application Form to any other person unless it is attached to, or accompanied by, a hard copy of the Prospectus or a complete and unaltered electronic copy of the Prospectus. The Application Forms included in this Prospectus may only be distributed if it is included in, or accompanied by, a complete and unaltered copy of this Prospectus. Each Application Form contains a declaration that the investor has personally received the complete and unaltered Prospectus prior to completing the Application Form. Calix reserves the right not to accept a completed Application Form if it has reason to believe that the Applicant has not received a complete and unaltered copy of the Prospectus, or that the Application Form has been altered or tampered with in any way.

By returning a completed Application Form, you acknowledge that you have read this Prospectus and agree to the terms of the Offer detailed in this Prospectus.

## 4. Privacy

If you apply for Offer Shares, you will provide personal information to Calix and Boardroom Limited (**Share Registry**). Calix and the Share Registry will collect, hold and use your personal information in order to assess your Application, service your needs as an investor, provide facilities and services that you request and carry out appropriate administration. Corporate and taxation laws require Calix to collect some personal information. If you do not provide the information requested, your Application may not be able to be processed efficiently, or at all. Collection, maintenance and disclosure of personal information is governed by legislation, including the Privacy Act and the Corporations Act. You can access, correct and update personal information that Calix holds about you by contacting the Share Registry.

If you do not provide the information requested in an Application Form, Calix and the Share Registry may not be able to process or accept your Application.

Your personal information may also be provided to Calix's agents and service providers on the basis that they deal with such information in accordance with Calix's privacy policy. The agents and service providers of Calix may be located outside Australia where your personal information may not receive the same level of protection as that afforded under Australian law.

The types of agents and service providers that may be provided with your personal information and the circumstances in which your personal information may be shared are:

- the Share Registry for ongoing administration of the register of members;
- printers and other companies for the purpose of preparation and distribution of statements and for handling mail;
- market research companies for the purpose of analysing the Shareholder base and for product development and planning; and
- legal and accounting firms, auditors, contractors, consultants and other advisors for the purpose of administering, and advising on, the Shares and for associated actions.

If an Applicant becomes a Shareholder, the Corporations Act requires Calix to include information about the Shareholder (including name, address and details of the Shares held) in its public register of members. If you do not provide all the information requested, your Application Form may not be able to be processed. The information contained in Calix's register of members must remain there even if a person ceases to be a Shareholder. Information contained in Calix's register of members is also used to facilitate dividend payments and corporate communications (including financial results, annual reports and other information that Calix may wish to communicate to its Shareholders) and compliance by Calix with legal and regulatory requirements. An Applicant has a right to access and correct the information that Calix and the Share Registry hold about that person, subject to certain exemptions under law. Applicants can obtain a copy of

Calix's privacy policy by visiting Calix's website [www.calix.com.au](http://www.calix.com.au). The privacy policy contains further details regarding access, correction and complaint rights and procedures. The Share Registry's complete privacy policy can be accessed at <https://boardroomlimited.com.au/privacy-policy>.

## 5. Offer Restrictions

No action has been taken to register or qualify the Offer, or otherwise to permit a public offering of Offer Shares, in any jurisdiction outside Australia. The Offer is not being extended to any investor outside Australia, other than to certain institutional investors as part of the Institutional Offer.

The distribution of this Prospectus (including in electronic form) in jurisdictions outside Australia may be restricted by law and therefore persons outside Australia who obtain this Prospectus should seek advice on, and observe, any such restrictions. Any failure to comply with these restrictions may constitute a violation of applicable securities laws. This Prospectus does not constitute an offer or invitation in any jurisdiction in which, or to any person to whom, it would be unlawful to make such an offer or invitation. See Section 6.6 for more details on selling restrictions that apply to the Offer and sale of Offer Shares in jurisdictions outside Australia.

### **Residents of the United States of America**

The Offer Shares have not been, and will not be, registered under the US Securities Act of 1993 as amended (**US Securities Act**), or the securities laws of any state or other jurisdiction of the United States, and the Offer Shares may not be offered, sold, pledged, transferred or resold in the United States absent registration or an applicable exemption from registration under the US Securities Act and applicable state securities laws.

## 6. Forward-Looking Statements

This Prospectus contains forward-looking statements which contain words such as "intends", "may", "could", "believes", "estimates", "targets", "plans" or "expects", and other similar words that are inherently intended to convey an element of uncertainty or risk. These statements are based on an evaluation of current economic and operating conditions, as well as assumptions regarding future events. These events are, as at the Prospectus

Date, expected to take place, but there cannot be any guarantee that such events will occur as anticipated or at all given numerous risk factors that may be outside of Calix's control. Risk factors that have been considered are set out in Section 4, however there may be risks that may not be known by, or currently considered material to, Calix and the Directors. Accordingly, Calix and the Directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this Prospectus will occur and you are cautioned not to place undue reliance on the forward-looking statements. Further, these forward-looking statements speak only as at the Prospectus Date. Unless required by law, Calix does not intend to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise and may not publish prospective financial information in the future. You should, however, review the factors and risks Calix describes in the reports to be filed from time to time with the ASX after the Prospectus Date.

## 7. Financial Information

Section 3 sets out Calix's historical financial information. It is presented on both a Statutory and Pro Forma basis in accordance with the Australian Accounting Standards issued by the Australian Accounting Standards Board, which are consistent with International Financial Reporting Standards issued by the International Accounting Standards Board. All financial amounts contained in this Prospectus are expressed in Australian dollars, unless stated otherwise.

Calix and its Directors have considered the matters outlined in ASIC Regulatory Guide 170. Given Calix is an early stage company which, whilst it has achieved growing sales revenues, is nonetheless still in the process of commercialising its technology, reliable forecasts of any possible revenue and expenses cannot be prepared and accordingly, such forecasts have not been included in this Prospectus.

Potential investors should note that Calix's past performance cannot be relied upon as an indicator of, and provides no guidance as to, Calix's future performance, including its future financial position or value.

## 8. Market and Industry Information

This Prospectus, including the industry and market data in Section 2, contains data and information (including forecasts and projections) relating to markets, including market size, growth, shares, and segments, of relevance to Calix's business. Calix has obtained much of this information from market research prepared by Frost and Sullivan. While Calix considers that this information therefore provides an independent insight into the markets of relevance to Calix's business, potential investors should note that such market data and information is not guaranteed as to accuracy or completeness, and any forward-looking statements and estimates should not be relied upon as statements of fact.

## 9. Photographs and Diagrams

Photographs used in this Prospectus which do not have descriptions are for illustration purposes only and should not be interpreted to mean that any person shown endorses the Prospectus or its content. Diagrams are illustrative only and may not be drawn to scale. The people and assets depicted in photographs in this Prospectus are not employees or assets of Calix unless specifically stated. Unless otherwise stated, all data contained in charts, graphs and tables is based upon information available as at 25 June 2018.

## 10. Meaning of Terms

Capitalised terms and certain other terms used in this Prospectus are defined in the Glossary in Section 11. References to "our", "us", "we" and "Calix" are references to Calix. References to "I", "you" and "your" are references to the Applicant.

## 11. Use of Trademarks

This Prospectus includes Calix's registered and unregistered trademarks. All other trademarks, tradenames etc appearing in this Prospectus remain the property of their respective owners.

## 12. Questions

If you have any questions about how to apply for Offer Shares, or any other questions in relation to the Offer, please contact the Share Registry on 1300 737 760 or +61 2 9290 9600 (from outside Australia).

If you have any questions about whether to invest in Calix, you should seek professional advice from your accountant, financial advisor, stockbroker, lawyer or other professional Advisor.

## CONTENTS

	Business at a Glance	3
	Important Dates	4
	Chair's Letter	5
1	Investment Overview	6
2	Company and Industry Overview	21
3	Financial Information	57
4	Risk Factors	74
5	Board, Management and Corporate Governance	82
6	Details of the Offer	102
7	Investigating Accountant's Report	114
8	Patent Report	120
9	JORC Report	128
10	Additional Information	197
11	Glossary	207
12	Appendices	213
13	Corporate Directory	IBC

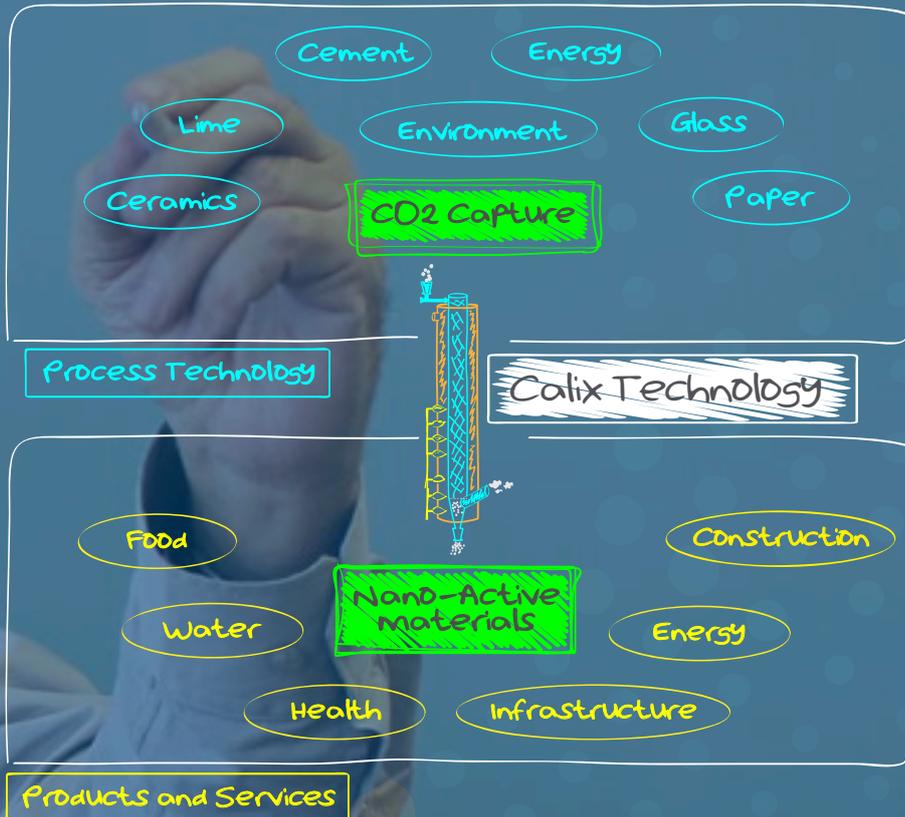


Mark Sceats, Founder

# BUSINESS AT A GLANCE

The core technology is a world-first, patented "kiln" built in Bacchus Marsh, Victoria that produces "mineral honeycomb" - very highly active minerals!

Calix's technology has been adopted overseas, where we are working with some of the world's largest companies, governments and research institutions on CO<sub>2</sub> capture.



Calix is using these minerals, which are safe and environmentally friendly, to improve waste water treatment and phosphate removal, help protect sewer assets from corrosion, and help improve food production from aquaculture and agriculture without anti-biotics, fungicides and pesticides.

## Creating new materials Solving global challenges

# IMPORTANT DATES

## KEY OFFER DATES

Activity	Date
Prospectus date	25 June 2018
Opening date	5 July 2018
Closing date	10 July 2018, 5.00pm AEST
Settlement date	11 July 2018
Issue and allotment of Offer Shares	12 July 2018
Expected dispatch of holding statements	16 July 2018
Shares expected to begin trading on the ASX	20 July 2018

Note: This timetable is indicative only and may change. Unless otherwise indicated, all times are stated in Sydney time. Calix in consultation with the Joint Lead Managers, reserves the right to vary any and all of the above dates and times without notice (including, subject to the Corporations Act, to close the Offer early, to extend the Offer Period relating to any component of the Offer, or to accept late Applications, either generally or in particular cases, or to cancel or withdraw the Offer before the Closing Date, in each case without notifying any recipient of this Prospectus or Applicants). If the Offer is cancelled or withdrawn before the allocation of Offer Shares, then all Application Monies will be refunded in full (without interest) as soon as possible in accordance with the requirements of the Corporations Act. Investors are encouraged to submit their Applications as soon as possible after the Offer opens.

## KEY OFFER STATISTICS

Metric	Value
Offer price	\$0.53
New Shares to be issued under the Offer	15.1 million
Gross proceeds of the Offer <sup>1</sup>	\$8.0 million
Total number of shares on issue on Completion	122.7 million
Market capitalisation at the Offer Price <sup>2</sup>	\$65.0 million
Pro forma net cash (as at 31 December 2017) <sup>3</sup>	\$11.5 million
Enterprise value at the Offer Price <sup>4</sup>	\$61.3 million
Expected free float at Completion <sup>5</sup>	26.6%
Total number of Warrants on issue on Completion <sup>6</sup>	8.9 million

### Notes:

- Gross proceeds of the Offer reflect the total number of Offer Shares available under the Offer multiplied by the Offer Price.
- Market capitalisation reflects the total number of Shares on issue following Completion, multiplied by the Offer Price. Shares may not trade at the Offer Price after Listing.
- Pro forma net cash is calculated as cash and cash equivalents as at 31 December 2017, calculated on a Pro forma basis assuming Completion. Certain financial information in this Prospectus is described as pro forma for the reasons described in Section 3.
- Enterprise value is calculated as the market capitalisation of Calix, based on the Offer Price, less pro forma net cash. Refer to Section 3 for details of the components of pro forma net cash.
- Free float is calculated as the percentage of Shares after Completion that are not subject to voluntary or mandatory escrow (see section 6.5) nor held by affiliated Shareholders of Calix.
- Total Warrants includes: 6.6 million of LNH Warrants exercisable at \$0.50 per warrant before 31 October 2019, 1.23 million Joint Lead Manager warrants exercisable at \$0.66 per warrant before 30 June 2022 and 1.13 million Financial Advisor warrants exercisable \$0.66 per warrant before 30 June 2022 (discrepancy due to rounding).

## ENQUIRIES

For any enquiries, you should contact the Share Registry on 1300 737 760 (for calls within Australia) or +61 2 9290 9600 (for calls outside Australia) between 8:00am to 5:00pm (Sydney time) Monday to Friday. Alternatively, contact your stockbroker, solicitor, accountant or other professional advisor.

# CHAIR'S LETTER

On behalf of the Directors, I am pleased to offer you the opportunity to become a shareholder in Calix Limited.

Calix has developed, and is commercialising, a technology platform that produces valuable new materials and processes that are targeted at solving some significant global challenges.

At the core of Calix's business is a world-first, patented, Australian technology that has reinvented the kiln process and is called the Calix Flash Calciner (CFC). The materials produced in the CFC have unique properties, similar to those of nano-particles, being highly reactive, but without the cost and handling challenges associated with nano-particles. The CFC process also allows for the direct separation of CO<sub>2</sub>, allowing it to be used for CO<sub>2</sub> reduction in traditionally CO<sub>2</sub> intensive industries, such as lime and cement production.

Calix has made significant commercial progress since bringing its first products to market in 2013. Calix's product development pipeline can be categorised as follows:

- Commercialised products - targeting wastewater treatment, and sewer infrastructure protection;
- Pre-Commercial products - targeting water conditioning in aquaculture and crop protection in agriculture; and
- Advanced research and development (R&D) projects - targeting CO<sub>2</sub> separation in lime and cement manufacture, and advanced materials for batteries and energy storage.

In an external market report produced for Calix, Frost & Sullivan estimates that the addressable global market opportunity is approximately A\$62 billion for Calix's commercialised product portfolio, approximately A\$11 billion for the pre-commercial products, and in excess of A\$20 billion for its advanced R&D projects.

While early in its commercialisation strategy, Calix has achieved a compound annual revenue growth for its core products of 41.8% between 2015 and 2017, with revenue growth of 34.2% achieved in the first half of this financial year (as compared to the first half of the 2017 financial year).



Calix is led by an experienced board and management team, who together with staff, will own approximately 19.7% of Calix's issued capital following listing on the ASX. This personal ownership and commitment is part of our culture.

Calix's strategy is to continue the commercialisation of its wastewater treatment and sewer infrastructure protection products both in Australia and New Zealand, while also expanding its market entry in the US. Calix will also continue commercialising its aquaculture and agriculture products, together with progressing the development of its R&D pipeline with a view to staying ahead of technology advancements. We have a clear view of our priorities.

The purpose of the Offer is to provide funding for Calix's growth strategy including:

- enhancing the efficiency of its existing production facilities to drive margin expansion;
- expanding its sales and marketing capabilities to increase revenues and enter new markets;
- to continue specific R&D projects;
- to provide working capital;
- to provide liquidity for its shares; and
- to provide Calix with the benefits of an increased profile as a listed entity.

This Prospectus contains detailed information about the Offer, the historical financial results of Calix and the material risks associated with an investment in Calix.

Before applying for Shares, any prospective investor should be satisfied that they have a sufficient understanding of the risks involved in making an investment in Calix. These include risks associated with the competitive environment for commercialising new products, the ability to attract and retain customers, R&D risk, regulatory changes, protection of intellectual property and reliance on key personnel. Please refer to Section 4 for further details.

**I encourage you to read this document carefully and in its entirety before making an investment decision.**

On behalf of my fellow Directors, I look forward to welcoming you as a shareholder of Calix.

**Peter Turnbull**  
Chair

# INVESTMENT OVERVIEW

1

## 1.1 INTRODUCTION

Topic	Summary	For more information
<p><b>What is Calix's business?</b></p>	<p>Calix has developed a patent-protected, platform technology that produces new materials and processes, targeted at solving some significant global challenges. The core technology platform is a reinvention of the kiln process, which can produce high purity, high surface area products that have high levels of reactivity.</p> <p>Calix commercialises these new materials and processes via a variety of business models including direct sales of products, licensed distributor sales, and licensing of the technology. Calix is building a global business and has operations, customers or distribution partners across Australia, New Zealand, Asia, Europe and product trials starting in the United States of America.</p> <p>Calix's business is split into Commercial, Pre-Commercial, and R&amp;D products and applications.</p> <ul style="list-style-type: none"> <li>i. Our Commercial function manages the growth in direct sales, or licensing of the product or application, including iteration and improvement of the offering. Calix's first sales were achieved in late 2013, with core product sales growing at a compound average growth rate of 41.8% between FY15 and FY17 to A\$3.2 million.</li> <li>ii. Our Pre-Commercial function involves taking promising products or applications and perfecting the business model for commercialisation, including via paid trials, potential licensed partner assessments, or indeed considering the spin-out or sale of a technology application. The focus of this work area is currently in the aquaculture and agriculture markets.</li> <li>iii. Our R&amp;D function manages a pipeline of opportunities that leverage the core technology. It has been successfully self-funded for 4 years with grants from the Australian Government and the European Union (<b>EU</b>). In addition to the capital invested to date, Calix has achieved over A\$36 million in grant funding to develop numerous applications of the CFC technology across multiple industries. The key current development focus is in demonstration of the technology for the cement and lime industries and the development of the CFC technology in the field of advanced batteries.</li> </ul> <p>Our business activities are under-pinned by a commercial-scale facility at Bacchus Marsh in Victoria, with a name-plate capacity of 25,000 tonnes per year<sup>1</sup> of raw (magnesium oxide) product, and a raw materials (magnesium carbonate) mine near Leigh Creek in South Australia. The mine is in operation, and the Bacchus Marsh facility can achieve nameplate capacity once some feed-stock and product handling systems are upgraded (as outlined in Use of Funds - Section 1.6). While our Pre-Commercial and Commercial functions are based upon magnesium oxide and hydroxide, multiple other minerals have been processed successfully by the technology and are being developed into a range of potential new products and applications as part of our R&amp;D.</p>	<p>Section 2.2</p> <p>Section 2.4</p> <p>Section 2.5</p> <p>Section 2.6</p> <p>Section 2.7</p> <p>Section 2.3</p>

1. Name plate capacity of 25,000 tonnes per annum of magnesium oxide product (based on 50,000 tonnes of raw material input) is contingent on the feed-stock, product handling, and efficiency upgrades, as contemplated by the use of funds outlined in this Offer.



Topic	Summary	For more information
<b>What is Calix's History?</b>	<p>Calix was founded as a private company in 2005 by Mark Sceats (current Executive Director and Chief Scientist) and Conner Horley (deceased). Calix raised capital in 2010 to establish its first pilot test facility at Bacchus Marsh, Victoria. Following proof of concept, Calix raised further capital in 2011 to build a commercial-scale demonstrator plant with a nameplate capacity of 25,000 tonne per annum<sup>2</sup> of magnesium oxide (MgO) from the mineral magnesite. This plant was completed and commissioned in 2013 and continues to be the source of materials for Calix's products. During this time, the Myrtle Springs mine was acquired to supply the commercial demonstrator with raw magnesite feedstock.</p> <p>Product sales based upon "hydrated" MgO commenced in 2013 for odour control and alkalinity in the sewer and waste water industry, and specialty magnesium oxide commenced export to Europe in 2015. A modified magnesium coating application for corrosion prevention in sewers was also developed, with sales commencing in 2015.</p> <p>Calix has achieved numerous awards for its technology including the Australian Technology Competition (2014 - Water, 2015 - Agri-tech and Overall Award), Australian Business Awards (2015 - Best Technology Product, 2017 - New Product Innovation), NSW Premier's and Australian Export Awards (2015 - NSW Emerging Exporter and Scholarship Award, 2016 - NSW Environmental Solutions Award, National Finalist), and significant grant funds including from the Australian Government (Commercialisation Australia and Accelerating Commercialisation ~A\$3 million), the UK Government (DECC Competition ~A\$10 million), and the European Commission (ASCENT, LEILAC and SOCRATCES Projects ~A\$14 million).</p>	Section 2.1

2. Name plate capacity of 25,000 tonnes per annum of magnesium oxide product (based on 50,000 tonnes of raw material input) is contingent on the feed-stock, product handling, and efficiency upgrades, as contemplated by the use of funds outlined in this Offer.

## 1. INVESTMENT OVERVIEW

Topic	Summary	For more information
<p><b>What products and markets are being addressed?</b></p>	<p>Calix's Commercial function involves:</p> <ul style="list-style-type: none"> <li>i. the direct sale of a specialty additive for odour control, alkalinity and biotreater efficiency into the <b>sewer and waste water</b> market in Australia and New Zealand,</li> <li>ii. the sale via licensed applicators of a <b>sewer infrastructure</b> protective coating in Australia and New Zealand,</li> <li>iii. the sale under license of a specialist magnesium oxide additive into the <b>polymers/rubbers/adhesives</b> market in Europe and Asia.</li> </ul> <p>Calix is now seeking to expand its commercial activities in waste water management and sewer infrastructure into the US and Europe. The global Total Addressable Market (TAM) of our Commercial business is estimated to be in the order of A\$61.8 billion<sup>3</sup> globally.</p> <p>Calix's Pre-Commercial function involves:</p> <ul style="list-style-type: none"> <li>i. the development of a safe, non-toxic, effective specialty water-conditioning additive into the <b>aquaculture</b> market, to lift yields and help control disease vectors; and</li> <li>ii. the development of a safe, non-toxic, effective, broad spectrum crop protection product for global <b>agriculture</b>,</li> </ul> <p>with combined global TAM in the order of A\$11.3 billion<sup>4</sup>. Both products are in the advanced stage of testing, with trials establishing price-points and external, independent assessments establishing efficacy and safety. All the Commercial and Pre-Commercial products are based upon magnesium oxide, a safe, non-toxic material.</p> <p>Our advanced R&amp;D function involve:</p> <ul style="list-style-type: none"> <li>i. Development of the CFC technology for direct CO<sub>2</sub> separation for the <b>lime and cement</b> industries, with a pilot project majority funded by the EU and with consortium partners including HeidelbergCement, Cemex, Lhoist and Tarmac.</li> <li>ii. Development of <b>advanced batteries</b> via two projects - the first an EU-funded base load thermo-chemical storage pilot, and the second an Australian Advanced Manufacturing Growth Fund grant-funded project to develop advanced cathode materials for lithium-ion batteries.</li> </ul> <p>The global TAM for Calix's solutions for lime and cement is currently estimated to be around A\$10.8 billion, while that for advanced batteries is currently estimated to be of the order of around A\$10.7 billion<sup>5</sup>.</p> <p>While the global market opportunity for Calix is significant, the Company faces a number of competitors in each industry and it will take time for Calix to build its market share in each market. For further information on relevant risks, please refer to Section 4.</p> <p>Early stage R&amp;D has also commenced on products and applications in <b>health/ pharmaceutical sectors, 3D printing, advanced building materials, and advanced catalysts.</b></p>	<p>Section 2.5.1</p> <p>Section 2.5.2</p> <p>Section 2.5.3</p> <p>Section 2.6.1</p> <p>Section 2.6.2</p> <p>Section 2.7.1</p> <p>Section 2.7.2</p> <p>Section 2.8</p>

3. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

4. IBID.

5. IBID.

Topic	Summary	For more information
<b>Why is the Offer being conducted?</b>	<p>Calix generated positive operating cash flow in FY15, and became EBITDA positive in FY17. It has tested business models for growth in our Commercial activities, and now Calix wishes to accelerate value growth by:</p> <ol style="list-style-type: none"> <li>i. Establishing US and EU business units to roll-out our Commercial products in these markets;</li> <li>ii. Adding additional resources into our Asian business to widen the base for development and growth of our aquaculture product;</li> <li>iii. Carrying out site logistics and efficiency upgrades at our manufacturing facility to support growth and improve gross margins;</li> <li>iv. Accelerating the agriculture and advanced battery development programs; and</li> <li>v. Raising some working capital to support growth in the supply chain.</li> </ol>	<p>Sections 2.5.1.7 and 2.5.2.4 Section 2.6.1.5 Section 2.3.2 Sections 2.6.2.4 and 2.7.2.2</p>

## 1.2 KEY FEATURES OF THE INDUSTRIES CALIX IS ADDRESSING

Topic	Summary	For more information
<b>Sewer and Waste Water</b>	<p>The global waste water network is expected to total 9.9 million km by 2020. With rapid urbanisation and development, and increasing environmental pressure on industrial emissions, there is an emerging trend for safe, sustainable solutions to prevent odour, protect existing and new infrastructure, and improve treatment performance.</p>	<p>Sections 2.5.1 and 2.5.2</p>
<b>Aquaculture</b>	<p>Aquaculture is the fastest growing major protein source globally. However, with intensive farming comes numerous problems associated with disease, yield loss and environmental degradation. If this important protein source is to continue to grow sustainably, there is a growing need for solutions that maintain high yields and help prevent disease, while also combating effluent impacts and coastal habitat destruction.</p>	<p>Sections 2.6.1 and 2.6.1.3</p>
<b>Agriculture</b>	<p>By 2050, agricultural output will need to increase by 50%, on a finite land base, and against increasing restrictions and concerns over crop protection products. Additionally, the costs and time to bring new crop protection products has increased to US\$200 million and 10 years <i>per product</i>. A significant number of deaths associated with misuse of crop protection products occur in the developing world, despite (because of cost) applying such products far less than the developed world. In our view, there is a need for safe, cheap, sustainable and environmentally friendly solutions.</p>	<p>Section 2.6.2</p>

## 1. INVESTMENT OVERVIEW

Topic	Summary	For more information
<b>Lime and Cement</b>	In 2017, over 4 billion tonnes per annum of lime and cement were produced. Cement alone accounts for about 5% of global CO <sub>2</sub> emissions – the largest non-fossil fuel (industrial) emission source. Most of this CO <sub>2</sub> results from the processing of limestone to lime, releasing CO <sub>2</sub> trapped in the limestone, (as opposed to the fuel used to burn lime) and is thus impossible to avoid. As the cost of CO <sub>2</sub> emissions increase, these industries will come under pressure to reduce emissions. In addition to cement, lime is used in multiple different industries such as water treatment, steel manufacturing, glass, and pulp and paper. There is a growing need for solutions that enable these industries to capture their CO <sub>2</sub> efficiently, initially for sale into industrial applications, but (as volumes grow) ultimately as part of Carbon Capture and Storage. Reducing industrial CO <sub>2</sub> emissions is widely regarded as being a substantial part of a sustainable future, even as fossil fuels decline in use.	Section 2.7.1
<b>Advanced Batteries</b>	Consumer electronics and electric vehicles have driven substantial growth in the battery industry, and this is expected to continue. However, costs, safety, recyclability, energy density and charge time are all factors that must be addressed to enable more sustainable battery growth. Materials technology is the key to such advancement, especially technologies that can improve performance through cheap manufacture of nano-scale structures to enhance efficient ion movement in charge and discharge cycles.	Section 2.7.2

### 1.3 KEY STRENGTHS OF CALIX'S BUSINESS

Topic	Summary	For more information
A technology platform, with multiple potential upsides, that is cashflow positive	Calix's patented technology has been proven at commercial scale. Sales revenues are already occurring, and Calix is cash-flow positive. The technology has multiple potential upsides and thus a diversified opportunity pipeline into large, global end-markets.	Sections 2.2, 3.4, 2.6, 2.7 and 2.8
Global industrial markets	Calix's technology targets multiple global markets such as waste water treatment, infrastructure, food, and energy with innovative solutions. Frost & Sullivan estimates the TAM for Calix's commercial products to be ~A\$61.8 billion globally, and the TAM for Calix's Pre-Commercial products to be ~A\$11.3 billion globally <sup>6</sup> .	Section 2.4
Growing margins	Calix has established revenues with growing gross margins in competitive industries. Our strategy is to continue gross margin growth over time with both our current products, through manufacturing scale and efficiencies and new business models, and through the commercialisation of our development pipeline of products and applications.	Section 3.4
Strong growth	Calix's Commercial products have experienced strong revenue growth in business to business ( <b>B2B</b> ) markets in Australia and New Zealand. Our strategy is to execute new market entries to continue strong revenue growth over time after establishing the business in much larger markets such as the US, Europe and Asia.	Section 3.3.3
Ability to scale	At present, Calix's manufacturing facility at Bacchus Marsh, Victoria, is approximately 10% utilised versus its nameplate reactor capacity <sup>7</sup> . Following the feed, product logistics and efficiency upgrades outlined in the capital program, the facility can scale to full MgO production without significant additional capital.	Section 2.3.2

6. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

7. Name plate capacity of 25,000 tonnes per annum of magnesium oxide product (based on 50,000 tonnes of raw material input) is contingent on the feed-stock, product handling, and efficiency upgrades, as contemplated by the use of funds outlined in this Offer.

## 1.4 KEY RISKS

Topic	Summary	For more information
<b>Competitive environment</b>	Calix's products and applications compete in each of its markets against a number of alternative products and solutions. There is no guarantee that Calix's products and applications will not be superseded by superior products and applications, or achieve the growth, margins and competitive position that constitutes a valuable, growing business.	Section 4.2.1
<b>Failure to retain existing customers and attract new customers</b>	Despite having achieved an average customer retention rate of greater than 95% to date, there is no guarantee that existing customers of Calix's products and applications will continue to purchase from Calix, nor that new customers will purchase products from Calix.	Section 4.2.2
<b>Market Development and Expansion Risk</b>	There is a risk that existing products cannot continue to be developed into new applications that exploit the unique properties of the CFC technology, or that new applications or technologies that are developed are unable to be effectively commercialised.	Section 4.2.3
<b>Research and Development Risk</b>	With respect to research and development of other potential opportunities for CFC technology, there is the risk that the CFC technology will not be applicable to those opportunities, or will not produce materials or processes of sufficient commercial difference to sustain a business or justify further investment to create a business.	Section 4.2.4
<b>Operational Risk</b>	Due to the nature and scale of Calix's operations there is the potential for disruptions to the supply chain that may unduly impact the scale and scope of Calix's activities. This risk is present in several stages of Calix's value chain, including Calix's Myrtle Springs mine, Bacchus Marsh processing plant, Nerang satellite facility, European projects, various distributor and applicator networks, and in administration.	Section 4.2.5
<b>Regulatory Risk</b>	There is a risk that under regulatory regimes in Australia and overseas, products and/or services that Calix wishes to sell will take more time and cost to register, or not receive regulatory approval at all; or that Calix's operations, despite governance and risk management processes and procedures being in place, fall foul of the multiple regulations in which we currently, or in the future, operate. Further, regulatory regimes that apply to Calix may change, resulting in business impacts and/or liabilities.	Section 4.2.6
<b>Grant-related Risks</b>	Calix receives considerable grant funding on certain terms and conditions related to valid expenditure, and if those terms and conditions are not met, there is a risk that the particular grant may cease, or in certain circumstances be clawed back.	Section 4.2.7
<b>Product liabilities</b>	Calix is exposed to potential product liability risks such as damage and reputational loss, which are inherent in the research, development, manufacturing marketing and use of its current products, and products that are developed in the future, despite best efforts regarding compliance and insurance coverage.	Section 4.2.8

## 1. INVESTMENT OVERVIEW

Topic	Summary	For more information
<b>IP Risks</b>	<p>Calix relies heavily on its technology and know-how and there can be no assurance that competitors of Calix or other parties will not seek to invalidate, imitate or develop technology and know-how that competes with, or supersedes, Calix's technology.</p> <p>Also, there is a risk that Calix has, is currently, or in the future could breach third party IP because of developing its technology into new products, markets and applications, and carrying out its business, despite best efforts by Calix and its IP advisors to check the IP landscape.</p> <p>The above may have an adverse effect on the operating, marketing and financial performance of Calix which could erode Calix's competitive advantage.</p>	Sections 4.2.9 and 4.2.10
<b>Ability to attract and retain key people</b>	As a small company, despite equity incentive schemes, Calix may not be able to attract and retain key people which may impact its ability to execute its business plans.	Section 4.2.11
<b>Reliance on Suppliers</b>	There is a risk that key suppliers of raw materials and utilities may be unable to supply, or supply at uneconomic pricing levels, impacting the ability of Calix to carry on its business.	Section 4.2.12
<b>Foreign Exchange Risk</b>	Due to the nature of its business, Calix is exposed to movements in foreign currency exchange rates which may impact the business financially.	Section 4.2.13
<b>Competitive and Dynamic Capital Requirements</b>	Through the Offer, Calix's current business plan is fully funded. However, if risks should affect Calix's ability to execute its business plan, there is a risk that Calix may have to change its business plan, and/or raise additional capital to continue to pursue the current, or indeed a modified, business plan.	Section 4.2.14

### General Risks of an Investment in Calix

General risks associated with an investment in Calix include equity market risk, general economic conditions, sovereign risks, inability to pay dividends or make other distributions, changes in taxation rules or their interpretation, changes in accounting standards, force majeure events, and other unforeseen risks.	Section 4.3
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## 1.5 KEY FINANCIAL INFORMATION

Topic	Summary	For more information
<b>How does Calix expect to fund its operations?</b>	<p>Calix's principal sources of funds will be cash flow from existing operations and cash held at completion of the Offer.</p> <p>On completion of the Offer, Calix expects to have sufficient cash to meet its business needs and sufficient working capital to carry out its stated objectives.</p>	Section 3

Topic	Summary					For more information
<b>What is Calix's pro-forma historical financial performance?</b>	<b>\$'000</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>HY18</b>	Section 3.3
	Core Revenue	1,582	2,745	3,181	1,656	
	Other Product Revenue	354	702	200	81	
	COGS	(1,483)	(2,791)	(2,374)	(1,282)	
	Gross Profit	454	656	1,007	456	
	Other income	5,392	6,783	7,630	2,705	
	Operating Expenses	(7,373)	(8,091)	(8,412)	(3,559)	
	EBITDA	(1,527)	(652)	225	(398)	
	EBIT	(3,523)	(2,356)	(2,433)	(1,420)	
	NPAT Pro forma	(3,526)	(2,068)	(2,593)	(1,500)	
NPAT Statutory	(3,560)	(1,912)	(2,141)	(1,674)		
<b>What is Calix's dividend policy?</b>	The payment of any dividend by Calix is at the discretion of the Directors and will be a function of several factors, including the operating results, cash flows and the financial condition of Calix, future funding requirements, capital management initiatives, taxation considerations (including the level of franking credits available), and any other factors the Directors may consider relevant. The Directors do not provide any assurance of the future level of dividends paid by Calix.					Section 3.5.7

## 1.6 USE OF FUNDS

Capital Required	\$Am	For more information
Development Pipeline - Advanced Batteries	1.5	Section 2.7.2
BOOSTER-Mag™ Development	0.5	Section 2.6.2.4
Manufacturing Logistics and Efficiencies	2.3	Section 2.3.2
New Market Development - US, EU, Asia	2.2	Sections 2.5.1.7 and 2.6.1.5
Working Capital <sup>1</sup>	1.5	
<b>Total</b>	<b>8.0</b>	

### Note

- Working Capital includes production of inventory, but not employment, nor administration expenses.

## 1. INVESTMENT OVERVIEW

### 1.7 DIRECTORS AND KEY MANAGEMENT

Directors and Officers of Calix Limited	Summary Experience	For more information
<b>Peter Turnbull</b> <i>Independent Chair</i>	<ul style="list-style-type: none"> <li>Experienced chair and non-executive director with significant board and senior executive experience in resource, energy and technology commercialisation</li> <li>Current chair of Metallica Minerals (ASX: MLM) and Auxita Pty Ltd, director of Karoon Gas Australia (ASX: KAR), and Governance Institute of Australia Ltd</li> <li>Adjunct-Professor at the University of Queensland</li> </ul>	Section 5.1
<b>Jack Hamilton</b> <i>Independent Director</i>	<ul style="list-style-type: none"> <li>30 years multidisciplinary experience in local and overseas energy industries, including as a director of NWS Ventures (Woodside North-West Shelf project)</li> <li>Currently the chair of Anteo Diagnostics Ltd (ASX:ADO). Previous non-executive director positions include Renu Energy (ASX:RNE), and DUET Group (ASX:DUE)</li> </ul>	Section 5.1
<b>Lance O'Neill</b> <i>Independent Director</i>	<ul style="list-style-type: none"> <li>London-based director of DFB Australia Pty Ltd, with 36 years of experience in international securities and investments in the UK, Australia, USA and the Far East</li> </ul>	Section 5.1
<b>Phil Hodgson</b> <i>Managing Director and CEO</i>	<ul style="list-style-type: none"> <li>14 years of multidisciplinary experience with Shell, including as the general manager and alternate director of its subsidiary Fuelink Pty Ltd, a \$700m revenue, 300-employee distribution and sales subsidiary</li> <li>7 years running a private consultancy providing strategy and M&amp;A services</li> <li>Previously the managing director of Jatenergy (ASX:JAT) a clean technology business, including a successful re-listing on the ASX</li> </ul>	Section 5.1
<b>Mark Sceats</b> <i>Executive Director and Chief Scientist</i>	<ul style="list-style-type: none"> <li>Co-founder of Calix</li> <li>Qualified physical chemist with over 46 years' experience, previous academic roles, and numerous fellowships and recognitions</li> <li>Author of more than 140 academic papers in physical chemistry and inventor of 36 patented inventions</li> </ul>	Section 5.1

Key Management of Calix Limited	Summary Experience	For more information
<b>Darren Charles</b> <i>Chief Financial Officer and Company Secretary</i>	<ul style="list-style-type: none"> <li>Experienced CFO with 20 years' experience in high-growth technology companies</li> <li>Previously the CFO and executive director of Altium (ASX:ALU) and CFO of Seeker Wireless Pty Ltd</li> <li>Fellow of CPA Australia</li> </ul>	Section 5.2
<b>Andrew Okely</b> <i>GM - Strategy and Commercial</i>	<ul style="list-style-type: none"> <li>Experienced technology business development professional with over 17 years' experience with Outotec Pty Ltd</li> <li>Previous roles include director - sales and marketing for SE Asia for Outotec and a member of the Outotec South East Asia Pacific executive management team</li> </ul>	Section 5.2

## 1.8 SIGNIFICANT INTERESTS OF KEY PEOPLE AND RELATED PARTY TRANSACTIONS

Topic	Summary	For more information																																																				
<p><b>Who are the Existing Shareholders and what will be their interest in Calix at the Completion of the Offer?</b></p>	<p>The table below sets out the Substantial Shareholders, Directors, senior executives, employees and other Existing Shareholders of Calix as at the date of the Prospectus together with Shares currently held by them and on completion of the Offer.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;"></th> <th style="border-top: 1px solid black; border-bottom: 1px solid black; text-align: center;">Shares held as at the date of this Prospectus</th> <th colspan="2" style="border-top: 1px solid black; border-bottom: 1px solid black; text-align: center;">Shares held on Completion of the Offer<sup>1</sup></th> </tr> <tr> <th style="border-bottom: 1px solid black;">Shareholders</th> <th style="border-bottom: 1px solid black; text-align: center;">(million)</th> <th style="border-bottom: 1px solid black; text-align: center;">(million)</th> <th style="border-bottom: 1px solid black; text-align: center;">% holding</th> </tr> </thead> <tbody> <tr> <td>Sculptor Finance Shareholders</td> <td style="text-align: center;">28.1</td> <td style="text-align: center;">28.1</td> <td style="text-align: center;">22.9%</td> </tr> <tr> <td>Key Management Personnel</td> <td style="text-align: center;">17.4</td> <td style="text-align: center;">17.4</td> <td style="text-align: center;">14.2%</td> </tr> <tr> <td>Nicholas Merriman &amp; Associates</td> <td style="text-align: center;">11.7</td> <td style="text-align: center;">11.7</td> <td style="text-align: center;">9.6%</td> </tr> <tr> <td>Paul Crowther</td> <td style="text-align: center;">8.3</td> <td style="text-align: center;">8.3</td> <td style="text-align: center;">6.8%</td> </tr> <tr> <td>Washington H. Soul Pattinson &amp; Co.</td> <td style="text-align: center;">5.7</td> <td style="text-align: center;">7.5</td> <td style="text-align: center;">6.2%</td> </tr> <tr> <td>Acorn Capital</td> <td style="text-align: center;">4.7</td> <td style="text-align: center;">6.6</td> <td style="text-align: center;">5.4%</td> </tr> <tr> <td>Other management and employees</td> <td style="text-align: center;">3.8</td> <td style="text-align: center;">3.8</td> <td style="text-align: center;">3.1%</td> </tr> <tr> <td>Non-executive Directors</td> <td style="text-align: center;">3.0</td> <td style="text-align: center;">3.0</td> <td style="text-align: center;">2.5%</td> </tr> <tr> <td>Other existing Shareholders</td> <td style="text-align: center;">24.9</td> <td style="text-align: center;">24.9</td> <td style="text-align: center;">20.3%</td> </tr> <tr> <td>Investors in the Offer</td> <td style="text-align: center;">-</td> <td style="text-align: center;">11.3</td> <td style="text-align: center;">9.2%</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: center;"><b>107.6</b></td> <td style="text-align: center;"><b>122.7</b></td> <td style="text-align: center;"><b>100.0%</b></td> </tr> </tbody> </table> <p><b>Note</b></p> <p>1. Washington H. Soul Pattinson and Co. has committed to subscribe for 1.9m Offer Shares under the Offer and Acorn Capital has committed to subscribe for 1.9m Offer Shares under the Offer. Otherwise, excludes any Offer Shares that may be subscribed for under the Offer.</p>		Shares held as at the date of this Prospectus	Shares held on Completion of the Offer <sup>1</sup>		Shareholders	(million)	(million)	% holding	Sculptor Finance Shareholders	28.1	28.1	22.9%	Key Management Personnel	17.4	17.4	14.2%	Nicholas Merriman & Associates	11.7	11.7	9.6%	Paul Crowther	8.3	8.3	6.8%	Washington H. Soul Pattinson & Co.	5.7	7.5	6.2%	Acorn Capital	4.7	6.6	5.4%	Other management and employees	3.8	3.8	3.1%	Non-executive Directors	3.0	3.0	2.5%	Other existing Shareholders	24.9	24.9	20.3%	Investors in the Offer	-	11.3	9.2%	<b>Total</b>	<b>107.6</b>	<b>122.7</b>	<b>100.0%</b>	Section 6.1.3
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<p><b>What significant benefits are payable to Directors and other persons connected with Calix or the Offer and what significant interests do they hold?</b></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Director (including associates)</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Shares at Prospectus Date</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Incentives at Prospectus Date</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Shares after Completion of the Offer<sup>1</sup></th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">% Holding of Shares following Completion (undiluted)</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">LNH Warrants<sup>2</sup></th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">% Holding of Shares following Completion (fully diluted)</th> </tr> </thead> <tbody> <tr> <td>Peter Turnbull</td> <td style="text-align: center;">957,484</td> <td style="text-align: center;">124,873</td> <td style="text-align: center;">1,082,357</td> <td style="text-align: center;">0.9%</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.8%</td> </tr> <tr> <td>Jack Hamilton</td> <td style="text-align: center;">1,793,881</td> <td style="text-align: center;">124,873</td> <td style="text-align: center;">1,918,754</td> <td style="text-align: center;">1.6%</td> <td style="text-align: center;">206,250</td> <td style="text-align: center;">1.6%</td> </tr> <tr> <td>Lance O'Neill</td> <td style="text-align: center;">16,445</td> <td style="text-align: center;">-</td> <td style="text-align: center;">16,445</td> <td style="text-align: center;">0.0%</td> <td style="text-align: center;">132,500</td> <td style="text-align: center;">0.1%</td> </tr> <tr> <td>Phil Hodgson</td> <td style="text-align: center;">3,225,866</td> <td style="text-align: center;">772,577</td> <td style="text-align: center;">3,998,443</td> <td style="text-align: center;">3.3%</td> <td style="text-align: center;">82,500</td> <td style="text-align: center;">3.1%</td> </tr> <tr> <td>Mark Sceats</td> <td style="text-align: center;">7,004,087</td> <td style="text-align: center;">838,364</td> <td style="text-align: center;">7,842,448</td> <td style="text-align: center;">6.4%</td> <td style="text-align: center;">462,000</td> <td style="text-align: center;">6.3%</td> </tr> </tbody> </table> <p><b>Notes:</b></p> <p>1. Excludes any shares that may be acquired under the Offer.</p> <p>2. For details of the Warrants refer to Section 6.1.3.</p> <p>The securities set out in the table above are subject to escrow arrangements the details of which can be found in Section 5.4. Phil Hodgson and Mark Sceats are entitled to receive remuneration in accordance with their respective employment agreements, the details of which are set out in Sections 5.3.1.1 and 5.3.1.2. The non-executive Directors are entitled to directors' fees, the details of which are set out in Section 5.3.1.3.</p>	Director (including associates)	Shares at Prospectus Date	Incentives at Prospectus Date	Shares after Completion of the Offer <sup>1</sup>	% Holding of Shares following Completion (undiluted)	LNH Warrants <sup>2</sup>	% Holding of Shares following Completion (fully diluted)	Peter Turnbull	957,484	124,873	1,082,357	0.9%	-	0.8%	Jack Hamilton	1,793,881	124,873	1,918,754	1.6%	206,250	1.6%	Lance O'Neill	16,445	-	16,445	0.0%	132,500	0.1%	Phil Hodgson	3,225,866	772,577	3,998,443	3.3%	82,500	3.1%	Mark Sceats	7,004,087	838,364	7,842,448	6.4%	462,000	6.3%	Section 5.3.1.5										
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<p><b>Have there been any Related Party transactions prior to the Offer?</b></p>	<p>There are no existing agreements or arrangements and there are no currently proposed transactions, other than as set out in the table above, in which Calix was, or is, to be a participant, and in which any Related Party had or will have a direct or indirect material interest.</p>																																																					

## 1. INVESTMENT OVERVIEW

### 1.9 OVERVIEW OF THE OFFER

Topic	Summary	For more information												
<b>Who is the issuer of the Prospectus?</b>	Calix Limited (ACN 117 372 540)	Section 10.1												
<b>What is the Offer?</b>	The offer is an initial public offering of 15.1 million Shares at \$0.53 per Share for proceeds of \$8.0 million (before Offer Costs).	Section 6.1												
<b>What is the minimum subscription amount?</b>	Applications for a minimum of \$8.0 million (before costs) worth of Offer Shares must be received under the Offer. If that minimum is not achieved within four months after the date of this Prospectus, all Applications will be dealt with in accordance with the Corporations Act.	Section 6.2												
<b>What is the minimum Application under the Offer?</b>	Applications must be for a minimum of 3,774 Shares (\$2,000.22).	Section 6.2												
<b>What will Calix's capital structure be on completion of the Offer?</b>	<table border="1"> <thead> <tr> <th></th> <th style="text-align: right;">On Completion</th> </tr> </thead> <tbody> <tr> <td>Shares on issue at the date of this Prospectus</td> <td style="text-align: right;">107.6 million</td> </tr> <tr> <td>New Shares to be issued under this Prospectus</td> <td style="text-align: right;">15.1 million</td> </tr> <tr> <td>Approximate total number of Shares after issue of new Shares under this Prospectus</td> <td style="text-align: right;">122.7 million</td> </tr> <tr> <td>Warrants on issue</td> <td style="text-align: right;">8.9 million</td> </tr> <tr> <td>Approximate total number of Shares after issue of new Shares under this Prospectus on a fully diluted basis</td> <td style="text-align: right;">131.6 million</td> </tr> </tbody> </table>		On Completion	Shares on issue at the date of this Prospectus	107.6 million	New Shares to be issued under this Prospectus	15.1 million	Approximate total number of Shares after issue of new Shares under this Prospectus	122.7 million	Warrants on issue	8.9 million	Approximate total number of Shares after issue of new Shares under this Prospectus on a fully diluted basis	131.6 million	Section 6.1.3
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Approximate total number of Shares after issue of new Shares under this Prospectus on a fully diluted basis	131.6 million													

Topic	Summary	For more information																				
<p><b>Will any Shares be subject to restrictions on disposal?</b></p>	<table border="1"> <thead> <tr> <th></th> <th>Number of Shares subject to mandatory escrow</th> <th>Number of Shares to be subject to voluntary escrow</th> <th>% of Shares subject to escrow</th> </tr> </thead> <tbody> <tr> <td>Related Parties and Promoters</td> <td>18.2 million</td> <td>42.2 million</td> <td>49.2%</td> </tr> <tr> <td>Unrelated investors who invested in the last 12 months</td> <td>0.1 million</td> <td>25.4 million</td> <td>20.7%</td> </tr> <tr> <td>Other investors voluntarily escrow</td> <td>-</td> <td>4.3 million</td> <td>3.5%</td> </tr> <tr> <td><b>Total</b></td> <td><b>18.2 million</b></td> <td><b>71.9 million</b></td> <td><b>73.4%</b></td> </tr> </tbody> </table> <p>Under the terms of the voluntary escrow arrangements, subject to certain customary exceptions (described in Section 6.5) and ASX notification requirements being satisfied, Escrowed Securities held by Escrowed Securityholders may only be sold on and from 10 business days following the release of Calix's financial accounts of the 6 months ended December 2018; with the exception of Escrowed Securities held by Sculptor Finance Shareholders, and the Board and Senior Management, as outlined below:</p> <p><b>Sculptor Finance Shareholders</b></p> <p>If the volume-weighted average price in any 10 consecutive trading days on and from the announcement of the financial accounts for the financial year ended 30 June 2018 (or the date by which those results are required to be announced) exceeds the Offer Price by more than 25%, then 6,666,667 (23.7%) of the Escrowed Securities held by Sculptor Finance Shareholders may be sold after 30 September 2018, or the date on which that volume weighted average price is achieved (if it occurs after 30 September 2018). The remaining Escrowed Securities held by Sculptor Finance Shareholders may be sold after after the earlier of 14 March 2019 and 10 business days following the release of Calix's financial accounts for the 6 months ended December 2018. Sculptor Finance Shareholders may further transfer their Escrowed Securities off market in limited circumstances.</p> <p><b>Board and Senior Management</b></p> <p>Escrowed Securities held by the Calix Board and Senior Management that are subject to voluntary escrow arrangements (being approximately 5.6 million Shares) may only be sold on and from 10 business days following the release of Calix's financial results for the financial year ended 30 June 2019.</p> <p>Calix has applied for a declaration from ASIC that the Corporations Act is modified such that Calix does not have a relevant interest in its own shares by virtue of entering into the voluntary escrow deeds for the purposes of the takeover provisions of the Corporations Act. If Calix is not granted relief, Calix will not be able to enter into any voluntary escrow arrangements which would result in Calix having greater than 20% relevant interest in its own shares.</p>		Number of Shares subject to mandatory escrow	Number of Shares to be subject to voluntary escrow	% of Shares subject to escrow	Related Parties and Promoters	18.2 million	42.2 million	49.2%	Unrelated investors who invested in the last 12 months	0.1 million	25.4 million	20.7%	Other investors voluntarily escrow	-	4.3 million	3.5%	<b>Total</b>	<b>18.2 million</b>	<b>71.9 million</b>	<b>73.4%</b>	Section 6.5
	Number of Shares subject to mandatory escrow	Number of Shares to be subject to voluntary escrow	% of Shares subject to escrow																			
Related Parties and Promoters	18.2 million	42.2 million	49.2%																			
Unrelated investors who invested in the last 12 months	0.1 million	25.4 million	20.7%																			
Other investors voluntarily escrow	-	4.3 million	3.5%																			
<b>Total</b>	<b>18.2 million</b>	<b>71.9 million</b>	<b>73.4%</b>																			
<p><b>Will the Shares be quoted on the ASX?</b></p>	<p>Calix will apply to the ASX no later than 7 days from the date of this Prospectus for official quotation of all Shares on the ASX under the code CXL.</p>	Section 6.8.1																				

## 1. INVESTMENT OVERVIEW

Topic	Summary	For more information
<b>How is the Offer structured?</b>	<p>The Offer comprises:</p> <ul style="list-style-type: none"> <li>• an Institutional Offer - open to eligible Institutional Investors in Australia, New Zealand, Singapore and Hong Kong who have received an invitation from the Joint Lead Managers; and</li> <li>• a Retail Offer, consisting of the Broker Firm Offer - open to retail investors in Australia who have received a firm allocation from their Broker; and a Priority Offer - open to selected investors agreed between Calix and the Joint Lead Managers.</li> </ul>	Section 6.1.1
<b>Is the Offer underwritten?</b>	The Offer is not underwritten.	
<b>What is the allocation policy?</b>	<p>The allocation of Offer Shares between the Retail Offer and the Institutional Offer will be determined by Calix in consultation with the Joint Lead Managers.</p> <p>With respect to the Broker Firm Offer, it will be a matter for Brokers to determine how they allocate Offer Shares among their eligible retail clients.</p> <p>The allocation of Offer Shares under the Institutional Offer will be determined by Calix and the Joint Lead Managers.</p>	Section 6.2
<b>Is there any brokerage, commission or stamp duty payable by Applicants?</b>	No brokerage, commission or stamp duty will be payable by Applicants.	Section 6.2
<b>What are the tax implications of investing in the Shares?</b>	<p>Investors may be subject to Australian income tax or withholding tax on any future dividends paid.</p> <p>The tax consequences of an investment in Shares will depend on the Investor's particular circumstances, particularly for non-resident shareholders. Applicants should obtain their own tax advice prior to deciding whether to invest.</p>	Section 6.9
<b>How can I apply?</b>	<p>Institutional Offer applicants will be provided with bidding instructions by the Joint Lead Managers.</p> <p>Broker Firm Offer applicants may apply for Offer Shares by completing an Application Form and lodging it with the Broker who invited them to participate in the Offer.</p>	Sections 6.3 and 6.4
<b>When will I receive confirmation that my Application has been successful?</b>	Holding Statements for successful applications under the Offer are expected to be issued on 16 July 2018.	Section 6.2
<b>Can the Offer be withdrawn?</b>	Calix reserves the right to withdraw or not proceed with the whole or any part of the Offer at any time prior to the allotment of Shares. In that event, any relevant Application Monies that have been received under the Offer will be refunded without interest, as soon as reasonably practical.	Section 6.2
<b>Where can I find out more information about this Prospectus or the Offer?</b>	If you have any questions in relation to the Offer, please call the Share Registry on 1300 737 760 or +61 2 9290 9600 from outside Australia from 8.30am until 5.30pm (Sydney time) Monday to Friday. You should seek professional advice from your accountant, financial advisor, stockbroker, lawyer or other professional advisor before participating in the Offer.	Section 6.2

**COMPANY  
AND INDUSTRY  
OVERVIEW**

**2**



## 2. COMPANY AND INDUSTRY OVERVIEW

### AQUACULTURE

For the fastest growing major protein source globally, the challenge is about finding innovative and sustainable aquaculture solutions that contribute to food security, nutrition, livelihoods and economic growth. AQUA-Cal+™ is being developed as a water conditioner to support sustainable Aquaculture farming.



### AGRICULTURE

By 2050, agricultural output will need to increase by 50%, on a finite land base, and against increasing restrictions and concerns over crop protection products. Calix's BOOSTER-Mag™ is being developed as a safe, sustainable and environmentally friendly crop protection solution.



## Creating new materials Solving global challenges

A multi-award-winning Australian technology company using its patented core technology as a platform to develop new processes and materials and solve global challenges.



### ENVIRONMENT

Cement and lime production are responsible for the largest industrial CO<sub>2</sub> emissions globally. Calix's technology is being piloted with the world's largest cement and lime companies to mitigate these emissions.



### WASTE WATER

As global urbanisation continues to pressure sewer and waste water systems, Calix's in-market products and solutions are experiencing rapid uptake by industrials and utilities.



### ADVANCED BATTERIES

As portable electronic devices and electric vehicle uptake drive the need for advanced batteries, Calix's unique process is being developed to produce advanced materials to meet this rapidly expanding market.

## 2.1 COMPANY HISTORY

Calix was founded as a private company in 2005 by Mark Sceats (current Executive Director and Chief Scientist) to patent, develop and commercialise a novel mineral processing technology developed by Connor Horley (deceased 4 November 2008). Following initial capital raisings in 2006 and 2007, Calix tested the Calix Flash Calciner (**CFC**) processing concept in a batch processing plant at Jacobs Well, Queensland. In 2007, Calix converted to an unlisted public company and raised funds in 2010 to establish its first continuous flash calciner pilot plant at Bacchus Marsh, Victoria (commissioned in September 2010). The pilot plant was used to prove the flash calcination process on magnesite, dolomite, limestone, phosphate rock, gypsum and bauxite over the period to 2013. Early results were submitted to Imperial College in London to assess the unique properties of the materials and potential to capture CO<sub>2</sub> from the processing of carbonates, and a positive, independent technology assessment was completed by Imperial College and other engineering experts in 2010-2011 for scale up.

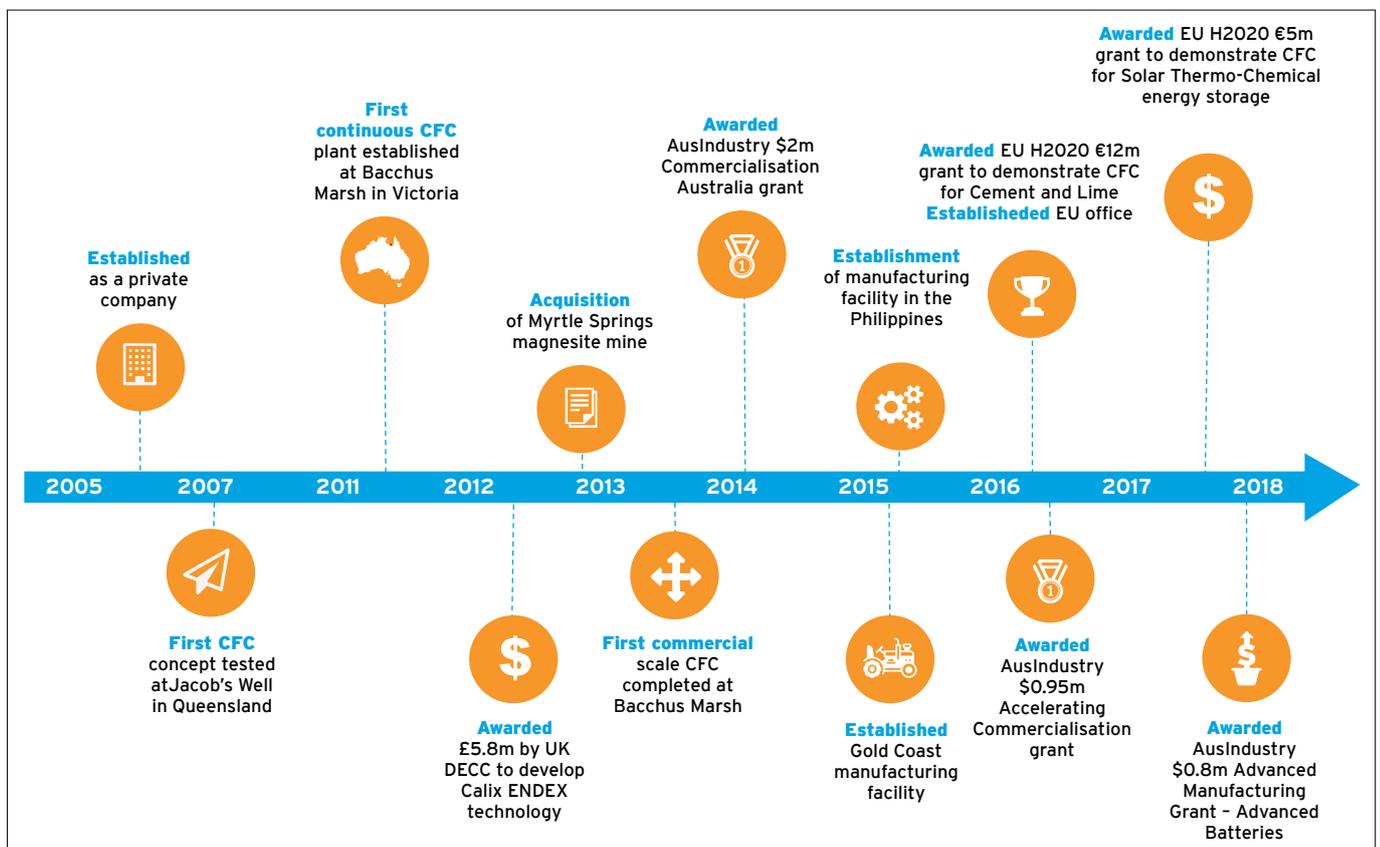
A further capital raising in 2011 secured funding to construct the commercial scale CFC facility at Bacchus Marsh in Victoria, with a nameplate capacity<sup>1</sup> of 25,000 tonne per annum (producing magnesium oxide from magnesite). Construction of this facility was completed in May 2013. Testing and commissioning were completed successfully by May 2013.

During construction of the commercial demonstrator, negotiations commenced on the acquisition of a magnesite mine in South Australia - the Myrtle Springs mine - to supply the commercial demonstrator with magnesite (magnesium carbonate). This acquisition was completed in May, 2013.

Initial product sales commenced in late 2013 based upon high surface area magnesium oxide (**HSA MgO**). Following successful trials on a hydration manufacturing facility at Bacchus Marsh, production of magnesium hydroxide commenced in December 2013, with initial sales for odour control and alkalinity in the sewer and waste water industry.

Key milestones in Calix's history are outlined in Figure 1.

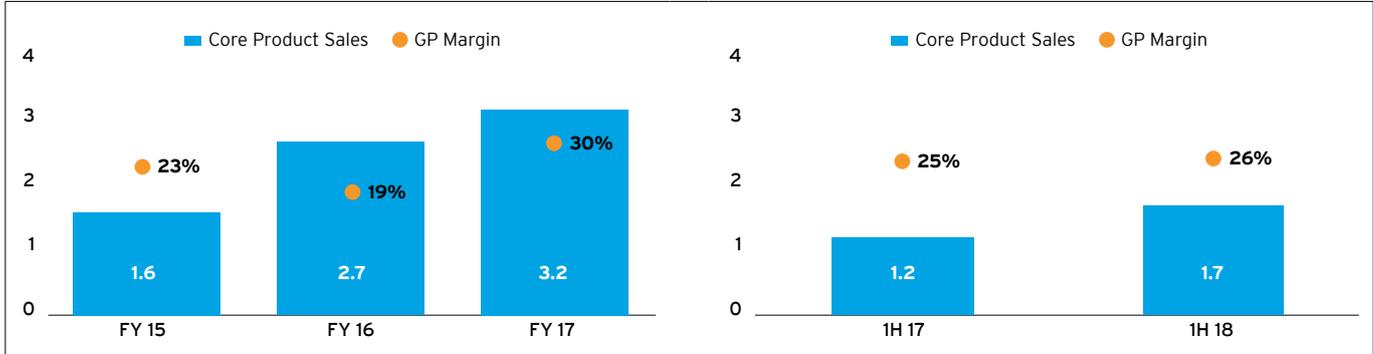
FIGURE 1: KEY MILESTONES IN CALIX'S HISTORY



1. Name plate capacity of 25,000 tonnes per annum of magnesium oxide product (based on 50,000 tonnes of raw material input) is contingent on the feed-stock, product handling, and efficiency upgrades, as contemplated by the use of funds outlined in this Offer.

## 2. COMPANY AND INDUSTRY OVERVIEW

FIGURE 2: CALIX'S CORE PRODUCT REVENUE (A\$M)



### 2.2 TECHNOLOGY

#### 2.2.1 Core Manufacturing Technologies

##### 2.2.1.1 Calix Flash Calcination - "CFC"

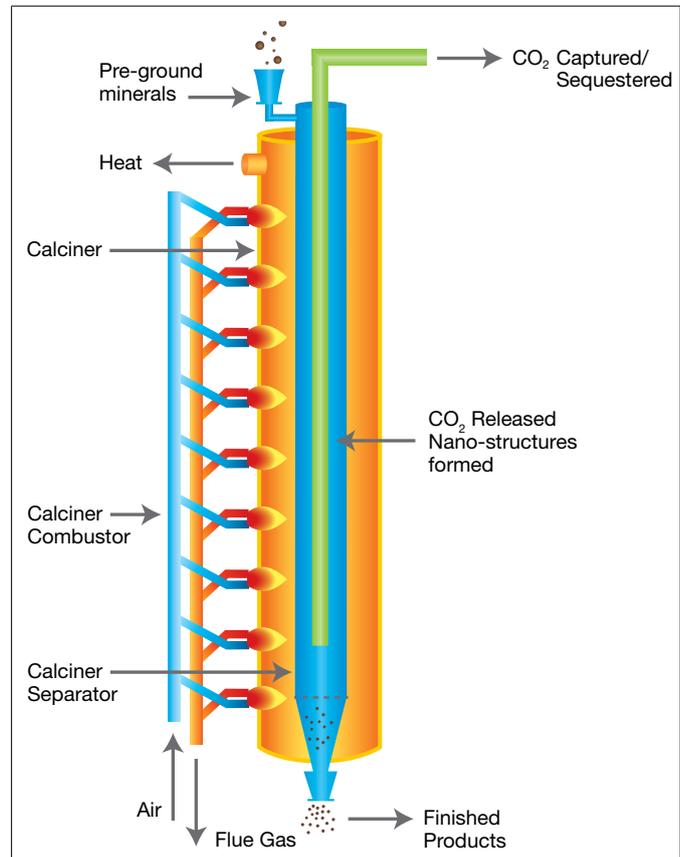
Activated minerals produced from calcination (kiln) technology are used across a wide range of manufacturing processes. As an example, the most widely used calcination process is the conversion of limestone (calcium carbonate) to lime (calcium oxide), via a kiln, for use in the production of cement and lime.

For each tonne of limestone entering a kiln, approximately half a tonne of lime is produced, with the remainder being CO<sub>2</sub> which is released from the limestone, making the cement industry one of the most CO<sub>2</sub>-intensive industrial emitters<sup>2</sup>.

FIGURE 3: CALIX'S COMMERCIAL-SCALE DEMONSTRATOR AT BACCHUS MARSH - VICTORIA



FIGURE 4: THE CALIX FLASH CALCINER



2. Cement Industry Federation - <http://www.cement.org.au/SustainabilityNew/ClimateChange/CementEmissions.aspx>.

The CFC (see Figure 3 and Figure 4) is a patented Australian engineering invention that reinvents calcination. Instead of *directly* heating the minerals as in conventional kilns, minerals are crushed to a fine powder and heated *indirectly* using a “downer” reactor tube. Calcination is completed in the few seconds it takes for the powder particles to float down through the radiative heat section of the reactor. The particles quickly cool as they exit the reactor.

The use of indirect heating separates the process of calcination from the furnace/heat source, ensuring that high-purity products do not come in contact with combustion gases, and giving far greater control of temperature and residence time of calcination.

The speed and control of calcination enables the CFC to produce very high surface area particles, which look like a “honeycomb” under a scanning electron microscope (see Figure 5). These particles have been shown to be Nano-Active (i.e. have similar properties to “nano-sized” particles, which are about 1 billionth of a metre in size), but are 1000x larger (about 1 millionth of a metre in size - similar to ground flour). This means that the particles produced via Calix’s proprietary CFC process have the high reactivity of nano-materials, without the potential health and handling issues associated with extremely small nano particles.

Indirect heating in the CFC also allows the direct capture of process CO<sub>2</sub> from calcination of carbonate materials, such as limestone (CaCO<sub>3</sub>) and magnesite (MgCO<sub>3</sub>).

The CFC is also flexible. Calix has successfully processed a variety minerals at its Bacchus Marsh facility, including magnesite, diatomaceous earth, kaolin, dolomite, limestone and phosphate rock and other minerals.

### 2.2.1.2 Magnesium Hydroxide Liquid Production

Calix’s first commercial specialty end-products are based upon our highly reactive, safe, and environmentally friendly magnesium hydroxide Liquid (**MHL**). MHL in Australia has traditionally been made by wet-grinding a quantity of magnesium oxide (**MgO**) with about the same weight of pre-heated water. In contrast, Calix’s MHL is created by shear mixing our CFC-produced, highly reactive MgO powder with ambient water in small-scale Calix Hydration facilities. The elimination of heating and wet grinding from this process enables significant capital and operating savings versus traditional MHL manufacturing facilities. This means Calix’s MHL can be produced in its small-scale Calix Hydration facilities near treatment sites, cutting the high cost of transporting a traditional MHL liquid, that is approximately 50% water by weight, and thus opening up markets previously commercially inaccessible, such as long-distance and export markets. Calix’s engineers developed this process in 2014 (and it has subsequently been patented), and a commercial scale Calix Hydration facility was built at Bacchus Marsh (Figure 6). Satellite Calix Hydration facilities have now been built in Queensland and the Philippines.

FIGURE 5: TRANSMISSION ELECTRON MICROSCOPE IMAGE OF CALIX CFC MgO COURTESY OF THE UNIVERSITY OF SEVILLE

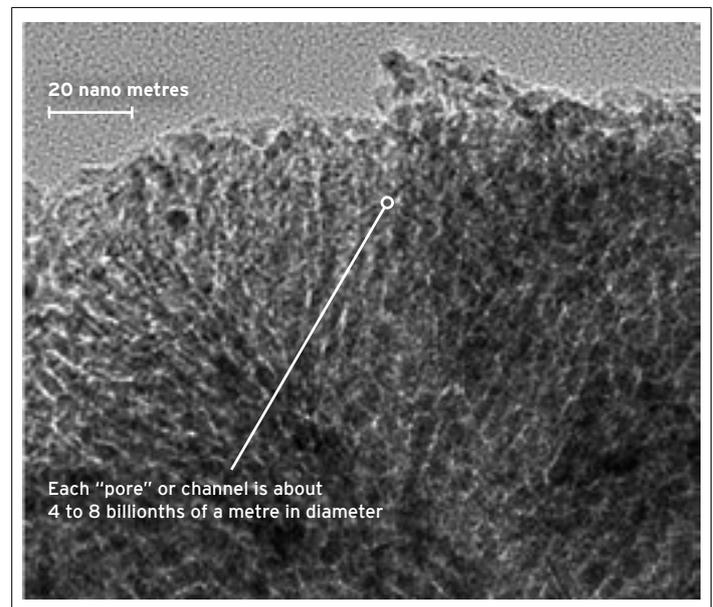


FIGURE 6: CALIX’S BACCHUS MARSH MHL FACILITY



## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.2.2 Patent Portfolio

Calix currently manages a total of 18 patent families, as detailed in Section 8.

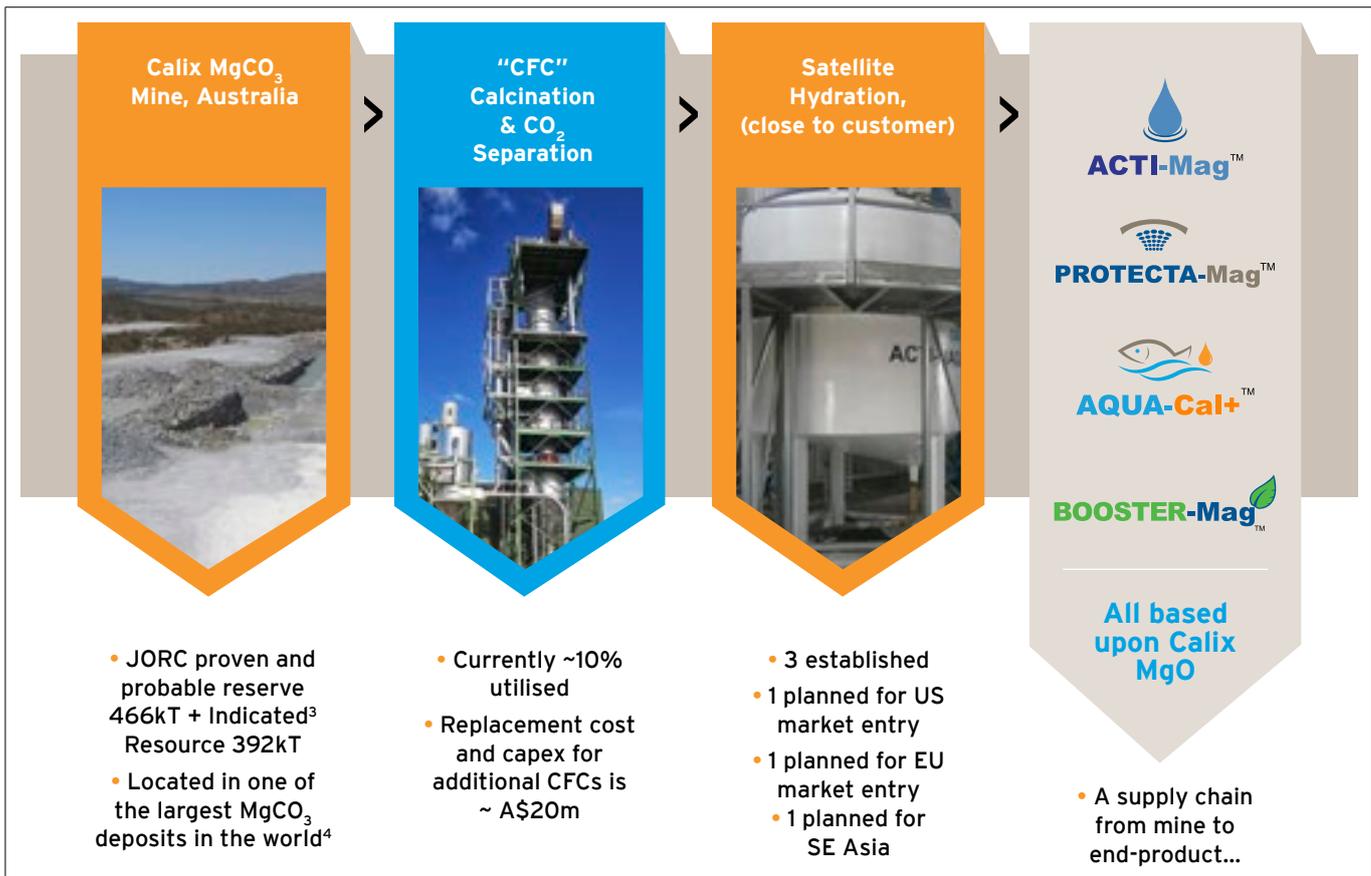
Calix maintains its intellectual property (IP), which are largely patents, based on the concepts of the “Core IP” and “Applications IP”:

- “Core IP” involves the IP associated with the core Calix technology - namely the Calix Flash Calciner. Through continued development of the core technology, the Company has simultaneously updated the IP protection through the submission of several additional patents; and
- “Applications IP” involves the IP associated with the products and applications that our Core IP produces. Through continued research and development (R&D) of new products and applications from our Core technology, Calix develops IP that we may choose to patent or retain as a trade secret to provide further layers of IP protection for a product or application, on top of our Core IP.

### 2.3 THE VALUE CHAIN

Our operations support our Commercial and Pre-Commercial products via key mining and manufacturing assets representing a value chain from the mine to the customer.

FIGURE 7: CALIX'S SCALABLE VALUE CHAIN - FROM MINE TO CUSTOMER



3. The information in this Prospectus that refers to a JORC-compliant resource estimate is based on information prepared by Ric Horn of Hornet Resource Assessment Services Pty Ltd. Ric is a Fellow of the Australasian Institute of Mining and Metallurgy and a Chartered Professional and is bound by and complies strictly with the Institutes codes and recommended practices. Mr Horn has 47 years' experience in the resources industry both in exploration and mining and has sufficient experience relevant to the style of mineralisation under consideration. He has 14 years' experience involved with the deposit under consideration and activities being undertaken to qualify as a competent person as defined in the 2012 Edition of the JORC Code of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr Horn consents to the inclusion in this Prospectus of the matters based on his information in the form and context in which it appears. For further information see Section 9.

4. Australian Government, Geoscience Australia - <http://www.australianminesatlas.gov.au/aimr/commodity/magnesite.html>

### 2.3.1 Myrtle Springs Magnesite Mine - South Australia

Calix, via its wholly owned subsidiary MS Minerals Pty Ltd, owns and operates two mining tenements at Myrtle Springs, located in the Leigh Creek area, South Australia. These tenements were acquired for \$1.0 million in 2013 and give Calix the benefit of direct access to magnesite minerals.

A JORC Code-compliant resource assessment<sup>5</sup> was carried out on Calix's Myrtle Springs mine in March 2018, and is detailed in Section 9. Tables 1 to 4, below, summarise the JORC code compliant ore reserve and resources across both tenements.

TABLE 1: SUMMARY OF JORC PROVED ORE RESERVES ESTIMATE ML 5000

JORC Code Category	Location	Bench	Beds	Magnesite tonnes	Grade Mg%	Grade Ca%	Dolomite tonnes	Waste
Proved ore Reserve	North West Extension	1	3-9	30,700	24.7	2.1	19,300	53,950
Proved ore Reserve	Below pit floor	2	1-9	98,000	24.4	2.1	18,400	211,000
Proved ore Reserve	North West Extension	2	1-9	35,000	24.0	2.0	5,200	65,000
<b>TOTAL</b>				<b>163,700</b>	<b>24.3</b>	<b>2.0</b>	<b>42,900</b>	<b>329,950</b>

TABLE 2: SUMMARY OF JORC PROBABLE ORE RESERVES ESTIMATE ML 5000

JORC Code Category	Location	Bench	Beds	Magnesite tonnes	Grade Mg%	Grade Ca%	Dolomite tonnes	Waste
Probable ore Reserve	North West Extension	1	1-9	62,000	24.0	2.0	37,300	128,000
Probable ore Reserve	West Extension	1	10-17	210,000	23.3	2.0	42,000	458,900
Probable ore Reserve	North-west Extension	2	1-9	30,000	24.0	2.0	5,000	60,000
<b>TOTAL</b>				<b>302,000</b>	<b>23.5</b>	<b>2.0</b>	<b>84,300</b>	<b>646,900</b>

TABLE 3: SUMMARY OF JORC INDICATED MINERAL RESOURCE ESTIMATE ML 5000

JORC Code Category	Location	Bench	Beds	Magnesite tonnes	Grade Mg%	Grade Ca%	Dolomite tonnes	Waste
Indicated	West Extension	2	10-17	210,000	23.0	2.0	42,000	458,900
<b>TOTAL</b>				<b>210,000</b>	<b>23.0</b>	<b>2.0</b>	<b>42,000</b>	<b>458,900</b>

TABLE 4: SUMMARY OF INDICATED MINERAL RESOURCE ESTIMATE ML 5001

JORC Code Category	Bench	Beds	Magnesite tonnes	Grade Mg%	Grade Ca%	Dolomite tonnes	Waste
Indicated resource	1	8-17	182,000	23.0	2.0	NA	355,000

5. The information in this Prospectus that refers to a JORC-compliant resource estimate is based on information prepared by Ric Horn of Hornet Resource Assessment Services Pty Ltd. Ric is a Fellow of the Australasian Institute of Mining and Metallurgy and a Chartered Professional and is bound by and complies strictly with the Institutes codes and recommended practices. Mr Horn has 47 years' experience in the resources industry both in exploration and mining and has sufficient experience relevant to the style of mineralisation under consideration. He has 14 years' experience involved with the deposit under consideration and activities being undertaken to qualify as a competent person as defined in the 2012 Edition of the JORC Code of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr Horn consents to the inclusion in this Prospectus of the matters based on his information in the form and context in which it appears. For further information see Section 9.

## 2. COMPANY AND INDUSTRY OVERVIEW

As outlined in tables 1 and 2, a total of over 450,000 tonnes of magnesite has been identified across the various JORC Code Ore Reserves categories (Proved Ore Reserve 163,700 tonnes and Probable Ore Reserves of 302,000 tonnes). Assuming the Bacchus Marsh CFC is fully utilised for magnesite processing (50,000 tonnes per annum input), the deposit could supply high grade minerals for production at Bacchus Marsh for at least 3 years (based on Proved Ore Reserves) and possibly up to 9 years (adding Probable Ore Reserves).

According to the Australian Atlas of Minerals Resources, Mines and Processing Centres<sup>6</sup>, Calix's Myrtle Springs mine sits within the largest identified Economic Demonstrated Resource' of magnesite in Australia, at 235 million tonnes.

Calix undertakes campaign mining via a mining contractor (i.e. non-continuous) in accordance with a mine plan approved by the South Australian Department of Mines (PEPR No. (2014/007)).

Calix uses the minerals from the Myrtle Springs mine to produce the majority Calix's range of magnesium-based products. Calix often blends some feed-stock from other sources of magnesite to smooth out any ore variability to meet our product specifications, without resorting to large stock holdings.

FIGURE 8: PHOTOS OF MYRTLE SPRINGS MINE



Experimenting with such blended feed-stocks has given us the confidence that the technology can be ore-indifferent. In other words, if a Calix calciner is built in Europe or the US, Calix is confident that it can source magnesite regionally and continue to produce its key product grades.

6. Australian Government, Geoscience Australia - <http://www.australianminesatlas.gov.au/aimr/commodity/magnesite.html>.

### 2.3.2 Bacchus Marsh - Victoria

The six-hectare Bacchus Marsh site in Victoria showcases our world-first technology. The site was established in early 2010, and has grown to include a small-scale pilot CFC for materials testing, a fully equipped R&D facility for investigating new materials and quality control, and our commercial-scale CFC including feed bunkers, crushing and grinding circuits, feed mixing and pre-heating, processing, product storage and handling, and a MHL production and storage facility. To date, Calix has invested \$20.0 million in the development of the Bacchus Marsh facility, which has a carrying value of \$10.2 million as at 31 December 2017.



CEO Phil Hodgson and Chief Scientist Mark Sceats at the Calix production facility at Bacchus Marsh, Victoria.

## 2. COMPANY AND INDUSTRY OVERVIEW

With a nameplate capacity<sup>7</sup> of 25,000 tonnes per annum of magnesium oxide production (from 50,000 tonnes per annum of raw magnesite input), and currently approximately 10% utilised against this nameplate capacity, our Bacchus Marsh facility has significant theoretical spare capacity. Realising this capacity for magnesium oxide production will require approximately A\$2.3 million in upgrades to feed and product storage and handling, and efficiency systems, which are referred to in the Use of Funds in Section 6.1.2.

Calix's product development, production and supply were ISO9001 accredited in 2015.



FS 634989 Development, Manufacture and Supply of Mineral Products

FIGURE 9: PHOTO OF BACCHUS MARSH FACILITY



7. Name plate capacity of 25,000 tonnes per annum of magnesium oxide product (based on 50,000 tonnes of raw material input) is contingent on the feed-stock, product handling, and efficiency upgrades, as contemplated by the use of funds outlined in this Offer.

### 2.3.3 Gold Coast - Queensland

Calix's advanced MHL small-scale hydration production plant on the Gold Coast was successfully commissioned in late December 2014 for a cost of around \$450,000. The plant has a capacity of 5,000 tonnes of MHL per annum per operating shift and can easily scale to grow with our customers' needs. Using Calix's unique, high reactivity magnesium oxide powder as a feed source, the plant can produce a 4-tonne batch of stable, 60% solids MHL in less than 90 minutes. The plant is currently servicing all of Calix's Queensland and northern New South Wales customers with capacity available for further growth. The small-scale Calix MHL facility was built with the assistance of an AusIndustry Commercialisation Australia grant.

FIGURE 10: GOLD COAST SMALL-SCALE CALIX MHL FACILITY



### 2.3.4 International Operations

Calix has established a Calix Hydration plant under license via our exclusive distributor in the Philippines - ACTI-Mag Asia Inc. - and intends to establish additional Calix Hydrating facilities worldwide, either as owner-operator or under licence, as demand increases. Raw MgO would continue to be supplied from the Bacchus Marsh facility.

Calix has also established UK and Belgian corporate entities for its business and projects in the UK and Europe and has 3 permanent employees and one casual employee employed in the UK and Europe under these entities.

In addition to its owned operations, Calix has customers, distributors, business partners, or products under trial in New Zealand, Asia (Hong Kong, Indonesia, Vietnam, Thailand, Malaysia, the Philippines), Europe, and the US.

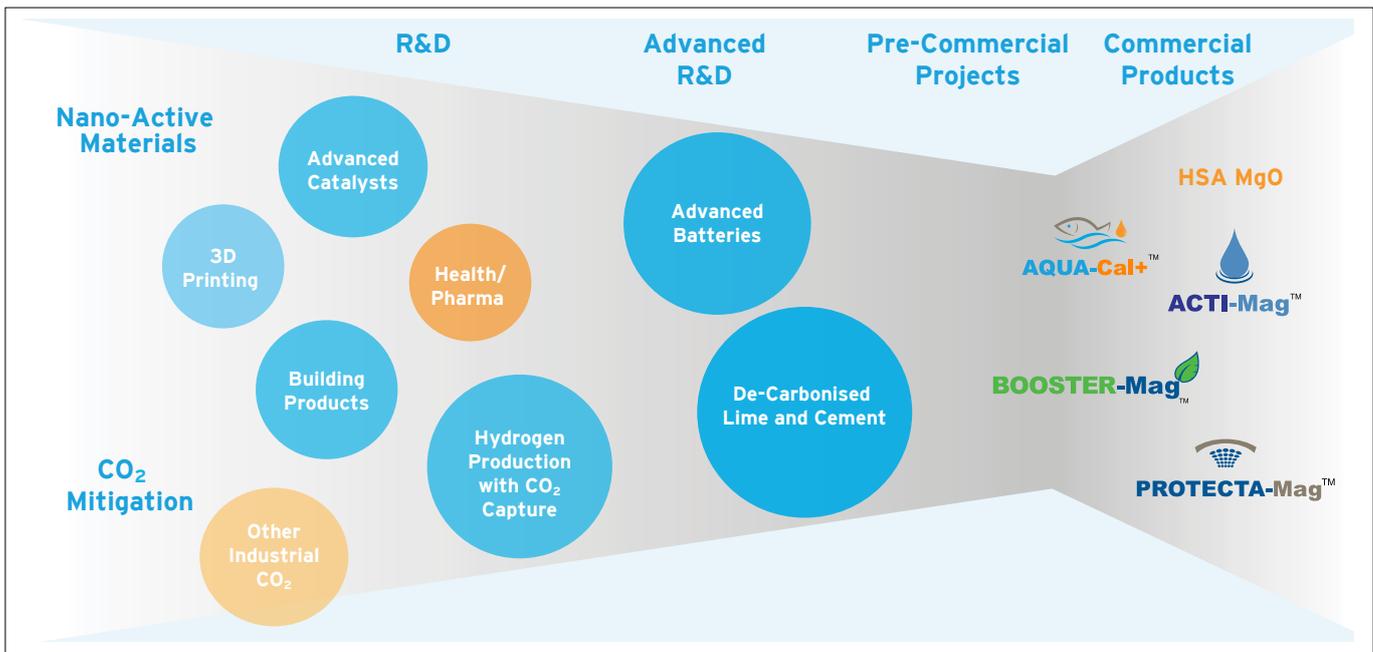
## 2. COMPANY AND INDUSTRY OVERVIEW



### 2.4 STRATEGY AND BUSINESS MODELS

Calix is a platform technology company with the potential to participate in multiple industries and markets. Calix’s strategy is to develop products and applications from R&D, through business model development, to commercial application, involving both licences and direct sales.

FIGURE 11: CALIX STRATEGY - TECHNOLOGY PLATFORM PIPELINE, CURRENT AND POTENTIAL APPLICATIONS



Calix’s strategy and business model for each Commercial, Pre-Commercial and Advanced R&D project is described in the following sections. The global Total Addressable Markets across Calix’s Commercial, Pre-Commercial and Advanced R&D projects is in excess of A\$90 billion<sup>8</sup>. While the global market opportunity for Calix is significant, the Company faces a number of competitors in each industry and it will take time for Calix to build its market share in each market. For further information on relevant risks, please refer to Section 4.

8. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018.

## 2.5 COMMERCIAL PRODUCTS AND INDUSTRIES

Our Commercial product portfolio has grown to three main product lines – with ACTI-Mag™ and PROTECTA-Mag™ product lines are the high focus growth products, and the HSA MgO product line is a “white label” revenue generator sold via a third-party licensee. Our sales revenue history also includes numerous one-off sales, processing, engineering and R&D contracts. Our core products’ (ACTI-Mag, PROTECTA-Mag and HSA MgO) sales growth over the last three years is presented in Figure 12 and Figure 13.

FIGURE 12

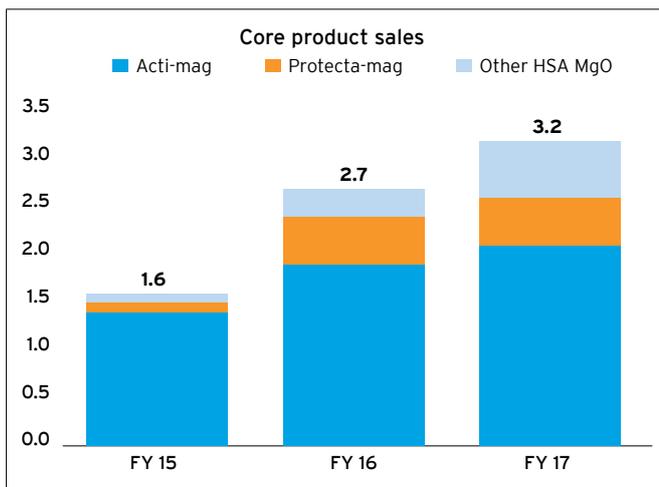
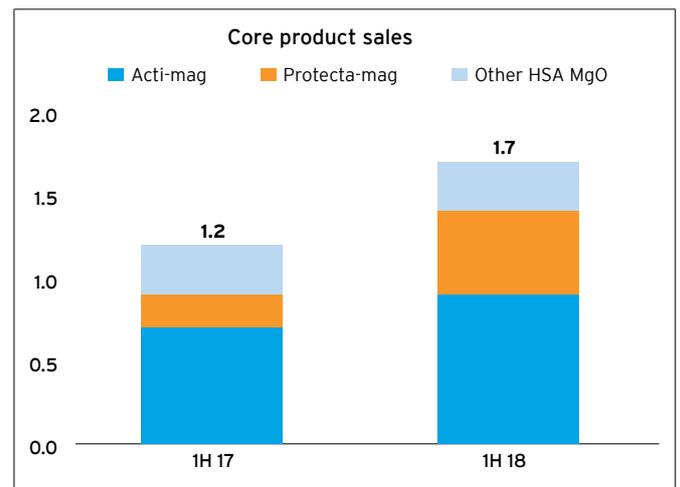


FIGURE 13

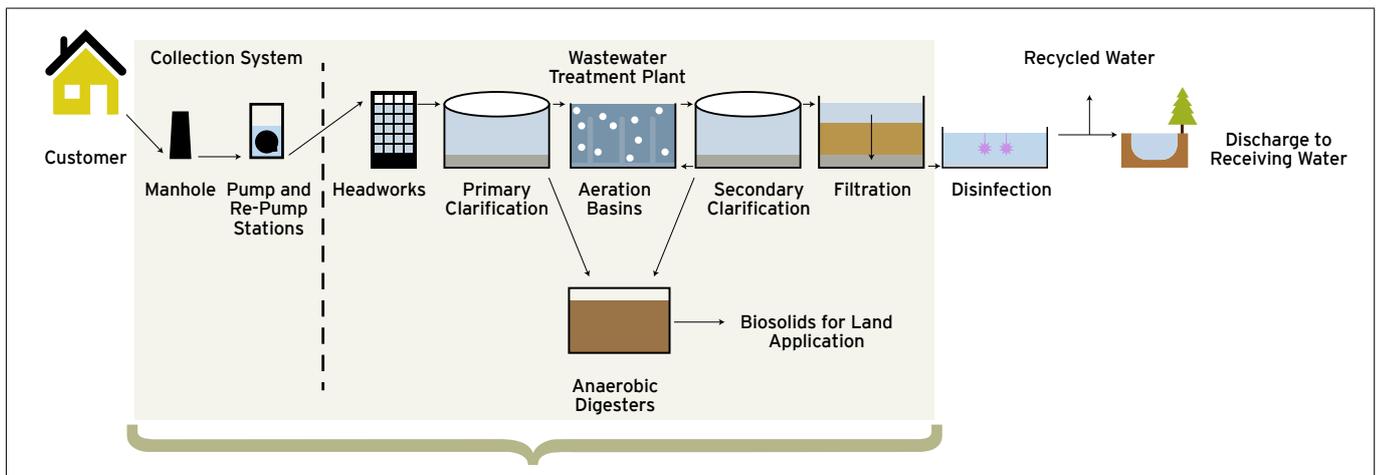


### 2.5.1 Waste Water Management

#### 2.5.1.1 Sewer Odour Control Sub-Industry<sup>9</sup>

The global waste water network is expected to total 9.9 million km by 2020, registering growth of over 17% since 2014. Each year, over 942 cubic kilometres of municipal and industrial waste water is produced. As a result of biological activity within a sewer or industrial waste water system, hydrogen sulphide or “rotten egg gas” (H<sub>2</sub>S) is produced. H<sub>2</sub>S has an unpleasant odour, is toxic and flammable in high concentrations. It is predominantly this chemical compound that wastewater facilities and infrastructure must limit to ensure the comfort and health of nearby residents and staff.

FIGURE 14: SEWER SYSTEM OVERVIEW - SOURCE: FROST & SULLIVAN



Main odour-generating areas in municipal infrastructure include: sewage pipes and access points, pump stations, headworks, clarifiers, digesters, aeration basins, lagoons, and sludge handling and holding areas.

9. All figures and market assessments quoted from Frost and Sullivan Market Report, except where otherwise noted.

## 2. COMPANY AND INDUSTRY OVERVIEW

As urbanisation-driven high intensity living increases, it is expected that municipalities will likely need to invest further in odour control to minimise their impact. Urban and suburban sprawl also means that fixed locations of municipal and industrial waste water plants that were once rural areas, are becoming encroached upon by residential developments where odours need to be controlled in greater frequency and quantity.

### 2.5.1.2 Competitive Landscape - Sewer Odour Control

The most prevalent solutions to H<sub>2</sub>S odour management include vapour treatment systems (such as filters) and chemical dosing. A number of companies supply products and/or carry out services associated with odour control, and some examples have been included below.

Vapour treatment systems work by ventilating odours through treatment systems such as wet air scrubbing (e.g. ECS Environmental Solutions)<sup>10</sup>, biofiltration (e.g. BioAir Solutions, Daniel Mechanical)<sup>11</sup>, and carbon adsorption (e.g. Calgon Carbon)<sup>12</sup>. While usually effective, drawbacks include the need to provide fans/compressors to drive the sewer atmosphere through the system, and the need to maintain the filter media, both of which are typically costly<sup>13</sup>.

Chemical dosing works by chemically binding H<sub>2</sub>S, or by altering the water chemistry (such as altering water pH) and thus changing the ability of H<sub>2</sub>S to become a gas, or by directly affecting those microbes that produce H<sub>2</sub>S to begin with. Chemicals currently being used include iron salts (ferric/ferrous chloride), nitrates (including calcium nitrate), nitrous acid and peroxide (e.g. USP technologies). There are some drawbacks from these approaches include black sludge formation, which can lead to blockages (iron salts), variable efficacy as biological conditions fluctuate (nitrates) and cost (peroxide). All are also, to varying degrees, toxic, and can impact downstream treatment systems<sup>14</sup>.

Magnesium hydroxide is also widely known and used in Australia (e.g. marketed by IXOM) and the US (e.g. Premier Magnesia, Martin Marietta Specialities, Hill Brothers Chemical Company), and to a lesser extent Europe (e.g. Nedmag). magnesium hydroxide is effective, safe/non-toxic and has beneficial impacts on downstream treatment systems<sup>15</sup>.

Apart from some of the specialised companies named above, the competitive landscape also includes multi-disciplinary chemical and service companies such as Dow Dupont, Suez, and Veolia<sup>16</sup>.



A bulk delivery of Calix ACTI-Mag for sewer odour control.

10. Frost and Sullivan Market Report.

11. IBID.

12. IBID.

13. Water and Wastes Digest <https://www.wwdmag.com/decentralized-wastewater/wastewater-odor-control-evaluation-technologies> Water Research Volume 45, Issue 19, 1 December 2011, Pages 6564-6574, and [www.epa.vic.gov/business-and-industry/water-guidelines/wastewater-guidelines-for-industry](http://www.epa.vic.gov/business-and-industry/water-guidelines/wastewater-guidelines-for-industry).

14. IBID.

15. IBID.

16. Frost and Sullivan Market Report.

### 2.5.1.3 Waste Water Treatment and Biogas Sub-Industry<sup>17</sup>

Biogas can be generated from wastewater (for use onsite for electricity and/or fed to the grid) by a broad range of Anaerobic Technologies that vary based on effluent characteristics and climatic conditions. A number of factors have contributed to the continuous stream of innovations in Anaerobic Technologies such as improvements in existing technologies, pilot studies to test new innovations and investments in research and development. This has enabled wider uptake of energy recovery equipment by commercial and industrial sites.

Increasing energy costs for commercial and industrial facilities are driving the search for alternative on-site energy production approaches. For example, in 2016 in Australia, average wholesale electricity prices increased 47% in New South Wales, 52% in Victoria, 14% in Queensland and 57% in South Australia. Similarly, over 2016, average gas prices in the Brisbane, Adelaide and Sydney short-term trading markets increased by 103%, 60% and 49% respectively. The energy produced from the biogas can be fed back into the grid or utilised in other parts of the production process, which represents a real opportunity to reduce energy costs.

### 2.5.1.4 Competitive Landscape - Waste Water Treatment and Biogas

The primary aim of a biotreater is to take waste water, typically high in contaminants, and use the action of bacteria and other micro-organisms to break the contaminants down into gases (biogas) and insolubles (sludge), leaving an effluent water stream that has far less, or none, of the original contaminants. As part of nearly all waste water treatment systems - chemical dosing is required to maintain pH, boost alkalinity and control odours in the treatment plant<sup>18</sup>. Current chemicals used for these issues include (hydrated) lime, caustic soda, and magnesium hydroxide<sup>19</sup>.

Lime and caustic soda are probably the most widely used, however their very high pH (12 and 14 respectively) can create “hot spots” of extreme pH, which can disrupt the operation of the biotreater, which takes time to recover. Global producers of lime include Lhoist, Carmeuse, Graymont, Mississippi Lime, and Minerals Technologies. While global producers of Caustic Soda include BASF, Solvay, PPG Industries, and FMC corporation<sup>20</sup>. Both are also hazardous materials, and caustic soda is also high in sodium, which adds to salinity concerns when discharging to fresh water systems.

MHL solves a lot of the problems associated with lime and caustic soda in biotreater use. It is non-toxic and safe, does not add to sodium levels in biotreater discharge, and has optimum alkalinity, even greater than either lime or caustic soda per litre, but without the extreme pH (being 9.5). However, to date it has found limited use in a lot of systems due to its propensity to form struvites (magnesium ammonium phosphate crystals) which cause blockages in biotreater systems<sup>21</sup>.

Biotreaters also produce biogas as part of the process of contaminant breakdown. Depending upon the type of waste stream, biogas can have very high levels of methane, which is a significant greenhouse gas (30 times worse than CO<sub>2</sub><sup>22</sup>). Whilst flaring this gas is an option, increasingly the methane is being seen as an energy source in its own right, when directed through gas engines to produce electricity. The quality of the methane becomes important, as high levels of H<sub>2</sub>S in the biogas degrades the gas engines very quickly. Thus, most biogas systems require gas treatment systems upstream of the biogas engines. Iron salts are sometimes used for odour (H<sub>2</sub>S) control in these systems, but as they are acidic, fight against the alkalinity in the system. As alkalinity drops, more H<sub>2</sub>S is produced, and so even more alkalinity needs to be added (typically lime or caustic soda).

### 2.5.1.5 ACTI-Mag Product

ACTI-Mag is an MHL product sold by Calix directly to end-users in the sewer and waste water industries for odour control and alkalinity. Key customers are water utilities and industrials with waste water treatment facilities. Calix manufactures MgO at its Bacchus Marsh facility, and then “hydrates” it (mixes with water and a small quantity of other additives) to form the final MHL product at Calix Hydration facilities at Bacchus Marsh in Victoria and Nerang in Queensland. A third facility is operated under license in the Philippines.

Because of the unique properties of the MgO used to make ACTI-Mag, the Calix Hydration facilities are relatively cheap to build, and therefore can be easily built close to the end-customer. This makes ACTI-Mag increasingly cost-competitive as distance to market increases, as Calix does not have to ship “water”, but only the raw MgO powder instead. Additionally, the high activity of Calix’s ACTI-Mag is manifesting in superior performance for biotreater applications, especially if phosphate discharge and the quality and quantity of methane gas production (if biogas power plants are in use) are key operating issues for a customer.

17. All figures and market assessments quoted from Frost and Sullivan Market Report, except where otherwise noted.

18. “Biotreatment of Industrial Effluents” Mukesh Doble, Anil Kumar Elsevier, 7 Apr. 2005.

19. IBID.

20. Frost and Sullivan Market Report.

21. Struvite precipitation assessment in anaerobic digestion processes, Chemical Engineering Journal Volume 141, Issues 1-3, 15 July 2008, Pages 67-74.

22. Princeton University. “A more potent greenhouse gas than carbon dioxide, methane emissions will leap as Earth warms.” ScienceDaily. ScienceDaily, 27 March 2014.

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.5.1.6 Commercialisation Case Study

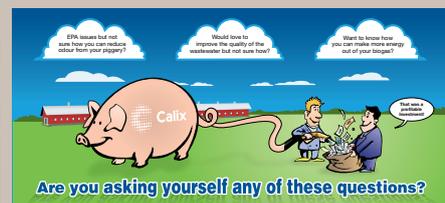
# CASE STUDY

## Use of Calix ACTI-Mag for improved biogas quality and quantity on an anaerobic cogeneration plant in Victoria.

The piggery in this case study has been owned and operated by the same family company since 1970. In 1991 they invested \$2 million on an anaerobic cogeneration plant and started producing electricity from the piggery effluent.

At present the piggery produces 3000kWh per day of electricity. As the price of electricity has risen, the business wanted to improve the production of electricity from the anaerobic cogeneration plant.

Calix started lab testing in our R&D facility to determine the correct dosing rate for the field trial. Our R&D team assessed hydrated lime, caustic soda, standard magnesium hydroxide and Calix ACTI-Mag as potential alkalis. In static lab tests, Calix's ACTI-Mag product produced a three-fold increase in biogas volume compared to the other alkaline materials tested.



Our Business Development team then designed and managed the field trials with the customer.

The following results were achieved in the field trials:

1. Biogas volume increased by 20%
2. Power generation increased by 23.5%
3. The soluble phosphate in the final waste stream was reduced by 37.5%
4. The H<sub>2</sub>S level in the biogas reduced from 800-600 ppm range to below 200 ppm
5. System blockages (due to solid crystal formation called "Struvite") were eliminated during the trial, having previously formed on a regular basis



In 2014, in the Australia Technology Competition, Calix Limited won the Water Award for its ACTI-Mag product development.

For more information:  
<http://www.austechcomp.com/alumni>

### 2.5.1.7 ACTI-Mag Growth Strategy

Frost and Sullivan has estimated the annual global TAM for Calix's ACTI-Mag in sewer odour control, waste water treatment systems and biogas production systems at over \$36.7 billion<sup>23</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

Since early 2014, Calix has established a growing, regular-order customer base for its ACTI-Mag product across multiple utilities, councils and industrials in Australia.

ACTI-Mag for odour control is sold to customers such as:

- Sydney Water;
- Yarra Valley Water;
- Queensland Urban Utilities; and
- TasWater.

ACTI-Mag for enhanced biotreater applications is sold to customers such as:

- A.J. Bush;
- Goulburn Valley Water; and
- Berrybank Pig Farm.

Calix also sells and leases ACTI-Mag dosing equipment and specialises in engineering such systems. To date, we have installed over a dozen systems across Australia and New Zealand.

Our customer value proposition for ACTI-Mag in odour control and biotreaters is to provide good quality, value-for-money MHL in the best-engineered dosing and applications systems.

Our growth strategy is to:

- continue to exploit cross-selling opportunities that arise from PROTECTA-Mag marketing strategies - see Section 2.5.2.3;
- continue to develop the biotreater additive market, especially in those situations where customers are experiencing tightening effluent and gas discharge restrictions, along with very high electricity prices;
- leverage the PROTECTA-Mag market entry strategies for overseas markets, particularly for biotreater applications - see Section 2.5.2.3; and
- identify and target "high" potential overseas biotreater markets, such as treating palm oil effluent to produce power and reduce impact on the environment. Our first trials in this application are underway now.

23. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.5.2 Sewer Infrastructure Sub-Industry

Since the development of Portland Cement in the 19th century, it has been the material of choice for sewer system construction and represents the majority of constructed in-situ material in modern sewer systems today<sup>24</sup>.

However, concrete sewers based upon Portland cement are subject to corrosion due to the production of hydrogen sulphide H<sub>2</sub>S as a result of biological activity in the sewer. In Australia, sewer maintenance, repair or replacement costs hundreds of millions of dollars per year, mostly as a direct result of corrosion<sup>25</sup>. Capital investment for the U.S. wastewater and storm water system is projected at A\$387 billion (US\$298 billion) over the next 20 years, with pipes accounting for three quarters of that total<sup>26</sup>.

#### 2.5.2.1 Competitive Landscape - Sewer Infrastructure Protection

Sewer repairs generally involve shutting the line down and applying a structural cement (such as calcium aluminate) or plastic, or a non-structural coating such as epoxy lining, or indeed completely replacing the infrastructure if deteriorated beyond structural integrity<sup>27</sup>. All these methods are expensive, time consuming, interrupt the sewer service and involve man-entry.

As a result of the size and growth of the problem, there are a multitude of specialty materials manufacturers and service providers that compete in the industry providing the above solutions, including Akzo Nobel, PPG Industries, Carboline Company, Jotun, Sherwin Williams, US Coatings, Tikkurila Oyj, Sauereisen, Inc., Borealis AG, 3M, Aegion Corporation, Chase Corporation, Jining Xunda Pipe Coating Material Co., Ltd., Metal Coatings Corp, Tnemec Company Inc., Cortec Corporation, EonCoat, LLC, APS (Anticorrosion Protective Systems), Induron Coatings, Inc., Royal Coatings, Wasser Corporation, and Enecon Corporation<sup>28</sup>.

#### 2.5.2.2 PROTECTA-Mag Technology

Magnesium hydroxide has been in use as a sprayed chemical barrier on sewer infrastructure greater than 600mm diameter for over 10 years by Sydney Water and L.A. County in the US, but has not been well-known outside these users until Calix entered the market in 2014 with its PROTECTA-Mag technology.

PROTECTA-Mag is a modified MHL product for sewer infrastructure protection. It is applied by spraying the product in larger (>600mm diameter) sewer pipes and "surface" sewer infrastructure such as man-holes, pump stations and sewer inlet works. Key customers are water utilities and councils managing sewer infrastructure. The business model involves partnering with a network of applicators under license from Calix, such as:

- Laser Plumbing; and
- Downer New Zealand.

The license requires the applicators to source equipment from Calix at agreed monthly rental rates, plus a fee-per-job royalty, in return for product supply and marketing and technical support.



**In 2015, Calix Limited was recognised as an ABA100 Winner for Best Technology Product in The Australian Business Awards 2015 for the research and development of PROTECTA-Mag.**

**The Australian Business Award for Best Technology Product TPA recognises leading products and services that have been developed through the practical application of technology for new and existing market needs.**



24. "Reducing sewer corrosion through integrated urban water management": Science, 15 Aug 2014 Vol 345, Issue 6198, pp 812-814 <http://science.sciencemag.org/content/345/6198/812>.

25. "Cost of urban water infrastructure failure" - The Australian Corrosion Association Inc. <https://membership.corrosion.com.au/blog/cost-of-urban-water-infrastructure-failure/>.

26. Frost and Sullivan Market Report.

27. IBID.

28. IBID.

### 2.5.2.3 Commercialisation Case Study

## CASE STUDY

### PROTECTA-Mag: New Zealand Market Entry

After a successful concentrated marketing and sales campaign on the east coast of Australia, Calix formulated and executed a New Zealand market entry, as a preparation study for planned US and European market entries. The PROTECTA-Mag technology was showcased as a demonstration to Watercare Auckland, Tauranga City Council and Taupo District Council between March to May 2017. The marketing and phone campaign targeted 60 of the 78 councils and utilities across New Zealand, and a face-to-face road trip carried out with more than 40% of positive responses (10% higher than Australia) during March to December 2017. As in Australia, a parallel process covered vetting potential application partners, with the selection of Downer as a trial partner. A meeting-to-paid trial success rate of around 30% was achieved up to 31 December 2017 - similar to Australia. Confidence in the product and process has since lead to the finalising of Downer as our New Zealand applicator, with a license contract executed in February 2018. Also, as with Australia, cross selling opportunities arose for our ACTI-Mag product.

PROTECTA-Mag achieved average quarterly revenue growth of 50% to the end of December 2017 and acquired 2 steady customers (major utilities) for ACTI-Mag.



## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.5.2.4 PROTECTA-Mag Growth Strategy

Frost and Sullivan has estimated the annual global TAM for Calix's PROTECTA-Mag at over \$25 billion<sup>29</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

Given the initial traction from the market entry experience in New Zealand, in November 2017 Calix commenced early inroads into the US market following the same process, initially in Hawaii. Our first trial products were shipped in February 2018. Our strategy is to grow our base in Hawaii and once Offer proceeds are available, follow the same process for the US West Coast starting later in 2018, and then Europe the following year. PROTECTA-Mag, given the low amount of product needed per job (and hence low cost of shipment of product to trial overseas, relative to overall cost of the job) is our beach-head product for overseas markets. Once the business is established, satellite hydration facilities can be installed (with the raw magnesium oxide powder shipped from Australia, to be made into ACTI-Mag and PROTECTA-Mag in-country) and ACTI-Mag cross-selling can begin (see Section 2.5.1.7).

Calix intends to allocate \$1.87 million from funds raised under the Offer to directly fund the export growth of its PROTECTA-Mag and ACTI-Mag products via establishment of overseas beach-heads in the US and Europe, as well as support the expansion of its current business in Australia and New Zealand.

### 2.5.3 OTHER SPECIALTY MGO SALES

#### 2.5.3.1 High Surface Area (HSA) MgO Markets

Magnesium oxide is used in many different markets, depending upon the physical and chemical properties of the final product. Calix can manufacture high surface area magnesium oxide, which is finding use in specialty applications (<\$50 million<sup>30</sup> TAM) such as an acid-scavenger in adhesives/rubber/polymer manufacturing. Competitive manufacturers for these niche applications include Premier Magnesia, Martin Marietta and Nedmag.



29. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

30. IBID.

### 2.5.3.2 HSA MgO

HSA MgO is a high surface area magnesium oxide powder sold under license with TIMAB as an additive in adhesives/polymer/rubber manufacturing. Calix purchases ore from an alternative ore supply (ie not from its Myrtle Springs mine), manufactures the product at its Bacchus Marsh facility and ships it to both Europe and Asia, where TIMAB undertake the marketing, distribution and selling, under a margin-sharing arrangement. The product competes directly with “synthetically-derived” MgO from sea water and brines.

### 2.5.3.3 HSA MgO Growth Strategy

The growth strategy for this product is being led by Calix’s Distributor, TIMAB. While current European sales are relatively mature, Calix is working with TIMAB on various quality and packaging initiatives to expand into Asia reduce costs from the supply chain.

## 2.6 PRE-COMMERCIAL PRODUCTS AND INDUSTRIES

### 2.6.1 Aquaculture Industry

Global growth in world per capita fish consumption (from 9.9 kg per year in the 1960s to beyond 20 kg in 2015<sup>31</sup>) has been driven by population growth, the rise in income levels and urbanisation. Since aquaculture has a low Feed Conversion Ratio<sup>32</sup>, it is seen as a viable way to meet growing demand for animal products globally with more efficient feed use than cattle or pig farming<sup>33</sup>. The Feed Conversion Ratio efficiency and growing fish consumption are underpinning investment in aquaculture. To meet growing demand, over time, aquaculture production has grown as a proportion of total seafood (from 38% of total captured and aquaculture production in 2009 to 44% in 2014)<sup>34</sup>. Also, the United Nation’s Food and Agriculture Organization (FAO) estimates suggest that disease outbreaks result in around \$7.8 billion (US\$6 billion) of losses to the global aquaculture industry per year<sup>35</sup>. The shrimp segment alone has contended with A\$12.9 billion (US\$10 billion) in losses since 1990<sup>36</sup>. Since degradation in water quality is one of the most common causes of disease and mortality in aquaculture<sup>37</sup>, the effective treatment of water is critical to reducing risk and economic loss in the sector.

Additionally, since aquaculture feed and waste produce nitrogen and phosphorus, the build-up of these elements on the water bed may lead to negative ecological disruptions. Algae is also capable of absorbing nutrients in the feed and waste. If uncontrolled, the spread of algae could lead to the deaths of many species and affect biodiversity of the ecosystem. A study in Canada found that there was a negative correlation between biodiversity and nearby salmon cages<sup>38</sup>.

Given both the opportunity and the problems facing aquaculture, there is likely to be a market for environmentally safe, low cost, innovative solutions.

#### 2.6.1.1 Crustaceans Sub-Industry

Globally, in 2014 crustaceans represented around 9.3% (6.7 MT) of total aquaculture production of 73.8 MT, with an estimated US\$36b wholesale (farm gate) value, of which shrimp and prawn represent about two-thirds, or around US\$24b<sup>39</sup>. Shrimp and prawn are in fact the second-largest single commodity in traded aquaculture produce after salmon and trout (at around US\$26.6b combined), and is growing at a rate of 16.8% annually<sup>40</sup>.

#### 2.6.1.2 Finfish Sub-Industry

Finfish represent the largest aquaculture sector, representing 49.8MT 2014 at a wholesale (ex-farm gate) market value of US\$99.2b. Within the finfish sector is the largest single commodity in traded aquaculture - salmon and trout (at around US\$26.6b)<sup>41</sup>.

31. The State of World Fisheries and Aquaculture 2016, Food and Agriculture Organization of the United Nations (FAO).

32. The ratio of feed intake to weight gain.

33. “Feed conversion efficiency in aquaculture: do we measure it correctly?”, Jillian P Fry et al 2018 Environmental Research Letters, Feb 2018.

34. The State of World Fisheries and Aquaculture 2016, Food and Agriculture Organization of the United Nations (FAO).

35. ‘Economic Impacts of Infectious Disease on Aquaculture Development’, World Aquaculture 2017 - Meeting Abstract.

36. IBID.

37. Water quality and disease, Department of Fisheries, Government of Western Australia.

38. Frost & Sullivan Market Report.

39. The State of World Fisheries and Aquaculture 2016, Food and Agriculture Organization of the United Nations (FAO).

40. “The use of probiotics in shrimp aquaculture”, A. Farzanfar, June 2006, Journal of Pathogens and Disease p 150.

41. The State of World Fisheries and Aquaculture 2016, Food and Agriculture Organization of the United Nations (FAO).

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.6.1.3 Competitive Landscape

As a relatively young industry, aquaculture represents a ground-floor opportunity for new technologies to help address issues such as yield loss due to poor pond conditions and disease.

Oxygenation of the water is critical for pond and fish health and good yields. There are various oxygenation techniques and technologies, such as the “paddle wheel” - which helps prevent stratification in the pond leading to oxygen-depleted zones, especially at the pond bottom, where oxygen demand is highest and oxygen penetration lowest. Other aeration techniques include pump-sprayer combinations, propellers, various mechanical mixing/aeration devices (e.g. Pentair Aquatic Eco-Systems)<sup>42</sup>, and various bioreactor technologies (e.g. Biogill)<sup>43</sup>. Apart from the initial capital cost of such devices, operating costs such as power are a significant input cost to aquaculture farming, especially in developing countries which require power remotely/off-grid. Further, it is still difficult to prevent low/no mix “dead zones”, which can be sources of anoxic conditions and disease. Dissolved metals from earthen pond bottoms are also a problem in aquaculture yields.

Gaining widespread use in Asia are “probiotics” - a general term covering the application of beneficial biologicals such as bacteria, yeast or algae to help condition pond water and/or help provide some defence against Pathogens. Probiotics are manufactured by many companies all over the world. Market penetration data by probiotics is hard to come by, but as an example probiotics have penetrated around 19% of the shrimp aquaculture market in Indonesia, one of Asia’s largest shrimp producers<sup>44</sup>). However, challenges associated with their use stemming from shelf-life in extended supply chains and implications for efficacy and cost, as well as potential destructive effects through inadvertent impacts on the surrounding environment and ultimately humans<sup>45</sup>, is preventing more rapid take-up. Use of anti-biotics is also occurring for higher-value crops, however the implications for increasing resistance and spill-over into human Pathogens is increasingly of concern.



AQUA-Cal+ being prepared for addition to a shrimp pond - Malaysia

42. Frost & Sullivan Market Report.

43. IBID.

44. Ipsos BC, “Indonesia’s Aquaculture Industry - Key Sectors for Future growth” - p 7.

45. Raja. S, Nandhini. E, Sahana. K, & Dhanakkodi. B, “Beneficial and destructive effects of probiotics in aquaculture systems - A review”; International Journal of Fisheries and Aquatic Studies 2015; 2(3): 153 - 159.

#### 2.6.1.4 AQUA-Cal+ Product

AQUA-Cal+ is a modified MHL product for water conditioning in aquaculture. It is applied by dosing the product directly into aquaculture ponds, at specified volumes and time intervals.

AQUA-Cal+ has multiple modes of action. Its high reactivity/surface area enables very effective binding of dissolved metals such as iron, which is critical in pond preparation for species sensitive to iron such as prawn post-larvae, and the micro-organisms they feed on. Similarly, its high reactivity and surface area has been proven to bind phosphates and ammonia in-situ within each tiny particle<sup>46</sup>, helping prevent free ammonia and phosphate build up, which lead to blue-green algae runaways. AQUA-Cal+ is also formulated with high levels of calcium - important for crustacean exoskeletons and fish bone formation. AQUA-Cal+ is a safe, environmentally friendly source of alkalinity - itself an important requirement for pond water conditioning.

Key customers are aquaculture farmers, co-operatives and businesses. The current business model involves the sale of the product to distributor partners in Malaysia (non-exclusively covering markets in Malaysia, Thailand, and Vietnam), Hong Kong (non-exclusively covering markets in Indonesia and Southern China) and the Philippines (exclusively covering the Philippines, and non-exclusively the rest of SE Asia). Our partners pay for the product in Australia once it is delivered to the ship. Our partners then sell the product in their territory. Calix also provides technical assistance at no cost to our partners, in return for full access to customers and the local business. The transfer pricing arrangement is designed such that each party receives an equal gross margin on their direct activities in the business.



46. C. Mehta, "Application of Calix ACTI-Mag for phosphorous removal from wastewater", Advanced Water Management Centre, University of Queensland, Report.

## 2. COMPANY AND INDUSTRY OVERVIEW



In 2017, Calix Limited was recognised as an ABA100 Winner for New Product Innovation in The Australian Business Awards 2017 for the research and development of AQUA-Cal+.

The Australian Business Award for New Product Innovation NEW recognises innovative products and services recently launched to market offering a point of difference from their competitors. For more information: <https://www.australianbusinessawards.com.au/2017-winners/calix-limited-aqua-cal/>



In January 2015, Calix Limited achieved Australian Organic Certified Operation for its Magnesium Hydroxide Slurry making it an Allowed Input for Organic Aquaculture production.

For more information: [austorganic.com](http://austorganic.com)



### 2.6.1.5 AQUA-Cal+ Commercialisation Strategy

Based upon crustaceans alone (the initial target market) Frost and Sullivan has estimated the annual global TAM for Calix's AQUA-Cal+ at over \$1.5 billion<sup>47</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

Calix has been trialling AQUA-Cal+ across multiple countries and crops since late 2014. Initial trials involved tilapia and milk fish in the Philippines over 2014 to 2015, followed by shrimp trials in Malaysia over 2016 and 2017. Given the prevalence of disease and the high value of the final crop in shrimp and prawn, Calix decided to focus on that market first.

Trials for shrimp were extended into Vietnam, Indonesia, Thailand, and Australia during 2017, and we are now planning for trials in India, Bangladesh and Southern China. Typically, trials are paid for, and each trial lasts for 4 to 6 months (typical "grow-outs" for shrimp) and are usually in one pond. If successful results are obtained, trials are extended the following season to several ponds. A second season of success might see the trials extended to the whole farm for a third season. A "regular" customer is thus established after about 4 seasons (16 months to 2 years). Farmers looking "over the fence" at such results may then be converted to customers more quickly, but will still want to trial for themselves.

Calix has been supporting the trial phase of its AQUA-Cal+ business with one technical support person to cover our three Asian distributors across the Philippines, Malaysia, Thailand, Vietnam, Indonesia, India, Bangladesh, Hong Kong and Southern China.

Given trials, typically by "early adopters" in each country or region, will only convert to regular sales over a minimum of typically four seasons, our growth strategy is to significantly ramp up our technical support at least three-fold, alongside a similar commitment from our distributor partners, to widen the trial and ultimately customer base for growth.

Calix intends to allocate \$0.33 million from funds raised in this IPO to directly fund the development and export growth of its AQUA-Cal+ product in Asia.

47. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

2.6.1.6 AQUA-Cal+ Case Study

# CASE STUDY

Emperor Marine Seafood Sdn Bhd (Manjung JV) was established in 2010. Their core business activities are in farming, processing and exporting frozen Black Tiger Prawns (Monodon) to local and global markets, including to Australia.

Manjung JV commenced trials of Calix AQUA-Cal+ in a single pond on 7th April 2016, to initially test iron suppression properties in a poorly performing earthen pond farm. After two days of treatment, dissolved iron was reduced as evidenced by good colour water, and the pond was left to stabilize for 7 days before being stocked with Monodon Post Larvae.

AQUA-Cal+ was then continually dosed during grow-out and yield measured against a reference pond treated with pro-biotics. Key harvest metrics are presented in the following table:

Pond	PCS/Kg	SR (%)	Harvest Weight (kg)	Total Revenue (RM '000)	Difference from Probiotics		
					(kg)	(%)	Yield (RM)
Probiotics	46	88	4,732	135	-	-	-
AQUA-Cal+	33	91	6,672	234	1,940	41	68,000
ACQA-Cal+ and Probiotics	36	90	6,159	206	1,427	30	48,000

Revenue is in Malaysian Ringgit

**Market Shrimp Price/kg**  
 46pcs - RM28.50  
 33pcs - RM35.00  
 36pcs - RM33.50

PCS/Kg refers to number of prawns per kg (a lower number indicates larger, more valuable prawns).  
 SR % refers to survival rate of original prawn larvae stock.

Use of AQUA-Cal+ resulted in a 41% increase in harvest weight over probiotics alone (a 55,290 Ringgit increase in revenue) as well as a higher value crop as a result of larger prawns (a 43,368 Ringgit additional revenue); a total of 98,658 Ringgit revenue uplift for an outlay of 4000 Ringgit on the AQUA-Cal+ treatment.

A second season of trials extended AQUA-Cal+ use to 6 ponds, with similar yield improvements. In season 3, Manjung JV have now increased to 22 ponds on these farms and decided to progressively roll out AQUA-Cal+ across all their 7 prawn farms.



## 2. COMPANY AND INDUSTRY OVERVIEW

FIGURE 15: POND WITH HIGH DISSOLVED IRON



FIGURE 16: POND AFTER TREATMENT WITH AQUA-CAL+



### 2.6.2 Agricultural Industry

#### 2.6.2.1 Crop Protection Industry<sup>48</sup>

Agricultural demand is expected to increase by an estimated 50% by 2050. Increased urbanisation will also see higher per capita spend on food and increase in protein consumption, thus driving demand for animal feed as well. These crops will need to be grown from an essentially static land resource base, with the growth in irrigated land expected to be just 0.1% per annum into the future. There are also ever-increasing concerns and restrictions on the very thing that has helped deliver yield increases over recent years - crop protection products. EU Directive 91/414/EEC (1993) and EU Regulation 1107/2009 (2011) have effectively overseen the reduction of over 75% of crop protection products' active substances from use in Europe, with those still approved undergoing renewals every 10 years under increasingly stringent criteria<sup>49</sup>. Many other countries are following this trend.

Despite the added focus on safety and sustainability in crop protection products, most deaths due to improper application are in the developing world<sup>50</sup>.

Additionally, the amount of time and money to develop a new product from inception, through development, registration, to market, is estimated to be 10 years and US\$200 million<sup>51</sup>.

#### 2.6.2.2 Competitive Landscape

The global crop protection industry is dominated by the majors Dow-Dupont, Syngenta-ChinaChem, and Monsanto-Bayer - all who announced mergers in the last 18 months. All have significant development programs for crop protection products, and well-developed distribution models that involve (to differing degrees) on-the-ground service offerings and product support. The "secondaries" (all multi-billion-dollar revenue companies), who may be specialists in off-patent formulas with some in-house development expertise, include Sumitomo Chemical, Nufarm, ADAMA, Arysta, FMC, Nippon Soda Co, and China National Chemical Corp<sup>52</sup>.

All of the above are involved in "traditional" chemical crop protection products, however given the pressures outlined in Section 2.6.2.1, they are also increasingly interested in Biopesticides - the use of active/beneficial biologicals such as bacteria, yeasts and fungi to help protect crops against disease and pests.

The advantages of biopesticides are that they are generally safer to use and with specific applications, quite effective, and the cost of development and regulatory approval time cycles are far lower than for chemicals<sup>53</sup>. However, their specificity limits their application, as does their (relatively short) longevity, and variable efficacy in field use. Yet the growth of biopesticides has occurred in spite of these issues, given the problems facing the crop protection industry.

48. All figures and market assessments quoted from Frost and Sullivan Market Report, except where otherwise noted.

49. "Crop Production Technology: The Effect of the Loss of Plant Protection Products in the UK" - Andersons, Oct 2014.

50. Jeyaratnam J. Acute pesticide poisoning: a major global health problem. *World Health Stat Q* 1990; 43: 139-44.

51. Sustainable Agriculture Reviews, Volume 13, Sustainable Agriculture Reviews, Volume 13 edited by Eric Lichtfouse p28.

52. Frost and Sullivan Market Report.

53. S. Olson, "An analysis of the biopesticide market now, and where it is going", in "Outlooks on Pest Management - October 2015", pp 203-206, Research Information Ltd.

### 2.6.2.3 BOOSTER-Mag Product

R&D on nano-metal oxides for applications such as crop protection has been driven by the need for alternative approaches to chemical pesticides and biopesticides<sup>54</sup>. Calix's Nano-Active magnesium oxide formulation BOOSTER-Mag is a broad spectrum, effective anti-fungal, anti-pest fertiliser that is safe to use, and overcomes many of the problems of both pesticides and biopesticides, on average at far lower cost.

### 2.6.2.4 BOOSTER-Mag Commercialisation Strategy

Frost and Sullivan has estimated the annual global TAM for Calix's BOOSTER-Mag at over \$9.8 billion<sup>55</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

As part of the commercialisation strategy for BOOSTER-Mag, Calix undertook a licensee search and vetting campaign in mid-2017, similar to the process undertaken by R&D firms in the pharmaceutical industry, for the licensing of a potential new drug to the pharmaceutical majors. Calix targeted 22 crop protection companies, some of which are amongst the largest companies in the world. 16 companies chose to progress discussions, and as at the date of this Prospectus, 11 Non-Disclosure Agreements have been put in place covering exchange of our research and trial data. The next stage of the process involves negotiating and executing a Material Transfer Agreements (MTA), covering IP ownership during a trial phase of due diligence involving one or more seasons, pests and geographical areas. 1 MTA is in place, and a further 3 MTAs are under negotiation as at the date of this Prospectus. Trial due diligence by potential licensees involves a considerable amount of their resources and time, and could take two years, or more. Final license negotiations are therefore expected in or after 2020.

The business model already tabled with potential licensees involves Calix continuing to manufacture BOOSTER-Mag, while the licensee formulates, registers, markets, distributes and sells the final product. In this business model, Calix focusses on manufacturing, and controlling its core IP, while licensees do what they do best - formulating, registering, marketing and selling via their substantial regional and global networks that are already in place.

In parallel to this licensee model strategy, Calix will be finalising a submission to the Australian Pesticides and Veterinary Medicines Authority (APVMA) for approval to sell the product as a crop protection product in Australia. Work has been ongoing on the application for two years, with the support of an AusIndustry Accelerating Commercialisation grant of \$950,000. Our first season of independently-assessed trials demonstrated statistical efficacy in the 95th percentile compared to an untreated control against fungal attack in grapes, and mites in commercial roses and tomato thrips in cucurbits. In addition, acute toxicology trials demonstrated that BOOSTER-Mag was not toxic in its concentrated form. The submission will require two seasons of statistically supportable efficacy results. The second season of testing is currently underway and if successful, should allow a submission within 12 months. The APVMA will then consider the submission, which may take 12 months or more. If APVMA approval is achieved, Calix will be able to market (label) and sell BOOSTER-Mag as a crop-protection product in Australia.

Calix intends to allocate \$0.5 million from the proceeds of the Offer towards both the licensing strategy and assist with the continuation of its APVMA registration process.

54. P. Chowdappa and S. Gowda, "Nanotechnology in crop protection: Status and scope", *Pest Management in Horticultural Ecosystems*, Vol 19, No. 2 pp 131-151 (2013).

55. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

## 2. COMPANY AND INDUSTRY OVERVIEW



In 2015, in the Australia Technology Competition, Calix Limited won the Agri-tech Award for its BOOSTER-Mag product development. Calix then went on to win the overall award as Best Technology Company - 2015.

For more information:  
<http://www.austechcomp.com/alumni>



In 2016, Calix Limited was awarded an Ausindustry Accelerating Commercialisation grant for its BOOSTER-Mag.

**For more information:** <https://www.business.gov.au/assistance/entrepreneurs-programme/accelerating-commercialisation/customer-stories/customer-story-calix>

### 2.6.2.5 BOOSTER-Mag Case Study - Three Seasons of Trials in Field Tomatoes

## CASE STUDY

### Three Seasons of Trials in Field Tomatoes

After extensive lab and small-scale field trial testing across numerous crops, Calix approached local farmer Jim Geltch to trial BOOSTER-Mag in one of his field tomato farms in Northern Victoria.

Jim agreed to small-scale trials initially in the 2015/16 growing season under the supervision of the Australian Processing Tomato Research Council, with initial testing simply spraying BOOSTER-Mag in addition to established crop protection products. Yield results in the first season, albeit on a small sample size were encouraging and consistent across three farms; ripe, unblemished fruit up 6%; insect damaged fruit down 67%, and in the following 2016/2017 season Jim had the confidence to support expanded scale trials across two of his farms where BOOSTER-Mag was applied as the primary crop protection product, with conventional pesticides used only when pest pressure was deemed risky for ultimate yield. Yield and traditional crop protection reduction results were as follows; crop protection chemical costs down by between 35 and 50%; pesticide sprays down by between 50 and 100%; all without compromising yield and yield quality.

These results, and the improved farm sustainability aspect, encouraged adoption of BOOSTER-Mag as the primary crop protection product over a third season, this time across an entire 40 ha farm. Results as at the Prospectus date were that yields were again consistent with the average yields in the region, which utilised standard chemical crop protection protocols. A fourth season of BOOSTER-Mag usage is now under discussion.

The logo for BOOSTER-Mag, featuring the brand name in a bold, sans-serif font with a green leaf icon to the right of the text.

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.7 ADVANCED RESEARCH AND DEVELOPMENT PROJECTS

Calix has a successful history of achieving significant grant funding to develop its technology (see Section 3.3.4). Calix's track record of success has enabled several promising aspects of the technology to be developed with limited additional equity from our shareholders. Being a platform technology, there are several new opportunities being developed by Calix in the pipeline for which R&D grants have, or will be sought. Also, due to the unique potential of the technology and Calix's established network of research institutions and universities, Calix is also invited to be part of several grant applications a year, mostly in Europe, through its network.

#### 2.7.1 Lime and Cement

According to the 'Global Infrastructure Outlook', covering 50 countries, to stay in step with expected demographic and economic growth, global infrastructure investment needs to be \$122 trillion (US\$94 trillion) between 2016 and 2040<sup>56</sup>. This drives demand for cement and lime used in construction and various industrial applications. As a result, lime and cement producers are planning new factory builds globally. For example, China's largest cement producer, China National Building Material has announced plans to build 100 cement factories across 50 countries over the next three years<sup>57</sup>.

##### 2.7.1.1 Lime

Lime is an important consumable in many industries, including the chemical industries, steel making, water and waste water treatment, glass, pulp and paper, and many others. World lime production reached 350 million tonnes in 2015<sup>58</sup>.

As lime is produced from limestone, for every tonne of limestone entering a lime kiln, half a tonne of CO<sub>2</sub> is emitted from the limestone itself (i.e. before taking into account any CO<sub>2</sub> produced by the use of fuel in the kiln). Thus, roughly 350 million tonnes of CO<sub>2</sub> per year is produced from the limestone itself, to make the lime needed by today's industries.

##### 2.7.1.2 Cement

Cement, or specifically ordinary Portland cement is probably the most widely used building and infrastructure material on the planet. The global ordinary Portland cement market was projected in 2015 to be US\$420 billion by 2019, a compound annual growth rate of 7%<sup>59</sup>, on production of 5.2 billion tonnes at that time.

As cement is produced mainly (around 78%) from limestone, for every tonne of limestone entering a cement kiln, roughly half a tonne of CO<sub>2</sub> is emitted from the limestone itself (i.e. before taking into account any CO<sub>2</sub> produced by the use of fuel in the kiln). Thus roughly 400 billion tonnes of CO<sub>2</sub> per year is produced from the limestone itself, to make the cement needed by today's society.

##### 2.7.1.3 Cement, Lime and CO<sub>2</sub> Emissions

The cement industry accounts for an estimated 5 % of total global man-made CO<sub>2</sub> emissions<sup>60</sup>, and cement is the largest global industrial source of man-made CO<sub>2</sub> emissions. The lime industry, while an order of magnitude smaller, is nonetheless a significant CO<sub>2</sub> emitter on its own, as it is based upon essentially the same raw material - limestone - and a heating process that releases CO<sub>2</sub> trapped in the rock.

As CO<sub>2</sub> emissions come under increasing social, legislative and economic pressure, both of these industries are seeking solutions to help reduce the amount of CO<sub>2</sub> emitted. The involvement of governments of various countries to reduce greenhouse gas emissions is mainly in the form of encouraging stakeholders through subsidies and incentives. This will spur increased uptake of capture technologies to curb greenhouse gas emissions<sup>61</sup>.

56. Frost and Sullivan Market Report.

57. IBID.

58. International Lime Association <http://www.internationallime.org/world-lime-production/>.

59. World Cement August 2015 <https://www.worldcement.com/europe-cis/27082015/global-demand-cement-billion-tons-449/>.

60. Cement Industry Federation - <http://www.cement.org.au/SustainabilityNew/ClimateChange/CementEmissions.aspx>.

61. Frost and Sullivan Market Report.

**2.7.1.4 Technologies for Dealing with CO<sub>2</sub> Emissions from Cement and Lime**

To decarbonise the lime and cement sectors, apart from energy efficiency improvements, the use of less carbon-intensive fuels, or reducing the clinker to cement ratio, the use of CO<sub>2</sub> capture technologies in the production process is also a key strategy. Carbon separation and capture approaches include chemical absorption, the use of membrane separators, and calcium looping. All three could be combined with oxy-fuel firing (using oxygen only burners) to reduce the gas-load and improve the costs of capture. However, all are at a relatively early stage of development for cement and lime, and all would involve considerable extra capital and operating expense.

**2.7.1.5 Calix Direct CO<sub>2</sub> Separation Technology for Lime and Cement**

Calix’s technology can directly separate the CO<sub>2</sub> produced from the processing of carbonates, as demonstrated at its Bacchus Marsh facility for magnesite (see Section 2.2.1.1), and is being demonstrated as part of its LEILAC project for lime and cement.

The LEILAC project’s objective is to build and demonstrate Calix’s Direct CO<sub>2</sub> separation technology at a similar scale to Calix’s Bacchus Marsh facility, and to assess over 18 months’ of operation whether such a technology can be applied to the cement and lime industries to enable process CO<sub>2</sub> separation without capital or operating penalty compared to other CO<sub>2</sub> capture technologies.

Calix’s Direct CO<sub>2</sub> Separation Technology is not necessarily a competitor to the other technologies dealing with CO<sub>2</sub> emissions as outlined in Section 2.7.1.4. By separating out the “process” CO<sub>2</sub> emissions directly, the job of cleaning up the kiln fuel’s CO<sub>2</sub> emissions is made easier, meaning a lower capital and operating cost for those technologies to be implemented. Calix’s technology is thus complimentary to those other technologies.

FIGURE 17: THE LEILAC CONSORTIUM PARTNERS



## 2. COMPANY AND INDUSTRY OVERVIEW

The LEILAC Project ([www.project-leilac.eu](http://www.project-leilac.eu)) is a Calix-led consortium of some of the world's largest cement and lime producers and highly esteemed universities, research institutes, process analysts and non-government organisation advocacy groups.

The consortium achieved €12 million in grant funding from the EU Horizon 2020 program in January 2016 to pilot its direct CO<sub>2</sub> separation technology for the cement and lime industries.

After successful front-end engineering, the project has moved into construction and is due for completion by end-March 2019, followed by the testing program starting in April 2019.

The test program finishing end-December 2020, will rigorously assess the technology on a slipstream from a working cement plant - HeidelbergCement's Lixhe facility - as well as on pure limestone.



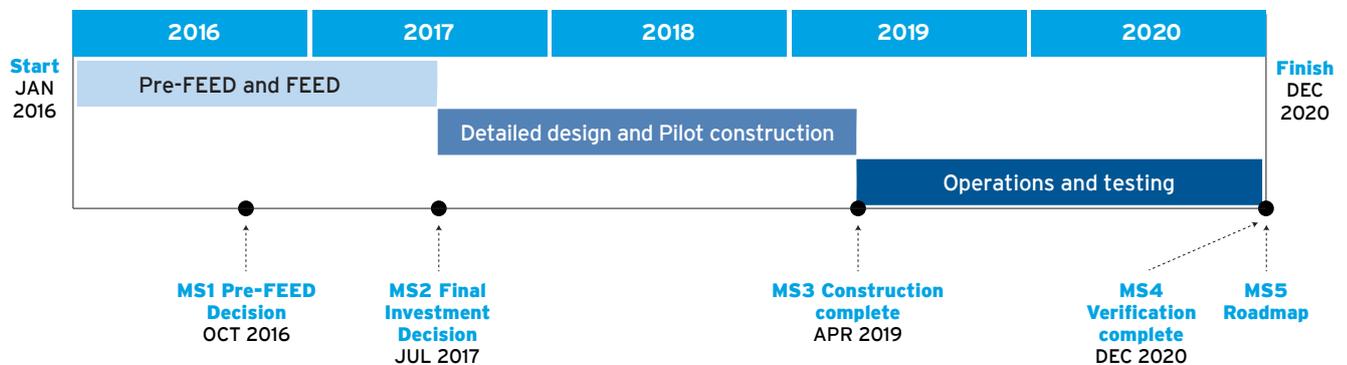
Fabrication commences on the LEILAC furnace sections in Belgium.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654465.



FIGURE 18: LEILAC PROJECT KEY MILESTONES



### 2.7.1.6 Commercial Exploitation

If the technology is proven, Calix's business model will involve licensing the technology to the cement and lime industries, perhaps using a standard technology royalty model, or equivalent.

As the price of CO<sub>2</sub> rises, there will be economic pressure on these industries to find a solution that captures CO<sub>2</sub> for delivery to downstream utilisation industries or sequestration. Additionally, first-movers would be able to access the 222 million tonnes<sup>62</sup> industrial CO<sub>2</sub> industry (medical gases, fire suppression, refrigeration, plastics, soft drinks etc) as a by-product of their production. As the lime industry is a magnitude smaller in scale than the cement industry, it might be expected that commercial exploitation could commence sooner for lime, as a scale-up of the technology will not be required for lime but will for cement.

Assuming the technology can be retro-fitted to existing plants (to be assessed during the LEILAC project), Frost and Sullivan has estimated the annual global TAM for Calix's LEILAC technology at over \$10.8 billion<sup>63</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

## 2.7.2 Batteries

### 2.7.2.1 Rechargeable Lithium Batteries

Growing demand for consumer electronics and electric vehicle applications are fuelling the uptake of Li-ion battery materials. The rapid growth of smartphones, tablets, laptops, hand-held gaming devices, MP3 players and wearable devices is spurring uptake of Li-ion in the consumer electronics sector. In the electric vehicle segment, Tesla and other original equipment manufacturers such as GM, Ford, Volvo and BMW are working on a range of products across plug-in electric and plug-in hybrid electric vehicle<sup>64</sup>.

Anode (negative electrode) and cathode (positive electrode) materials are a significant portion of the total wholesale price for a Li-ion battery. The anode and the cathode largely constitute the material into which the lithium ion is charged, and discharged, during the battery charge/discharge cycle. In order to increase both the energy density (how much charge) and capacitance (how quickly you can charge/discharge) there is intense research focussed on anodes, cathodes and electrolyte properties.

Current market players include Umicore, Reshine, L&F Co. Ltd., Shanshan Tech, NICHIA, Sumitomo, Johnson Matthey, Tronox, Prayon, Toda-Kogyo Corporation, Ecopro, Targray, American Elements, Solvay, BASF, LG Chem, BYD, Panasonic, Hitachi Chemicals, BTR Energy, Nippon Carbon, Mitsubishi Chemical, LS Mtron, Carbonics, Shanshan Tech, Tokai Carbon, etc<sup>65</sup>.

62. Frost and Sullivan Market Report.

63. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

64. Frost and Sullivan Market Report.

65. IBID.

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.7.2.2 Calix Advanced Materials Development for Li-Ion Batteries

There is well-established and extensive advanced battery material research on assembling Nano Particles into micron-sized agglomerates, to produce porous particles for battery materials anodes and cathodes. The porosity of such agglomerates has been widely reported in research to enhance performance in terms of charge rate and/or energy density. However, the cost to produce Nano Particles at scale has inhibited commercialisation of such technology.

Calix's technology can produce Nano-Active Materials, which are micron-sized particles, at scale and low cost - and therefore could be prospective as a process for advanced battery materials production.

Calix has produced cathode material,  $Mn_3O_4$  from cheap agricultural grade manganese carbonate, which has been processed and tested as a cathode at Imperial College, where it performed comparatively against commercial-grade materials over 60 cycles in half-cell tests. Far more extensive testing and development is required before a final product can be claimed, however these early results are very encouraging.

Upon reviewing Calix's technology and the Imperial College results, Professor Doug MacFarlane from Monash University and Associate Professor Pat Howlett from Deakin University and CSIRO's BATtri Hub commented...

***"Calix's material appears to have some unique properties that we expect could lead to superior battery and super-capacitor performance. These are early days but we are very encouraged by the potential".***

#### **Advanced Manufacturing Growth Fund Grant...**

In January 2018, Calix commenced a A\$2.4 million project to design and build the first CFC to produce advanced battery materials at its Bacchus Marsh site, with the help of an Australian Government Department of Industry, Innovation and Science Advanced Manufacturing Growth Fund grant of A\$0.8 million. Calix is seeking an additional A\$1.5 million to be funded from the proceeds of the Offer to help complete the project as well as accelerate its R&D program with institutions such as Monash University and BATtri hub.

The project, if successful, will complete the first stage of long-term plan to establish best in class Lithium based battery manufacturing in Australia, and pave the way for the next generation of advanced battery development.

### 2.7.2.3 Grid-Scale Battery Energy Storage Systems

With the rise in production of power from renewable energy sources, there is increasing demand for energy storage on an electricity-network-scale. In a recent article<sup>66</sup>, McKinsey estimates that the grid-scale energy storage market could reach US\$2.5 billion by 2020, a six-fold increase over 2015, and over 20 years reach 1,000 gigawatts, about 4,500 times the market size in 2015 of 221 megawatts<sup>67</sup>.

There are numerous competing technologies able to be scaled into grid energy storage. Li-Ion batteries are already joining established technologies such as pumped-hydro on a large scale, albeit with higher base or capital costs, but bringing new value propositions such as response time, to the market. The market of the future will likely be a mix of technologies based upon specific circumstances and customer requirements. Current market players include BYD, LG Chem, Samsung, Toshiba, Sanyo NEC Corporation, Wanxiang, China Aviation Lithium Battery, Amperex Technology Limited, Kokam, Magellan Power, NGK Insulators, Redflow, Sumitomo Electric Industries, Tesla etc<sup>68</sup>.

66. D'Aprile, P., Newman, J. and Pinnar, D., "The New Economics of Energy Storage" - McKinsey - August 2016.

67. Frost and Sullivan Market Report.

68. IBID.

#### 2.7.2.4 Calix Thermo-Chemical Battery Development for Grid-Scale Energy Storage

Calix's technology can directly separate the CO<sub>2</sub> produced from the processing of carbonates, as demonstrated at its Bacchus Marsh facility for magnesite, and is being demonstrated as part its LEILAC project for limestone (see Section 2.7.1.4).

Breaking apart limestone into lime and CO<sub>2</sub> uses large amounts of heat. If the CO<sub>2</sub> can be captured for minimal energy penalty, as is being demonstrated in the LEILAC project, and stored and then recombined with lime - it produces a similar amount of energy, as high grade heat, that it took to break apart. Once the heat is converted back to power, the cycle is the basis for a chemical "battery" concept for renewable energy storage.

In January 2018, Calix commenced the €5 million SOCRATCES project, in collaboration with 14 other consortium members and majority funded by the EU Horizon 2020 scheme, to design and build the first pilot-scale thermo-chemical energy storage device linked to solar energy production.

The project, if successful, will complete the first stage of a long-term plan to establish Calix's technology in base load energy storage.

FIGURE 19: THE SOCRATCES THERMO-CHEMICAL ENERGY STORAGE CONSORTIUM



#### 2.7.2.5 Commercial Exploitation - Advanced Batteries

Both our advanced battery materials and battery energy storage system projects are at early stages of development. However, based upon current market size, Frost and Sullivan has estimated the annual global TAM for Calix's battery materials opportunity at around \$6.5 billion, and that for battery energy storage system at around \$4.2 billion (utility scale only - excluding residential and industrial)<sup>69</sup>. Of course, TAM is a theoretical concept and Calix will be competing against other products and solutions for this market. Nonetheless, the opportunity appears large.

69. Frost & Sullivan: Market Opportunity for Calix Flash Calcination, dated 17 April 2018. Refer to Section 4 for risks associated with the competitive environment, retaining and winning customers and market development.

## 2. COMPANY AND INDUSTRY OVERVIEW

### 2.8 OTHER INDUSTRIES/DEVELOPMENT PIPELINE

There are numerous other development opportunities for the technology platform at the early stage of R&D.

*Decarbonisation of fossil fuels:* Fossil fuels are expected to remain part of the energy mix for decades. Large-scale decarbonisation (to produce hydrogen) with Carbon Capture and Storage is thus a high potential option to reduce CO<sub>2</sub> emissions, and there is research that is on-going on innovative, efficient solutions. Calix has already advanced studies into decarbonisation of fossil fuels and production of hydrogen with CO<sub>2</sub> capture via the EU ASCENT program (see Table 9, Section 3.3.4). While longer-term, development in this important sector is increasingly of interest, especially to traditional fossil fuel companies with significant reserves looking for a place in the energy mix of the future.

*Advanced Building Products:* Whilst cement and steel are expected to remain key materials for infrastructure for decades, alternative, innovative materials with a lower carbon footprint and better properties continue to generate interest. Calix has already put considerable effort into magnesium-based building products and is the owner of the Novacem technology - which was selected as one of the 10 Breakthrough Technologies of the year by the MIT Technology Review in 2010, one of only 5 technologies selected for the 2010 Bloomberg New Energy Finance Summit and selected by the World Economic Forum as a Technology Pioneer for 2011. Calix continues to actively both develop, and look for the right development partners, for its building products applications.

*Health/Pharmaceuticals:* Apart from investigation of new chemical compounds to advance medicine, there is also R&D interest in Nano-Active Materials as anti-super-bug agents or targeted deliverers of specific drugs. Early work undertaken by an independent laboratory has confirmed that Calix's HSA MgO, which is safe and non-toxic to humans, exhibited significant anti-"super-bug" efficacy. Further, these particles can carry conventional systemic toxic adjuvants, absorbed on the surface, that may work synergistically with the Calix materials to reduce the dosing of such materials, and lower the development of resistance. Calix will continue its own research and development on potential health and pharmaceutical applications, as well as look for suitable development partners to help advance this potential application.

*3D Printing:* Calix has commenced early work on sprayed layers of its Nano-Active Materials to understand bonding and curing properties, and will continue its own research and development on potential 3D printing applications, as well as look for suitable development partners to help advance this potential application.

*Catalysts:* The core of low energy chemical conversions and a centrepiece to all chemical industries, advanced catalysts, similar to 3D printing, will rely on materials with unique properties being developed cheaply and at scale. As with other potential applications in early stage R&D, Calix will continue its own research and development on potential catalyst applications, as well as look for suitable development partners to help advance this potential application.

# FINANCIAL INFORMATION

3



## 3. FINANCIAL INFORMATION

### 3.1 INTRODUCTION

The financial information contained in this section includes:

- Statutory historical financial information
  - statutory historical consolidated statements of profit or loss for the years ended 30 June 2015 (**FY15**), 30 June 2016 (**FY16**) and 30 June 2017 (**FY17**) and the half years ended 31 December 2016 (**1H17**) and 31 December 2017 (**1H18**) (**Statutory Historical Results**);
  - statutory historical consolidated cash flow information for FY15, FY16, FY17, 1H17 and 1H18 (**Statutory Historical Cash Flows**); and
  - statutory historical consolidated statement of financial position as at 31 December 2017 (**Statutory Historical Statement of Financial Position**).
- (together the **Statutory Historical Financial Information**).
- Pro forma historical financial information
  - pro forma historical consolidated statements of profit or loss for FY15, FY16, FY17, 1H17 and 1H18 (**Pro Forma Historical Results**);
  - pro forma historical consolidated cash flow information for FY15, FY16, FY17, 1H17 and 1H18 (**Pro Forma Historical Cash Flows**); and
  - pro forma historical consolidated statement of financial position as at 31 December 2017 (**Pro Forma Historical Statement of Financial Position**).
- (together the **Pro-forma Historical Financial Information**).

Also summarised in this section are:

- the basis of preparation and presentation of the Financial Information (refer Section 3.2);
- information regarding certain non AAS or IFRS financial measures (refer Section 3.2.3);
- summary of key pro forma operating metrics (refer Section 3.3.2);
- the pro forma adjustments to the Statutory Historical Financial Information and reconciliations to the Pro Forma Historical Financial Information (refer Sections 3.3.2, 3.4.2 and 3.5.1);
- details of Calix's indebtedness and capitalisation (refer Section 3.5.2);
- information regarding Calix's liquidity and capital resources (refer Section 3.5.3);
- management's discussion and analysis of the Pro Forma Historical Financial Information (refer Sections 3.3.4 and 3.4.3);
- details of the proposed dividend policy (refer Section 3.5.7).

Information provided in this section should be read in conjunction with the risk factors outlined in Section 4, and the other information provided in this Prospectus.

### 3.2 BASIS OF PREPARATION AND PRESENTATION OF THE FINANCIAL INFORMATION

#### 3.2.1 Overview

The statutory consolidated historical financial statements of Calix for FY15, FY16 and FY17 have been audited, with 1H17 and 1H18 having been reviewed, by BDO East Coast Partnership (**BDO Audit**).

The Historical Financial Information has been prepared and presented in accordance with the measurement and recognition principles prescribed in Australian Accounting Standards (AAS) (including the Australian Accounting Interpretations issued by the Australian Accounting Standards Board, which are consistent with International Financial Reporting Standards (**IFRS**) issued by the International Accounting Standards Board).

Calix operates on a financial year ended 30 June. All amounts disclosed in this section are presented in Australian Dollars. Rounding in the Financial Information may result in some discrepancies between the sum of components and the totals outlined within the tables and percentage calculations.

The Financial Information is presented in an abbreviated form insofar as it does not include all the presentation and disclosures, statements or comparative information as required by the AAS, IFRS and other mandatory professional reporting requirements applicable to general purpose financial reports prepared in accordance with the Corporations Act. Calix's key accounting policies have been consistently applied throughout the financial periods presented and are set out in Appendix 1 of this Prospectus.

The Historical Financial Information has been reviewed and reported on by BDO Corporate Finance (East Coast) Pty Ltd as set out in the Independent Limited Assurance Report on Financial Information set out in Section 7. Investors should note the scope and limitations of the Independent Limited Assurance Report (refer to Section 7).

### 3.2.2 Preparation of the Historical Financial Information

The Statutory Historical Financial Information has been extracted from the audited statutory consolidated financial statements of Calix for FY15, FY16 and FY17 and the reviewed statutory consolidated financial statement of Calix for 1H17 and 1H18.

The Pro Forma Historical Financial Information has been prepared for the purpose of inclusion in this Prospectus. The Pro Forma Historical Results and Pro Forma Historical Cash Flows have been derived from the Statutory Historical Financial Information, with pro forma adjustments being made to reflect the impact of historical acquisitions, to eliminate certain non-recurring items, and to reflect adjustments to Calix's operating and capital structure following Completion, as well as standalone public company expenses.

The Pro Forma Historical Statement of Financial Position as at 31 December 2017 is based on the reviewed consolidated financial statements of Calix as at that date adjusted to reflect the impact of the Offer and other material transactions post 31 December 2017 (refer to Section 3.5.1).

Refer to Section 3.3.2 for a reconciliation between Statutory Historical Results and Pro Forma Historical Results, to Section 3.4.2 for a reconciliation between the Statutory Historical Cash Flows and the Pro Forma Historical Cash Flows and to Section 3.5.1 for a reconciliation between the Statutory Historical Statement of Financial Position and the Pro Forma Historical Statement of Financial Position.

Investors should note that past results are not a guarantee of future performance.

### 3.2.3 Explanation of Certain non-AAS or non-IFRS Financial Measures

Calix uses certain measures to report on its business that are not recognised under AAS or IFRS. These measures are collectively referred in this section and under Regulatory Guide 230 'Disclosing non-IFRS financial information' published by ASIC, as "non-IFRS financial measures". The principal non-IFRS financial measures that are referred to in this Prospectus are as follows:

- **EBIT** is earnings before interest and tax.
- **EBITDA** is earnings before interest, tax, depreciation and amortisation.

Management uses EBITDA to evaluate the operating performance of the business without the non-cash impact of depreciation and amortisation and before interest and tax charges, which are affected by the capital structure and historical tax position of Calix.

Because it does not include the non-cash charges for depreciation and amortisation, EBITDA can be useful to help understand the cash generation potential of the business. However, management believes that it should not be considered as an alternative to net free cash flow from operations and investors should not consider EBITDA in isolation from, or as a substitute for, an analysis of the results of Calix's operations.

- **Capital expenditure** is expenditures on property, plant and equipment.
- **Net free cash flow** is operating free cash flow less capital expenditure and patent costs.
- **Operating free cash flow** is EBITDA and changes in working capital.
- **Working capital** is trade and other receivables and other current assets less trade and other payables and income tax payable and employee entitlements.

Certain financial data included in this section is also non-IFRS financial information.

Although Calix believes that these measures provide useful information about the financial performance of Calix, they should be considered as supplements to the statement of profit and loss measures that have been presented in accordance with the AAS and IFRS and not as a replacement for them. Because these non-IFRS financial measures are not based on AAS or IFRS, they do not have standard definitions, and the way Calix calculated these measures may differ from similarly-titled measures used by other companies. Investors should therefore not place undue reliance on these non-IFRS financial measures.

### 3. FINANCIAL INFORMATION

#### 3.3 CONSOLIDATED STATUTORY HISTORICAL RESULTS AND PRO FORMA HISTORICAL RESULTS

##### 3.3.1 Overview

Table 5 below sets out the Statutory Historical Results and Pro Forma Historical Results for FY15, FY16, and FY17.

Table 5	Notes	Statutory historical			Pro forma historical		
		FY15	FY16	FY17	FY15	FY16	FY17
Core product revenues	1	1,582,324	2,745,486	3,181,115	1,582,324	2,745,486	3,181,115
Other product revenues	2, A	354,164	702,145	409,768	354,164	702,145	200,368
Cost of sales	3	(1,482,684)	(2,791,185)	(2,374,261)	(1,482,684)	(2,791,185)	(2,374,261)
<b>Gross profit</b>		<b>453,804</b>	<b>656,446</b>	<b>1,216,622</b>	<b>453,804</b>	<b>656,446</b>	<b>1,007,222</b>
Other income	4	5,392,495	6,783,066	7,629,976	5,392,495	6,783,066	7,629,976
<b>Total operating income</b>		<b>5,846,299</b>	<b>7,439,512</b>	<b>8,846,598</b>	<b>5,846,299</b>	<b>7,439,512</b>	<b>8,637,198</b>
Sales & marketing expenses	5	(961,667)	(1,080,461)	(1,131,975)	(961,667)	(1,080,461)	(1,131,975)
R & D expenses	6	(5,200,542)	(5,545,231)	(5,918,755)	(5,200,542)	(5,545,231)	(5,918,755)
Admin expenses	7, B, D	(991,615)	(1,035,833)	(894,367)	(1,211,103)	(1,465,705)	(1,361,634)
<b>Total operating expenses</b>		<b>(7,153,824)</b>	<b>(7,661,525)</b>	<b>(7,945,098)</b>	<b>(7,373,312)</b>	<b>(8,091,397)</b>	<b>(8,412,365)</b>
<b>Profit from ordinary activities</b>		<b>(1,307,525)</b>	<b>(222,013)</b>	<b>901,500</b>	<b>(1,527,014)</b>	<b>(651,885)</b>	<b>224,833</b>
Depreciation & impairment expense	8	(1,995,590)	(1,704,435)	(2,657,980)	(1,995,590)	(1,704,435)	(2,657,980)
Finance costs	9, C	(256,425)	(276,012)	(384,596)	(3,265)	(2,108)	(159,805)
<b>Profit before tax</b>		<b>(3,559,540)</b>	<b>(2,202,460)</b>	<b>(2,141,077)</b>	<b>(3,525,868)</b>	<b>(2,358,428)</b>	<b>(2,592,952)</b>
Income tax expense		-	-	-	-	-	-
<b>Net profit from continuing operations</b>		<b>(3,559,540)</b>	<b>(2,202,460)</b>	<b>(2,141,077)</b>	<b>(3,525,868)</b>	<b>(2,358,428)</b>	<b>(2,592,952)</b>
<b>Discontinued operations</b>							
Profit from discontinued operations		-	290,545	-	-	290,545	-
<b>Net profit</b>		<b>(3,559,540)</b>	<b>(1,911,915)</b>	<b>(2,141,077)</b>	<b>(3,525,868)</b>	<b>(2,067,883)</b>	<b>(2,592,952)</b>
<b>Other comprehensive income</b>							
Foreign currency translation		(1,026)	(48,700)	(80,652)	(1,026)	(48,700)	(80,652)
<b>Total comprehensive income</b>		<b>(3,560,566)</b>	<b>(1,960,616)</b>	<b>(2,221,728)</b>	<b>(3,526,894)</b>	<b>(2,116,583)</b>	<b>(2,673,604)</b>

Table 6 below sets out the Statutory Historical Results and Pro Forma Historical Results for 1H17 and 1H18.

Table 6	Notes	Statutory historical		Pro forma historical	
		1H17	1H18	1H17	1H18
Core product revenues	1	1,234,513	1,656,443	1,234,513	1,656,443
Other product revenues	2, A	318,961	81,023	109,561	81,023
Cost of sales	3	(1,006,197)	(1,281,760)	(1,006,197)	(1,281,760)
<b>Gross profit</b>		<b>547,277</b>	<b>455,706</b>	<b>337,877</b>	<b>455,706</b>
Other income	4	2,419,028	2,704,733	2,419,028	2,704,733
<b>Total operating income</b>		<b>2,966,305</b>	<b>3,160,439</b>	<b>2,756,905</b>	<b>3,160,439</b>
Sales & marketing expenses	5	(558,893)	(805,366)	(558,893)	(805,366)
R & D expenses	6	(2,040,259)	(2,077,023)	(2,040,259)	(2,077,023)
Admin expenses	7, B, D	(443,404)	(550,241)	(569,404)	(676,241)
<b>Total operating expenses</b>		<b>(3,042,556)</b>	<b>(3,432,630)</b>	<b>(3,168,556)</b>	<b>(3,558,630)</b>
<b>Profit from ordinary activities</b>		<b>(76,251)</b>	<b>(272,191)</b>	<b>(411,651)</b>	<b>(398,191)</b>
Depreciation & impairment expense	8	(1,276,433)	(1,021,730)	(1,276,433)	(1,021,730)
Other expenses		(13,946)	(93,458)	(13,946)	(41,850)
Finance costs	9, C	(155,813)	(287,351)	(112,251)	(38,523)
<b>Profit before tax</b>		<b>(1,522,443)</b>	<b>(1,674,730)</b>	<b>(1,814,282)</b>	<b>(1,500,294)</b>
Income tax expense		-	-	-	-
<b>Net profit</b>		<b>(1,522,443)</b>	<b>(1,674,730)</b>	<b>(1,814,282)</b>	<b>(1,500,294)</b>
<b>Other comprehensive income</b>					
Foreign currency translation		60,296	(8,382)	60,296	(8,382)
<b>Total comprehensive income</b>		<b>(1,462,147)</b>	<b>(1,683,112)</b>	<b>(1,753,986)</b>	<b>(1,508,676)</b>

The following Notes relate to the Statutory information in Table 5 and Table 6:

1. Core product revenues comprises revenues from sales of Calix's core commercial products namely ACTI-Mag, PROTECTA-Mag and HSA MgO.
2. Other product revenues are derived from selling products or services that are not based on the core products and include toll processing or selling other materials that have been processed through the plant for research purposes or products that are considered pre-commercial or at trial stage.
3. Cost of sales comprises costs of material and production costs including plant labour and running costs such as gas and electricity.
4. Other income includes grants and rebates earned to assist in funding the development and commercialisation of technology and Pre-Commercial products.
5. Sales & marketing expenses are direct costs associated with selling and marketing products and technology including employee costs, travel, advertising and promotion. A portion of company overheads such as office rent, supplies, telephone and IT are also allocated to sales and marketing expenses.
6. R & D - all research & development costs are expensed as incurred. R&D costs includes employee costs, laboratory and testing expenses, applications development costs, travel costs and repairs and maintenance to research & development equipment. A portion of company overheads such as office rent, supplies, telephone and IT are also allocated to research and development expenses.
7. Admin expenses includes accounting, audit, taxation and IT, some management and admin employee staff costs. This also cover governance costs such as board costs, public company expenses and insurance costs. A portion of company overheads such as office rent, supplies, telephone and IT are also allocated to administration and other expenses.
8. Depreciation & impairment expense is a non-cash charge associated with the depreciation and impairment of property plant and equipment.
9. Finance costs include interest on borrowing facilities and finance charges associated with hire purchase arrangements.

### 3. FINANCIAL INFORMATION

The following Notes relate to the Pro Forma information in Table 5 and Table 6:

The Pro Forma Historical Results include revenues and expenses that have been adjusted to reflect the following:

- A.** Other product revenues: The Pro Forma Historical results have been adjusted to remove a one-off sale of magnesite ore to a customer for a specific research project undertaken by that customer that is not expected to be repeated.
- B.** Administration and other expenses: The Pro Forma Historical expenses have been adjusted to reflect estimated additional costs for Calix as a listed entity including additional audit and legal expenses, listing fees, share registry expenses, directors' and officers' insurance premiums as well as investor relations, annual general meeting and annual report expenses.
- C.** Finance and other expenses: The Pro Forma Historical results have been adjusted to reflect the impact on the operating results of the retirement of term debt facilities as a consequence of the loan note redemption and equity issue completed in March 2018.
- D.** During the review of the 1H18A financial statements a cumulative adjustment of \$0.4m was made to retained earnings to correctly account for share-based payments. The pro forma adjustment made in FY15A, FY16A and FY17A is to reflect the timing of the correction in the periods to which they relate.

#### 3.3.2 Pro Forma Adjustments to the Statutory Historical Results

Table 7 below sets out the pro forma adjustments that have been made to Calix's Statutory Historical Results to reflect the full year impact of the operating and capital structure that will be in place following Completion as if it were in place as at 1 July 2014.

Table 7	Notes	FY15	FY16	FY17	1H17	1H18
<b>Statutory Net Profit from Continuing Operations</b>		<b>(3,559,540)</b>	<b>(2,202,460)</b>	<b>(2,141,077)</b>	<b>(1,522,443)</b>	<b>(1,674,730)</b>
Magnesite sale	1	-	-	(209,400)	(209,400)	-
Listed company costs	2	(252,000)	(252,000)	(252,000)	(126,000)	(126,000)
Debt Interest expense	3	253,160	273,904	224,791	43,562	300,436
Adjustment to share-based payment allocation	4	32,512	(177,872)	(215,267)	-	-
<b>Pro Forma Net Profit from Continuing Operations</b>		<b>(3,525,868)</b>	<b>(2,358,428)</b>	<b>(2,592,952)</b>	<b>(1,814,282)</b>	<b>(1,500,294)</b>

Notes:

1. Magnesite ore sale represents a one-off sale of magnesite ore to a customer for a specific research project that is not expected to be repeated.
2. Listed company costs represent the estimated additional annual costs that will be incurred by Calix as a listed company including additional audit and legal expenses, listing fees, share registry expenses, directors' and officers' insurance premiums as well as investor relations, annual general meeting and annual report expenses.
3. Interest expense on debt reflects the impact on the operating results of the retirement of term debt facilities in relation to the pre-IPO equity raise, loan note redemption and equity issue completed in March 2018. These are discussed further in Section 3.5.1
4. During the review of the 1H18 financial statements a cumulative adjustment of \$0.4m was made to retained earnings by BDO Audit to correctly account for share-based payments. The pro forma adjustments made in FY15, FY16 and FY17 are to reflect the timing of the correction in the periods to which they relate.

### 3.3.3 Key Operating Results

Table 8 below sets out a summary of Calix's key historical operating metrics for FY15, FY16, FY17, 1H17 and 1H18 derived from the Pro Forma Historical Results.

	Notes	Pro forma				
		FY15	FY16	FY17	1H17	1H18
Core product revenue growth	1		73.5%	15.9%		34.2%
Gross margin	2	23.4%	19.0%	29.8%	25.1%	26.2%
Growth in Opex	3		9.7%	4.0%		12.3%
Operating profit (EBITDA) (\$)	4	(1,527,014)	(651,885)	224,833	(411,651)	(398,191)
EBIT (\$)	4	(3,522,604)	(2,356,370)	(2,433,147)	(1,688,084)	(1,419,921)

Commentary on the key operating metrics that Calix uses to measure its performance can be found in Section 3.3.4 below.

1. Core product revenue growth. For further commentary on core product revenue refer to 3.3.4 General factors affecting the operating results of Calix below.
2. Gross margin as a percentage of product revenues. For further commentary on gross margin refer to 3.3.4 General factors affecting the operating results of Calix below.
3. Growth in Opex (Operating expenditures). For further commentary on operating expenditures refer to 3.3.4 General factors affecting the operating results of Calix below.
4. Operating profit (EBITDA and EBIT). For further commentary on operating profit refer to 3.3.4 General factors affecting the operating results of Calix below.

### 3.3.4 General Factors Affecting the Operating Results of Calix

Below is a discussion of the main factors which affected Calix's operations and relative historical financial performance in FY15, FY16, FY17, 1H17 and 1H18. The discussion of these general factors is intended to provide a summary only and does not detail all factors that affected Calix's historical operating and financial performance.

#### Revenue

Calix earns revenues from three primary sources:

1. sale of core products;
  2. sale of other products and services; and
  3. earning grants and rebates to support research and development or commercialisation activities.
1. Sale of core products. Calix markets and sells two primary MHL-based products - ACTI-Mag for odour control and PROTECTA-Mag for sewer asset infrastructure protection. In addition, Calix sells high surface area MgO powder (HSA MgO) to a European distributor who sells the product as a chemical additive in to commodity markets in which Calix chooses not to operate.

Core product sales result from utilising the unique properties of Calix's high surface area, Nano-Active product technology and are targeted to markets and applications where these benefits are best leveraged.

Core product revenues have grown over the period of the historical results. Core product revenues comprise sales from Calix's core commercial products ACTI-Mag, PROTECTA-Mag and HSA MgO. In FY16 growth was positively impacted by a substantial contract award for PROTECTA-Mag sub-surface sewer coating for a single customer. The coating of sub-surface sewer assets is an ongoing element of Calix's core product offerings but would be unlikely to occur on a regular basis given the size and complexity of sub-surface projects.

Calix has seen increasing PROTECTA-Mag sales in surface asset protection, which are both faster to coat and less complex and costly projects to manage. As a result of the single large sub-surface transaction in FY16, the relative growth in core product sales looked to have slowed in FY 17, however in 1H18 the relative growth was 34.2%.

Calix also experiences some seasonality in the sale of ACTI-Mag associated with a customer who purchases product during the summer and autumn fruit picking seasons, when their processing plant is in operation, but not through winter and spring when their plant is idle. This has historically contributed to larger sales volumes in the second half of the financial year than the first half.

### 3. FINANCIAL INFORMATION

2. Sale of other products and services. Calix has also earned revenues from providing products or services to customers that are not part of the core MHL-based product range. This has included toll processing of feedstocks other than magnesite upon specific request. In addition, revenues have been earned from selling other materials that have been processed through the plant for research purposes or that are considered pre-commercial or at trial stage.
3. Other incomes - Grants and rebates. Calix has been able to fund the development and commercialisation of its technology and products through successfully applying for grants from Australian government agencies and from overseas governments and agencies. This grant funding has played a critical role in facilitating research and development activities in to a broad range of applications of the technology and assisted in accelerating the commercialisation of specific products in the development pipeline.

Table 9 highlights some of the elements of grant funding received and where this has been applied.

Table 9		Total maximum value	Start date	Duration	Pro forma historical (\$'000)		
Grant or project name	Notes				FY 15	FY 16	FY 17
CA	1	\$1.8m	Feb-14	1.5 yrs	1,722	100	-
ASCENT	2	€0.5m	Mar-14	4 yrs	80	246	-
LEILAC	3	€7.5m	Jan-16	5 yrs	-	2,656	2,359
AC	4	\$1.0m	Mar-16	2 yrs	-	212	429
SOCRATCES	5	€0.9m	Jan-18	3 yrs	-	-	-
AMGF	6	\$0.8m	Jan-18	3 yrs	-	-	-
<b>Total Grant Funding</b>					<b>1,802</b>	<b>3,214</b>	<b>2,788</b>
EMDG	7				62	93	76
R&D rebate	8				3,483	3,252	4,694
<b>Total Grants and Rebates</b>					<b>5,347</b>	<b>6,559</b>	<b>7,558</b>

#### Notes:

1. An AusIndustry grant from Commercialisation Australia for assistance with the development of novel satellite MHL manufacturing plants.
2. A European Commission grant from the 7th Framework Programme for fossil fuel decarbonisation / production of hydrogen with CO<sub>2</sub> capture (Advanced Solid Cycles with Efficient Novel Technologies ASCENT).
3. A European Commission grant from the Horizons 2020 programme for decarbonisation of lime and cement with CO<sub>2</sub> capture (LEILAC).
4. An AusIndustry grant from Accelerating Commercialisation (AC) for assistance with BOOSTER-Mag - Australian registration and early commercialisation.
5. A European Commission grant from the Horizons 2020 programme for solar-thermal energy storage with calcium looping (SOCRATCES).
6. An AusIndustry grant from the Advanced Manufacturing Growth Fund (AMGF) for assistance with a manufacturing plant for advanced battery materials.
7. An Austrade grant for assistance with the development of export markets (Export Market Development Grant).
8. The research and development tax incentive from the Australian government, managed by AusIndustry and applied by the Australian Tax Office.

For those projects that are still on-going, namely the ASCENT, LEILAC, AC, SOCRATCES and AMGF projects, the balance of funds not received by 31 December 2017 remain available to Calix to reimburse eligible expenditures yet to be incurred provided specific grant conditions are met.

#### Cost of sales/gross profit

Calix incurs costs associated with the production and distribution of core and other products and sub-contracted costs associated with the application of PROTECTA-Mag to sub-surface and surface sewer assets. This includes certain fixed costs including labour and variable costs of production such as gas, electricity, freight, feedstock raw materials and consumables. These costs that are directly related to core and other products are expensed as costs of sales and used in determining gross profit and gross margin.

Calix is targeting increased gross margin percentage as operating efficiencies are improved, plant utilisation increases, and it brings new products to market that leverage its core technology. Gross margin percentage has increased over the historical period, although relative margin was 19.0% in FY16 due to the sub-surface coating transaction which had a portion of the labour component sub-contracted to a third party and these sub-contracting costs were brought to account. Certain fixed plant operating overheads have also historically contributed to higher gross margins earned in the second half of the financial year relative to the first half as sales revenues fluctuate to a degree seasonally, as mentioned above.

Calix has identified opportunities to improve operating efficiencies through certain upgrades to its production facilities at Bacchus Marsh. Proceeds of the Offer will be used to improve operating efficiencies, and this should contribute to improving gross margin percentage over time.

### **Operating expenditures**

Calix reports operating expenditures grouped across 3 main broad business categories; sales & marketing; research & development; and administration. Calix has targeted minimal growth in operating expenditure over the historical period, with growth primarily stemming from increase in R&D expenditures. The increase in R&D expenditure has been matched with increases in other income, which as noted above includes grants and rebates received to assist with certain R&D projects. For further information on the grants and rebates received please refer to Table 9 above.

Calix has targeted improvement in operating profit (EBITDA as measured as operating income less operating expenditures) and to achieving a positive operating profit result as a key performance measure. Calix has improved its operating profit result during the historical period and achieved a positive EBITDA in FY17.

### **Sales & marketing expenses**

Sales and marketing expenses include all the costs associated with selling and marketing core products sales and other commercialisation and marketing activity. This includes salaries, allowances, bonuses, leave provisions, health, workers compensation, payroll taxes and superannuation expenses for sales and marketing employees. Certain corporate overhead expenses such as office rent, telephone, IT and office supplies are also allocated as sales and marketing expenditures based on the number of Calix staff who focus their efforts on these activities as a percentage of total staff. Marketing expenses such as advertising, marketing, public relations, trade and promotional expenses and sales and marketing travel costs are also included.

As Calix has moved new products through its development pipeline from pre-commercial to commercial phase it has expanded the number of staff focussed on selling and marketing efforts, and increased overall sales and marketing expenditures. Certain team members have been redeployed from R&D activities to sales & marketing activities contributing to most of the increase in sales and marketing expenditures in 1H18 over 1H17.

Calix intends to use certain proceeds of the Offer to fund expansion in to US and European markets which may lead to increased sales and marketing costs over time. Estimated incremental costs associated with being a listed entity have been factored in to the historical pro forma results.

### **Research & Development costs**

Calix undertakes research and development activities to generate new capabilities in its core technology and applications capabilities. The research projects address the development and commercialisation of new materials, products and processes. Calix also undertakes work to refine production processes for magnesium hydroxide slurries and development of methodologies to improve the application and delivery of these novel materials.

A further primary component of research and development activity is in the application of Calix's direct separation technology for the capture of CO<sub>2</sub> from industrial processes. Calix undertakes this work both in Australia and overseas and has received a certificate for advance finding under section 28A of the Industry Research and Development Act 1986 for this project and for associated work required to be undertaken overseas. The finding allows Calix's eligible R&D expenses on these projects overseas to be counted towards its R&D Rebate from the Australian Government. The LEILAC project is an example of overseas research and development activity that is subject to this overseas funding (as referenced in Table 9) and will run to the end of December 2020. Calix has also recently commenced a research project associated with the application of its direct separation technology for solar thermal-chemical storage, with funding provided by the European Commission through its Horizons 2020 programme and AusIndustry through the research and development rebate.

Expenditure during the research phase of a project is recognised as an expense when incurred. Development costs would only be capitalised when technical feasibility studies identify that the projects will deliver future economic benefits and these benefits can be measured reliably. These high measurement hurdles are established by the AAS and IFRS accounting standards and Calix applies a conservative approach to assessing potential future benefits that can be measured reliably and, consequently, has historically expensed all its research and development costs.

The capitalisation of any development costs would also defer the timing by which Calix would be able to access certain tax incentives and grants available to it in association with those costs.

### 3. FINANCIAL INFORMATION

To date, Calix has been able to fund its research and development activity through successfully applying for grants from Australian government agencies and from overseas governments and agencies. This includes research and development activities on projects that it has committed to continue over the next few years. To the extent that new research and development projects are unable to attract such funding support the level of research and development expenditures would most likely be reduced.

R&D costs includes employee costs, laboratory and testing expenses, applications development costs, travel costs and repairs and maintenance to research & development equipment. A portion of company overheads such as office rent, supplies, telephone and IT are also allocated to research and development expenses.

#### **Administration expenses**

Administration and other expenses relate to operating costs that are not classified as either sales and marketing costs or research and development costs. This would include the costs of activities such as accounting, finance and IT, some management staff costs, governance costs and insurance costs. Overheads are allocated across the three main cost categories based on the number of staff that are associated with each category. Pro forma administration and other expenses have been adjusted to account for estimated listed company expenses as if they had been incurred since 1 July 2014.

#### **Depreciation, amortisation & impairment expense**

Depreciation expenses are non-cash charges relating to the on-going use of property, plant & equipment used in research and development including such items as the CFC facility at Bacchus Marsh and the slurry manufacturing and application assets. Impairment charges are those costs associated with R&D projects where expenditures items that are ordinarily capital in nature are immediately impaired as their future economic benefit cannot be measured reliably, pursuant to AAS and IFRS standards.

The depreciation expense associated with fixed assets is calculated on a straight-line basis over the assets useful life commencing from the time the asset is held ready for use and in accordance with Calix's accounting policies.

At the end of each reporting period, Calix also undertakes an assessment as to whether there is an indication that any of its assets have been impaired. If there has been impairment in value, a non-cash charge is recognised in the accounts.

#### **Finance costs**

Finance costs relate to expenses associated with borrowings and servicing costs for finance leases. Calix has used borrowing facilities to fund working capital needs and as a result of a loan note redemption, and the issue of new equity that occurred in March 2018 and the anticipated proceeds of the Offer, the Pro Forma results have been adjusted to illustrate the effect of reduced borrowing needs and associated finance costs.

#### **Taxation**

Calix has not recognised any company income tax expenses in the Historical Results as it has not generated taxable profits in the jurisdictions that it has operations. Calix has accumulated carried forward tax losses that it has not recognised in its Historical Results and their on-going availability is subject to certain conditions.

Calix has operations in Australia which at the date of this Prospectus, has a corporate tax rate of 27.5%. Calix also has operations in overseas jurisdictions which have various rates of corporate tax.

For further information on taxation risks associated with Calix's taxation obligations please refer to Section 6 of this Prospectus.

#### **Foreign exchange**

The financial information in this Prospectus is presented in Australian Dollars which is the reporting currency of Calix. A foreign currency translation reserve is used to recognise exchange differences arising from the translation in to Australian Dollars of the financial statements of overseas subsidiaries that use different reporting currencies. Calix has not historically hedged its foreign currency exposure and as a result its earnings are exposed to net impact of movements of foreign exchange rates. Calix incurs costs in foreign currencies and receives grants or rebates in foreign currencies to help naturally hedge this exposure.

### 3.4 CONSOLIDATED STATUTORY HISTORICAL CASH FLOWS AND PRO FORMA HISTORICAL CASH FLOWS

#### 3.4.1 Overview

Table 10 below sets out the Statutory Historical Cash Flows for FY15, FY16 and FY17 and Pro Forma Historical Cash Flows for FY15, FY16 and FY17.

Table 10	Notes	Statutory historical			Pro forma historical		
		FY15	FY16	FY17	FY15	FY16	FY17
<b>Cash Flows from Operating Activities</b>							
Receipts from customers & government agencies	1	8,356,365	9,700,938	6,800,582	8,356,365	9,700,938	6,591,182
Payments to suppliers and employees	2	(7,852,320)	(10,317,200)	(8,750,537)	(8,104,320)	(10,569,200)	(9,002,537)
Interest received		12,543	3,633	3,835	12,543	3,633	3,835
Net cash from discontinued operations		-	3,034,553	-	-	3,034,553	-
<b>Net cash flows from operating activities</b>		<b>516,588</b>	<b>2,421,924</b>	<b>(1,946,120)</b>	<b>264,588</b>	<b>2,169,924</b>	<b>(2,407,520)</b>
<b>Cash Flows from Investing Activities</b>							
Purchases of property, plant & equipment		(1,307,962)	(269,527)	(222,711)	(1,307,962)	(269,527)	(222,711)
Purchases of intellectual property		-	-	(233,168)	-	-	(233,168)
Proceeds from sales of assets		88,090	-	-	88,090	-	-
Payments for investments in associates		(41,270)	-	-	(41,270)	-	-
<b>Net cash flows from investing activities</b>		<b>(1,261,142)</b>	<b>(269,527)</b>	<b>(455,880)</b>	<b>(1,261,142)</b>	<b>(269,527)</b>	<b>(455,880)</b>
<b>Cash Flows from Financing Activities</b>							
Proceeds from issues of shares		114,713	278,541	479,237	114,713	278,541	479,237
Proceeds from/(repayments of) borrowings		500,000	(1,000,000)	2,167,245	500,000	(1,000,000)	2,167,245
Payment of interest on borrowings	3	(256,425)	(276,012)	(237,137)	(3,265)	(2,108)	(12,346)
<b>Net cash flows from financing activities</b>		<b>358,288</b>	<b>(997,471)</b>	<b>2,409,345</b>	<b>611,448</b>	<b>(723,567)</b>	<b>2,634,136</b>
<b>Net increase (decrease) in cash and cash equivalents</b>		<b>(386,266)</b>	<b>1,154,926</b>	<b>7,345</b>	<b>(385,106)</b>	<b>1,176,831</b>	<b>(229,264)</b>
Cash and cash equivalents at the start of the year		1,108,730	722,464	1,877,390	1,108,730	722,464	1,877,390
<b>Cash and cash equivalents at the end of the year</b>		<b>722,464</b>	<b>1,877,390</b>	<b>1,884,735</b>	<b>723,624</b>	<b>1,899,295</b>	<b>1,648,126</b>

### 3. FINANCIAL INFORMATION

Table 11 below sets out the Statutory Historical Cash Flows for 1H17 and 1H18 and Pro Forma Historical Cash Flows for 1H17 and 1H18.

Table 11	Notes	Statutory historical		Pro forma historical	
		1H17	1H18	1H17	1H18
<b>Cash Flows from Operating Activities</b>					
Receipts from customers & government agencies	1	5,009,716	9,575,334	4,800,316	9,575,334
Payments to suppliers and employees	2	(4,740,992)	(6,455,309)	(4,866,992)	(6,581,309)
Interest received		-	8,236	-	8,236
<b>Net cash flows from operating activities</b>		<b>268,724</b>	<b>3,128,261</b>	<b>(66,676)</b>	<b>3,002,261</b>
<b>Cash Flows from Investing Activities</b>					
Purchases of property, plant & equipment		(152,532)	(190,172)	(152,532)	(190,172)
Purchases of intellectual property		(113,215)	(108,222)	(113,215)	(108,222)
<b>Net cash flows from investing activities</b>		<b>(265,747)</b>	<b>(298,394)</b>	<b>(265,747)</b>	<b>(298,394)</b>
<b>Cash Flows from Financing Activities</b>					
Proceeds from issues of shares		479,237	-	479,237	-
Proceeds from/(repayments of) borrowings		405,480	(615,484)	405,480	(615,484)
Payment of interest on borrowings	3	(51,900)	(264,456)	(8,338)	(15,628)
<b>Net cash flows from financing activities</b>		<b>832,817</b>	<b>(879,940)</b>	<b>876,379</b>	<b>(631,112)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>		<b>835,794</b>	<b>1,949,928</b>	<b>543,956</b>	<b>2,072,755</b>
Cash and cash equivalents at the start of the year		1,877,390	1,884,735	1,877,390	1,884,735
<b>Cash and cash equivalents at the end of the year</b>		<b>2,713,184</b>	<b>3,834,662</b>	<b>2,421,346</b>	<b>3,957,490</b>

#### 3.4.2 Pro Forma Adjustments to the Statutory Historical Cash Flows

Table 12 below sets out the pro forma adjustments that have been made to Calix's Statutory Historical Cash Flows to reflect the impact of the operating and financing structure that will be in place following Completion as if it was in place as at 1 July 2014.

Table 12	Notes	FY15	FY16	FY17	1H17	1H18
<b>Statutory net cash flows</b>		<b>(386,266)</b>	<b>1,154,926</b>	<b>7,345</b>	<b>835,794</b>	<b>1,949,928</b>
Magnesite ore sale	1	-	-	(209,400)	(209,400)	-
Listed company costs	2	(252,000)	(252,000)	(252,000)	(126,000)	(126,000)
Interest expense on debt	3	253,160	273,904	224,791	43,562	248,828
<b>Pro forma net cash flows</b>		<b>(385,106)</b>	<b>1,176,831</b>	<b>(229,264)</b>	<b>543,956</b>	<b>2,072,755</b>

#### Notes:

- Magnesite ore sale represents a one-off sale of magnesite ore to a customer for a specific research project that is not expected to be repeated.
- Listed company costs represent the estimated additional annual costs that will be incurred by Calix as a listed company including additional audit and legal expenses, listing fees, share registry expenses, directors' and officers' insurance premiums as well as investor relations, annual general meeting and annual report expenses.
- Interest expense on debt reflects the impact on the operating results of the retirement of term debt facilities in relation to the pre-IPO equity raise, loan note redemption and equity issue completed in March 2018.

### 3.4.3 General Factors Affecting the Cash Flows of Calix

Below is a discussion of the main factors which affected Calix's historical cash flows in FY15, FY16, FY17, 1H17 and 1H18. The discussion of these general factors is intended to provide a summary only and does not detail all factors that affected Calix's historical cash flows.

#### *Operating cash flows*

Calix's operating cash flows have increased over the historical period and contributed to an increase in cash on hand from \$1,108,730 at 1 July 2014 to \$3,834,662 at 31 December 2017. Calix has improved operating cash performance to 31 December 2017, notwithstanding a decrease in working capital in FY17 associated with the timing of receipt of a grant for the LEILAC project. Calix received the grant payment in July 2017 (1H18), which is associated with LEILAC project costs incurred primarily in FY17.

As grant funded projects and research & development expenses are incurred throughout the year but grant payments and rebates, including the annual research and development tax incentive, are received annually, Calix is required to draw on its working capital reserves to fund the project expenditures and R&D in the interim.

#### *Investing cash flows*

Calix incurs investing cash flows associated with the development of its patent portfolio and purchases of certain capital equipment items. Calix intends to use certain proceeds from the Offer to undertake a program of capital expenditure works at Bacchus Marsh to improve operational efficiencies.

#### *Financing cash flows*

Calix has used borrowing facilities to assist with funding working capital, which has increased during the historical period in line with growth in revenues, grants and projects. Prior to a pre-IPO equity raise and associated loan note redemption and new shares issued in March 2018 (as set out below in the pro forma statement of financial position as at 31 December 2017) Calix has not had to raise any new equity over the Historical Period to assist with funding the growth of the business.

### 3. FINANCIAL INFORMATION

#### 3.5 STATUTORY HISTORICAL STATEMENT OF FINANCIAL POSITION AND PRO FORMA HISTORICAL STATEMENT OF FINANCIAL POSITION

##### 3.5.1 Overview

Table 13 below sets out the pro forma adjustments that have been made to the audited Statutory Historical Statement of Financial Position for Calix at 31 December 2017 in order to prepare the Pro Forma Statement of Financial Position for Calix to take into account the effect of, amongst other things, the Offer proceeds, transaction expenses and other material transactions. These adjustments reflect the impact of the changes in capital structure that will take place as part of the Offer, as if they had occurred or were in place as at 31 December 2017.

TABLE 13: STATUTORY HISTORICAL STATEMENT OF FINANCIAL POSITION AND PRO FORMA HISTORICAL STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2017.

Table 13	Reviewed 31-Dec-17	Pro forma adjustments	Pro forma 31-Dec-17
Cash & cash equivalents	3,834,662	7,708,539	11,543,201
Trade & other receivables	3,172,533	-	3,172,533
Inventory	330,252	-	330,252
<b>Total current assets</b>	<b>7,337,447</b>	<b>7,708,539</b>	<b>15,045,986</b>
Intangible assets	521,211	-	521,211
Property, plant & equipment	12,097,405	-	12,097,405
<b>Total non-current assets</b>	<b>12,618,616</b>	<b>-</b>	<b>12,618,616</b>
<b>Total assets</b>	<b>19,956,063</b>	<b>7,708,539</b>	<b>27,664,602</b>
Trade and other payables	(1,957,685)	-	(1,957,685)
Borrowings	(4,187,619)	4,187,619	-
Provisions	(378,246)	-	(378,246)
Deferred revenue	(1,418,229)	-	(1,418,229)
<b>Total current liabilities</b>	<b>(7,941,779)</b>	<b>4,187,619</b>	<b>(3,754,160)</b>
Borrowings	(575,675)	491,660	(84,015)
Provisions	(267,491)	-	(267,491)
<b>Total non-current liabilities</b>	<b>(843,166)</b>	<b>491,660</b>	<b>(351,506)</b>
<b>Total liabilities</b>	<b>(8,784,945)</b>	<b>4,679,279</b>	<b>(4,105,666)</b>
<b>Net assets</b>	<b>11,171,118</b>	<b>12,387,818</b>	<b>23,558,937</b>
<b>Equity</b>			
Issued equity	21,638,226	11,872,398	33,510,624
Reserves	728,871	2,297,590	3,026,461
Retained earnings	(11,196,496)	(1,782,169)	(12,978,665)
Non-controlling interests	517	-	517
<b>Total equity</b>	<b>11,171,118</b>	<b>12,387,818</b>	<b>23,558,937</b>

Table 14 below sets out further details of the pro forma adjustments.

Table 14	Pre-IPO equity raise <sup>1</sup>	Loan note redemption & new share issue <sup>2</sup>	IPO Issue <sup>3</sup>	ESS IPO bonus <sup>4</sup>	Subsidiary shareholder loan conversion <sup>5</sup>	Total Pro Forma adjustments
Cash & cash equivalents	1,967,265	(687,573)	6,428,847	-	-	7,708,539
Trade & other receivables	-	-	-	-	-	-
Inventory	-	-	-	-	-	-
<b>Total current assets</b>	<b>1,967,265</b>	<b>(687,573)</b>	<b>6,428,847</b>	<b>-</b>	<b>-</b>	<b>7,708,539</b>
Intangible assets	-	-	-	-	-	-
Property, plant & equipment	-	-	-	-	-	-
<b>Total non-current assets</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total assets</b>	<b>1,967,265</b>	<b>(687,573)</b>	<b>6,428,847</b>	<b>-</b>	<b>-</b>	<b>7,708,539</b>
Trade & other payables	-	-	-	-	-	-
Borrowings	-	(4,187,619)	-	-	-	(4,187,619)
Provisions	-	-	-	-	-	-
Deferred revenue	-	-	-	-	-	-
<b>Total current liabilities</b>	<b>-</b>	<b>(4,187,619)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(4,187,619)</b>
Borrowings	-	-	-	-	(491,660)	(491,660)
Provisions	-	-	-	-	-	-
<b>Total non-current liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(491,660)</b>	<b>(491,660)</b>
<b>Total liabilities</b>	<b>-</b>	<b>(4,187,619)</b>	<b>-</b>	<b>-</b>	<b>(491,660)</b>	<b>(4,679,279)</b>
<b>Net assets</b>	<b>1,967,265</b>	<b>3,500,046</b>	<b>6,428,847</b>	<b>-</b>	<b>(491,660)</b>	<b>12,387,818</b>
<b>Equity</b>						
Issued equity	1,967,265	3,500,046	6,405,087	-	-	11,872,398
Reserves	-	-	488,393	1,809,197	-	2,297,590
Retained earnings	-	-	(464,632)	(1,809,197)	491,660	(1,782,169)
Non-controlling interests	-	-	-	-	-	-
<b>Total equity</b>	<b>1,967,265</b>	<b>3,500,046</b>	<b>6,428,847</b>	<b>-</b>	<b>491,660</b>	<b>12,387,818</b>

Notes:

- On 12 March 2018 Calix completed a pre-IPO equity raise to assist with the funding costs associated with the IPO and to accelerate certain commercial activities. Funds were raised from existing shareholders and a small number of new shareholders. 3.7m new shares were issued at \$0.53 raising \$1,967,265.
- Concurrent with the pre-IPO equity raise, Calix redeemed and repaid its loan note debt instruments through the issue of 6.6m new shares at \$0.53 to the value of \$3,500,046. In addition, Calix repaid \$687,573 being the balance of the loan notes outstanding prior to the date of this Prospectus.
- Cash proceeds of the offer flowing to Calix are \$8.0m through the issue of ~15.1m new Shares at \$0.53 per share. Planned uses of the proceeds are set out in Section 6.1.2. Transaction costs associated with the offer amount to \$2,059,545 with \$1,571,153 being cash costs and \$488,393 being non-cash costs associated with the issue of Warrants to certain advisors. \$1,594,913 of these costs are offset against equity as they are incremental costs directly attributable to the issue of new shares. The balance of \$464,632 of expected Offer-related costs have been expensed through the income statement and reduced retaining earnings accordingly.

### 3. FINANCIAL INFORMATION

4. Upon the completion of the Offer and a listing of the shares on the ASX, 3.4m unvested shares on issue since 2014 and which are held in trust in the Employee Share Scheme vest to management and employees as an IPO bonus. These shares have been recognised as a non-cash cost in reserves and in the income statement at \$2,020,448 and reduced retained earnings accordingly. The shares will be moved from Reserves to Issued Equity, subject to the discretion of the Chair, upon request from the ESS participants to withdraw vested shares from the trust.
5. The Historical Statement of Financial Position includes an amount of \$491,660 classified as borrowings associated with obligations to be settled by equity in Millennium Generation Limited, a UK company owed 65% by Calix. These borrowings to be settled by equity are due to other existing shareholders of Millennium Generation Limited and Calix will not outlay any cash to extinguish this liability.

#### 3.5.2 Indebtedness

Table 15 sets out the indebtedness of Calix as at 31 December 2017 on a statutory and pro forma basis, adjusted for the pro forma effect of the Offer as if the transactions had occurred on 31 December 2017.

Table 15	Reviewed 31-Dec-17	ProForma 31-Dec-17
Cash and cash equivalents	3,834,662	11,543,201
Current borrowings	(4,187,619)	-
Non-current borrowings	(575,675)	(84,015)
<b>Total (indebtedness)/net cash</b>	<b>(928,632)</b>	<b>11,459,186</b>
Contributed equity	21,638,226	33,510,624
Reserves	728,871	3,026,461
Accumulated losses	(11,196,496)	(12,978,665)
<b>Total equity</b>	<b>11,170,601</b>	<b>23,558,419</b>
<b>Total capitalisation and indebtedness</b>	<b>10,241,969</b>	<b>35,017,604</b>

Calix has secured a working capital facility for up to €3.4 million with EFIC to assist with funding the LEILAC project expenditures to be incurred between 1 March 2018 and 31 July 2018. The facility is repayable on 31 October 2018 and is secured against the assets of Calix and its subsidiaries. At the date of the Prospectus, this facility was undrawn.

Calix has also secured a working capital facility totalling \$540,000 from Commonwealth Bank of Australia with an indefinite revolving term that is subject to annual review. The facility is secured by a General Security Interest in Calix that is a second ranking charge.

#### 3.5.3 Liquidity and Capital Resources

Following Completion, Calix's principal sources of funds are expected to be cash flow generated from operations and cash on hand, including the proceeds of the Offer.

Calix uses net cash flows to fund further research and development of its technology platform, bringing pre-commercial products through the development pipeline and to fund increased sales and marketing activities including expansion in to overseas markets.

#### 3.5.4 Contracted Obligations and Commitment

Table 16 below sets out a summary of Calix's statutory contractual obligations and commitments following Completion.

Table 16	Pro forma historical			Total
	Less than 1 year	1-5 years	More than 5 yrs	
<b>Commitments</b>				
Operating lease commitments	206,311	309,403	-	515,714

#### 3.5.5 Off Balance Sheet Items

Calix has no material contingent liabilities or off-balance sheet arrangements.

### 3.5.6 Public Company Expenses

Public company expenses are assumed to be incurred during the Historical Periods and reflect Calix's estimate of the incremental annual expenses that Calix will incur as a listed entity. These expenses include additional audit and legal expenses, listing fees, share registry expenses, directors' and officers' insurance premiums as well as investor relations, annual general meeting and annual report expenses.

Table 17 below sets out a summary of the Company's public company expenses.

TABLE 17: THE COMPANY'S PUBLIC COMPANY EXPENSES

Pubic Company Expenses	A\$
Additional employee expenses including executives	50,000
ASX Listing annual fees	45,000
Registry fees	12,000
Investor relations	60,000
Audit fees	35,000
Additional legal fees	10,000
Annual General Meetings	5,000
Annual report costs	5,000
Directors and Officers insurance premiums	10,000
Contingency	20,000
<b>Total</b>	<b>252,000</b>

### 3.5.7 One-off offer costs

Table 18 below sets out a summary of the Company's one-off offer costs.

TABLE 18: ONE-OFF OFFER COSTS

One-off offer costs	A\$
Lead Manager fees	1,493,393
Legal fees	200,000
ASX Listing fee	135,028
Independent reporting accounting	87,000
Audit fees	33,000
Investor relations advisor	30,000
Independent market expert	25,500
Printing and design	22,625
Geographical report	11,000
Other expenses	22,000
<b>Total</b>	<b>2,059,545</b>

### 3.5.8 Dividend Policy

The payment of any dividend by Calix is at the discretion of the Directors and will be a function of a number of factors (many of which are outside the control of the Directors), including the general business environment, the operating results, cash flows and the financial condition of the Calix Group, future funding requirements, capital management initiatives, taxation considerations (including the level of franking credits available), any contractual, legal or regulatory restrictions on the payment of dividends by the Calix Group, and any other factors the Directors may consider relevant. The Directors do not provide any assurance of the future level of dividends paid by Calix.

# RISK FACTORS

4



## 4.1 INTRODUCTION

This section describes some of the potential material risks associated with Calix's business, the industry in which Calix operates and the risks associated with an investment in its Shares. Calix is subject to a number of risks, both specific to Calix's business activities and of a general nature, which may either individually or in combination adversely impact Calix's future operating and financial performance, investment returns and the value of Calix's Shares. The occurrence or consequences of some of the risks described here are partially or completely outside of Calix's control, or the control of Calix's Directors and Management.

This section does not purport to list every risk that may be associated with Calix's business or the industry in which Calix operates, or an investment in Shares, now or in the future. The selection of risks has been based on an assessment of a combination of the probability of the risk occurring, the ability to mitigate the risk and the impact of the risk if it did occur. This assessment is based on the knowledge of the Directors as at the Prospectus Date, but there is no guarantee or assurance that the risks will not change or that other risks or matters that may adversely affect Calix will not emerge.

Any of these risks, or any other risks or other matters, may emerge and may have a material adverse effect on the business and its financial position and performance. There can be no guarantee that Calix will achieve its stated objectives, deliver on its business strategy, or that any forward-looking statement contained in this Prospectus will be achieved or realised. You should note that past performance may not be a reliable indicator of future performance.

Before applying for Shares you should be satisfied that you have a sufficient understanding of the risks involved in making an investment in Calix and whether it is a suitable investment for you, having regard to your investment objectives, financial circumstances and taxation position. You should seek advice from your stockbroker, solicitor, accountant, financial advisor or other independent professional advisor before investing in Calix.

## 4.2 RISKS SPECIFIC TO AN INVESTMENT IN CALIX

### 4.2.1 Competitive Environment

Calix's products and applications compete in each of its markets against alternative products and solutions. There is no guarantee that Calix's products and applications will not be superseded by superior products and applications, or achieve the growth, margins and competitive position that constitutes a valuable, growing business.

### 4.2.2 Failure to Retain Existing Customers and Attract New Customers

Calix's products and applications compete in each of their markets against alternative products and solutions. Despite having achieved an average customer retention rate of greater than 95 % to date there is no guarantee that existing customers of Calix's products and applications will continue to purchase from Calix, nor that new customers will be attracted to purchase from Calix.

In FY17, Calix's core product revenues were derived from 73 customers. Over that period, the top 10 customers represented just over 66% of revenue, highlighting a risk that the loss of one or more key customers could materially impact revenue. Calix's proposed expansion into new markets will facilitate the acquisition of new clients and the ability to mitigate this risk.

### 4.2.3 Market Development and Expansion Risk

There are aspects of Calix's current products and applications, as well as those under development, that represent additional features or customer value propositions as a result of the novel materials produced by the CFC technology. Products or applications that are not direct replacements of those currently in existence may take some time for the customer to understand, and thus there is a risk that take-up will take longer than planned, involve more cost and effort (such as trials) to bring to market, and that even after extensive trial periods, the product is not adopted by the customer.

There is also the risk that existing products cannot continue to be developed into new applications that exploit the unique properties of the CFC technology, or that the products and applications that are developed are unable to be effectively commercialised. This risk is manifest in a number of Calix processes such as:

- developing the MHL product for specialist biotreater applications; and
- developing our AQUA-Cal + beyond the prawns market and into the fin fish market.

Calix will continue to develop both its Commercial products, Pre-Commercial products and pipeline of new products and applications as a mitigation strategy for this risk.

## 4. RISK FACTORS

### 4.2.4 Research and Development Risk

Whilst the CFC technology has been running with minimal maintenance or operating issues for 5 years, its robustness as a process has not been demonstrated over decades, which could impact more rapid acceptance of the technology into established industries. More specifically, the LEILAC project process has not been tested at scale and may not work in a way that is efficient and robust enough to be of commercial interest to the cement and lime industries. In the cement application of the technology, there is still significant scale-up risk even if LEILAC works.

With respect to Calix's battery materials development, there is the risk that the technology will not work, or not produce materials of sufficient commercial difference to sustain a business, or justify further investment to create a business.

With respect to research and development of other potential opportunities for the CFC technology, there is the risk that the technology will not work, or not produce materials or processes of sufficient commercial difference to sustain a business, or justify further investment to create a business.

### 4.2.5 Operational Risk

Due to the nature and scale of Calix's operations there is the potential for varied disruptions to the supply chain that may unduly impact the scale and scope of Calix's activities. This risk is present in several stages of Calix's value chain, namely:

- Myrtle Springs Mine: Despite the ability to run on alternate feed-stocks, a disruption to the Myrtle Springs mining operation, delay in, or lack of, renewal of the mining tenements, or a delay or failure in renewing the under-lease for the Myrtle Springs Mine (including on economic terms), will impact Calix's ability to source feed-stock from its own operations. While Calix actively maintains feed-stock cover to mitigate this risk, Calix cannot guarantee that this will adequately mitigate this risk under all circumstances. Additionally, whilst Calix can source alternate feed-stocks under such circumstances, it may require additional time, and cost more;
- Bacchus Marsh: Calix's calciner carries operational risks such as failure of the reactor tube, grinder failure, other process units' failure, strike, force majeure event etc, which could lead to loss of production, with a knock-on impact on customers and revenues. Calix actively maintains product stock cover to mitigate this risk, however there is no guarantee that this will adequately mitigate this risk under all circumstances;
- Nerang: Calix's Queensland MHL facility carries operational risks such as failure of the various mechanical items, general processing units, strike, act of god etc, which could lead to loss of production, with a knock-on impact on customers and revenues. While Calix actively maintains product stock cover to mitigate this risk, however there is no guarantee that this will adequately mitigate this risk under all circumstances;
- Distribution: In some cases, Calix delivers product directly to customers and in other cases, it relies on distribution partners. Failure to deliver Calix's products and services, or deliver of the products at services below an acceptable level, could occur as a result of multiple factors. Such failure could lead to loss of reputation, and ultimately loss of customers, and thus revenue and growth;
- Europe: LEILAC construction: A delay in the construction of the LEILAC pilot due to supply logistics, supplier issues, inclement weather etc, could lead to delays in the project delivery, impacting the commercial strategy, as well as cost blow-outs, requiring either additional unplanned capital from the consortium (including Calix) to complete the project, or at worst, abandonment of the project; and
- Distributor and applicator network: Calix's business model involves delivery of products and services via a licensed distributor or applicator network, both in Australia and overseas. Failure by a distributor or applicator to distribute Calix's products in accordance with customer expectations, or at all, could result in damage to Calix's reputation and loss of customers. Whilst Calix takes necessary precautions in vetting and selecting its distributor and applicator network, and putting in place appropriate agreements to protect its interests, the risk remains that counterparties may not comply with the terms of their engagement, potentially resulting in reputational damage to Calix or loss of customers.

### 4.2.6 Regulatory Risk

In Australia, Calix's ACTI-Mag and PROTECTA-Mag, can be sold as non-dangerous goods without specific regulatory approvals. Calix's AQUA-Cal+ can be sold in Australia without specific regulatory approval, and in addition, "organic" products derived from aquaculture will be able to maintain their organic status when using AQUA-Cal+. BOOSTER-Mag can be sold as a foliar fertiliser in Australia, if Calix choose to do so, but the label cannot currently claim any efficacy against disease and pests (hence our current effort to get the product registered with the APVMA). For BOOSTER-Mag, there is a risk that seeking APVMA registration may take more time, or cost, or both, than planned, or indeed registration may not be achieved at all. There is a risk that regulations covering all of these products may change, in which case Calix may need to apply for approvals to continue with its business, and may not achieve such approvals. In addition, a change in regulatory approvals may trigger additional risks under product liability, if it is deemed that such change in regulation has been brought about by information on the safety or efficacy of Calix's products that is unknown to Calix at this time.

Overseas, different countries will have different regulatory environments. For example, in Indonesia, our AQUA-Cal+ product requires registration with the Indonesian Ministry of Agriculture and the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia before it can be sold under the AQUA-Cal+ label. And in Europe, we have been advised by potential partners in France and Spain that BOOSTER-Mag can be sold as a foliar fertiliser, however registration of the product is required to make crop protection claims, and such registration will require efficacy testing in each jurisdiction. In Australia, there is a risk that regulations covering all of these products may change, in which case Calix may need to apply for approvals to continue with its business and may not achieve such approvals. Additionally, a change in regulatory approvals may trigger risks under product liability, if it is deemed that such change in regulation have been brought about by information on the safety or efficacy of Calix's products that is unknown to Calix at this time.

Apart from Calix's products, Calix's operations require compliance with multiple regulatory systems. Apart from general regulatory risks (e.g. Sections 4.3.4, 4.3.6, 4.3.7) Calix's operations require adherence to, for example, multiple safety, health, environmental, employment, and privacy standards both at national and state levels in Australia, and across multiple jurisdictions where we currently, or may choose to, operate. While we have a governance system in place to continually monitor and ensure compliance across these multiple regulatory regimes, there is a risk that Calix, may now, or in the future, be in breach of such systems, warranting correction, or involving financial penalties, or possibly other more serious business impacts.

#### **4.2.7 Grant-Related Risks**

Calix receives considerable grant income across multiple development projects. In each case, the grant is extended under binding agreements that outline, amongst other things, the mechanism for cancelling, or even claw-back of, grant monies. There is a risk that, despite putting in place appropriate governance, project management and accounting structures to manage this risk, Calix does not follow, or is deemed not to have followed, grant protocols with respect to valid expenditures of grant monies, that the relevant clauses in these agreements could be exercised by the counter-parties (typically government bodies) to cancel or claw-back the grants.

Further, there is no guarantee that Calix will continue to be awarded grants to undertake further research and development on the alternative applications of its technology. If Calix is not able to secure further grant funding, then it will need to self-fund its future research and development projects which may affect the amount of research and development undertaken and the time within which it will be able to bring its development technologies to market.

#### **4.2.8 Product Liabilities**

Calix is exposed to potential product liability risks, which are inherent in the research and development, manufacturing, marketing and use of its products or products that are developed in the future.

Whilst Calix has liability insurance to help manage such risks, Calix may not be able to maintain insurance for product or service liability on reasonable terms in the future and, or Calix's insurance may not be sufficient to cover large claims, or the insurer could disclaim coverage on claims.

Although Calix endeavours to work to rigorous standards, there is still the potential for its products to contain defects that may result in damage to customers' systems in turn causing a financial or reputational loss. For Calix, these defects or problems could result in the loss of or delay in generating revenue, loss of market share, failure to achieve market acceptance, injury to Calix's reputation or increased insurance costs. If Calix fails to meet its customers' expectations, Calix's reputation could suffer and it could be liable for damages.

Calix gives no assurance that all such risks will be adequately managed through its insurance policies to ensure that such loss does not have an adverse effect on its performance.

Calix's products and applications are typically sold in B2B markets under purchase order terms and conditions or longer-term contracts. Whilst every effort is made to limit potential contractual and common law liabilities associated with Calix's products and applications, exposure to potential product liabilities exist and can be broadly categorised as follows:

ACTI-Mag: Despite the product being non-hazardous, non-toxic and being used in waste water treatment, there are risks that incorrect delivery or use of the product may lead to claims against Calix; and

PROTECTA-Mag: Despite the product being non-hazardous, non-toxic and being used in waste water assets, there are risks that incorrect application of the product may lead to claims against Calix.

## 4. RISK FACTORS

If Calix is successful in commercialising its Pre-Commercial products, or even during the trial phases before successful commercialisation, product liability risk associated with those products may arise, as per our Commercial products.

Examples of such liabilities are:

AQUA-Cal+: Despite the product being non-hazardous, non-toxic and being used in aquaculture applications, there are risks that incorrect application (such as over-dosing) of the product may lead to claims against Calix; and

BOOSTER-Mag: Despite the product being non-hazardous, non-toxic and being used in agriculture applications, there are risks that incorrect application (such as over-spraying) of the product may lead to claims against Calix.

### 4.2.9 Invalidation, Suppression and/or Theft of IP

Calix relies heavily on its technology and know-how and there can be no assurance that competitors of Calix or other parties will not seek to imitate or develop technology and know-how that competes with Calix or supersedes Calix's technology. The unauthorised use or disclosure of its intellectual property may have an adverse effect on the operating, marketing and financial performance of Calix which could erode Calix's competitive advantage. Calix cannot be certain that others will not independently develop the same or similar technologies on their own or gain access to trade secrets or disclose such technology, or that Calix will be able to meaningfully protect its trade secrets and unpatented know-how and keep them secret. There is an inherent risk with any licensed technology that the license may be terminated in accordance with its terms or the patent invalidated by a third party.

#### **Patent rights**

Calix relies on its ability to obtain and maintain adequate and valid patent protection of its products and technologies and to operate without infringing on the proprietary rights of third parties or having third parties circumvent Calix's rights.

Calix's patent portfolio comprises 18 patent families, with all at different stage of application in various jurisdictions (see Section 8). While the Directors believe that Calix's current patent applications will be successful, no guarantee can be given that such protection will be successfully and validly obtained by Calix, nor does the grant of a patent guarantee that the patent concerned is valid or that the patented technology does not infringe the rights of others. If the patents are not granted, it may be possible for a third party to imitate or otherwise obtain and use Calix's technology without authorisation or to develop and use similar technology independently. While Calix believes it has taken appropriate steps to protect its proprietary technology, the law may not adequately protect it in all places that Calix does business, or enable Calix's rights to be enforced with any adequacy.

#### **Trade Secrets**

In addition to its patent and licensing activities, Calix also regards its trade secrets, trademarks, domain names and similar intellectual property as important to its success. The measures that Calix employs to protect its intellectual property rights may not always be sufficient to protect its trade secrets. The unauthorised use or disclosure of its intellectual property may have an adverse effect on the operating, marketing and financial performance of Calix which could erode Calix's competitive advantage.

### 4.2.10 Breach of Third Party IP

Calix is not aware of any material violation or infringement of its trademarks and the intellectual property rights of others. However, there can be no assurance that in the future, Calix will not inadvertently infringe the intellectual property rights of others, or be subjected to infringement claims or litigation arising out of patents and pending applications of its competitors, or additional proceedings initiated by third parties to re-examine the patentability of licenses or owned patents. Although no litigation is current or threatened by or against Calix, in the future litigation may be necessary to enforce Calix's issued patents, licences, to protect its trade secrets and know-how, or to determine the enforceability, scope and validity of the proprietary rights of others.

The defence and prosecution of intellectual property suits, and related legal and administrative proceedings are expensive and time consuming and may divert valuable resources from and disrupt the conduct of its business. Further, Calix may not be successful in its infringement claims which will lead to a drain on its financial resources. Adverse determinations in such litigation could result in loss of proprietary rights or subject Calix to significant liabilities, which could impact upon Calix's financial performance.

In May 2014, an entity claimed Calix had breached its IP while developing and introducing its ACTI-Mag product into the Australian market, on the back of the entity's own patent which expired that same year. Calix refuted the claim and there has been no further correspondence between the parties since December 2014. There is no certainty that the claim will not be re-initiated, but Calix believes that if it is, it will be able to successfully refute the claim.

#### **4.2.11 Ability to Attract and Retain Key People**

Calix currently employs a number of key management and scientific personnel (Refer to Sections 5.1 and 5.2 of this Prospectus for details of key personnel). Calix's success is dependent upon a number of highly qualified and experienced personnel and a stable workforce. In particular, the Senior Management team has accumulated a significant number of years' experience. Calix's future will be dependent upon the continued performance, efforts, abilities and expertise of its key management personnel. While Calix has in place long-term or evergreen employment contracts, there can be no assurance that Calix will be able to retain its key personnel or attract other suitably qualified personnel in the future, if required. The inability to attract and retain the necessary technical and managerial personnel could have a material and adverse effect upon Calix's business, results of operations and financial condition.

#### **4.2.12 Reliance on Suppliers**

Apart from Calix's Myrtle Springs mine, Calix can purchase magnesite from several other sources to manage its supply chain risk. Calix is able to make its product range from a variety and combination of multiple supply sources, however to make Calix's HSA MgO product (see Section 2.5.3) a single source of magnesite from a third party must be used. If magnesite supply from that third party was threatened or became uneconomic, Calix would be unable to continue the HSA MgO business.

Gas and Electricity are material inputs into our operational costs. If the price of these utilities increased significantly, or their availability became unreliable, there is a risk that Calix's business could be significantly interrupted, or even become uneconomic.

#### **4.2.13 Foreign Exchange Risk**

Calix is exposed to movements in exchange rates, due to a material portion of grant funding being earned in Europe, and the commencement of product sales into New Zealand. Financial statements are maintained in Australian dollars, and currently a majority of revenues and expenses are settled in Australian Dollars. As Calix expands its product offering internationally, a greater foreign exchange risk is foreseen. The Directors will implement foreign exchange hedging policies for Calix if, and when considered appropriate.

#### **4.2.14 Competitive and Dynamic Capital Requirements**

Whilst Calix is currently cash-flow positive as a result of its historical ability to sell products and applications, achieve grant funding, and receive the Australian Government R&D rebate (until its revenues exceed A\$20m, after which this rebate reverts to a tax concession), changes in Calix's ability to access such funding in the future, whether through regulatory change, failure in grant funding applications, or failure to grow sales and license revenues, may impact the ability of the business to carry out some, or all of its current activities, including funding its R&D pipeline.

On completion of the Offer the current business plan will be fully funded. If risks should affect Calix's ability to execute the business plan materialise, there is a risk that Calix may have to change its business plan, and/or raise additional capital to continue to pursue the current, or indeed a modified, business plan. There is no guarantee that Calix will be able to raise capital in the future on favourable terms, or at all.

### **4.3 GENERAL RISKS OF AN INVESTMENT IN CALIX**

#### **4.3.1 Equity Market Risk**

There can be no certainty that, following listing, an active market in the Shares will develop. In addition, Shares may trade on the ASX at a discount or premium to the Offer Price. The price at which Shares trade on the ASX may be affected by a number of factors, including the financial and operating performance of Calix and external factors over which Calix and its Directors have no control.

These external factors include actual, expected and perceived general economic conditions, changes in government policy or regulation, significant events such as natural disasters or acts of terrorism, investor attitudes, changes in taxation, movements in interest rates, movements in stock markets, and general conditions in the markets in which Calix will operate. In addition, investors should consider the historical volatility of Australian and overseas share markets.

## 4. RISK FACTORS

### 4.3.2 Liquidity of Shares

There has been no public market in the Shares prior to the Offer. Once the Shares are quoted on the ASX, there can be no guarantee that an active trading market for the Shares will arise or that the price of the Shares will increase. There may be relatively few prospective buyers or sellers of the Shares on the ASX at any given time.

In accordance with the escrow requirements in Chapter 9 of the ASX Listing Rules, at completion of the Offer certain Existing Shareholders will be required to enter into escrow deeds and the Company will enter into voluntary escrow arrangements with certain Existing Shareholders. Accordingly, at completion of the Offer, approximately 73.4% of the Shares on issue will not be able to be traded for a period after listing (see Section 6.5). Given the number of Shares restricted from trading, there will only be liquidity with respect to approximately 26.6% of the Shares on issue at Completion of the Offer until such time as applicable escrow periods end. The absence of any sale of Shares by the escrowed shareholders during this period may cause, or at least contribute to, limited liquidity in the market for the Shares. This could impact the prevailing market price at which Shareholders are able to sell their Shares. It is important to recognise that, on a disposal, Shareholders may receive a market price for their Shares that is less than the price that they paid under the Offer.

Following release from escrow, Shares held by the Existing Shareholders will be able to be freely traded on the ASX. A significant sale of Shares by the Existing Shareholders, or the perception that such sales have occurred or might occur, could adversely impact the price of Shares. The interests of the Existing Shareholders may be different from the interests of investors who acquire Shares in the Offer.

### 4.3.3 General Economic Conditions

The general economic climate in which Calix operates may experience changes, which adversely affect Calix's financial performance. Factors that may influence the general economic climate include but are not limited to:

- changes in Government policies, taxation and other laws;
- future demand for Calix's technologies and products;
- the strength of the equity and share markets in Australia and throughout the world;
- changes in investor sentiment toward particular market sectors;
- movement in, or outlook on, exchange rates, interest rates and inflation rates;
- industrial disputes in Australia and overseas;
- financial failure or default by an entity with which Calix may become involved in a contractual relationship; and
- natural disasters, social upheaval or war.

### 4.3.4 Country/Regional Risks (Sovereign Risks)

Calix has operations in a number of overseas jurisdictions and is exposed to a range of different legal and regulatory regimes, including in new jurisdictions in which Calix may establish businesses and/or in geographies which Calix is expanding its operations. As Calix expands its presence in new international jurisdictions, it is subject to the risks associated with doing business in regions that may have political, legal and economic instability or less sophisticated legal and regulatory systems and frameworks, including:

- unexpected changes in, or inconsistent application of, applicable foreign laws and regulatory requirements;
- less sophisticated technology standards;
- difficulties engaging local resources; and
- potential for political upheaval or civil unrest.

As Calix enters newer and less familiar regions there is a risk that Calix fails to understand the laws, regulations and business customs of these regions. This gives rise to risks relating to labour practices, foreign ownership restrictions, tax regulation, difficulty in enforcing contracts, changes to or uncertainty in the relevant legal and regulatory regimes and other issues in foreign jurisdictions in which Calix may operate. This could interrupt or adversely affect parts of Calix's business and may have an adverse effect on Calix's operations and financial performance.

#### **4.3.5 Inability to Pay Dividends or Make Other Distributions**

The ability of Calix to pay any dividend in the future is dependent on many factors including Calix's ability to generate sufficient earnings. Many of the factors that will affect Calix's ability to pay dividends and the timing of those dividends will be outside the control of Calix and its Directors. The Directors cannot give any assurance regarding the payment of dividends in the future.

#### **4.3.6 Changes in Taxations Rules or heir Interpretation**

Changes in taxation law, or changes in the way taxation laws are interpreted may impact Calix's tax liabilities or the tax treatment of a Shareholder's investment. In particular, both the level and basis of taxation may change. In addition, an investment in shares involves tax considerations which may differ for each shareholder. Each prospective Shareholder is encouraged to seek professional tax advice in connection with any investment in Calix.

#### **4.3.7 Changes in Accounting Standards**

Australian Accounting Standards are set by the Australian Accounting Standards Board (AASB) and are outside Calix's control and the control of its Directors. The AASB is due to introduce new or refined Australian Accounting Standards during the period from 2017 to 2018, which may affect future measurement and recognition of profit or loss and other comprehensive income, and statement of financial position items, including revenue and receivables. There is also a risk that interpretations of existing Australian Accounting Standards, including those relating to the measurement and recognition of key statement of profit or loss and other comprehensive income, and statement of financial position items, including revenue and receivables, may differ. Changes to Australian Accounting Standards issued by the AASB or changes to the commonly held views on the application of those standards could materially adversely affect the financial performance and position reported in our consolidated financial statements

#### **4.3.8 Force Majeure Events**

Events may occur within or outside Australia that could impact upon Calix and the value of shares. These events include but are not limited to acts of terrorism, an outbreak of international hostilities, fires, floods, earthquakes, labour strikes, civil wars, natural disasters, outbreaks of disease or other natural or man-made events or occurrences that can have an adverse effect on the demand for Calix's products and its ability to conduct business. Calix only has a limited ability to insure against some of these risks.

#### **4.3.9 Unforeseen Risk**

There may be other risks of which the Directors are unaware at the time of issuing this Prospectus which may impact Calix, its operations and/or the valuation and performance of Shares. The above list of key risks ought not to be taken as exhaustive of the risks faced by Calix or by investors in Calix. The above risks and others not specifically referred to above may in the future materially affect Calix, its financial performance or the value of Shares.

**BOARD,  
MANAGEMENT  
AND CORPORATE  
GOVERNANCE**

**5**

## 5.1 BOARD OF DIRECTORS

Directors	Summary experience
 <p><b>Peter Turnbull</b> <i>Independent Chair</i></p>	<p>Peter Turnbull is an experienced Chair and professional non-executive director of publicly-listed, unlisted public, not for profit and early stage companies - and is chair or a member of various audit, remuneration, governance and risk management board committees.</p> <p>Peter has a Bachelor of Law and Commerce (University of Melbourne) and over 25 years senior executive and corporate legal experience with some of Australia's largest (top 50) listed public companies in the resources, energy and industrial sectors including Newcrest Mining, BTR Nylex and Energex.</p> <p>Peter also has significant corporate regulatory and government policy experience gained working with the Australian Securities &amp; Investments Commission and as Director, Corporate Finance at the Hong Kong Securities &amp; Futures Commission. Peter is also a member of the ASIC Directors Advisory Panel.</p> <p>Peter is a regular speaker and writer on global governance issues and his wider experience includes significant exposure to managing complex cross-border operations and dealing with cross-cultural issues.</p> <p>Current positions and directorships include:</p> <ul style="list-style-type: none"> <li>• Chair, Calix Limited</li> <li>• Non-executive director, Karoon Gas Australia Ltd (ASX-KAR)</li> <li>• Chair, Metallica Minerals Limited (ASX-MLM)</li> <li>• Non-executive director, Governance Institute of Australia</li> <li>• Chair, Auxita Pty Ltd</li> </ul> <p>Peter is an Adjunct Professor at the University of Queensland, a former President and Life Member and Fellow of the Governance Institute of Australia and a Fellow of the Australian Institute of Company Directors.</p> <p>Peter is a member of Calix's Audit and Risk Management Committee and chair of the Remuneration and Nomination Committee.</p>
 <p><b>Jack Hamilton</b> <i>Independent Director</i></p>	<p>Dr Jack Hamilton has over 30 years' experience both locally and internationally in operations management covering refining, petrochemicals and gas production, marketing, strategy and liquefied natural gas project management.</p> <p>Jack was previously CEO of Exergen Pty Ltd, a low emission coal resource development company and formerly, director of NWS Ventures with Woodside Energy overseeing one of Australia's largest resource projects, the North West Shelf Project.</p> <p>Jack has held numerous publicly-listed non-executive director roles including Renu Energy Limited and DUET Group Ltd.</p> <p>Jack holds a Bachelor of Chemical Engineering degree and a Doctorate of Philosophy (University of Melbourne). He is also a Fellow of Australian Institute of Energy and a Fellow of the Australian Institute of Company Directors.</p> <p>Jack is chair of Calix's Audit and Risk Management Committee, chair of the Technology Committee and a member of the Remuneration and Nomination Committee.</p>

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

Directors	Summary experience
 <p><b>Lance O'Neill</b> <i>Independent Director</i></p>	<p>Lance O'Neill is a Director of DFB (Australia) Pty Ltd, a Sydney based investment advisory business, and has worked in institutional equity, fixed income sales/trading and corporate finance in international securities and investment markets for over thirty years predominantly in Australia, UK and USA.</p> <p>He is the chair of MediaZest Plc and EP&amp;F Capital Plc and in addition is a director of, and investor in, a number of private and public companies in Australia, UK, the USA and Asia.</p> <p>He holds a BSc (Econ) Hons. degree in Accountancy and Law (University of Wales).</p>
 <p><b>Phil Hodgson</b> <i>Managing Director and CEO</i></p>	<p>Phil has a technical and commercial background from a successful career with Shell, where for over 14 years he developed significant depth of experience across all key sectors of the downstream oil industry including refining and supply, marketing and sales, pricing strategy, risk management, corporate strategy, and mergers and acquisitions.</p> <p>From 2007 to 2013, Phil ran his own consultancy providing project development, commercial, M&amp;A, and management expertise to several sectors including LNG, biofuel, clean coal, geothermal energy, building products, logistics and fast-moving consumer goods.</p> <p>Phil holds a Bachelor of Chemical Engineering with Honours (University of Sydney) and a PhD in Chemical Engineering from the University of NSW.</p> <p>Phil joined Calix as CEO in 2013, was appointed a Director in 2014, and is a member of Calix's Technology Committee.</p>
 <p><b>Mark Sceats</b> <i>Executive Director and Chief Scientist</i></p>	<p>Mark Sceats is a qualified physical chemist with 40 years' experience. He has degrees in Science (Hons 1st Class) and a PhD (University of Queensland).</p> <p>Mark has previously worked at the James Franck Institute at the University of Chicago, and as an Assistant Professor of the University of Rochester NY, USA, where he was awarded the Alfred P Sloan Fellowship for his work. Later he was employed by the University of Sydney as a Reader in the School of Chemistry for his research work on chemical reaction kinetics. Mark has published more than 140 academic papers in physical chemistry and is an inventor of 36 patented inventions.</p> <p>Mark was awarded the M.A. Sargent Medal of the Institute of Engineers Australia for his contributions to optical communications and the Centenary Medal of the Commonwealth of Australia for his contributions to Australian society. He is a Fellow of the Australian Academy of Technological Sciences and Engineering, a Fellow of the Royal Australian Chemical Institute, and a Companion of the Institute of Engineers Australia.</p> <p>Mark founded Calix in 2005, was re-elected as a Director in 2014 and is a member of Calix's Technology Committee.</p>

## 5.2 KEY MANAGEMENT PERSONNEL

Key Management	Summary experience
<p><b>Phil Hodgson</b> <i>Managing Director and CEO</i></p>	<p>As above in Section 5.1</p>
<p><b>Mark Sceats</b> <i>Executive Director and Chief Scientist</i></p>	<p>As above in Section 5.1</p>
 <p><b>Darren Charles</b> <i>Chief Financial Officer and Company Secretary</i></p>	<p>Darren has more than 20 years' experience in high-growth technology companies. Prior to joining Calix he was CFO and company secretary of Seeker Wireless Pty Ltd and CFO and executive director of the ASX-listed company Altium Limited ("Altium").</p> <p>Darren joined Altium in 1995 and led its finance function as it grew internationally, from operations in two countries and sales of US\$5.8 million to operations in nine countries and sales of US\$55.8 million. His experience at Altium included its IPO, mergers and acquisitions activity in US and Europe, and leading all facets of a finance function that included international tax, budgeting, corporate planning, financial reporting and compliance.</p> <p>Darren joined Calix in 2011 and as CFO has responsibility for overseeing finance, admin and IT and is also the company secretary.</p> <p>Darren is a Fellow of CPA of Australia and holds a Bachelor of Commerce (Accounting) degree (University of Tasmania).</p>
 <p><b>Andrew Okely</b> <i>General Manager - Strategy and Commercial</i></p>	<p>Andrew began his career at Pasmenco's Research Centre in Newcastle in 1990, where he investigated various hydro- and pyro-metallurgical processes. Andrew joins Calix after a 17-year career at Outotec where his most recent role was Director, Sales and Marketing for the South-East Asia-Pacific region, in addition to being a member of the South East Asia Pacific executive management team.</p> <p>Andrew's experience covers general business management, sales process design, contract formation and negotiation, business and technical presentations, and strategic planning. He has been involved in several international projects, with particular exposure to Asia, and has worked with a wide range of minerals and metals.</p> <p>Andrew joined Calix in 2012 and is currently GM - Strategy and Commercial, overseeing all of Calix's technology licensing and business development strategy, as well as all contractual relationships (procurement as well as sale).</p> <p>Andrew holds a Bachelor of Engineering (Metallurgical) degree (Royal Melbourne Institute of Technology University), a Postgraduate Certificate in Marketing and a Master of Business Finance (University of Technology, Sydney).</p>
 <p><b>John Phipps</b> <i>General Manager - Engineering and Operations</i></p>	<p>John joined Calix in 2013 from a background in the oil &amp; gas and power generation industries. His career began at Tema Engineers in 1991, a specialist supplier in solids/liquids separation equipment, where he was responsible for tendering, pilot plant trials and the engineering and project execution of small modular water treatment plant projects. During his 11 year tenure with the Linde Group, an international specialist process engineering and contracting company, John took on various roles ranging from engineering, project management, construction management and commissioning. He gained experience working on projects such as cryogenic air separation plants, petrochemical plants, ammonia plants and LNG plants. John has worked for other high profile engineering and construction companies including Foster Wheeler, United Group, John Holland and most recently Lend Lease.</p> <p>As General Manager - Engineering and Operations at Calix, John manages and oversees the execution of the various engineering projects undertaken by Calix and develops concepts from the R&amp;D stage into commercial scale production plants equipment. He also oversees the operations side of the business (Bacchus Marsh and Nerang production facilities).</p> <p>John holds a Bachelor of Engineering (Chemical) degree (University of NSW).</p>

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

Key Management	Summary experience
 <p><b>Adam Vincent</b> <i>General Manager - Research and Development</i></p>	<p>Adam joined Calix in July 2010 to run and develop the Calix Bacchus Marsh site after spending 15 years in technical and operations management across diverse industries including chemicals, starch and sugar, wine, plastic packaging, printing and cardboard packaging.</p> <p>Adam began his career as a project Chemical Engineer with ICI where he developed applications for the pulp and paper industry, including a novel alternative use of magnesium oxide in peroxide bleaching leading to a successful patent application.</p> <p>Since joining Calix Adam has overseen the building and commissioning of both the CFC850 (pilot) and CFC15000 (commercial) calciners together with site facilities that house R&amp;D, maintenance and office activities.</p> <p>In 2016 Adam was relocated to the UK to manage the LEILAC project.</p> <p>Adam returned from the UK in early 2018 to the role of General Manager - Research and Development - overseeing the numerous projects that develop Calix's technology into different applications.</p> <p>Adam holds a Bachelor of Chemical Engineering (Royal Melbourne Institute of Technology University) and a Masters of Engineering Science (Monash University).</p>
 <p><b>Bill Karis</b> <i>General Manager - Sales and Marketing</i></p>	<p>Bill joined Calix in May, 2018 to develop and run the sales and marketing teams and processes in support of Calix's growth plan.</p> <p>After graduating from university, Bill joined Shell, and over a 9-year career there gained a significant depth of experience in the sales and marketing of fuels and lubricants to a broad range of market segments through multiple channels. Key roles included membership of the Oceania Executive Team and a lead role in Shell's transformation of its sales and marketing function across 160 staff and 40,000 customers, followed by consulting to similar transformation programs across other operating units in Shell globally.</p> <p>Bill then joined Bluescope Distribution as Sales Transformation Manager for ~2 years, followed by another ~3 years as General Manager Wholesale at United Petroleum, delivering double digit growth at increased margin.</p> <p>In addition to his corporate career, Bill started up and grew private company Self-Drive Pty Ltd over 18 years into a multi-million-dollar turn-over business, and remains a director there.</p> <p>Bill holds a Bachelor of Mechanical Engineering (University of Technology, Sydney).</p>

### 5.3 INTERESTS AND BENEFITS

The following section outlines the nature and extent of interests, benefits and/or fees to certain persons involved in the Offer. Other than as set out below or elsewhere in this Prospectus, no:

- Director or proposed Director of Calix;
- person named in this Prospectus and who has performed a function in a professional, advisory or other capacity in connection with the preparation or distribution of this Prospectus; or
- promoter of Calix,

holds at the time of lodgement of this Prospectus with ASIC, or has held in the two years before lodgement of this Prospectus with ASIC, an interest in:

- the formation or promotion of Calix;
- property acquired or proposed to be acquired by Calix in connection with its formation or promotion, or in connection with the Offer; or
- the Offer,

and no amount (whether in cash, Shares or otherwise) has been paid or agreed to be paid, nor has any benefit been given or agreed to be given, to any such persons for services in connection with the formation or promotion of Calix or the Offer or to any Director or proposed Director to induce them to become, or qualify as, a Director of Calix.

### 5.3.1 Interests and Compensation of Directors

#### 5.3.1.1 MD and CEO Compensation

The key terms concerning the employment of Phil Hodgson as Managing Director and Chief Executive Officer with Calix are as follows:

- **Nature and Term of Employment:** Full-time employment with Calix until 31 March, 2020, at which point the contract will become evergreen subject to certain termination conditions:
  - a. Calix may terminate the agreement at any time without prior notice if Phil Hodgson:
    - i. is convicted of any criminal offence other than an offence which in the reasonable opinion of Calix does not affect his position as a senior executive of Calix; or
    - ii. becomes bankrupt, or similar under Australian law or the law of another jurisdiction.
  - b. Calix may also terminate the agreement if, after giving written notice (and a satisfactory response to the issue is not provided in thirty (30) days), Phil Hodgson:
    - i. commits any wilful, serious or persistent breach of any of the provisions of his employment agreement;
    - ii. engages in wilful or serious misconduct or neglect in the discharge of his duties for Calix.
  - c. If, before 31 March 2020, the Board views Phil Hodgson's performance in executing his role as unsatisfactory, and if, after discussion and counselling on the perceived shortfalls, no satisfactory correction in performance has been achieved after six (6) months, Calix may give six (6) months' notice of termination.
  - d. After the passing of the Evergreen Date, Phil Hodgson's employment may be terminated by Calix without cause or reason by giving six (6) months' notice in writing.
  - e. Phil Hodgson may terminate his employment with Calix without cause or reason at any time by giving six (6) months' notice in writing.
  - f. Calix may, in its absolute discretion, terminate the agreement immediately at any time prior to the expiry of the notice periods given by Phil Hodgson or Calix by making a payment to Phil Hodgson, equal to the value of his fixed remuneration base, in lieu of the period of notice, or for any unexpired part of that notice period. No notice period will apply, or payment made in lieu of notice in the event of termination under a. or b., above.
- **Remuneration:** A fixed remuneration base of A\$348,000 per year, rising to A\$398,000 per year upon a successful ASX listing, and reviewable annually based upon performance, plus superannuation based upon the maximum contribution base set yearly by the Australian Tax Office, paid in monthly instalments, plus participation in the Calix EIS, details of which are provided in Section 5.3.5.
- **Annual Leave:** annual leave is accrued at the rate of four (4) weeks or twenty (20) working days per year of service.
- **Intellectual Property:** all intellectual property created by Phil Hodgson including future Intellectual Property arising out of the carrying out of his employment with Calix or otherwise will immediately be assigned to and vest in Calix or such other person or company as may be nominated by Calix as such rights are created.

#### 5.3.1.2 Executive Director and Chief Scientist Compensation

The key terms concerning the employment of Mark Sceats as Executive Director and Chief Scientist with Calix are as follows:

- **Nature and Term of Employment:** Full-time employment with Calix subject to certain termination conditions:
  - a. Calix may terminate the agreement at any time without prior notice if Mark Sceats commits gross misconduct or breaches the terms and conditions of his employment:
    - i. commits gross misconduct or breaches the terms and conditions of his employment;
    - ii. is convicted of any criminal offence other than an offence which in the reasonable opinion of Calix does not affect his position as a senior executive of Calix; or
    - iii. becomes bankrupt, or similar under Australian law or the law of another jurisdiction.
  - b. Calix may also terminate the agreement if, after giving written notice (and a satisfactory response to the issue is not provided in thirty (30) days), Mark Sceats:
    - i. commits any wilful, serious or persistent breach of any of the provisions of his employment agreement; or
    - ii. engages in wilful or serious misconduct or neglect in the discharge of his duties for Calix.
  - c. Mark Sceats, or Calix, may terminate his employment with Calix without cause or reason at any time by giving 3 months' notice in writing.

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

d. Calix may, in its absolute discretion, terminate the agreement immediately at any time prior to the expiry of the notice periods given by Mark Sceats or Calix by making a payment to Mark Sceats, equal to the value of his fixed remuneration base, in lieu of the period of notice, or for any unexpired part of that notice period. No notice period will apply, or payment made in lieu of notice in the event of termination under a. or b., above.

- **Remuneration:** A fixed remuneration base of A\$307,623 per year reviewable annually based upon performance, plus superannuation based upon the maximum contribution base set yearly by the Australian Tax Office, paid in monthly instalments, plus participation in the Calix EIS, details of which are provided in Section 5.3.5.
- **Annual Leave:** annual leave is accrued at the rate of four (4) weeks or twenty (20) working days per year of service.
- **Intellectual Property:** all intellectual property created by Mark Sceats including future intellectual property arising out of the carrying out of his employment with Calix or otherwise will immediately be assigned to and vest in Calix or such other person or company as may be nominated by Calix as such rights are created.

### 5.3.1.3 Non-Executive Director Compensation

The following Table outlines the compensation for Calix's independent, Non-executive Directors:

Name	Position	Compensation
Peter Turnbull	Independent, Non-executive Chair of the Board Member of the Audit and Risk Committee Chair of the Remuneration and Nomination Committee	A\$105,000 annual fee ESS Shares - see Section 5.3.1.5 for more details
Jack Hamilton	Independent, Non-executive Director Chair of the Audit and Risk Committee Member of the Remuneration and Nomination Committee Chair of the Technology Committee	A\$69,000 annual fee ESS Shares - see Section 5.3.1.5 for more details
Lance O'Neill	Independent, Non-executive Director	A\$42,762 annual fee

### 5.3.1.4 Deeds of Access, Insurance and Indemnity

Calix has entered into a deed of access, indemnity and insurance with each Director, which confirms the Director's right of access to Board papers, and requires Calix to indemnify the Director (on a full indemnity basis, and to the full extent permitted by law), against all losses or liabilities (including all reasonable legal costs) incurred by the Director as an officer of Calix or of a related body corporate. Under the deeds, Calix must maintain a directors' and officers' insurance policy, insuring the Directors and officers against liability as a Director or officer of Calix and its related bodies corporate until seven years after a Director or officer ceases to hold office as a director or officer of Calix, or a related body corporate (or the date any relevant proceedings commenced during the seven-year period have been finally resolved).

### 5.3.1.5 Directors' Shareholdings

Directors (including associates)	Shares as at Prospectus date	ESS Shares that vest on Completion - subject to Chair discretion	LNH Warrants held	Fully diluted shares following Completion
Peter Turnbull	957,484	124,873	-	1,082,357
Jack Hamilton	1,793,881	124,873	206,250	2,125,004
Lance O'Neill	16,445	-	132,500	148,945
Phil Hodgson	3,225,866	772,577	82,500	4,080,943
Mark Sceats	7,004,084	838,364	462,000	8,304,448
<b>Total Shares</b>	<b>12,997,760</b>	<b>1,860,687</b>	<b>750,750</b>	<b>15,741,697</b>

### 5.3.2 Interests and Compensation of Key Management Personnel

#### 5.3.2.1 Chief Financial Officer and Company Secretary

The key terms concerning the employment of Darren Charles as Chief Financial Officer and Company Secretary with Calix are as follows:

- **Nature and Term of Employment:** Full-time employment with Calix subject to certain termination conditions:
  - a. Calix may terminate the agreement at any time without prior notice if Darren Charles commits gross misconduct or breaches the terms and conditions of his employment.
  - b. Darren Charles, or Calix, may terminate his employment with Calix without cause or reason at any time by giving three months' notice in writing.
  - c. Calix may, in its absolute discretion, terminate this agreement immediately at any time prior to the expiry of the notice periods given by Darren Charles or Calix by making a payment to Darren Charles, equal to the value of his fixed remuneration base, in lieu of the period of notice, or for any unexpired part of that notice period. No notice period will apply, or payment made in lieu of notice in the event of termination under a., above.
- **Remuneration:** A fixed remuneration base of A\$292,000 per year reviewable annually based upon performance, plus superannuation based upon the maximum contribution base set yearly by the Australian Tax Office, paid in monthly instalments, plus participation in Calix EIS, details of which are provided in Section 5.3.5.
- **Annual Leave:** annual leave is accrued at the rate of four (4) weeks or twenty (20) working days per year of service.
- **Intellectual Property:** all intellectual property created by Darren Charles including future intellectual property arising out of the carrying out of his employment with Calix or otherwise will immediately be assigned to and vest in Calix or such other person or company as may be nominated by Calix as such rights are created.

#### 5.3.2.2 General Manager - Strategy and Commercial

The key terms concerning the employment of Andrew Okely as General Manager - Strategy and Commercial with Calix are as follows:

- **Nature and Term of Employment:** Full-time employment with Calix subject to certain termination conditions:
  - a. Calix may terminate the agreement at any time without prior notice if Andrew Okely commits gross misconduct or breaches the terms and conditions of his employment.
  - b. Andrew Okely, or Calix, may terminate his employment with Calix without cause or reason at any time by giving three months' notice in writing.
  - c. Calix may, in its absolute discretion, terminate this agreement immediately at any time prior to the expiry of the notice periods given by Andrew Okely or Calix by making a payment to Andrew Okely, equal to the value of his fixed remuneration base, in lieu of the period of notice, or for any unexpired part of that notice period. No notice period will apply, or payment made in lieu of notice in the event of termination under a., above.
- **Remuneration:** A fixed remuneration base of A\$280,939 per year reviewable annually based upon performance, plus superannuation based upon the greater of A\$22,500 per annum or the maximum contribution base set yearly by the Australian Tax Office, paid in monthly instalments, plus participation in Calix EIS, details of which are provided in Section 5.3.5.
- **Annual Leave:** annual leave is accrued at the rate of four (4) weeks or twenty (20) working days per year of service.
- **Intellectual Property:** all intellectual property created by Andrew Okely including future intellectual property arising out of the carrying out of his employment with Calix or otherwise will immediately be assigned to and vest in Calix or such other person or company as may be nominated by Calix as such rights are created.

### 5.3.3 Description of Calix's Performance Review Process, Salary Packaging and Incentive Arrangements

Salary packaging for all staff is comprised of a base salary set at mid-point market rates as determined from external benchmarks, where possible, plus statutory superannuation contribution. An incentive or bonus scheme is also applied based upon performance versus both Calix and individual Key Performance Indicators (**KPI**). Base salaries across the whole company are reviewed annually each January by Calix's Remuneration and Nomination Committee.

The Calix Board sets yearly KPIs to drive yearly performance in line with the longer-term strategy. Performance against KPIs is reviewed regularly, and assessed annually by the Remuneration and Nomination Committee, for the purpose of annual incentives and/or bonuses.

All Calix staff have specific KPIs that link to the overall Calix KPIs, which are regularly reviewed with their line management, and which also go to a final determination of any incentives or bonuses. A description of Calix's incentive schemes is set out in Sections 5.3.4 and 5.3.5.

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

For outstanding contribution over specific short-term assignments or projects, individual cash bonuses can also be awarded, subject to approval from Calix's Remuneration and Nomination Committee.

### 5.3.4 Employee Share Scheme (ESS) Arrangements

The Calix ESS provided for the grant of shares, rights and/or options to eligible officers and employees of Calix (as determined by the Board) up until a successful Listing of Calix. It intended to provide competitive, performance-based remuneration supporting the retention, incentivisation and reward functions of that remuneration and drive alignment with shareholders.

Further details of Calix's ESS can be found under Section 10.7.

### 5.3.5 Employee Incentive Scheme (EIS) Arrangements

The Calix EIS provides for the grant of rights and/or options to eligible officers and employees of Calix (as determined by the Board) following a successful Listing of Calix. It is intended to provide competitive, performance-based remuneration supporting the retention, incentivisation and reward functions of that remuneration and drive alignment with shareholders.

Further details of Calix's EIS can be found under Section 10.8.

### 5.3.6 Interests of Advisors

Calix has engaged the following professional advisors:

- Shaw and Partners Limited has acted as Joint Lead Manager to the Offer. Calix has paid, or agreed to pay, the Joint Lead Managers a management fee of 3.0% of Offer proceeds (excluding disbursements and GST), together with a selling fee of 3.0% of Offer proceeds, excluding proceeds from Existing Shareholders (excluding disbursements and GST). The management fee and selling fee are split equally between the Joint Lead Managers. Calix has also agreed to issue Shaw and Partners Limited 613,539 Warrants with an exercise price of \$0.66 and an expiry date of 30 June 2022;
- Foster Stockbroking Pty Ltd has acted as Joint Lead Manager to the Offer. Calix has paid, or agreed to pay, the Joint Lead Managers a management fee of 3.0% of Offer proceeds (excluding disbursements and GST), together with a selling fee of 3.0% of Offer proceeds, excluding proceeds from Existing Shareholders (excluding disbursements and GST). The management fee and selling fee are split equally between the Joint Lead Managers. Calix has also agreed to issue Shaw and Partners Limited 613,539 Warrants with an exercise price of \$0.66 and an expiry date of 30 June 2022;
- Piper Alderman has acted as Australian legal advisor to Calix in relation to the Offer (excluding in relation to taxation and stamp duty matters). Calix has paid, or agreed to pay, approximately \$200,000 (excluding disbursements and GST) for these services to the date of this Prospectus. Further amounts may be paid to Piper Alderman in accordance with its timed-based charge-out rates;
- BDO Corporate Finance (East Coast) Pty Ltd has acted as the Investigating Accountant and has prepared the Independent Limited Assurance Report for inclusion in the Prospectus. BDO Corporate Finance (East Coast) Pty Ltd has also performed due diligence enquiries in relation to the Pro Forma Historical Financial Information. Calix has paid, or agreed to pay, approximately \$87,000 (plus GST) for these services to the date of this Prospectus. Further amounts may be paid to BDO Corporate Finance (East Coast) Pty Ltd in accordance with their normal time-based charge-out rates;
- BDO East Coast Partnership has acted as auditor to Calix in respect of the Audited Historical Financial Information in relation to the Offer. Calix has paid, or agreed to pay, approximately \$33,000 (plus GST) for the review of the Audited Historical Financial Information in relation to the Offer. Further amounts may be paid to BDO East Coast Partnership in accordance with their normal time-based charge-out rates; and
- Pitt Capital Partners has acted as financial advisor to Calix in relation to the Offer. Calix has paid, or agreed to pay, approximately \$525,000 (excluding disbursements and GST), plus 5% of the total invested funds into the Offer by Pitt Capital Partners, or Washington H. Soul Pattinson and to issue 1,132,075 Warrants with an exercise price of \$0.66 and an expiry date of 30 June 2022; and
- Frost & Sullivan has prepared a market study for Calix in relation to the Offer. Calix has paid or agreed to pay approximately \$25,000 (excluding disbursements and GST) for these services.

## 5.4 ESCROW

As per ASX Listing Rules, Directors and certain shareholders of Calix will be subject to mandatory escrow conditions for some, or all, of their Shareholdings. Additionally, a number of Calix's largest Shareholders will submit to voluntary escrow arrangements for all of their holdings (whether or not they are already subject to mandatory escrow arrangements).

Full details of all escrow arrangements are outlined in Section 6.5.

## 5.5 CORPORATE GOVERNANCE

### 5.5.1 Overview

Calix understands and values the benefits of good governance for its shareholders and stakeholders and has structured its business accordingly.

The Board is committed to maximising the value of Calix over the short, medium, and longer term to achieve the best possible financial returns for Shareholders.

To help achieve this objective, the Board has oversight over the business and is responsible for the overall corporate governance of Calix. It also has oversight over the strategic, operational and financial performance of Calix.

As part of this oversight framework, the Board has adopted practices, policies and procedures in line with the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations (**ASX Recommendations**) as outlined under Section 5.5.2. Calix has been a public company since 24 May 2007 and has been operating for 8 years with a comprehensive corporate governance platform and associated operational practices in place.

Compliance with the ASX Corporate Governance Recommendations, as well as Calix's practices, policies and principles, are described below.

### 5.5.2 Compliance with ASX Recommendations

ASX Principle and Recommendation	Compliance	Explanation
<b>Principle 1: Lay solid foundations for management and oversight</b>		
<b>Recommendation 1.1</b> A listed entity should disclose: <ol style="list-style-type: none"> <li>the respective roles and responsibilities of its board and management; and</li> <li>those matters expressly reserved to the board and those delegated to management.</li> </ol>	Yes	Calix has adopted a Board Charter which discloses the roles and responsibilities of the Board and Senior Management. Under the Board Charter, the Board is responsible for the overall operation and stewardship of Calix, including the strategies and financial objectives for Calix, monitoring progress against these objectives, and monitoring compliance with regulatory requirements and ethical standards. The Board Charter is available on Calix's website.
<b>Recommendation 1.2</b> A listed entity should: <ol style="list-style-type: none"> <li>undertake appropriate checks before appointing a person, or putting forward to security holders a candidate for election, as a director; and</li> <li>provide security holders with all material information relevant to a decision on whether or not to elect or re-elect a director.</li> </ol>	Yes	As part of the process of admission to the Official List of the ASX, each Director was required to submit to the ASX 'good fame and character' assessment. Consequently, Calix does not propose to conduct specific checks prior to nominating an existing Director for re-election by Shareholders. However, Calix will continue to include in its notices of meeting a brief biography and other material information in relation to each Director who stands for re-election. The biography will set out (amongst other things) the relevant qualifications and professional experience of the nominated Director for consideration by Shareholders. The relevant background of Directors who will hold office at listing are set out in Section 5.1 of this Prospectus. Calix will conduct background checks of candidates for new Director positions prior to their appointment or nomination for election by Shareholders, including checks as to good character, experience, education, qualifications, criminal history and bankruptcy.
<b>Recommendation 1.3</b> A listed entity should have a written agreement with each director and senior executive setting out the terms of their appointment.	Yes	Calix engages or employs its Directors and other senior executives under written agreements setting out the key terms governing their engagement or employment.

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 1.4</b></p> <p>The Company Secretary of a listed entity should be accountable directly to the board, through the chair, on all matters to do with the proper functioning of the board.</p>	Yes	<p>Calix's Company Secretary reports directly, and is accountable, to the Board through the Chair in relation to all governance matters. The Company Secretary advises and supports the Board members on general governance matters, implements adopted governance procedures, and coordinates circulation of meeting agendas and papers.</p>
<p><b>Recommendation 1.5</b></p> <p>A listed entity should:</p> <ol style="list-style-type: none"> <li>a. have a diversity policy which includes requirements for the board or a relevant committee of the board to set measurable objectives for achieving gender diversity and to assess annually both the objectives and the entity's progress in achieving them;</li> <li>b. disclose that policy or a summary of it; and</li> <li>c. disclose as at the end of each reporting period the measurable objectives for achieving gender diversity set by the board or a relevant committee of the board in accordance with the entity's diversity policy and its progress towards achieving them, and either: <ol style="list-style-type: none"> <li>1. the respective proportions of men and women on the board, in senior executive positions and across the whole organisation (including how the entity has defined "senior executive" for these purposes); or</li> <li>2. if the entity is a "relevant employer" under the Workplace Gender Equality Act, the entity's most recent "Gender Equality Indicators", as defined in and published under that Act.</li> </ol> </li> </ol>	Yes	<p>Calix has adopted a diversity policy which outlines the requirements of the Board to set diversity objectives and measure Calix's progress against those objectives.</p> <p>Progress against the objectives will be disclosed annually. A copy of Calix's diversity policy is available on Calix's website.</p>
<p><b>Recommendation 1.6</b></p> <p>A listed entity should:</p> <ol style="list-style-type: none"> <li>a. have and disclose a process for periodically evaluating the performance of the board, its committees and individual directors; and</li> <li>b. disclose, in relation to each reporting period, whether a performance evaluation was undertaken in the reporting period in accordance with that process</li> </ol>	Yes	<p>Calix has adopted in its Board Charter a process for evaluation of the Board, its committees and individual Directors. This process is conducted by the Board and may involve external input as deemed appropriate. Calix will disclose if a performance evaluation has been conducted.</p>
<p><b>Recommendation 1.7</b></p> <p>A listed entity should:</p> <ol style="list-style-type: none"> <li>a. have and disclose a process for periodically evaluating the performance of its senior executives; and</li> <li>b. disclose in relation to each reporting period, whether a performance evaluation was undertaken in the reporting period in accordance with that process.</li> </ol>	Yes	<p>Calix has a Remuneration and Nomination Committee which undertakes performance evaluation of the senior executives on at least an annual basis. Calix will disclose if a performance evaluation has been conducted.</p>

ASX Principle and Recommendation	Compliance	Explanation
<b>Principle 2: Structure the Board to add value</b>		
<p>The board of a listed entity should:</p> <p>a. have a nomination committee which:</p> <ol style="list-style-type: none"> <li>1. has at least three members, a majority of whom are independent directors; and</li> <li>2. is chaired by an independent director, and disclose:               <ol style="list-style-type: none"> <li>i. the charter of the committee;</li> <li>ii. the members of the committee; and</li> <li>iii. as at the end of each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; or</li> </ol> </li> </ol> <p>if it does not have a nomination committee, disclose that fact and the processes it employs to address board succession issues and to ensure that the board has the appropriate balance of skills, knowledge, experience, independence and diversity to enable it to discharge its duties and responsibilities effectively.</p>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Calix has a Remuneration and Nomination Committee which undertakes succession planning to ensure the Board has an appropriate balance of skills, knowledge, experience, independence and diversity to enable it to discharge its duties and responsibilities effectively on at least an annual basis.</p> <p>The current Remuneration and Nomination Committee is comprised of two independent Directors being Peter Turnbull (Chair) and Jack Hamilton.</p> <p>The Board considers that, given the current size and scope of Calix's operations, efficiencies or other benefits would not be gained by establishing a committee with 3 members.</p>
<p><b>Recommendation 2.2</b></p> <p>A listed entity should have and disclose a board skills matrix setting out the mix of skills and diversity that the board currently has or is looking to achieve in its membership.</p>	<p>Yes</p>	<p>Calix has and will disclose in each annual report a skills matrix in relation to the current Board as well as the skills Calix is looking to achieve in its Board.</p>
<p><b>Recommendation 2.3</b></p> <p>A listed entity should disclose:</p> <ol style="list-style-type: none"> <li>a. the names of the directors considered by the board to be independent directors;</li> <li>b. if a director has an interest, position, association or relationship of the type described in Box 2.3 of the recommendations but the board is of the opinion that it does not compromise the independence of the director, the nature of the interest, position, association or relationship in question and an explanation of why the board is of that opinion; and</li> <li>c. the length of service of each director.</li> </ol>	<p>Yes</p>	<p>At the Prospectus Date, Peter Turnbull, Jack Hamilton and Lance O'Neill are considered to be independent Directors.</p> <p>Details of the Directors' interests, positions, associations and relationships are provided in Section 5.1</p> <p>The length of service and independency (or otherwise) of each Director will be provided in each annual report and is, at the Prospectus Date, as follows:</p> <ul style="list-style-type: none"> <li>• Peter Turnbull - since 12 February 2009;</li> <li>• Jack Hamilton - since 1 November 2012;</li> <li>• Lance O'Neill - since 10 February 2014;</li> <li>• Phil Hodgson - since 10 February 2014; and</li> <li>• Mark Sceats - since 10 February 2014.</li> </ul>
<p><b>Recommendation 2.4</b></p> <p>A majority of the board of a listed entity should be independent directors.</p>	<p>Yes</p>	<p>The Board is comprised of 3 independent Directors who satisfy the criteria for independence for the purposes of the ASX, and 2 non-independent Directors.</p>

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 2.5</b></p> <p>The chair of the board of a listed entity should be an independent director and, in particular, should not be the same person as the CEO of the entity.</p>	Yes	The Chair of the Board, Peter Turnbull, satisfies the criteria for independence for the purposes of ASX and is not the CEO of Calix.
<b>Principle 3: Act ethically and responsibly</b>		
<p><b>Recommendation 3.1</b></p> <p>A listed entity should:</p> <p>a. have a code of conduct for its directors, senior executives and employees; and</p> <p>b. disclose that code or a summary of it.</p>	Yes	<p>Calix has established a Code of Conduct which sets out the standards with which the Directors, officers, managers, employees and consultants of Calix are expected to comply in relation to the affairs of Calix's business and when dealing with each other, Shareholders and the broader community.</p> <p>The Code also outlines the procedure for reporting any breaches of the Code and the possible disciplinary action Calix may take in respect of any breaches.</p> <p>In addition to their obligations under the Corporations Act in relation to inside information, all Directors, employees and consultants have a duty of confidentiality to Calix in relation to confidential information they possess.</p> <p>In fulfilling their duties, each Director dealing with corporate governance matters may obtain independent professional advice at Calix's expense, subject to prior approval of the Chair, whose approval will not be unreasonably withheld.</p> <p>Calix's Code of Conduct is available on Calix's website.</p>
<b>Principle 4: Safeguard integrity in corporate reporting</b>		

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 4.1</b></p> <p>The board of a listed entity should:</p> <p>a. have an audit committee which:</p> <ol style="list-style-type: none"> <li>1. has at least three members, all of whom are non-executive directors and a majority of whom are independent directors; and</li> <li>2. is chaired by an independent director, who is not the chair of the board, and disclose:</li> <li>3. the charter of the committee;</li> <li>4. the relevant qualifications and experience of the members of the committee; and</li> <li>5. in relation to each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; or</li> </ol> <p>b. if it does not have an audit committee, disclose that fact and the processes it employs that independently verify and safeguard the integrity of its corporate reporting, including the processes for the appointment and removal of the external auditor and the rotation of the audit engagement partner.</p>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Calix has established a separate Audit and Risk Management Committee (<b>ARMC</b>) under its Audit and Risk Management Committee charter. The ARMC currently comprises two members - Peter Turnbull (Non-Executive Chair), and Jack Hamilton (Non-Executive Director). It is thus comprised of a majority of independent Directors.</p> <p>The chair of the ARMC is Jack Hamilton who is considered by the Board to be 'independent' for the purposes of the ASX Recommendations.</p> <p>Calix's ARMC Charter sets out the purpose and functions of the ARMC.</p> <p>The qualifications, experience and attendance record of the ARMC members will be disclosed in each year's annual report.</p> <p>The ARMC Charter is available on Calix's website.</p>
<p><b>Recommendation 4.2</b></p> <p>The board of a listed entity should, before it approves the entity's financial statements for a financial period, receive from its CEO and CFO a declaration that, in their opinion, the financial records of the entity have been properly maintained and that the financial statements comply with the appropriate accounting standards and give a true and fair view of the financial position and performance of the entity and that the opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.</p>	<p>Yes</p>	<p>As a matter of practice, Calix obtains supporting declarations from its Managing Director and Chief Financial Officer before its financial statements are approved by the Board.</p>
<p><b>Recommendation 4.3</b></p> <p>A listed entity that has an AGM should ensure that its external auditor attends its AGM and is available to answer questions from security holders relevant to the audit.</p>	<p>Yes</p>	<p>In accordance with ASX Recommendation 4.3 Calix has, and will continue to, request that its external auditor attends each annual general meeting and be available to answer Shareholder questions about the conduct of the audit and the preparation and content of the auditor's report.</p>
<p><b>Principle 5: Make timely and balanced disclosure</b></p>		

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 5.1</b></p> <p>A listed entity should:</p> <p>a. have a written policy for complying with its continuous disclosure obligations under the Listing Rules; and</p> <p>b. disclose that policy or a summary of it.</p>	Yes	<p>Calix has adopted a Continuous Disclosure Policy.</p> <p>Calix is a “disclosing entity” pursuant to section 111AR of the Corporations Act and, as such, will be required to comply with the continuous disclosure requirements of section 674 of the Corporations Act and Chapter 3 of the Listing Rules, following admission to ASX.</p> <p>Calix is committed to observing its disclosure obligations under the Corporations Act and, following admission to ASX, its obligations under the Listing Rules. All announcements provided to the ASX will be posted on Calix’s website.</p> <p>The Continuous Disclosure Policy is available on Calix’s website.</p>
<b>Principle 6: Respect the rights of security holders</b>		
<p><b>Recommendation 6.1</b></p> <p>A listed entity should provide information about itself and its governance to investors via its website.</p>	Yes	<p>Comprehensive information about Calix and its corporate governance, including copies of its various corporate governance policies and charters, is available on Calix’s website.</p>
<p><b>Recommendation 6.2</b></p> <p>A listed entity should design and implement an investor relations program to facilitate effective two-way communication with investors.</p>	Yes	<p>Calix has adopted a Shareholder Communications Policy, the purpose of which is to facilitate the effective exercise of Shareholders’ rights by communicating effectively with Shareholders, giving Shareholders ready access to balanced and understandable information about Calix and its corporate strategies and making it easy for Shareholders to participate in general meetings of Calix.</p> <p>Calix communicates with Shareholders as follows:</p> <ul style="list-style-type: none"> <li>• following admission to the ASX, through releases to the market via the ASX;</li> <li>• through Calix’s website;</li> <li>• through information provided directly to Shareholders; and</li> <li>• at general meetings of Calix.</li> </ul> <p>The Shareholder Communications Policy is available on Calix’s website.</p>

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 6.3</b></p> <p>A listed entity should disclose the policies and processes it has in place to facilitate and encourage participation at meetings of security holders.</p>	Yes	<p>Calix supports Shareholder participation in general meetings and seeks to provide appropriate mechanisms for such participation, including by ensuring that meetings are held at convenient times and places to encourage Shareholder participation.</p> <p>In preparing for general meetings of Calix, Calix will draft the notice of meeting and related explanatory information so that they provide all of the information that is relevant to Shareholders in making decisions on matters to be voted on by them at the meeting. This information will be presented clearly and concisely so that it is easy to understand and not ambiguous, and voting procedures and options will be kept as simple as possible to encourage participation.</p> <p>Calix will use general meetings as a tool to effectively communicate with Shareholders and will allow Shareholders a reasonable opportunity to ask questions of the Board and to otherwise participate in the meeting. Mechanisms for encouraging and facilitating Shareholder participation will be reviewed regularly to encourage the highest level of Shareholder participation.</p>
<p><b>Recommendation 6.4</b></p> <p>A listed entity should give security holders the option to receive communications from, and send communications to, the entity and its security registry electronically.</p>	Yes	<p>Calix provides new Shareholders with the option to receive communications from Calix electronically and encourages them to do so. Existing Shareholders are also encouraged to request communications electronically. Following admission to the ASX, all Shareholders that have opted to receive communications electronically will be provided with notifications by Calix when an announcement or other communication (including annual reports and notices of meeting) is uploaded to the ASX announcements platform.</p>

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

ASX Principle and Recommendation	Compliance	Explanation
<b>Principle 7: Recognise and Manage Risk</b>		
<p><b>Recommendation 7.1</b></p> <p>The board of a listed entity should:</p> <p>a. have a committee or committees to oversee risk each of which:</p> <ol style="list-style-type: none"> <li>1. has at least three members, a majority of whom are independent directors; and</li> <li>2. is chaired by an independent director, and disclose:</li> <li>3. the charter of the committee;</li> <li>4. the members of the committee; and</li> <li>5. as at the end of each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; or</li> </ol> <p>b. if it does not have a risk committee or committees that satisfy (a) above, disclose that fact and the processes it employs for overseeing the entity's risk management framework.</p>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Calix has established a separate Audit and Risk Management Committee under its Audit and Risk Management Committee Charter.</p> <p>The ARMC comprises Peter Turnbull (Non-Executive Chair), and Jack Hamilton (Non-Executive Director, and is thus comprised of a majority of independent Directors.</p> <p>The chair of the ARMC is Jack Hamilton who is considered by the Board to be 'independent' for the purposes of the ASX Recommendations.</p> <p>Calix's ARMC Charter sets out the purpose and functions of the ARMC.</p> <p>The qualifications, experience and attendance record of the ARMC members will be disclosed in each year's annual report.</p> <p>The ARMC Charter is available on Calix's website</p>
<p><b>Recommendation 7.2</b></p> <p>The board or a committee of the board should:</p> <p>a. review the entity's risk management framework at least annually to satisfy itself that it continues to be sound; and</p> <p>b. disclose, in relation to each reporting period, whether such a review has taken place.</p>	<p>Yes</p>	<p>Calix has established a separate Audit and Risk Management Committee under its Audit and Risk Management Committee Charter.</p> <p>The ARMC has responsibility for the monitoring of risk on behalf of the Board, and reviews Calix's risk management framework at least annually to ensure it continues to be effective.</p> <p>Disclosure of the outcome of the annual risk management review will be included in the annual report.</p>

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 7.3</b></p> <p>A listed entity should disclose:</p> <p>a. if it has an internal audit function, how the function is structured and what role it performs; or</p> <p>b. if it does not have an internal audit function, that fact and the processes it employs for evaluating and continually improving the effectiveness of its risk management and internal control processes.</p>	No	<p>Calix does not currently have an internal audit function.</p> <p>Calix has adopted internal control procedures pursuant to its Risk Management Policy. Calix's internal controls include the following:</p> <ul style="list-style-type: none"> <li>• Calix has clear and approved authorisation limits in place for all expenditure and payments;</li> <li>• a dual-approval process is in place via electronic banking for all payments;</li> <li>• Calix prepares cash flow forecasts which include materiality thresholds, and which are regularly reviewed; and</li> <li>• Calix regularly reviews its other financial materiality thresholds.</li> </ul> <p>The Board and Senior Management are charged with evaluating and considering improvements to Calix's risk management and internal control processes on an ongoing basis.</p> <p>The Board considers that an internal audit function is not currently necessary given the current size, complexity and scope of Calix's operations.</p> <p>As Calix's operations grow and evolve, the Board will reconsider the appropriateness of adopting an internal audit function.</p>
<p><b>Recommendation 7.4</b></p> <p>A listed entity should disclose whether it has any material exposure to economic, environmental and social sustainability risks and, if it does, how it manages or intends to manage those risks.</p>	Yes	<p>The Board does not consider that Calix currently has a material exposure to environmental and social sustainability risks. If such risks develop, Calix will disclose them as part of its disclosure of the outcome of the annual risk management review in the annual report, or otherwise in accordance with its Continuous Disclosure Policy.</p> <p>Calix's exposure to economic (and other) risks are outlined in Section 4. Calix manages these risks via the Audit and Risk Committee oversight, and a robust risk management process undertaken by management under that oversight. Calix also has a Safety, Health and Environmental Policy which is available on Calix's website.</p>

## 5. BOARD, MANAGEMENT AND CORPORATE GOVERNANCE

ASX Principle and Recommendation	Compliance	Explanation
<b>Principle 8: Remunerate fairly and responsibly</b>		
<p>The board of a listed entity should:</p> <p>a. have a remuneration committee which:</p> <ol style="list-style-type: none"> <li>1. has at least three members, a majority of whom are independent directors; and</li> <li>2. is chaired by an independent director, and disclose:</li> <li>3. the charter of the committee;</li> <li>4. the members of the committee; and</li> <li>5. as at the end of each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; or</li> </ol> <p>b. if it does not have a remuneration committee, disclose that fact and the processes it employs for setting the level and composition of remuneration for directors and senior executives and ensuring that such remuneration is appropriate and not excessive.</p>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Calix has established a Remuneration and Nomination Committee whose purpose is to provide oversight of a framework for assessing, monitoring and managing remuneration of Directors, Key Management and staff of Calix.</p> <p>The Remuneration and Nomination Committee currently comprises two members - Peter Turnbull (Non-Executive Chair), and Jack Hamilton (Non-Executive Director, and is thus comprised of a majority of independent Directors.</p> <p>The chair of the Remuneration Committee is Peter Turnbull who is considered by the Board to be 'independent' for the purposes of the ASX Recommendations.</p> <p>The Remuneration and Nomination Committee Charter outlines the roles and responsibilities of the Remuneration and Nomination Committee, which are primary to assist the Directors to discharge their duties with regard to the Remuneration and Nomination Committee Charter.</p> <p>The Board considers that, given its current size, efficiencies or other benefits would not be gained by a remuneration committee comprised of 3 (or more) Directors.</p> <p>Following admission to ASX, Calix will set out the remuneration paid or provided to Directors and senior executives annually in the remuneration report contained within Calix's annual report to Shareholders.</p> <p>As Calix's operations grow and evolve, the Board will reconsider the appropriateness of adding an additional Director to the Remuneration and Nomination Committee.</p> <p>The Remuneration and Nomination Committee Charter is available on Calix's website.</p>
<p><b>Recommendation 8.2</b></p> <p>A listed entity should separately disclose its policies and practices regarding the remuneration of non-executive directors and the remuneration of executive directors and other senior executives.</p>	<p>Yes</p>	<p>Calix's policies and practices regarding the remuneration of executive and non-executive Directors and other senior executives are set out in the Remuneration Report contained in Calix's Annual Report for each financial year.</p>

ASX Principle and Recommendation	Compliance	Explanation
<p><b>Recommendation 8.3</b></p> <p>A listed entity which has an equity-based remuneration scheme should:</p> <p>a. have a policy on whether participants are permitted to enter into transactions (whether through the use of derivatives or otherwise) which limit the economic risk of participating in the scheme; and</p> <p>b. disclose that policy or a summary of it.</p>	Yes	<p>Calix has adopted an Employee Incentive Scheme. In accordance with Calix's Securities Trading Policy, the Scheme does not allow participants to enter transactions that would limit their economic risk under the scheme.</p> <p>Calix's Securities Trading Policy sets out the circumstances in which the Directors, executives, and employees, contractors, consultants and advisors (<b>Designated Persons</b>) are prohibited from dealing in Calix's Securities.</p> <p>The policy provides that where a Designated Person is entitled to equity-based remuneration arrangements, that Designated Person must not at any time enter into a transaction (e.g. writing a call option) that operates or is intended to operate to limit the economic risk of holdings of unvested Calix Securities or vested Calix Securities which are subject to a holding lock.</p> <p>The Securities Trading Policy is available on Calix's website.</p>

### 5.5.3 Corporate Governance Policies and Principles

Calix has a comprehensive set of policies which augment the oversight role of the Board, which are regularly reviewed and updated in line with best practice and legislative changes. The suite of policies is available on Calix's website and selection of them are summarised below:

#### 5.5.3.1 Continuous Disclosure Policy

Once the Calix is listed on the ASX, it will be required to comply with the continuous disclosure requirements that are set out in the ASX listing rules and the Corporations Act. The policy sets out the information that is subject to mandatory disclosure and the method by which it should be disclosed and by whom. It also provides guidelines for disclosing information to the public, the media and analysts. The policy is designed to ensure that Calix complies with its continuous disclosure obligations.

#### 5.5.3.2 Securities Trading Policy

The policy provides guidelines that apply to all employees and Directors and additional restrictions on trading that apply to Directors and Key Management Personnel. The purpose of the policy is to ensure that the reputation and integrity of Calix is preserved and that any dealings in securities do not reflect badly on the Company or its staff and that there are no breaches of securities trading legislation.

#### 5.5.3.3 Code of conduct policy

The policy sets out core principals of conduct at Calix and certain guidelines on how these principals are to be interpreted. This includes reference to the duties owed by Directors, officers and employees to the Company, creditors, Shareholders and other stakeholders in Calix.

#### 5.5.3.4 Risk Management policy

This policy outlines risk identification, assessment, monitoring, mitigation and management activities that Calix is to use to address risk and the systems and culture to be adopted to ensure risk is managed effectively.

#### 5.5.3.5 Diversity policy

This policy sets out Calix's aims for achieving diversity in the workplace at all levels including the board, management and staff.

**DETAILS OF  
THE OFFER**

**6**

## 6.1 DESCRIPTION OF THE OFFER

This Prospectus relates to an initial public offering of 15,094,340 Shares by Calix at an Offer Price of \$0.53 per Share, raising gross proceeds of \$8.0 million.

On Completion, approximately 90.1 million Shares will be subject to certain escrow arrangements described in Section 5.4.

The total number of Shares on issue at the Completion of this Offer will be approximately 122.7 million and all Shares will rank equally with each other. There will also be approximately 8.9 million Warrants on issue (all of which are vested) at Completion of the Offer. A summary of the rights attaching to the Shares is set out in Section 10.6. A summary of the terms of the Warrants is set out in Section 10.6.

The Offer is made on the terms, and is subject to the conditions, set out in this Prospectus.

### 6.1.1 Structure of the Offer

The Offer comprises:

- the Retail Offer, consisting of:
  - the Broker Firm Offer - open to retail investors in Australia who have received a firm allocation from their Broker (see Section 6.3.1);
  - the Priority Offer - open to selected investors (as agreed between Calix and the Joint Lead Managers) who receive a Priority Offer invitation (see Section 6.3.2); and
- the Institutional Offer - an invitation to bid for Offer Shares made to Institutional Investors in Australia and certain other eligible jurisdictions (see Section 6.4).

No general public offer of Shares will be made under the Offer. Members of the public wishing to apply for Offer Shares under the Offer must do so through a Broker.

Details of the Broker Firm Offer and the allocation policy under it are described in Section 6.3.1. Details of the Priority Offer and the allocation policy under it are described in Section 6.3.2. Details of the Institutional Offer and the allocation policy under it are described in Section 6.4.

The allocation of Shares between the Broker Firm Offer, the Priority Offer and the Institutional Offer is agreed between Calix and the Joint Lead Managers, having regard to the allocation policies outlined in Sections 6.3 and 6.4.

### 6.1.2 Purpose of the Offer and Use of Offer Proceeds

The purpose of the Offer is to raise approximately \$8.0 million before expenses. It is anticipated that the proceeds from the Offer will be indicatively applied as follows over the 24 months following the Prospectus Date. The Directors believe that Calix will have sufficient working capital on completion of the Offer to carry out its objectives as stated in this Prospectus:

Sources	\$ million	%	Uses	\$ million	%
Issue of new Offer Shares	8.0	100%	Development pipeline - advanced batteries (Section 2.7.2)	1.5	18.75%
<b>Total</b>	<b>8.0</b>	<b>100%</b>	BOOSTER-Mag licensing support costs (Section 2.6.2.4)	0.5	6.25%
			Manufacturing logistics and efficiencies (Section 2.3.2)	2.3	28.75%
			New market development - US, EU, Asia (Sections 2.5.1.7, 2.6.1.5)	2.2	27.5%
			Working capital	1.5	18.75%
			<b>Total</b>	<b>8.0</b>	<b>100%</b>

The information above is indicative only. Actual use of funds will depend upon a variety of factors as the business strategy is executed, including changing market conditions and competitive response. As with any budget, intervening events and new circumstances have the potential to affect the manner in which funds are ultimately applied. The Board reserves the right to alter the way the funds are applied on this basis.

## 6. DETAILS OF THE OFFER

### 6.1.3 Ownership Structure of Calix

The ownership structure of Calix immediately prior to the Offer, and as expected on completion of the Offer, is set out below:

	Shares held immediately prior to Completion <sup>2</sup>		Shares held on Completion		LNH Warrants <sup>1</sup> and JLM <sup>2</sup> & FA <sup>3</sup> Warrants held on Completion	Shares held on Completion (fully diluted) <sup>3</sup>	
	(m)	(%)	(m)	(%)	(m)	(m)	(%)
Sculptor Finance Shareholders	28.1m	26.1%	28.1m	22.9%	-	28.1m	21.4%
Key Management Personnel	17.4m	16.2%	17.4m	14.2%	1.0m	18.4m	14.0%
Nicholas Merriman and Associates	11.7m	10.9%	11.7m	9.6%	1.3m	13.1m	9.9%
Paul Crowther	8.3m	7.7%	8.3m	6.8%	1.6m	9.9m	7.5%
Washington H. Soul Pattinson and Co.	5.7m	5.3%	7.5m	6.2%	1.1m	8.7m	6.6%
Acorn Capital	4.7m	4.4%	6.6m	5.4%	-	6.6m	5.0%
Other management and employees	3.8m	3.5%	3.8m	3.1%	0.2m	4.0m	3.0%
Non-executive Directors	3.0m	2.8%	3.0m	2.5%	0.3m	3.4m	2.5%
Other Existing Shareholders	24.9	23.2%	24.9m	20.3%	1.4m	26.3m	20.0%
New investors in the Offer	-	-	11.3m	9.2%	-	11.3m	8.6%
Other warrants holders	-	-	-	-	0.6m	0.6m	0.5%
Joint Lead Managers	-	-	-	-	1.2m	1.2m	0.9%
<b>Total Shares</b>	<b>107.6m</b>	<b>100%</b>	<b>122.7m</b>	<b>100%</b>	<b>8.9m</b>	<b>131.6m</b>	<b>100%</b>

Notes:

1. LNH Warrants are exercisable at \$0.50 up until 31 October 2019. There are 6,560,800 LNH Warrants on issue at the date of the Prospectus.
2. JLM Warrants are exercisable at \$0.66 up until 30 June 2022. The 1.2m Warrants will be issued upon Completion of the Offer.
3. Financial Advisor Warrants are exercisable at \$0.66 up until 30 June 2022. The 1.1m Warrants will be issued upon Completion of the Offer.
4. Washington H. Soul Pattinson and Co. has committed to subscribe for 1.9m Offer Shares under the Offer and Acorn Capital has committed to subscribe for 1.9m Offer Shares under the Offer
5. Errors due to rounding

### 6.1.4 Control Implications of the Offer

As at the date of this Prospectus, no single Shareholder, or group of Shareholders, exercises control of Calix. Assuming Existing Shareholders do not take up any Offer Shares in the Offer, it is not expected that any one Shareholder or groups of Shareholders will control Calix as a result of allocations under the Offer.

## 6.2 TERMS AND CONDITIONS OF THE OFFER

Topic	Summary
<b>What is the type of security being offered?</b>	Shares (being fully paid ordinary shares in the capital of Calix).
<b>What are the rights and liabilities attached to the security being offered?</b>	A description of the Shares, including the rights and liabilities attaching to them, is set out in Section 10.5.
<b>What is the consideration payable for each security being offered?</b>	Successful Applicants under the Offer will pay the Offer Price, being \$0.53 per Share.
<b>What is the Offer period?</b>	<p>The key dates, including details of the Offer Period relating to each component of the Offer, are set out on page 4.</p> <p>The timetable is indicative only and may change. Unless otherwise indicated, all times are stated as Sydney time.</p> <p>Calix and the Joint Lead Managers may vary the times and dates for the Offer without notice (including, subject to the ASX Listing Rules and the Corporations Act, to close the Offer early, to extend the Offer period relating to any component of the Offer, or to accept late Applications, either generally or in particular cases, or to cancel or withdraw the Offer before Completion, in each case without notifying any recipient of this Prospectus or any Applicants).</p> <p>If the Offer is cancelled or withdrawn before Completion, then all Application Monies will be refunded in full (without interest) as soon as possible in accordance with the requirements of the Corporations Act.</p>
<b>Acceptance of Applications</b>	<p>An Application in the Institutional Offer, Broker Firm Offer or Priority Offer is an offer by an Applicant to Calix to apply for Offer Shares in the amount specified on the Application Form at the Offer Price, and on the terms and conditions set out in this Prospectus and the Application Form (including the conditions regarding quotation on ASX and the acknowledgements). To the extent permitted by law, an Application by an Applicant under the Institutional Offer, Broker Firm Offer or Priority Offer is irrevocable.</p> <p>An Application may be accepted by Calix and the Joint Lead Managers in respect of the full number of Shares specified in the Application Form or any of them, without further notice to the Applicant. Acceptance of an Application will give rise to a binding contract. Any surplus Application Monies will be returned to the Applicant (without interest).</p> <p>Calix reserves the right to close the Offer early.</p>
<b>Who can apply?</b>	<p>The Broker Firm Offer is open to persons who have received a firm allocation from their Brokers and who have a registered address in Australia. You should contact your Broker to determine whether you can receive a firm allocation from them under the Broker Firm Offer.</p> <p>The Priority Offer is open to selected investors who have a registered address in Australia and who have received an invitation to participate from Calix. If you are a Priority Offer Applicant, you should have received a personalised invitation to apply for Shares in the Priority Offer.</p> <p>The Institutional Offer consisted of an invitation to certain Institutional Investors in Australia and a number of other eligible jurisdictions to apply for Shares. The Joint Lead Managers separately advised Institutional Investors of the application procedures for the Institutional Offer.</p>
<b>What are the cash proceeds of the Offer?</b>	Based on the Offer Price, the expected proceeds of the Offer is \$8.0 million.

## 6. DETAILS OF THE OFFER

Topic	Summary
<b>What is the minimum and maximum Application size under the Retail Offer (i.e. the Broker Firm Offer and the Priority Offer)?</b>	<p>The minimum Application under the Broker Firm Offer and the Priority Offer is \$2,000.22 worth of Shares (3,774 Shares), there is no maximum value of Shares that may be applied for under the Broker Firm Offer or the Priority Offer.</p> <p>Calix and the Joint Lead Managers reserve the right to not accept Applications, to reject any Application, or to scale back any Application.</p> <p>Calix and the Joint Lead Managers reserve the right to aggregate any Applications that they believe may be multiple Applications from the same person.</p>
<b>What is the allocation policy?</b>	<p>The allocation of Offer Shares between the Broker Firm Offer, the Priority Offer and the Institutional Offer was determined by Calix and the Joint Lead Managers having regard to the allocation policies outlined in Sections 6.3 and 6.4.</p> <p>With respect to the Broker Firm Offer, the relevant Broker will decide how it allocates Offer Shares among its eligible retail clients, and they (and not Calix or the Joint Lead Managers) will be responsible for ensuring that eligible retail clients who have received an allocation from it receive the relevant Offer Shares.</p> <p>The allocation of Offer Shares among Applicants in the Priority Offer and the Institutional Offer will be agreed by Calix and the Joint Lead Managers.</p> <p>Calix and the Joint Lead Managers have absolute discretion regarding the allocation of Shares to applicants under the Offer and may reject any Application, or scale back any Application, in their absolute discretion.</p>
<b>Payment methods</b>	<p>Applicants under the Broker Firm Offer must pay their Application Monies to their Broker in accordance with instructions provided by their Broker.</p> <p>If you are a Priority Offer Applicant, you must pay for Offer Shares applied for following the instructions on your personalised invitation.</p> <p>If you are an Institutional Offer Applicant, you must pay for the Offer Shares applied for by following the instructions from the Joint Lead Managers.</p>
<b>When will I receive confirmation that my Application has been successful?</b>	<p>It is expected that initial holding statements will be dispatched to successful Applicants by post on or about 16 July 2018.</p> <p>Refunds (without interest) to Applicants who make an Application and receive a lesser value of Shares than the amount of the Application Monies (including where no Shares are allocated), will be made as soon as practicable after Completion of the Offer.</p>
<b>Will the Shares be listed?</b>	<p>Calix will apply to ASX for admission to the Official List of the ASX and quotation of Shares on the ASX (which is expected to be under the code CXL) within seven days of the Prospectus Date.</p> <p>Completion is conditional on ASX approving this application. If approval is not given within three months after such application is made (or any longer period permitted by law), the Offer will be withdrawn and all Application Monies received will be refunded without interest, as soon as practicable in accordance with the requirements of the Corporations Act.</p> <p>ASX takes no responsibility for this Prospectus or the investment to which it relates. The fact that ASX may admit Calix to the Official List is not to be taken as an indication of the merits of Calix or the Offer Shares.</p>
<b>When are the Shares expected to commence trading?</b>	<p>It is expected that trading of the Shares on ASX will commence on or about 20 July 2018, on a normal settlement basis.</p> <p>It is the responsibility of each Applicant to confirm their holding before trading in Shares. Applicants who sell Shares before they receive an initial holding statement do so at their own risk.</p> <p>Calix, the Share Registry and the Joint Lead Managers disclaim all liability, whether in negligence or otherwise, to persons who sell Shares before receiving their initial holding statement, whether on the basis of a confirmation of allocation provided by any of them, by a Broker, or otherwise.</p>

Topic	Summary
<b>Are there any escrow arrangements?</b>	Yes. Details are provided in Section 6.5.
<b>Has an ASIC relief or ASX waiver been obtained or applied for?</b>	Yes. Details are provided in Section 10.13.
<b>Are there any tax considerations?</b>	Yes. The tax consequences of any investment in the Shares will depend upon an investor's particular circumstances. Applicants should obtain their own tax advice prior to deciding whether to invest. Refer to Section 6.9.
<b>Is there any brokerage, commission, or stamp duty payable?</b>	No brokerage, commission or stamp duty is payable by Applicants on acquisition of Offer Shares under the Offer. See Section 5.3.6 for details of various fees payable by Calix to the Joint Lead Managers and by the Joint Lead Managers to Brokers.
<b>What should I do with any enquiries?</b>	All enquiries in relation to this Prospectus should be directed to the Offer Information Line on 1300 737 760 (toll free within Australia) or +61 2 9290 9600 (outside Australia) between 9.00am and 5.00pm (Sydney Time) Monday to Friday (excluding public holidays). If you are unclear in relation to any matter or are uncertain as to whether Calix is a suitable investment for you, you should seek professional guidance from your stockbroker, solicitor, accountant, financial advisor or other independent professional advisor before deciding whether to invest.

## 6.3 RETAIL OFFER

### 6.3.1 Broker Firm Offer

The Broker Firm Offer is open to retail investors who have received a firm allocation of Offer Shares from their Broker. You should contact your Broker to determine whether you can receive an allocation of Offer Shares from them under the Broker Firm Offer.

If you receive an invitation to apply for Offer Shares from your Broker and wish to apply for those Offer Shares under the Broker Firm Offer, you should contact your Broker to request a Prospectus and Application Form, or download a copy at [www.boardroomlimited.com.au/calix](http://www.boardroomlimited.com.au/calix). Your Broker will act as your agent and it is your Broker's responsibility to ensure that your Application Form and Application Monies are received before 5.00pm (Sydney Time) on the Closing Date or any earlier closing date determined by your Broker.

An Application under the Broker Firm Offer is an offer by an Applicant to Calix to apply for Shares in the amount specified in the Application Form at the Offer Price on the terms and conditions set out in this Prospectus (including any supplementary or replacement prospectus) and the Application Form. To the extent permitted by law, an Application by an Applicant under the Offer is irrevocable.

Broker clients should complete and lodge their Application Form and Application Monies with the Broker from whom you received your invitation to acquire Offer Shares under this Offer. Applicants under the Broker Firm Offer must pay their Application Monies to their Broker in accordance with the instructions provided by that Broker.

Application Forms must be completed in accordance with the instructions given to you by your Broker and the instructions set out on the back of the Application Form. Applicants under the Broker Firm Offer must not send their Application Forms or Application Monies to the Share Registry.

By making an Application, you declare that you were given access to the Prospectus, (or any supplementary or replacement Prospectus) together with an Application Form. The Corporations Act prohibits any person from passing an Application Form to another person unless it is attached to, or accompanied by, a hard copy of this Prospectus or the complete and unaltered electronic version of this Prospectus.

Calix and the Joint Lead Managers reserve the right not to accept Applications in the Broker Firm Offer that are from persons who they believe may be Institutional Investors, to reject any Application, or to scale back any Application.

Calix, the Joint Lead Managers and the Share Registry take no responsibility for acts or omissions committed by your Broker in connection with your Application.

## 6. DETAILS OF THE OFFER

The allocation of Offer Shares to Brokers was determined by the Joint Lead Managers in consultation with Calix. Offer Shares which have been allocated to Brokers for allocation to their eligible retail clients will be issued or transferred to successful Applicants who have received a valid firm allocation of Offer Shares from their Brokers. The allocation of Offer Shares among Applicants under the Broker Firm Offer will be at the sole and absolute discretion of the relevant Broker. Those Brokers (and not Calix or the Joint Lead Managers) will be responsible for ensuring that their clients who have received an allocation from them, receive the relevant Offer Shares.

### 6.3.2 Priority Offer

If you have received a personalised invitation to apply for Offer Shares under the Priority Offer and you wish to apply for all or some of those Offer Shares, you should follow the instructions on your personalised invitation to apply.

You may apply for an amount up to and including the amount indicated on your personalised invitation. Applications under the Priority Offer must be for a minimum of \$2,000.22 worth of Offer Shares (3,774 Offer Shares).

By making an Application, you declare that you were given access to this Prospectus (or any supplementary or replacement prospectus), together with an Application Form. The Corporations Act prohibits any person from passing an Application Form to another person unless it is included in, or accompanied by, a hard copy of this Prospectus or the complete and unaltered electronic version of this Prospectus.

An Application under the Priority Offer is an offer by an Applicant to Calix to apply for Offer Shares in the amount specified in the Application Form at the Offer Price, and on the terms and conditions set out in this Prospectus (including any supplementary or replacement prospectus) and the Application Form. To the extent permitted by law, an Application by an Applicant under the Offer is irrevocable.

An Application may be accepted by Calix and the Joint Lead Managers in respect of the full number of Offer Shares specified in the Application Form, or any of them, without further notice to the Applicant. Calix reserves the right to decline any Application in whole or in part, without giving any reason. Applicants under the Priority Offer who are allocated a lesser number of Offer Shares than the amount applied for will receive a refund of all or part of their Application Monies, as applicable. Interest will not be paid on any monies refunded.

If the amount of your Application Monies that you pay is less than the amount specified on your Application Form, you may be taken to have applied for such lower Australian dollar amount of Shares as for which your cleared Application Monies will pay (and to have specified that amount on your Application Form) or your Application may be rejected.

The allocation of Offer Shares among Applicants in the Priority Offer will be determined by Calix and the Joint Lead Managers. Calix and the Joint Lead Managers have absolute discretion regarding the basis of allocation of Offer Shares under the Priority Offer.

Acceptance of an Application will give rise to a binding contract.

### 6.4 INSTITUTIONAL OFFER

The Institutional Offer will be conducted using a bookbuild process managed by the Joint Lead Managers. Full details of how to participate, including bidding instructions, will be provided to eligible participants by the Joint Lead Managers.

The Joint Lead Managers, in consultation with Calix reserve the right to vary the times and dates of the Offer, including to close the Offer early, extend the closing date or accept late Applications or bids, either generally or in particular cases, without notification.

Bids in the Institutional Offer may be amended or withdrawn at any time up to the close of the Institutional Offer. Any bid not withdrawn at the close of the Institutional Offer is an irrevocable offer by the relevant bidder to apply or procure Applicants for the Shares bid for (or such lesser number as may be allocated) at the Offer Price.

The allocation of Offer Shares among Applicants in the Institutional Offer will be determined by the Joint Lead Managers in consultation with Calix. The Joint Lead Managers and Calix have absolute discretion regarding the basis of allocation of Offer Shares among Institutional Investors.

Bids can be accepted or rejected in whole or in part without further notice to the bidder. Acceptance of a bid will give rise to a binding contract on allocation of Shares to successful Applicants.

Details of the arrangements for notification and settlement of allocations applying to participants in the Institutional Offer will be provided to participants by the Joint Lead Managers.

## 6.5 ESCROW ARRANGEMENTS

The following table summarises the escrow arrangements that will apply to the Securities held by Escrowed Securityholders immediately following Completion:

Escrowed Securityholders	Shares held on Completion subject to escrow		Warrants held on Completion subject to escrow	Escrow Period	Mandatory (M) or voluntary (V) escrow or both
	(m)	(%)			
Sculptor Finance Shareholders	28.1m	22.9%	-	Up to 9 Months <sup>1</sup>	V
Key Management Personnel	17.4m	14.1%	0.5	Up to 24 months <sup>2</sup>	V and M
Nicholas Merriman and Associates	11.7m	9.6%	1.3	Up to 9 months <sup>3</sup>	V and M
Paul Crowther	8.3m	6.8%	-	Up to 9 months <sup>4</sup>	V
Washington H. Soul Pattinson and Co.	5.7m	4.6%	1.1	Up to 24 months <sup>4</sup>	V and M
Other Management and Employees	1.4m	1.1%	-	Up to 9 months <sup>5</sup>	V
Non-executive Directors	3.0m	2.5%	0.3	Up to 24 months <sup>6</sup>	V and M
Joint Lead Managers	-	-	1.2	24 months <sup>7</sup>	M
Other Existing Shareholders	14.5m	11.8%	-	Up to 9 months <sup>5</sup>	V
<b>Total Escrowed Securityholders</b>	<b>90.1</b>	<b>73.4%</b>	<b>4.4</b>		

### Notes

- Of 28.1m shares held post completion, 6.7m shares are eligible for release from escrow from 31 Aug 2018 (see Section 6.5.1), the remaining 21.4m shares are released in March 2019.
- Of 17.4m shares held post completion, 1.7m shares are escrowed for approximately 9 months (ie up to 10 business days following the release of half year results to 31 December 2018), 6.3m shares are escrowed for 15 months and 9.4m shares are escrowed for 24 months. Warrants are escrowed for 24 months.
- Of 11.7m shares held post completion, 5.0m shares are escrowed for approximately 9 months (ie up to 10 business days following the release of half year results to 31 December 2018) and 6.7m shares are escrowed for 24 months. Warrants are escrowed for 24 months.
- Shares escrowed for approximately 9 months (ie up to 10 business days following the release of half year results to 31 December 2018), FA Warrants are escrowed for 24 months.
- Escrowed for approximately 9 months (ie up to 10 business days following the release of half year results to 31 December 2018).
- Of 3.0m shares held on completion, 0.9m shares are escrowed for 15 months and 2.1m shares are escrowed for 24 months. Warrants are escrowed for 24 months.
- JLM Warrants are escrowed for 24 months. Warrants are escrowed for 24 months.

### 6.5.1 Voluntary Escrow Arrangements

The Securities held by certain Escrowed Securityholders at Completion of the Offer (other than any purchase by them under the Offer) will be subject to voluntary escrow arrangements, as set out in the table above. Under the terms of these arrangements, subject to certain exceptions (described below), Shares held by the Escrowed Securityholders may only be sold after 11.59pm (Sydney time) on the date that is 10 business days following the release of Calix's financial accounts for the 6 months ended 31 December 2018.

## 6. DETAILS OF THE OFFER

### **Sculptor Finance Shareholders**

Shares held by Sculptor Finance Shareholders may only be sold before 11.59pm (Sydney time) on the date that is the earlier of 14 March 2019, and 10 business day following the release of Calix's financial accounts for 6 months ended 31 December 2018, on the following basis:

Escrowed Securities	Escrow release conditions
23.7% of Escrowed Securities held by Sculptor Finance Shareholders at Completion of the Offer	<p>If the volume-weighted average price for the Shares in any 10 consecutive trading days on and from the earlier of:</p> <ul style="list-style-type: none"> <li>• the announcement of the financial results for the financial year ended 30 June 2018; and</li> <li>• 31 August 2018,</li> </ul> <p>exceeds the Offer Price by more than 25%, then those Escrowed Securities are released from escrow after 11.59pm (Sydney time) on the later of:</p> <ul style="list-style-type: none"> <li>• 30 September 2018, and</li> <li>• the date on which that volume weighted average price is achieved (if it occurs after 30 September 2018).</li> </ul> <p>The remaining Escrowed Securities held by Sculptor Finance Shareholders may be sold after 11.59pm (Sydney time) on the earlier of 14 March 2019, and the date that is 10 business days following the release of Calix's financial accounts for the 6 months ended December 2018.</p>
Up to 100% of Escrowed Securities held by Sculptor Finance Shareholders at Completion of the Offer	<p>Subject to the purchaser of the Escrowed Securities agreeing to the same escrow conditions that applied to the Escrowed Securities, as held by Sculptor Finance Shareholders:</p> <ul style="list-style-type: none"> <li>• up to 100% of the Escrowed Securities held by the Sculptor Finance Shareholders if ASIC makes a declaration that the Corporations Act is modified such that Calix does not have a relevant interest in those Escrowed Securities in the hands of the purchaser for the purposes of the takeover provision of the Corporations Act; and</li> <li>• up to 65% of the Escrowed Securities held by the Sculptor Finance Shareholders in all other circumstances. This assumes Calix may have up to a 5% relevant interest in its own Shares at the time of such transfer (arising primarily under the Calix Employee Share Scheme Trust). If Calix's relevant interest in its own Shares at that time is above 5% (for example, through the issuance of additional voluntarily escrowed shares), then that proportion of the Escrowed Shares transferred which would otherwise have been escrowed if not for Calix's relevant interest in its own Shares exceeding 5%, will not be subject to escrow.</li> </ul>

### **Board and Senior Management Shareholders**

Escrowed Securities held by members of the Calix Board and Senior Management (being approximately 6.9 million Shares) may only be sold after 11.59pm (Sydney time) on the date that is 10 business days following the release of Calix's financial accounts for the financial year ended 30 June 2019.

### **Terms common to all voluntary escrow arrangements**

Each of the Escrowed Securityholders whose Securities are noted in the table above as being subject to voluntary escrow, has agreed to enter into a voluntary escrow deed with Calix in respect of their Escrowed Securities. This deed will prevent them from disposing of their Escrowed Securities for the applicable escrow period referred to above, subject to certain exceptions (described below).

The restriction on "disposing" is broadly defined and includes, among other things, selling, assigning, transferring or otherwise disposing of any interest (including an economic interest) in the Escrowed Securities, encumbering or granting a security interest over the Escrowed Securities (except to the extent permitted by the escrow deed), granting or exercising an option over the Escrowed Securities, doing, or omitting to do, any act if the act or omission would have the effect of transferring effective ownership or control of any of the Escrowed Securities, or agreeing to do any of those things. Nothing in the deed affects or in any way restricts any right in respect of voting attached to the Escrowed Securities.

All of the Escrowed Securityholders may be released early from these escrow obligations to enable:

- the Escrowed Securityholders to accept an offer under a takeover bid in relation to their Escrowed Securities, or to tender its Securities into a bid acceptance facility established in connection with a takeover bid, if holders of at least half of the Escrowed Securities subject of the bid that are not held by the Escrowed Securityholders (or any other agreement between Calix and its Shareholders which imposes similar restrictions) have accepted the takeover bid or tendered (and not withdrawn) their securities into the bid acceptance facility and, in relation to accepting an offer under a takeover bid only, the takeover bid is unconditional or all conditions have been waived;

- the Escrowed Securities held by the Escrowed Securityholders to be transferred or cancelled as part of a merger by scheme of arrangement under Part 5.1 of the Corporations Act which has received all necessary approvals; and
- Escrowed Securityholders to participate in an equal access buy-back or equal return of capital or other similar pro rata reorganisation which has received all necessary approvals.

In aggregate, approximately 71.9 million Shares will be the subject of these voluntary escrow arrangements.

### 6.5.2 Mandatory Escrow Arrangements

Certain Securities held by Escrowed Securityholders following Completion of the Offer will be subject to mandatory restrictions in accordance with Chapter 9 of the ASX Listing Rules, as set out in the table above.

Chapter 9 of the ASX Listing Rules requires that any such Escrowed Securityholders whose Securities are subject to mandatory escrow, must enter into restrictions agreements in the form required by the ASX Listing Rules which preclude holders of such restricted securities from dealing in or disposing of those securities or an interest in those securities or agreeing to deal in or dispose of those securities or an interest in those securities for the relevant restriction periods. The holder of such securities will be precluded from granting a security interest over those securities. However, ASX may consent to those securities being sold in certain circumstances such as under a takeover bid or under a merger by way of a scheme of arrangement under the Corporations Act.

In aggregate, approximately 18.2 million Shares and 4.6 million Warrants will be the subject of these mandatory escrow arrangements.

## 6.6 RESTRICTIONS ON DISTRIBUTION

An Offer made under this Prospectus is not made to persons or in places which would not be lawful to make the Offer. No action has been taken to register the Offer or otherwise permit the Offer to be made in any jurisdiction outside Australia.

The distribution of this Prospectus in jurisdictions outside Australia may be restricted by law in those jurisdictions and therefore persons who come into possession of this Prospectus should seek advice on and observe any such restrictions. Failure to comply with such restrictions may constitute a violation of applicable securities laws.

Applicants who are residents in countries other than Australia should consult their professional advisors as to whether any governmental or other consents are required or whether any other formalities need to be considered and followed in respect of the Offer.

### 6.6.1 United States

This document may not be released or distributed in the United States. It does not constitute an offer to sell, or solicitation of an offer to buy, securities in the United States. The Offer Shares described in this document have not been, and will not be, registered under the US Securities Act of 1933 or the securities laws of any state or other jurisdiction of the United States, and may not be offered, sold, pledged, transferred or resold in the United States absent registration or an applicable exemption from registration under the US Securities Act of 1933 and applicable state securities laws.

### 6.6.2 Hong Kong

This document has not been, and will not be, registered as a prospectus under the Companies Ordinance (Cap. 32) of Hong Kong (**Companies Ordinance**), nor has it been authorised by the Securities and Futures Commission in Hong Kong pursuant to the Securities and Futures Ordinance (Cap. 571) of the Laws of Hong Kong (**SFO**). No action has been taken in Hong Kong to authorise or register this document or to permit the distribution of this document or any documents issued in connection with it. Accordingly, the Offer Shares have not been and will not be offered or sold in Hong Kong other than to "professional investors" (as defined in the SFO).

No advertisement, invitation or document relating to the Offer Shares has been or will be issued, or has been or will be in the possession of any person for the purpose of issue, in Hong Kong or elsewhere that is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Offer Shares that are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors (as defined in the SFO and any rules made under that ordinance). No person allotted Offer Shares may sell, or offer to sell, such securities in circumstances that amount to an offer to the public in Hong Kong within six months following the date of issue of such securities.

The contents of this document have not been reviewed by any Hong Kong regulatory authority. You are advised to exercise caution in relation to the offer. If you are in doubt about any contents of this document, you should obtain independent professional advice.

### 6.6.3 New Zealand

This document has not been registered, filed with or approved by any New Zealand regulatory authority under the Financial Markets Conduct Act 2013 (**FMC Act**). The Offer Shares are not being offered to the public within New Zealand.

## 6. DETAILS OF THE OFFER

Offer Shares may not be offered or sold in New Zealand (or allotted with a view to being offered for sale in New Zealand) other than to a person who:

- operates an investment business within clause 37 of Schedule 1 of the FMC Act;
- meets the investment activity criteria specified in clause 38 of Schedule 1 of the FMC Act;
- is large within the meaning of clause 39 of Schedule 1 of the FMC Act;
- is a government agency within the meaning of clause 40 of Schedule 1 of the FMC Act; or
- subscribes, or has subscribed, for securities that have a minimum amount payable of at least NZ\$750,000 and is also an eligible investor under clause 41 of the FMC Act.

### 6.6.4 Singapore

This document and any other materials relating to the Offer Shares have not been, and will not be, lodged or registered as a prospectus in Singapore with the Monetary Authority of Singapore. Accordingly, this document and any other document or materials in connection with the offer or sale, or invitation for subscription or purchase, of the Offer Shares, may not be issued, circulated or distributed, nor may Offer Shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore except pursuant to and in accordance with exemptions in Subdivision (4) Division 1, Part XIII of the Securities and Futures Act, Chapter 289 of Singapore (**SFA**), or as otherwise pursuant to, and in accordance with the conditions of any other applicable provisions of the SFA.

This document has been given to you on the basis that you are (i) an existing holder of Calix's Shares, (ii) an "institutional investor" (as defined in the SFA) or (iii) a "relevant person" (as defined in section 275(2) of the SFA). In the event that you are not an investor falling within any of the categories set out above, please return this document immediately. You may not forward or circulate this document to any other person in Singapore.

Any offer is not made to you with a view to the Offer Shares being subsequently offered for sale to any other party. There are on-sale restrictions in Singapore that may be applicable to investors who acquire the Offer Shares. As such, investors are advised to acquaint themselves with the SFA provisions relating to resale restrictions in Singapore and comply accordingly.

## 6.7 DISCRETION REGARDING THE OFFER

Calix may withdraw the Offer at any time before Completion. If the Offer, or any part of it, does not proceed, all relevant Application Monies will be refunded (without interest).

Calix and the Joint Lead Managers also reserve the right, subject to the Corporations Act, to close the Offer or any part of it early, extend the Offer or any part of it, accept late Applications or bids either generally or in particular cases, reject any Application or bid, or (subject to the terms of any guaranteed allocations referred to in this Prospectus) allocate to any Applicant or bidder fewer Shares than applied or bid for.

## 6.8 ASX LISTING, REGISTERS AND HOLDING STATEMENTS

### 6.8.1 Application to the ASX for Listing and Quotation of Shares

Calix will apply for admission to the Official List of ASX and quotation of the Shares on the ASX within 7 days of the Prospectus Date. Calix's ASX code is expected to be CXL.

ASX takes no responsibility for this Prospectus or the investment to which it relates. The fact that ASX may admit Calix to the Official List and grant official quotation of the Shares is not to be taken as an indication of the merits of Calix or the Offer Shares.

If the Shares are not admitted to quotation on the ASX within three months after the Prospectus Date (or any later date permitted by law), the Offer will be withdrawn and all Application Monies received by Calix will be refunded (without interest) in accordance with the requirements of the Corporations Act.

Subject to certain conditions (including any waivers obtained by Calix from time to time), Calix will be required to comply with the ASX Listing Rules.

### 6.8.2 CHESS and Issuer Sponsored Holdings

Calix will apply to participate in ASX's Clearing House Electronic Sub-register System (**CHESS**) and will comply with the ASX Listing Rules and the ASX Settlement Operating Rules. CHESS is an electronic transfer and settlement system for transactions in securities quoted on ASX under which transfers are effected in an electronic form.

When the Shares become approved financial products (as defined in the ASX Settlement Operating Rules), holdings will be registered in one of two sub-registers, an electronic CHESS sub-register or an issuer sponsored sub-register. For all successful Applicants, the Shares of a Shareholder who is a participant in CHESS or a Shareholder sponsored by a participant in CHESS will be registered on the CHESS sub-register. All other Shares will be registered on the issuer sponsored sub-register.

Following Completion, Shareholders will be sent a holding statement that sets out the number of Shares that have been allocated to them. This statement will also provide details of a Shareholder's Holder Identification Number (HIN) for CHESS holders or, where applicable, the Securityholder Reference Number (SRN) of issuer sponsored holders. Shareholders will subsequently receive statements showing any changes to their holding. Certificates will not be issued.

Shareholders will receive subsequent statements during the first week of the following month if there has been a change to their holding on the register and as otherwise required under the ASX Listing Rules and the Corporations Act. Additional statements may be requested at any other time either directly through the Shareholder's sponsoring broker in the case of a holding on the CHESS sub-register or through the Share Registry in the case of a holding on the issuer sponsored sub-register. Calix and the Share Registry may charge a fee for these additional issuer sponsored statements.

## 6.9 AUSTRALIAN TAX CONSIDERATIONS

The following information provides a general overview of certain Australian tax issues for Australian tax resident Shareholders who acquire Offer Shares under this Prospectus. The information is not intended as a substitute for investors obtaining their own independent taxation advice in relation to their specific circumstances. All potential investors in Calix are encouraged to obtain independent financial advice about the consequences of acquiring Offer Shares in the Offer prior to doing so.

No reference is made to the tax implications for non-Australian resident Shareholders. Non-resident Shareholders should seek their own independent tax advice on matters that may affect their tax position as a result of acquiring Offer Shares in the Offer.

The comments in this section are based on the *Income Tax Assessment Act 1936*, the *Income Tax Assessment Act 1997*, *A New Tax System (Goods and Services Tax) Act 1999* and relevant stamp duty and ATO rulings at the date of this Prospectus. If you have any concerns or doubts about the course of action that you should take you are encouraged to seek independent taxation advice.

### **Tax position of Calix**

Calix is taxed as a company at the prevailing company tax rate, which at the date of this Prospectus, is 27.5% for companies of Calix's size. The Company has incurred tax losses over the period referenced in the Historical Financial Statements as set out in Section 3, and its ability to carry forward any tax losses to offset against any future taxable income will be dependent on its ability to satisfy the tax loss recoupment tests.

As at the date of this Prospectus, Calix has subsidiaries in Australia, UK, Belgium and the US. These companies will be subject to taxes within their local jurisdictions. Within Australia, income from these companies may be attributable to Calix and be subject to tax where the relevant requirements are satisfied.

For further information on the Historical tax position of Calix, please refer to Section 3 of this Prospectus.

### **Disposal of Shares**

In Australia, resident taxpayers who dispose of their Shares, referred to as a taxable event, will be subject to capital gains tax. A taxable capital gain generally occurs when the proceeds from the sale of the Shares exceeds the costs paid (cost base) in acquiring them. A taxable loss occurs when the cost base exceeds the proceeds received from disposal of the Shares.

If Shares are held for longer than 12 months Australian resident tax payers may be able to access concessions applicable on taxable capital gains. If the concession applies, after taking in to account any capital losses, a discount on 50% of the capital gains tax liability may apply for individuals and 33.3% may apply for complying superannuation funds. This situation may vary based on each Shareholder's individual circumstances and you are encouraged to seek independent tax advice as to how capital gains tax may apply in your circumstance.

### **Dividends**

If Calix pays a dividend on its Shares, this payment will be considered assessable income for Australian resident taxpayers. A dividend may or may not have franking credits attached to it. If a dividend includes a franking credit then details of the credits will need to be included in assessable income of the Shareholder and a franking credit related tax offset may be applicable.

If a dividend is paid that is unfranked, then the dividend amount should be included in the taxpayer's income tax return with no franking offset.

Shareholders are encouraged to seek their own independent tax advice regarding the taxation implications that may apply to them in respect to any dividends paid by Calix.

### **Stamp duty and GST**

Applicants who acquire Offer Shares in the Offer should not be subject to stamp duty or GST with respect to their purchase or if they subsequently transfer or dispose of their Shares. This may not be the case in all circumstances and Applicants are encouraged to seek advice with respect to how stamp duty or GST may be applied in their own specific circumstance.

**INVESTIGATING  
ACCOUNTANT'S  
REPORT**

**7**



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Level 11, 1 Margaret St  
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Australia

Directors  
Calix Limited  
Level 1, 9 Bridge Street  
PYMBLE NSW 2073

22 June 2018

Dear Directors

## INDEPENDENT LIMITED ASSURANCE REPORT

### INTRODUCTION

BDO Corporate Finance (East Coast) Pty Ltd (**BDO**) has been engaged by Calix Limited (**Calix** or **the Company**) to prepare this Independent Limited Assurance Report (**Report**) in relation to certain financial information of Calix, for the Initial Public Offering (**IPO**) of shares in Calix, for inclusion in a prospectus proposed to be issued on or about 25 June 2018 (**Prospectus**).

Unless stated otherwise in this Report, expressions defined in the Prospectus have the same meaning in this Report.

This Report has been prepared for inclusion in the Prospectus. We disclaim any assumption of responsibility for any reliance on this Report or on the Financial Information to which it relates for any purpose other than that for which it was prepared.

### SCOPE

You have requested BDO to perform a limited assurance engagement in relation to the financial information described below and disclosed in the Prospectus.

The financial information is presented in the Prospectus in an abbreviated form, insofar as it does not include all of the presentation and disclosures required by Australian Accounting Standards (**AAS**) or Australian equivalents to International Financial Reporting Standard (**AIFRS**) and other mandatory professional reporting requirements applicable to general purpose financial reports prepared in accordance with the Corporations Act 2001.

### SCOPE OF REVIEW OF THE STATUTORY HISTORICAL FINANCIAL INFORMATION

You have requested BDO to review the following historical financial information (together the **Statutory Historical Financial Information**) included in the Section 3 of the Prospectus:

- The statutory historical consolidated statements of profit and loss for the years ended 30 June 2015 (**FY15**), 30 June 2016 (**FY16**) and 30 June 2017 (**FY17**) and the half years ended 31 December 2016 (**1H17**) and 31 December 2017 (**1H18**);
- The statutory historical consolidated statements of cash flow for **FY15**, **FY16**, **FY17**, **1H17** and **1H18**; and
- The statutory historical consolidated statements of financial position as 31 December 2017.

## 7. INVESTIGATING ACCOUNTANT'S REPORT



The Statutory Historical Financial Information has been prepared in accordance with the stated basis of preparation, being the recognition and measurement principles contained in Australian Accounting Standards and the company's adopted accounting policies. The Statutory Historical Financial Information has been extracted from:

- the general purpose financial reports (prepared in accordance with Australian Accounting Standards - Reduced Disclosure Requirements) of Calix for the financial years ended 30 June 2015, 30 June 2016 and 30 June 2017, which were audited by BDO East Coast Partnership in accordance with the Australian Auditing Standards; and
- the general purpose financial report (prepared in accordance with Australian Accounting Standards - Reduced Disclosure Requirements) of Calix for the half year ended 31 December 2017 which was reviewed by BDO East Coast Partnership in accordance with the Australian Auditing Standards.

BDO East Coast Partnership issued an unmodified audit opinion in all periods. The Statutory Historical Financial Information is presented in the Prospectus in an abbreviated form, insofar as it does not include all of the presentation and disclosures required by Australian Accounting Standards and other mandatory professional reporting requirements applicable to general purpose financial reports prepared in accordance with the Corporations Act 2001.

### SCOPE OF REVIEW OF THE PRO FORMA HISTORICAL FINANCIAL INFORMATION

You have requested BDO to review the following pro forma financial information (together the **Pro Forma Historical Financial Information**) included in the Prospectus:

- The pro forma historical consolidated statements of profit and loss for FY15, FY16, FY17, 1H17 and 1H18;
- The pro forma historical consolidated statements of cash flow for FY15, FY16, FY17, 1H17 and 1H18; and
- The pro forma historical consolidated statement of financial position as at 31 December 2017.

The Pro Forma Historical Financial Information has been derived from the Statutory Historical Financial Information of Calix, after adjusting for the effects of pro forma adjustments described in Section 3 of the Prospectus. The stated basis of preparation is the recognition and measurement principles contained in Australian Accounting Standards applied to the historical financial information and the event(s) or transaction(s) to which the pro forma adjustments relate, as described in Section 3 of the Prospectus, as if those event(s) or transaction(s) had occurred as at the date of the historical financial information. Due to its nature, the Pro Forma Historical Financial Information does not represent the company's actual or prospective financial position, financial performance, and cash flows.

### Directors' Responsibility

The directors of Calix are responsible for the preparation of the Statutory Historical Financial Information and Pro Forma Historical Financial Information, including the selection and determination of pro forma adjustments made to the historical financial information and included in the Pro Forma Historical Financial Information. This includes responsibility for such internal controls as the directors determine are necessary to enable the preparation of the Statutory Historical Financial Information and Pro Forma Historical Financial Information that are free from material misstatement, whether due to fraud or error.



### **Our Responsibility**

Our responsibility is to express a limited assurance conclusion on the Statutory Historical Financial Information and Pro Forma Historical Financial Information based on the procedures performed and the evidence we have obtained. We have conducted our engagement in accordance with the Standard on Assurance Engagement ASAE 3450 *Assurance Engagements involving Corporate Fundraisings and/or Prospective Financial Information*.

A review consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Australian Auditing Standards and consequently does not enable us to obtain reasonable assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Our engagement did not involve updating or re-issuing any previously issued audit or review report on any financial information used as a source of the financial information.

### **Review statement on the Statutory Historical Financial Information**

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the Statutory Historical Financial Information for the years ended 30 June 2015, 30 June 2016, 30 June 2017 and half years ended 31 December 2016 and 31 December 2017 are not presented fairly, in all material respects, in accordance with the stated basis of preparation, as described in Section 3 of the Prospectus.

### **Review statement on the Pro Forma Historical Financial Information**

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the Pro Forma Historical Financial Information for the years ended 30 June 2015, 30 June 2016, 30 June 2017 and half years ended 31 December 2016 and 31 December 2017 are not presented fairly, in all material respects, in accordance with the stated basis of preparation, as described in Section 3 of the Prospectus.

### **SUBSEQUENT EVENTS**

Apart from the matters dealt with in this Report, and having regard to the scope of this Report and the information provided by the Directors, to the best of our knowledge and belief no material transaction(s) or event outside of the ordinary business of Calix not described in the Prospectus, has come to our attention that would require comment on, or adjustment to, the information referred to in our Report or that would cause such information to be misleading or deceptive.

### **INDEPENDENCE**

BDO is a member of BDO International Ltd. BDO does not have any interest in the outcome of the Prospectus other than in connection with the preparation of this Report and participation in due diligence procedures, for which professional fees will be received. BDO East Coast Partnership performs the audit of Calix for which normal professional fees are received.

### **GENERAL ADVICE WARNING**

This Report has been prepared, and included in the Prospectus, to provide investors with general information only and does not take into account the objectives, financial situation or needs of any specific investor. It is not intended to be a substitute for professional advice and potential investors should not make specific investment decisions in reliance on the information contained in this Report. Before acting or relying on any information, potential investors should consider whether it is appropriate for their objectives, financial situation or needs.

## 7. INVESTIGATING ACCOUNTANT'S REPORT



Without modifying our conclusions, we draw attention to Section 3 of the Prospectus, which describes the purpose of the financial information, being for inclusion in the Prospectus. As a result, the financial information may not be suitable for use for another purpose.

BDO has consented to the inclusion of this Report in the Prospectus in the form and context in which it is included. At the date of this Report this consent has not been withdrawn. However, BDO has not authorised the issue of the Prospectus. Accordingly, BDO makes no representation regarding, and takes no responsibility for, any other statements or material in or omissions from the Prospectus.

### FINANCIAL SERVICES GUIDE

Our Financial Services Guide follows this Report. This guide is designed to assist retail clients in their use of any general financial product advice in our Report.

Yours faithfully

BDO CORPORATE FINANCE (EAST COAST) PTY LTD

A handwritten signature in black ink, appearing to read 'S. Stevens', written over a horizontal line.

Sebastian Stevens

Director



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Level 11, 1 Margaret St  
 Sydney NSW 2000  
 Australia

This Financial Services Guide is issued in relation to an independent limited assurance report (ILAR) prepared by BDO Corporate Finance (East Coast) Pty Ltd (ABN 70 050 038 170) (BDO) at the request of the Directors of Calix Limited (Calix).

#### Engagement

The ILAR is intended to accompany the prospectus proposed to be issued on or about 25 June 2018 (Prospectus). The Prospectus is being issued in relation to an initial public offering of 15,094,340 shares at an offer price of \$0.53 per share to raise \$8,000,000.

#### Financial Services Guide

BDO holds an Australian Financial Services Licence (License No: 247420) (Licence). As a result of our ILAR being provided to you BDO is required to issue to you, as a retail client, a Financial Services Guide (FSG). The FSG includes information on the use of general financial product advice and is issued so as to comply with our obligations as holder of an Australian Financial Services Licence.

#### Financial services BDO is licensed to provide

The Licence authorises BDO to provide reports for the purposes of acting for and on behalf of clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate restructures or share issues, to carry on a financial services business to provide general financial product advice for securities and certain derivatives (limited to old law securities, options contracts and warrants) to retail and wholesale clients.

BDO provides financial product advice by virtue of an engagement to issue the ILAR in connection with the issue of securities of another person.

Our ILAR includes a description of the circumstances of our engagement and identifies the party who has engaged us. You have not engaged us directly but will be provided with a copy of our ILAR (as a retail client) because of your connection with the matters on which our ILAR has been issued.

Our ILAR is provided on our own behalf as an Australian Financial Services Licensee authorised to provide the financial product advice contained in the ILAR.

#### General financial product advice

Our ILAR provides general financial product advice only, and does not provide personal financial product advice, because it has been prepared without taking into account your particular personal circumstances or objectives (either financial or otherwise), your financial position or your needs.

Some individuals may place a different emphasis on various aspects of potential investments.

An individual's decision in relation to voting on the transaction described in the documents may be influenced by their particular circumstances and, therefore, individuals should seek independent advice.

#### Benefits that BDO may receive

BDO will receive a fee based on the time spent in the preparation of the ILAR in the amount of approximately c. A\$87,000 (plus GST and disbursements). BDO will not receive any fee contingent upon the outcome of the proposed transaction, and accordingly, does not have any pecuniary or other interests that could reasonably be regarded as being capable of affecting its ability to give an unbiased opinion in relation to the transaction.

#### Remuneration or other benefits received by our employees

All our employees receive a salary. Employees may be eligible for bonuses based on overall productivity and contribution to the operation of BDO or related entities but any bonuses are not directly connected with any assignment and in particular are not directly related to the engagement for which our ILAR was provided.

#### Referrals

BDO does not pay commissions or provide any other benefits to any parties or person for referring customers to us in connection with the reports that BDO is licensed to provide.

#### Associations and relationships

BDO is the licensed corporate finance arm of BDO East Coast Partnership, Chartered Accountants and Business Advisers. The directors of BDO may also be partners in BDO East Coast Partnership, Chartered Accountants and Business Advisers.

BDO East Coast Partnership, Chartered Accountants and Business Advisers is comprised of a number of related entities that provide audit, accounting, tax and financial advisory services to a wide range of clients.

BDO's contact details are as set out on our letterhead.

BDO is unaware of any matter or circumstance that would preclude it from preparing the ILAR on the grounds of independence under regulatory or professional requirements. In particular, BDO has had regard to the provisions of applicable pronouncements and other guidance statements relating to professional independence issued by Australian professional accounting bodies and Australian Securities and Investments Commission (ASIC).

#### Complaints resolution

As the holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints must be in writing, addressed to The Complaints Officer, BDO East Coast Partnership, Level 11, 1 Margaret Street, Sydney NSW 2000.

On receipt of a written complaint we will record the complaint, acknowledge receipt of the complaint and seek to resolve the complaint as soon as practical. If we cannot reach a satisfactory resolution, you can raise your concerns with the Financial Ombudsman Service Limited (FOS). FOS is an independent body established to provide advice and assistance in helping resolve complaints relating to the financial services industry. BDO is a member of FOS. FOS may be contacted directly via the details set out below.

Financial Ombudsman Service Limited  
 GPO Box 3  
 Melbourne VIC 3001  
 Toll free: 1300 78 08 08  
 Email: info@fos.org.au

**PATENT  
REPORT**

**8**



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(p) +61-2-9007-9916  
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Calix Ltd  
Level 1  
9 Bridge Street  
PYMBLE NSW 2073  
Australia

Alder IP Ref: 40107  
21 June 2018

**Re: Intellectual Property and Legal Services**

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We have been instructed by Calix Ltd ("Calix") to provide this report ("Report") relating to their patent portfolio. The Report is for inclusion in a prospectus to be issued by Calix. We understand that the Prospectus will be lodged with the Australian Securities & Investments Commission by Calix Ltd, on or about the date of this Report.

This Report sets out the particulars of intellectual property residing in patent rights in the name of Calix. This Report is based on data provided online by the relevant Patent Offices, including the US Patents and Trademarks Office ("USPTO") and the European Patent Office ("EPO"). Other forms of intellectual property owned by Calix including trade secrets, designs, copyright and trademarks are not contained or disclosed within this Report. The Report is accurate to the best of our knowledge and investigations as at the date of the Report, subject to the limits and qualifications set out below.

**Background**

**Patents**

Patents are an essential element of intellectual property portfolios and strategies for most technology based businesses. Patents are a form of intellectual property that cover inventions and provide a monopoly in exchange for an inventor's full disclosure of his or her invention to the public. Patents generally seek to protect inventions created by the Company and the patents provide a monopoly for the claimed inventions in the respective jurisdiction when granted. To obtain protection in any jurisdiction, it is necessary to file an application for registration of the relevant right in that jurisdiction. Patents are only granted for inventions that are new and inventive as of the priority date (or first claimed filing date). Patents have a finite or maximum term and may provide the owner with an exclusive period to exclude others from commercially exploiting an invention that is claimed in the specification of the granted patent. However, the granting of patent rights does not confer a right on the patentee to exploit an invention and this is

## 8. PATENT REPORT

subject to the existence of any intervening third party rights, such as an earlier patent in the same field which is in force.

The granting of a patent does not warrant that the patent is valid but rather that the respective Patent Office is satisfied that the Patent meets the eligibility requirements. A granted patent can be revoked through re-examination proceedings before the Patent Office in those jurisdictions that provide for re-examination, or through revocation proceedings before the Courts. Grounds for invalidity generally include the claimed invention not being patentable subject matter, not novel, not inventive (obvious), or the patent specification lacks sufficient supporting detail. The exact rules for patentability may vary between different jurisdictions.

Maintenance fees, called renewal fees, must be paid for patents or patent applications within specified time frames. Wherein renewal fees are not paid within the designated timeframes, the patent or patent application will irrevocably lapse or expire. The deadlines for renewal fees vary greatly between jurisdictions. We note that typically most patents have a maximum term of 20 years. Patents and patent applications that have ceased, lapsed, or expired prior to the date of this Report are not contained within the following schedule.

### Patent Families

Calix is officially recorded in the records of the respective Patent Offices, as the owner of the granted patents and patent applications (“Calix Patents”) as set out in the following table.

The granted patents have undergone examination by the Patent Offices relevant to the jurisdictions, and are granted in each jurisdiction noted in the table below. These patents will remain in force subject to payment of renewals as they fall due, and subject to no other adverse action.

The patents and patent application identified in this report have been grouped into eighteen (18) distinct patent families. Members of a patent family are typically related based on the similarity of the inventions in one specific area of technology and wherein members claim a common base priority application.

### Validity of Calix Patents

We are not aware of any specific prior art related issues that would be expected to affect the validity of the Calix Patents. However, we have not performed a detailed prior art search and have not conducted an analysis of any prior art documents.

### Provisional and PCT Applications

Provisional patent applications are patent applications that only last a maximum of one (1) year and may be used as a priority document to file further patent applications. Subsequent applications may be filed in other countries around the world pursuant to the Paris Convention for the Protection of Industrial Property (1883) and these subsequent applications are typically called Convention Applications.

Additionally, Provisional Applications may also be used to file Patent Cooperation Treaty (“PCT”) applications. PCT Applications are filed through World Intellectual Property Organisation (“WIPO”) based in Switzerland. PCT Applications are published and examined within predetermined time

frames. PCT Applications last a maximum of 31 months from the priority date of the Provisional Application. Subsequent National Phase Patent Applications must be filed in participating jurisdictions, as selected by the Applicant, prior to 30 or 31 months from the priority date.

### **Ownership and Assignments**

Under the applicable US law patent applications are initially filed in the name of the inventors and the ownership lies with the inventors. Typically, the inventors then assign the invention to the assignee at filing or shortly after filing. As a result, assignments play a significant role in the ownership of US patents.

We confirm that for each of the Calix Patents filed in the United States we identified an assignment from the applicable inventor or inventors to Calix. However, we have not performed a detailed review of the assignment documents themselves. The other relevant jurisdictions do not require an assignment document to be filed. As a result, assignment documents are not on the public record.

We believe the information provided here to be accurate but caution that the accuracy of such information is, of necessity, subject to the accuracy of the public databases accessed.

### **United States Invention Disclosure Requirements**

In the United States of America, each person associated with filing and prosecution of a patent application owes a duty of disclosure, candour and good faith toward the USPTO. Under this duty, any prior art known to those persons that could be material to the question of patentability of the claimed invention must be disclosed to the USPTO. This duty continues during the term of the United States patent. The disclosure of relevant prior art takes place by filing an Information Disclosure Statement with the USPTO. Failure to disclose relevant prior art in respect of a US patent can lead to that patent being unenforceable.

Calix appears to have met the required duty of disclosure, and there are no issues apparent from publicly available records in this regard that might affect Calix's ability to enforce its United States patents.

Please note that despite the expiry date of individual granted US patents appearing in following schedule, those US patents may have a longer maximum lifespan. Limited extensions of maximum expiry dates are possible in the United States and these extensions have not been reported.

### **European Patents and Validation**

Please note that once a European patent is granted, the patent must be validated in each individual European country that the applicant seeks protection. Alder IP notes that Calix's European patents have been validated in several selected countries in Europe. The individual European countries have not been reported in the following schedule but are a matter of public record which is available from the website of European Patent Office.

### **Patent Validity and Infringement of Third Party Rights**

Enforcement of patent rights varies from country-to-country. The remedies for unauthorised use (patent infringement) available to the patent owner often include an injunction, which effectively

## 8. PATENT REPORT

stops further infringement of the patent, damages or account of profits, and legal costs awards. In some countries the patent owner can also file criminal complaints against the infringer or claim punitive damages.

This Report is not a 'Freedom to Operate' opinion and Alder IP makes no assertion that the Calix Patents are valid or enforceable nor that Calix has the freedom in any country to exploit the technology or inventions referred to in the relevant patent specifications without infringing intellectual property rights of third parties.

Further, it is important to note that there are legal mechanisms by which third parties can bring evidence that they have sole or joint entitlement to an invention and any patent application or patent obtained for that invention. Alder IP cannot guarantee that the Calix Patents, even if valid, will adequately cover any commercial products commercialised by Calix or that the inventions achieve the stated or claimed results or advantages.

### About Alder IP

Alder IP is a specialised law firm focused on protection of intellectual property assets including patents, trademarks, and registered designs. Anthony Alder of Alder IP is a registered patent attorney and trade marks attorney under Trans-Tasman rules for Patent Attorneys and is qualified to conduct this work in New Zealand and Australia. Anthony is a Fellow of the Institute of Patent Attorneys and registered NSW Supreme Court Solicitor. Anthony holds a double major in chemistry and biology and a law degree. Anthony also currently holds a director position on the Trans-Tasman IP Attorneys Board for NZ and Australia. Alder IP has specific expertise with technology areas including electrical and mechanical engineering, electronics, chemistry, biotechnology, medical devices, computers, information technology and communication technology.

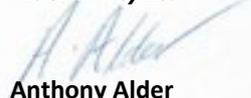
### Independence of Alder IP

This is an independent report. We confirm the following:

- a) Alder IP has reviewed the data on record for the Calix Patents and provided in this Report accordingly. This service was charged on Alder IP's standard terms and conditions of engagement being a fixed pre-negotiated fee.
- b) Neither Anthony Alder nor Alder IP that were involved in the review of the Calix Patents have any entitlement to any shares in Calix, or has any interest in the promotion of Calix, and have no financial interest in the outcome of the offer under the Prospectus

Yours faithfully

**Alder IP Pty Ltd**



**Anthony Alder**

*NSW Supreme Court Solicitor/Patent Attorney  
Btech (Biotech) LLB MIP FIPTA*



MEMBER OF  
THE LAW SOCIETY  
OF NEW SOUTH WALES

Corporate NTL  
GLOBAL AWARDS  
WINNER 2016

Corporate NTL  
GLOBAL AWARDS  
WINNER 2017

Corporate NTL  
GLOBAL AWARDS  
WINNER 2018

### Calix Patent Schedule

As of 21 June 2018

Family No.	Title	Country	App No./ Patent No.	Status	Next Maintenance Fee Due	Maximum Term
1	Dolomite based quick release organic broad acre fertiliser	Australia	2002301717	Granted	1 Oct 2018	1 Oct 2022
2	System and method for calcination/carbonation cycle processing	Australia Canada China Europe India USA	2006303828 2626418 200680048425.3 1951411 267841 860322	Granted Granted Granted Granted Granted Granted	23/10/2018 23/10/2018 23/10/2018 23/10/2018 23/10/2018 10/6/2021	23/10/2026
3	A material compound and a method of fabricating the same	Australia Canada Europe India USA	2006303830 2626497 06790412.8 261964 8951493	Granted Granted Accepted Granted Granted	23/10/2018 23/10/2018 23/10/2018 23/10/2018 10/8/2018	23/10/2026
4	System and method for the calcination of minerals	Australia Brazil Canada China Europe India USA - 1 USA - 2	2007000424 PI0709913.4 2643594 CN101466461B 2004319 282366 8807993 9469884	Granted Granted Granted Granted Granted Granted Granted Granted	2/4/2019 2/4/2019 2/4/2019 2/4/2019 2/4/2019 2/4/2019 19/2/2022 18/4/2020	2/4/2027
5	System and method for processing flue gas	Australia Canada China Europe USA 1 USA 2	2009246062 2724378 ZL2009801275526 2276552 8632626 8894743	Granted Granted Granted Granted Granted Granted	15/5/2018 15/5/2018 15/5/2018 15/5/2018 21/7/2021 28/5/2018	15/5/2029
6	Method and source for extracting carbon dioxide from an industrial source of flue gas at atmospheric pressure	USA	8449853	Granted	28/10/2020	20/7/2030
7	System and method for processing an input fuel gas and stream to produce carbon dioxide and an output fuel gas	Australia Canada	2010310862 2778179	Granted Granted	25/8/2018 25/8/2018	25/8/2030

Liability limited by a scheme approved under Professional Standards Legislation.  
Legal practitioners employed by Alder IP Pty Ltd are members of the scheme.

## 8. PATENT REPORT

8	System and method of pyrolysis	China Europe India USA 1 USA 2 Australia – Provisional App	ZL201080058293.9 2490792 295036 9150807 9505998 2017901522	Granted Granted Granted Granted Granted Pending – Provisional App	25/8/2018 25/8/2018 25/8/2018 6/4/2019 29/5/2020 N/A	27/4/2018
9	Process and Apparatus for manufacture of hydroxide slurry	Australia Canada China Europe Hong Kong India Malaysia Philippines USA	2014339743 2925924 ZL201480057776.5 14855476.9 16110501.3 201627012980 PI2016701150 1-2016-500686 15/030819	Granted Granted Granted Pending Pending Pending Pending Pending Pending	15/10/2018 15/10/2018 15/10/2018	15/10/2034
10	Process and apparatus for manufacture of Portland cement	Australia Canada China Europe India USA	2014354559 2930437 201480064233.6 14865329.8 201617019549 15039693	Granted Pending Pending Pending Pending Pending	19/11/2018 19/11/2018 19/11/2018	19/11/2035
11	Oxide products formed from calcined carbonate powder for use as biocide, chemical detoxifier and catalyst support products	Australia Canada China Europe Hong Kong Indonesia India Malaysia Philippines USA	2014374829 2933373 201480071370.2 14877351.8 16112312.8 P00201604325 201617021002 PI2016702143 1-2016-501454 9913475	Granted Pending Pending Pending Pending Pending Pending Pending Pending Granted	10/12/2018 10/12/2018 10/12/2018 10/12/2018	10/12/2034
12	Process and apparatus for manufacture of calcined compounds for the production of calcined products	Australia Canada China Europe	2015349593 2966539 201580062367.9 15860368.8	Pending Pending Pending Pending	11/11/2019 11/11/2019 11/11/2019	11/11/2035

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Legal practitioners employed by Alder IP Pty Ltd are members of the scheme.



# JORC REPORT

9



## Independent Geologists Report



**HORNET RESOURCE ASSESSMENT SERVICES PTY LTD**  
**ABN: 82 099 786 188**

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### Independent Geological Report

On

The Myrtle Springs Magnesite Mine,

Mineral Leases 5000 and 5001

Miscellaneous Purpose Licences 18 and 27

Leigh Creek, South Australia

Prepared for

**Calix Limited**

Prepared by: C M (Ric) Horn

B/Sc., Cert. Horticulture, Fellow AusIMM, (CP Geo), Member Geol. Soc. Australia

June 2018

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	

### MYRTLE SPRINGS MAGNESITE MINE

#### EXECUTIVE SUMMARY

Hornet Resources Assessment Services Pty Ltd (**HRAS**) has been contracted by Calix Limited (**Calix**) and Calix Sale Co Pty Ltd (**CSC**) to undertake a **JORC Code 2012** resources estimation and prepare an independent geological assessment of their Myrtle Springs magnesite ( $MgCO_3$ ) mine at Leigh Creek, South Australia.

A site visit was carried out on the 12<sup>th</sup> March 2018 to review the current extent of the mining operations and confirm the thickness of the magnesite beds exposed in the pit. A complete review of the mining operations and environmental aspects was completed and existing technical data reviewed.

The mining tenements, Mineral Leases 5000 and 5001 and Miscellaneous Purpose Licences 18 and 27, were originally granted to Steetley Industries Limited in 1982. MS Minerals Pty Ltd, (**MSM**), a wholly owned subsidiary of **Calix**, purchased the tenements in 2012 as a long-term source of high-grade magnesite for the production of a range of magnesium based products at their processing plant in Bacchus Marsh, Victoria.

The Myrtle Springs mine project consists of four active mining tenements which are in good standing and in compliance with the mining lease conditions and generally with the Program for Environmental Protection and Rehabilitation (**PEPR**) approved by the Department of Premier and Cabinet, Mineral Resources Division on the 14<sup>th</sup> February, 2014. A Mining and Rehabilitation Compliance Report (**MARCR**) compliance report is due every two years, to be lodged within two months of the due date, the next report being due on the 14 February 2019. Prior to lodging the next **MARCR** a detailed review and upgrade of the **PEPR** is required in order to address minor changes made to the mining operations and should be submitted to the Director of Mining Regulation together with the **MARCR**.

**MSM** was required to lodge a **Significant Environmental Benefit (SEB)** payment of \$11 250 to the Native Vegetation Fund to permit the removal of native vegetation ahead of mining as per the approved **PEPR**. A bond has been lodged against the final rehabilitation of the mine should the mine close.

An under-lease of portion of the Myrtle Springs Pastoral Station has been entered into between the **Indigenous Land Corporation (ICL)**, **PIDIA Aboriginal Corporation (PIDIA)** and **MSM** and this has been registered with the South Australian Lands Title office. All Native Title obligations, with respect to the mine tenement and access road are in good standing.

Mining of magnesite at Myrtle Springs was first recorded in 1947 and small amounts were mined up until 1984 -1985 when Commercial Minerals Ltd mined 30 000 tonnes for use in water purification by Queensland Alumina Limited. Since 1985, mining has been on an annual campaign basis by qualified mining contractors with experience in selective mining of the narrow, steeply dipping, magnesite beds.

Magnesite deposits occur as interbeds within the Skillogalee Dolomite carbonate sequence and extend northwest from Leigh Creek to the Willouran ranges a distance of 120 kilometres. Commonly, 1-20 metre thick cycles of dolomitic sandstones - dolomitic mudstone and magnesite mudstone have been deposited in an extensive late Precambrian sedimentary basin, precipitated in a low – energy, marginal marine ephemeral lake or lagoon.

The Myrtle Springs deposit is on the south west limb of a regional syncline which includes the Camel Flat, Mount Hutton, Myrtle Springs and Mount Playfair deposits. The Mineral Leases at Myrtle Springs

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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cover a package of northwest- southeast striking magnesite beds ranging in thickness from 0.3m -2.5m that are steeply dipping (60°) to the north - east. A total of 25 beds have been identified within the area of the mining leases although only beds 1 – 17 are considered as an economic and mineable package. There is a reasonable prospect that beds 1 -17 can be economically extracted.

No drilling has been undertaken at the Myrtle Springs Mine, however 61 holes for 3,952 metres was drilled between 1998 – 1999 at the Mt Hutton deposit, 4km's southeast of Myrtle Springs and 6 holes for 397 metres were drilled in 1999 at the Mt Playfair deposit, 2km's northwest of Myrtle Springs mine. Data acquired from these exploration programs has been applied to the resource estimates at Myrtle Springs.

Based on the exceptional homogeneity, spatial continuity and very simple geometry of the magnesite beds and the exposure of these beds on the surface and in the existing pit as well as the remarkable correlation with the same package at Mt Hutton, 4 kms to the south-east, and Mount Playfair 3 km to the north-west, an assessment has been made outlining a JORC compliant "**Proved Ore Reserve**" and "**Probable Ore Reserve**" in ML 5000. A JORC compliant "**Indicated Mineral Resource**" has been defined within ML's 5000 and 5001.

The reserves and resources have been determined using a specified thickness for each bed, a specified height of the bench for each bed given the terrain, the division of the beds into 50m panels along the strike of the beds and an average specific gravity for each magnesite, dolomite and waste bed. The grade assigned to each bed has been determined from rock chip sampling at Myrtle Springs and from the sampling of core from diamond drilling at Mount Hutton. The average grade for the **Resource** and **Reserves** is the weighted average of the beds considered in each estimation.

Within Mineral Lease 5000 a JORC compliant "**Proved Reserve**" is estimated at 163 700 tonnes at a grade of 24.3% Mg and 2.0% Ca. Waste to ore ratio is 2.3:1.0 with 374 000 tonne of waste and 55 800 tonnes of dolomite. The dolomite is considered suitable for sub-base in road formation and as a possible sealing medium. **MSM** has been authorised, pursuant to Section 39(2) of the Mining Act 1971, for the recovery, use and sale or disposal of Extractive Minerals including, but not limited to dolomite, produced as a result of operations conducted in pursuance of the Mineral Leases.

A JORC compliant "**Probable Reserve**" of 302 000 tonnes at 23.0% Mg has been defined to a depth of 10m below the existing open cut and the north-west extension in ML 5000. Mining of bed 7 in 2000 below the floor of the open cut confirmed the continuity of the beds at least to a second bench level.

The author is of the opinion that there exists an "**Exploration Target**" of between 280 000 and 300 000 tonnes below the main open cut in ML 5000

Outcrop mapping in ML 5001 using GPS survey data demonstrates continuity of beds 1-17 from the adjoining ML 5000. There is an "**Exploration Target**" of between 1.0 million and 1.5 million tonnes within ML 5001 due to the untested nature of the lease with the only workings an old pit located in the north east corner of the lease and no previous drilling. In order to adequately test this "**Exploration Target**" a four hole, fully cored, diamond drill program is proposed to confirm the resource for a 2-3 bench open pit mine extending south from the existing open pit in ML5000.

It is the Authors opinion that the Myrtle Springs magnesite mine described in this report is a valuable asset that is being mined in a systematic manner and that evaluation exploration and testing of the ore body at depth by diamond drilling is definitely warranted.

It is noted that ore beds 1 and 2 on Bench 2 of the mine pass outside the boundary of the mineral leases and the author is of the opinion that a superimposed mining lease to cover MPL18 should be applied

## 9. JORC REPORT

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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for. This same action applies to ML5001 where beds 1 - 8 are outside the eastern boundary of the Mining Lease and are within MPL 18 which does not permit mining. This action will substantially increase the magnesite resource and will greatly assist the orderly mine development.

We are of the opinion that MS Minerals Pty Ltd., has satisfactorily maintained the mine and the tenements in good standing and complied with the approved **PEPR** and lease conditions. Rehabilitation of the waste dump has not yet commenced and this is an activity that is required to be undertaken progressively in order to comply fully with the environmental outcomes. This is expected to begin during the 2018 mining campaign.

### Conclusions:

- There is sufficient Ore Reserve of a suitable quality to supply 100% of the plant's ore requirements for at least 20 years at the current rate of production and should the production rate be increased there is high potential to significantly increase the reserves.
- There is considerable scope for drill testing to increase the resource and add to the **Proved** and **Probable** reserves.
- There are no political, social or environmental issues that would adversely affect the ore supply.
- Clearance of native vegetation cannot be avoided or reduced with the proposed method of mining. The type of vegetation present on the mining lease is common in this area and no endangered species have been identified.
- The tenements are in good standing, the mine workings are in compliance with the **PEPR** and are being conducted in an efficient and professional manner.
- There is a good working relationship with the landowners of the Myrtle Springs Pastoral lease, the Pidia Aboriginal Corporation.
- The mining operations are being conducted in a very professional manner with selective mining producing a high grade product.

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

## Contents

EXECUTIVE SUMMARY .....	2
INTRODUCTION .....	8
• Qualifications and Experience .....	8
• Competent Person's Statement .....	9
• Disclaimer of interests .....	9
PROPERTY LOCATION AND ACCESS .....	10
MINERAL TENEMENTS .....	10
LAND TENURE .....	12
UNDER- LEASE WITH PIDIA ABORIGINAL CORPORATION .....	12
PROGRAM FOR ENVIRONMENTAL PROTECTION AND REHABILITATION (PEPR) .....	13
SIGNIFICANT ENVIRONMENTAL BENEFIT ASSESSMENT .....	13
DESCRIPTION OF THE ENVIRONMENT .....	15
GROUND WATER .....	16
CLIMATE .....	17
INFRASTRUCTURE .....	17
HISTORICAL MAGNESITE MINING .....	19
PREVIOUS INVESTIGATIONS .....	19
GEOLOGICAL SETTING AND MINERALISATION .....	20
• Regional Geology .....	20
• Stratigraphy .....	21
• Structure .....	22
• Magnesite Formation .....	23
Depositional Environment .....	23
Magnesite Mudstone .....	23
Intraclastic Magnesite .....	24
Nodular Magnesite .....	24
RESOURCE AND RESERVES ESTIMATES .....	25
Sampling Techniques and Data .....	27
Estimation and Reporting of Mineral Resources and Reserves .....	29
PARAMETERS FOR JORC RESOURCE AND RESERVES .....	30
Mineral Lease 5000 .....	31
Mineral Lease 5001 .....	32
MINING OPERATIONS .....	35
FUTURE MINING .....	36

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Myrtle Springs Magnesite Mine Leigh Creek, South Australia

EXPLORATION TARGET.....	40
REHABILITATION .....	41
ENVIRONMENTAL COMPONENTS.....	43
ENVIRONMENTAL OUTCOMES .....	44
CONCLUSIONS.....	45
RECOMMENDATIONS .....	45
REFERENCES.....	46
APPENDIX 1: Notification of approved PEPR .....	48
APPENDIX 2: Approval to change photo point reporting requirements.....	50
APPENDIX 3: Memorandum of Authorisation to produce extractive minerals.....	51
APPENDIX 4: Authorisation to produce extractive minerals on a mineral lease .....	52
APPENDIX 5: JORC CODE CRITERIA AND EXPLANATION OF ESTIMATION AND REPORTING OF MAGNESITE RESOURCES AT MYRTLE SPRINGS MINE .....	54
APPENDIX 6: JORC CODE CRITERIA AND EXPLANATION FOR THE ESTIMATION AND REPORTING OF ORE RESERVES.....	60
GLOSSARY OF TECHNICAL TERMS.....	63
ABBREVIATIONS .....	69

### FIGURES

Figure 1. Location plan of Myrtle Springs mine

Figure 2. Google Earth plan of the Mining Tenements at Myrtle Springs

Figure 3. Google Earth Image with photo point locations and 2014 – 2017 mine area

Figure 4 Google Earth Image showing areas of vegetation to be effect by mining

Figure 5. Simplified regional geology and deposit locations

Figure 6 ML 5001 GPS surface mapping of beds 1, 7, 9 and 17 and location of Sections 1 and 2

Figure 7 ML 5001 Cross section 1 – Location shown on figure 6

Figure 8 ML 5001 Cross section2 – Location shown on figure 6

Figure 9 Mining sequence showing mining panels 1 – 12

Figure 10 Cross Sections 500, 400, 320 – Refer Figure 9

Figure 11 Cross Sections 230, 135 and 00 – Refer figure 9

Figure 12 Proposed location of drill holes to test resources in ML 5001

Figure 13 Pit outline at end of mine life

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

#### TABLES

- Table 1: Current Mineral Tenure MS Minerals Pty Ltd
- Table 2: Climate Statistics 1982 to 2018 at the Leigh Creek Airport
- Table 3: Average Grade per bed for beds 1 – 17 at Mt Hutton deposit
- Table 4 Typical Mineral content magnesite beds at Mt Hutton
- Table 5 Myrtle Springs mine typical sample analytical results
- Table 6: Comparison of XRF and ICP analytical results
- Table 7: ML's 5000-5001 Average Specific Gravity and Average Grade Data per Bed
- Table 8: Summary of JORC Proved Ore Reserves Estimate ML 5000
- Table 9: Summary of JORC Probable Ore Reserves Estimate ML 5000
- Table 10: Summary of JORC Indicated Mineral Resource Estimate ML 5000
- Table 11: Summary of JORC Indicated Mineral Resource Estimate ML 5001
- Table 12: Rehabilitation Liability Estimate
- Table 13 Summary of the outcomes and measurement criteria for the Compliance Monitoring Report

#### PLATES

- Plate 1: Mine Site and typical vegetation cover
- Plate 2: *Atriplex vesicaria* (bladder salt bush)
- Plate3: *Maireana sedifolia* (blue bush)
- Plate 4: Camp site in ML 5001
- Plate 5: Magnesite beds out cropping south end of ML 5001
- Plate 6. Ripple Marks indicating shallow water deposition
- Plate 7: Intraclastic magnesite sample
- Plate 8: Nodular magnesite with interstitial dolomite and talc
- Plate 9: Beds 1 – 5 North face 2014 beds 1, 2 and 2A mined out
- Plate 10: Beds 5- 9 North face of current pit
- Plate 11: Top Soil and Weathered layer stripped
- Plate 12: Waste dump in MPL 18 showing top soil removal
- Plate 13: Excavator breaking ore from the face
- Plate 14: In pit crushing plant and crushed ore stockpiles
- Plate 15: Beds 3, 4 and 5 north face of the main open cut.

## 9. JORC REPORT

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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### INTRODUCTION

Hornet Resources Assessment Services Pty Ltd (**HRAS**) has been engaged to prepare an Independent Geologists' Report (**IGR**) on behalf of Calix Limited (**Calix**) and Calix Sale Co Pty Ltd (**CSC**) for inclusion in a prospectus in connection with a proposed Initial Public Offering (**IPO**) to raise funds for the further development of company activities. Calix (ABN: 36 117 372 540) is an unlisted public company registered according to the *Corporations Act of 2001* by the Australian Securities and Investment Commission (**ASIC**) with registered office at Level 1, 9 Bridge Street, Pymble, New South Wales, 2073.

MS Minerals Pty Ltd (**MSM**) (ACN: 160 673 343), a wholly owned subsidiary of Calix, is the registered holder of mining tenements covering their magnesite mining operations on Myrtle Springs Crown Pastoral Lease No. 2306A in the Northern Flinders Ranges, South Australia. Mining operations are carried out on a campaign basis using the services of a recognised and experienced mining contractor with knowledge and understanding of selective mining of the magnesite beds.

Calix Limited has developed new materials and processes to assist with large scale issues to help combat climate change, increase sustainability of industry and improving agricultural & aquaculture environments. Their unique products are being tested and utilised in Australia, Asia & Europe with incredible results.

Information contained in this report has been sourced from published technical reports and from open file information data bases of Department of Premier and Cabinet (**DPC**), Mineral Resources Division as well as the author's intimate knowledge of the Myrtle Springs deposit. The author first became involved with the magnesite deposits of the Northern Flinders Ranges in 1999 and has maintained an on-going working relationship and geological reporting of magnesite exploration and mining in South Australia over the past 18 years. Published papers and historical reports referred to are listed in the references section.

- Qualifications and Experience

This report has been prepared by Ric Horn, B/Sc, Cert. Horticulture, Fellow AusIMM, An AusIMM Chartered Professional and Member Geological Society of Australia, who is the principal geologist of Hornet Resource Assessment Services Pty Ltd. Ric is a professional geologist with over 52 years' experience in mineral exploration, resource and ore estimation, mine geology, open-cut and underground mining operations and feasibility studies, in Australia and overseas.

Ric commenced his employment in 1966 as an exploration geologist with North Broken Hill Limited working in the Lachlan Fold belt of N S W. He spent some time with Planet Metals Limited drilling a porphyry copper project in North Queensland and was employed in the King Island Scheelite Mine in Tasmania where he was responsible for sampling the ore body for grade control and with diamond drilling for the calculation of ore reserves as well as exploration away from the mine.

Between 1971 and 1976 he was chief Mine Geologist at the Emperor Gold Mine in Fiji where he had responsibility for the annual calculation of ore reserves and worked closely with the mining engineering department in design of both underground and open cut mining operations.

From 1976 to 1978 he worked as an Environmental Officer in the S.A. Department for the Environment and Planning, assessing the environmental impact of mining applications and operations. Between 1978 and 1996 Ric was a Senior Resources Geologist and later became the Director of Mineral Resources with the then South Australian Department of Mines and Energy.

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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In 1996 Ric joined Pima Mining NL as Managing Director and was responsible for the SAMAG project until 2003 and continued as a consultant until 2005. During this time with the SAMAG Project he was involved in major resource definition drilling program at a number of magnesite deposits in the Northern flinders Ranges and worked on the calculation of a magnesite resource at the Mount Hutton magnesite mine located 4 kms south-east of Myrtle Springs mine.

From 2005 – 2007 Ric was the founding Chairman of Southern Gold Limited. He is now a Director of his own consultant group, Hornet Resource Assessment Services Pty Ltd, and a Director of the Arion Consulting Group.

- Competent Person's Statement

The author has been associated with the exploration and assessment of the magnesite deposits in the Northern Flinders Ranges since 1999 and was the lead author of the paper Sedimentary magnesite deposits, Flinders Ranges published in the 2017 AusIMM Monograph Number 32, Australian Ore Deposits. Information contained in this report relating to mineral resources or ore reserves and mining operations is based on information compiled by Ric Horn, a competent person Fellow of the Australasian Institute of Mining and Metallurgy (**AusIMM**) who has over 52 years of exploration and mining experience and over 10 years' experience relevant to the style of mineralisation and mining activity under consideration and to the activity being undertaken to qualify as a **Competent Person** as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ric Horn consents to the inclusion of this report, or of matters referred to in this report, in the Prospectus to be issued by Calix in connection with the IPO, in the form and context in which they appear.

The report has been compiled in accordance with the Australian Securities and Investments Commission (**ASIC**) Regulatory Guidelines 111(Content of expert reports), 112 (Independence of Experts) and 55 (Statements in disclosure documents and Product Disclosure Statements (PDS's): Consent to Quote) as well as the Information form and Checklist Annexure 1 (Mining Entities).

- Disclaimer of interests

At the time of compilation of this report, Hornet Resource Assessment Services Pty. Ltd (**HRAS**) and Ric Horn have not had any relationship with **Calix**, or its subsidiary **MSM**, other than as has occurred as the result of providing consultancy services in the ordinary course of business. HRAS and Ric Horn declare that neither have any interest in or any interest in the acquisition of or disposal of securities in Calix Limited. HRAS and Ric Horn declare that neither have a pecuniary or other interest that may be construed as a conflict of interest that could influence their ability to provide an unbiased and independent report on the **Calix** mining interests at Myrtle Springs, Leigh Creek, South Australia.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### PROPERTY LOCATION AND ACCESS

The Myrtle Springs magnesite mine ( $138^{\circ} 13' 31.31'' - 30^{\circ} 24' 57.68''$ ) is located 25 kilometres north-west of Leigh Creek town ( $138^{\circ} 23' 59.07'' - 30^{\circ} 36' 30.24''$ ), in the Northern Flinders Ranges approximately 556 kilometres north of Adelaide (Figure 1).

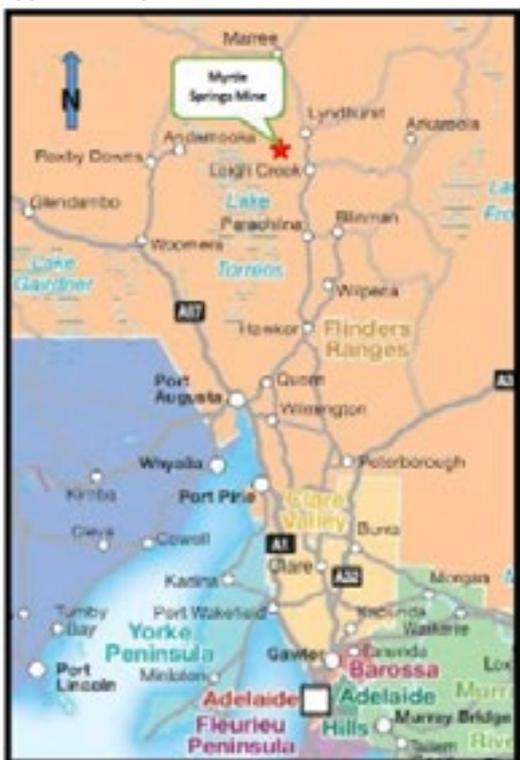


Figure 1: Location Plan of Myrtle Springs Mine

Access to the Myrtle Springs deposit is from the Leigh Creek to Lyndhurst Highway (No. 83) approximately 12 kilometres from the town of Copley ( $138^{\circ} 25' 26.07'' - 30^{\circ} 33' 18.95''$ ). A well-formed, unsealed, station track to the Myrtle Springs homestead is used to access the mine. Approximately 13 kilometres along the station track prior to entering the Myrtle Springs gorge, the track branches north and crosses Playfair Well Creek and is followed 2 kilometres north to the mine site.

Myrtle springs station track is a registered public road although not generally used by the public and only accesses the Myrtle Springs station and mine. Calix is currently responsible for the upgrading and maintenance of the station track by way of a Deed and S221 Authorisation issued by Transport SA.

### MINERAL TENEMENTS

Myrtle Springs mine is located within granted Mineral Leases 5000 and 5001 registered to **MSM**, a wholly owned subsidiary of Calix Limited. Associated with the mining operations is Miscellaneous Purpose Licence (MPL) 18 used for waste rock disposal and ore stockpiles and Miscellaneous Purpose Licence (MPL) 27 used for a water bore. (Figure 2)

The tenements were originally granted to Steetley Industries Ltd on the 11<sup>th</sup> January 1982. They were subsequently transferred to Commercial Minerals Ltd (CML) on the 20<sup>th</sup> November 1984 and acquired by Normandy Industrial Minerals Ltd (**NIML**) in 1998 when that company took over CML. In November 2000 Unimin Australia Ltd purchased the tenements from **NIML** and continued to mine on a campaign basis. In 2001 they were purchased by Magnesium Developments Pty Ltd (**MDPL**) to supply magnesite feedstock for the then proposed magnesium metal project (**SAMAG**) at Port Pirie. When this project didn't eventuate the tenements were purchased by and transferred in 2013 to **MSM** who have continued to mine on a campaign basis

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
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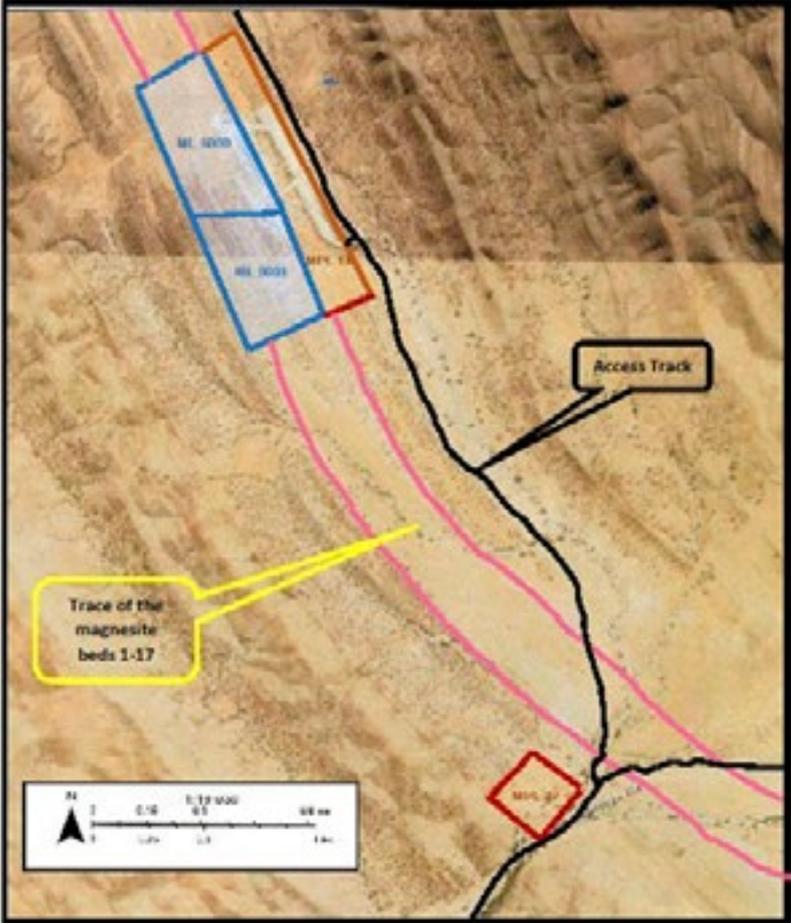


Figure 2: Google Earth plan of the Mining Tenements at Myrtle Springs.  
 (The pink lines show the trace of the magnesite beds 1 and 17)

At the time of writing the current status of mineral tenure held by **MSM** at Myrtle Springs is shown in Table 1 below:

**Table 1: Current Mineral Tenure MS Minerals Pty Ltd at Myrtle Springs, Leigh Creek.**

Tenement	Purpose	Area (Ha)	Original Grant Date	Renewed Date	Current Expiry Date
ML 5000	Current open Pit mining operations, crushing and ore stockpiles.	18.60	11.01.1982	31.07.2001	29.03.2022
ML 5001	Exploration and testing of the resource for future mining. Current site of the mine camp.	14.30	11.01.1982	31.07.2001	29.03.2022
MPL 18	Waste dump. Dolomite stockpiles for road material	16.00	15.12.1982	01.10.2001	29.03.2022
MPL 27	Water bore located approximately 2km south of the mine	5.40	13.01.1987	30.09.2008 and then 30.09.2015	29.03.2022

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	

During the visit and mine inspection on the 12 March, 2018, lease pegs were checked and found to be appropriately marked and in good standing.

### LAND TENURE

The mine is located on Crown Pastoral Lease No. 2036A known as the **Myrtle Springs Station Pastoral Lease**. The Pastoral Lease is now owned by the PIDIA Aboriginal Corporation (**PIDIA**) (formerly Vinya Aboriginal Corporation). **MSM** has executed an under-lease agreement with **PIDIA** and the Indigenous Land Corporation (**ICL**).

The mining tenements were granted prior to the *Native Title Act 1993* being passed by the Australian Parliament "to provide a national system for the recognition and protection of native title and for the co-existence with the national land management system". Part 9B of the *Mining Act 1971* of South Australia commenced on 17<sup>th</sup> June 1996 and is an alternative to the "right to negotiate" scheme in the Commonwealth Native Title Act 1993 (NTA).

Although the Adnyamathanha Traditional Lands Association (ATLA) have determination over the tenement areas, these tenements were granted pre 9B and as such Native Title does not apply to these tenements.

Part 6 Section 38 (2) of the Mining Act 1971 states:

"Subject to the terms and conditions of a mining lease, the holder of the lease shall, if he has complied with the conditions of this Act, and the term and conditions of this lease during the term for which the lease was granted or last renewed, be entitled, at the expiration of that term, to the renewal of the lease for a further term".

### UNDER- LEASE WITH PIDIA ABORIGINAL CORPORATION

An Under-Lease was initially executed between the **ILC** and **MDPL** in respect of the southern half of Crown Pastoral Lease No 2306A upon which the Mt Playfair, Myrtle Springs and Mount Hutton Deposits are located. The Under-Lease was registered with the Lands Title office on 3 December, 2002. The term of the under-lease was for 10 years with a 10 year right of renewal. The initial term expired on 30 June 2010 and was extended for a further term. In 2013 the Under-Lease was transferred to **MSM**.

This is an important document which provides haulage road access from the mining operations and unrestricted use of the mining tenements for mining operations and obviates the need to have a compensation agreement with the land owner under the *Mining Act 1971*.

In addition to the lease payments, the under- Lease includes the following obligations:

- Public Liability insurance of \$10 million;
- Insurance of the pastoral buildings
- Obligation to maintain fences and gates (fair wear and tear excepted);
- Obligation to comply with or to ensure that **PIDIA** complies with obligations under the *Pastoral Land Management Act 1989* including regarding payment of rates, taxes, levies, Pastoral Board fees and stocking rates;

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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- Obligation to maintain windmills, tanks, bores, etc. (fair wear and tear excepted)
- Obligation to pay all utilities bills (including telephone);
- Indemnity to **PIDIA** for losses caused by **MSM** activities; and
- Obligation to pay lease rentals.

## PROGRAM FOR ENVIRONMENTAL PROTECTION AND REHABILITATION (PEPR)

Ministerial Determination 005 published in the South Australian Government Gazette 50:3049 – 3063 on 12 July 2012 is a notice in accordance with regulation 65(7) of the Mining Regulations 2011 and defines the minimum information required to be provided in a “Program for Environmental Protection and Rehabilitation” (**PEPR**) for a Mineral Lease (**ML**) and any associated Miscellaneous Purposes Licence (**MPL**) for metallic and industrial minerals (excluding extractive minerals, coal and uranium).

**MSM** initially submitted a **PEPR** outlining a proposed extension to the mining operations in **ML** 5000 to the then Department for Manufacturing, Innovation, Trade, Resources and Energy (**DMITRE**), now the Department of State Development, on 26<sup>th</sup> June 2013 for assessment. The **PEPR** included activities on **ML** 5001 (possible camp site), **MPL** 18 (waste dump extension) and **MPL** 27 (replacement water bore). **MSM** were required to revise the **PEPR** on two occasions improving the silt control and drainage, mine completion measurement criteria and operator compliance monitoring sections. The **PEPR** was finally approved by the Director –Mining Regulation on the 14<sup>th</sup> February 2014 (see approval letter Appendix1). The **PEPR** required the establishment of six vegetation photo point locations (Figure 3) and the submission of six monthly vegetation reports with photos. This was later changed to annual reporting requirement to be an appendix to the Operator Mining Compliance Report (**OMCR**) due every two years (see letter in Appendix 2). The next **OMCR** is due on the 14<sup>th</sup> February 2019.

A Mining and Rehabilitation Compliance Report (**MARCR**) was prepared on the 14<sup>th</sup> February 2017 and lodged with Director –Mining Regulation. This report concluded that the “environmental outcomes as listed in the approved **PEPR** have been in general terms complied with although the perimeter fence requires maintenance and monitoring of the water quality from the bore in **MPL27** and **Playfair** well require major ions and trace element analyses”.

During the site inspection on the 12<sup>th</sup> March 2018 a review was completed of all aspects of the **PEPR** document and a report submitted to **MSM**. Changes to the approved **PEPR** require a review in accordance with section 70D (3) of the *Mining Act 1971*. There have been some significant variations including a change to the mining sequence, the rehabilitation sequence, the crushing and ore loading, the site security and the results of consultation apart from numerous minor alterations. It is recommended that following the next mining campaign, the **PEPR** be updated to reflect the existing state of the mining operations and submitted with Mining and Rehabilitation Compliance Report due on the 14 February 2018.

## SIGNIFICANT ENVIRONMENTAL BENEFIT ASSESSMENT

The Myrtle Springs mine lease area consists of a stony valley between two parallel ridges of the north-western Flinders Ranges. The local vegetation shows strong affinities to that of the Willouran Ranges and the Lake Eyre botanical region to the north. Vegetation in the Myrtle Springs mine area consists of tall woodland and low shrubland communities in the valley with low woodland or tall shrubland communities on the hills (Laut et al 1997).

The extended mining operations at Myrtle Springs cannot be undertaken without the clearance of some tall woodland vegetation comprising *Eucalyptus socialis* immediately in the path of mining. No vegetation along stream channels within the mine site or adjacent area will be affected by the mining operations. There is no practicable alternative that will avoid the clearance of some native vegetation.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

The proposed clearance of vegetation will not affect any significant stands or endangered or rare species and where unavoidable, measures will be undertaken to counterbalance the loss of the vegetation.

The clearance of native vegetation for mining operations is subject to the provisions of the *Native Vegetation Act, 1991* through the Native Vegetation Regulations introduced on 25 August 2003. Application was sought from **DMITRE** for the removal of native vegetation as a direct consequence of the mining activities. Payment of \$11 250 has been made to the Native Vegetation Council, Significant Environmental Benefit Fund (**SEB**).



Figure 3: Google Earth image with photo point locations and 2014-2017 mine area

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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**DESCRIPTION OF THE ENVIRONMENT**

The dominant land forms within the mine area comprise north-west, south-east striking ridges of Copley/Witchelina Quartzite and intervening valleys of Myrtle Springs Formation and Skilloogalee Dolomite. The relatively featureless intervening valley commonly forms over softer shales and magnesite beds.

Soils are typically shallow, reddish, powdery calcareous loamy soils on quartzite ridges and alkaline loamy soils on the dolomite and magnesite beds. The shallow soil cover means that it is important to remove and retain as much of the surficial cover and seed bank as possible for future rehabilitation.



The Myrtle Springs pastoral lease area has been subject to pastoral activities for more than 150 years and the land system and native vegetation has been badly degraded due to large numbers of feral goats, rabbits and kangaroos.

Plate 1: Mine Site and typical vegetation cover

The Myrtle Springs mine site has an open shrubland/tall tree vegetation cover. Immediately surrounding the mine area the vegetation is dominantly *Eucalyptus socialis* with a few scattered understorey shrubs and low chenopod shrubland.

The dominant chenopod species are *Atriplex vesicaria* (Bladder Saltbush) and *Maireana sedifolia* (Blue Bush) over other chenopods and native grasses. The existing native vegetation is a result of serious overgrazing and lack of natural regrowth due to harsh climatic semi desert conditions.



Plate 2: *Atriplex vesicaria* (bladder salt bush)

Plate3: *Maireana sedifolia* (blue bush)

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia



Figure 4: Google Earth image showing areas of vegetation to be effected by mining

Drainage from the mine area is to the south-east for a distance of 3 kilometres where the ephemeral stream channels draining the mine area enter the major Myrtle Springs Creek which passes through Myrtle Springs Gorge draining westerly toward Lake Torrens.

### GROUND WATER

Ground water has not been encountered in the current mining operations within Mining Leases 5000 & 5001 and is not expected to be encountered in the development of the second bench. A mining slot below bench 1 was excavated to depth of 10 m in 2002 to mine beds 6 & 7 and this slot did not encounter any groundwater and the vertical nature of the competent rock strata indicates the likelihood of encountering any groundwater to be extremely low. The ground elevation of bench 1 at the mine is an average 214m; bench 2 will have an average ground elevation of about 204m. Bore hole 1321 in MPL 27 and the Mount Playfair well 2311 have ground elevations of 174.6 and 179.1

CALIX LIMITED  
 HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
 Myrtle Springs Magnesite Mine  
 Leigh Creek, South Australia

respectively and SWL of 5 & 14.2m as recorded in the SARIG drill hole data base therefore the water table is expected to be considerably lower at the mine which is located on the crest of a rise some 34m above the ground level of the recorded bores

## CLIMATE

The Leigh Creek region experiences hot, dry summers with temperatures up to 48<sup>o</sup> C and generally significantly cooler winters with overnight temperatures as low as -2<sup>o</sup>C. Table 2 shows the monthly mean maximum temperature and the monthly mean minimum temperature from 1982 to March 2018 at Leigh Creek airport. Evaporation rate is high at 3000mm. this restricts the type of vegetation that can be established in the area after completion of the mining operations.

Annual rainfall is around 220mm. Rains do not fall in any particular month although intense falls are common in the summer months due to convective thunderstorms. This is particularly important in designing overburden stockpiles and waste dumps to control erosion and run-off from the mine area. The high rate of run-off after sudden summer storms also tends to cause siltation of water storage dams.

Climate statistics are an important consideration in the satisfactory progressive rehabilitation of the waste dump and mine faces required under the approve PEPR.

## INFRASTRUCTURE

The closest settlement to the mine is the town of Copley (138<sup>o</sup> 25' 26.07" – 30<sup>o</sup> 33' 18.95") located 5kms north east of Leigh Creek town on Highway 83 from Port Augusta to Marree. The town of Leigh Creek (138<sup>o</sup> 23' 59.07" – 30<sup>o</sup> 36' 30.24") was established to provide facilities for the Leigh Creek coal mining operations. With the closure of the coal mine, the town has downsized from 750 to 200 people. Facilities include an area school, medical centre, hotel, supermarket, service station and is now being promoted as a tourist resort. An all-weather, lighted airstrip serves the township of Leigh Creek.

The Aroona dam located 3km west of Leigh Creek supplies water to the towns of Leigh Creek, Copley and Lyndhurst. Leigh Creek draws drinking water from a number of local bores. Due to the relatively high salinity of the ground water supply, a small desalination plant is used to treat the water. The plant is capable of producing up to 1.25ML of drinking water per day.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

**Table 2: Climate Statistics 1982 to 2018 at the Leigh Creek Airport**

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
<b>Temperature</b>															
Mean maximum temperature (°C)	35.7	34.7	31.3	26.2	21.1	17.1	16.7	19.2	23.4	27.1	30.9	33.3	26.4	34	1982 2018
Mean minimum temperature (°C)	20.9	20.5	17.5	13.0	8.9	5.5	4.7	6.1	9.4	12.5	16.2	18.7	12.8	34	1982 2018
<b>Rainfall</b>															
Mean rainfall (mm)	23.6	25.5	19.5	15.6	17.7	17.5	15.8	16.1	18.6	16.6	18.1	23.0	228.6	29	1982 2018
Decile 5 (median) rainfall (mm)	7.2	11.0	4.2	7.2	9.2	9.2	8.4	8.0	8.7	13.5	11.2	19.2	200.4	32	1982 2018
Mean number of days of rain ≥ 1 mm	2.4	2.0	2.1	1.9	2.4	3.0	3.2	2.9	2.3	2.4	2.7	2.8	30.1	31	1982 2018
<b>9 am conditions</b>															
Mean 9am temperature (°C)	26.6	25.2	22.8	19.6	14.4	10.2	9.6	12.2	16.9	19.9	22.6	25.0	18.8	27	1982 2010
Mean 9am relative humidity (%)	34	39	40	44	59	71	69	59	47	40	37	36	48	25	1982 2010
Mean 9am wind speed (km/h)	22.1	19.7	18.2	16.9	11.4	9.6	10.7	14.5	20.5	21.8	22.1	21.9	17.5	23	1982 2010
<b>3 pm conditions</b>															
Mean 3pm temperature (°C)	33.8	32.7	30.2	25.0	20.2	16.3	15.9	18.1	22.3	25.5	29.1	31.3	25.0	27	1982 2010
Mean 3pm relative humidity (%)	20	23	23	29	37	45	44	37	29	26	22	22	30	25	1982 2010
Mean 3pm wind speed (km/h)	19.0	18.2	17.5	17.4	16.7	17.3	18.5	20.9	22.4	21.2	20.8	20.2	19.2	24	1982 2010

red = highest value blue = lowest value

Prepared 29 March 2018 from Bureau of Meteorological (BOM) statistics

An external supply of power to the mine is a SWER line which runs to Myrtle Springs homestead and has an off-take line to MPL 27. Power for the mine campsite is supplied by diesel generator.

A new water bore has been established in MPL 27 and supplies water for the camp site. Personnel employed on site are domiciled in an established camp comprising transportable office, first aid room, crib room, kitchen ablution block and bunk house for sleeping.



Plate 4: Camp site in ML 5001

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## HISTORICAL MAGNESITE MINING

A total of 68,870 tonnes of magnesite has been mined in South Australia, for a variety of uses, between 1901 and 1998 (PIRSA 1999). Crettenden (1985) gives a comprehensive description of historical production of magnesite in South Australia.

The first recorded magnesite mining in the Leigh Creek area was in 1919 at the Camel Flat deposit, 5km west of Copley. (McCallum, W.S. 1988). Prior to 1984 small amounts were mined for pharmaceutical and chemical use by F H Faulding and Co Ltd. In 1984 Commercial Minerals Limited reportedly mined 12 502 tonnes of magnesite from the newly developed Myrtle springs mine in ML's 5000 and 5001 (Crettenden, P.P. 1985). Further mining took place in 1985 in ML's 4998 and 4999 at Mount Playfair, 2 km north- west of the Myrtle Springs mine with an estimated 17 500 tonnes were mined (McCallum W.S. 1990) for use in water filtration by Queensland Alumina Ltd.

## PREVIOUS INVESTIGATIONS

In 1997 PIRSA began a mapping program of the magnesite deposits in the Willouran and Northern Flinders Ranges. Three areas were mapped between 17 September and 19 November 1997 and 28 October and 4 November 1998, using a Differential Global Positioning Satellite System.

The three deposits mapped were Screechowl Creek, Termination Hill and Mount Hutton. The mapping method used dolomite marker beds, which are continuous along strike. A geologist marked the beds with paint marker then technical officers following used a GPS, taking readings approximately every 50 metres along the beds or where the beds were offset by faulting. General topographic information (e.g. drainage, tracks and topography) was also captured by this method.

In 1998 **DMITRE** undertook trial flights of a new hyperspectral visible-short wave infrared airborne imaging spectrometer (HyMap™), (Keeling and Mauger, 1998). This mapping was extended to the Mt Hutton-Myrtle Springs-Mt Playfair deposits and clearly defined the overall thickness and continuity of the magnesite /dolomite beds within the Skilloalee Dolomite carbonate sequence.

GPS mapping of the surface outcrop of the magnesite beds within ML's 5000 and 5001 was undertaken by the author in 2010 and demonstrated continuity of the magnesite beds over the entire length of the mining tenements.

CSIRO (Keeling et al 1998) and Amdel (Henley K J. 1997) studied the quantitative mineralogy of Mount Hutton magnesite and associated mineral phases from outcrop samples.

Between 2000 and 2002 Magnesium Developments Pty Ltd (**MDPL**) undertook comprehensive surveys of the Mount Hutton deposit, located 4 kilometres south east of the Myrtle Springs mine. **MDPL** undertook outcrop sampling (134 samples from exposed beds in creeks and 27 samples at 20 m intervals along the strike of a bed), detailed geological and structural mapping, surface rock chip sampling of magnesite outcrops, aerial photography, GPS surveying and drilling of sixty four fully cored diamond drill holes. In 2000 a one hundred tonne sample of high grade magnesite was extracted from a test pit at Mount Hutton and samples were the subject of metallurgical test work in Adelaide and Germany. Vegetation fauna and heritage surveys were also completed.

A total measured resource of 18.3 million tonnes with a grade of 23.7% Mg, 2.1% Ca, 101 ppm B, and 4129 ppm Si using a partial digest method for chemical analysis was outlined at Mount Hutton (Arthur,

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report

Myrtle Springs Magnesite Mine

Leigh Creek, South Australia

C. Micromine Pty Ltd 1999). Micromine prepared an average grade per bed table for beds 1-17 in the Mount Hutton package (table 3 Arthur, C. 1999) below:

Minarco Resources Pty Ltd were contracted to prepare a mine reserve for the deposit and estimated the proven reserve at 7.1 million tonnes at a grade of 23.7% MgO and 2.1% CaO with SG of 2.96 g/cc. (Horn et. al. 1999)

Table 3: Average Grade per bed for the Beds 1-17 at the Mount Hutton deposit

Bed	Mg%	Mg-St Dev	Ca%	Ca-St Dev	B-ppm	B-St Dev	Si-ppm	Si-St Dev	Insol%	Insol-St Dev
1	24.68	0.07	2.08	0.46	133	18.49	3413	1034	7.95	1.60
2	22.94	0.06	2.7	0.5	80	10.17	4419	1084	12.57	1.50
2A	21.57	0.32	2.74	0.58	60	9.04	5423	380	19.09	5.11
3A	23.82	0.07	5.09	1.44	53	5.09	4952	1031	9.83	1.58
3	22.13	0.96	3.17	1.22	61	7.84	3649	1093	11.65	2.97
4	24.69	0.69	1.53	0.42	137	13.31	3166	906	9.1	1.76
5	22.76	0.75	1.31	0.78	114	13.31	3331	884	11.5	5.12
6	24.13	2.13	2.12	0.66	98	11.86	4962	1423	13.65	3.26
7	23.67	1.58	1.03	0.71	126	12.2	3055	878	7.65	2.67
8	24.08	0.77	2.69	0.85	118	17.55	4721	1503	11.18	2.80
9	26.74	0.04	0.62	0.15	128	11.11	2983	963	6.14	1.29
10	22.32	0.61	3.63	0.52	73	11.39	4807	1258	14.08	2.81
11	21.79	1.71	1.31	0.92	82	14.84	4487	1271	12.24	2.31
11A	20.92	2.43	2.18	0.62	32	7.8	3842	1004	27.9	6.82
12	23.54	0.34	2.3	0.44	111	10.28	3945	1259	8.27	1.61
13	21.83	0.70	2.99	0.58	89	9.95	4559	1587	14.82	2.12
14	26.10	0.36	0.64	0.47	199	21.11	2982	1149	6.17	2.17
14A	22.46	0.48	2.08	0.99	94	10.15	5257	1787	19.09	6.11
14B	23.49	0.53	2.81	0.75	77	6.08	4881	1298	10.98	1.36
15	25.10	0.66	0.98	0.31	114	10.54	3944	1374	9.18	1.52
16	23.24	0.44	2.13	0.92	74	5.62	4759	1384	14.42	3.12
17	24.33	0.42	1.07	0.22	157	32.05	4172	1409	9.53	0.95

In November 2012, Lester Franks, surveyors, were contracted to prepare a topographic survey plan of the mine workings and overburden waste dump together with cross sections of the existing pit and proposed northern extension. This survey was extended in 2013 to include Mineral Lease 5001 and the old southern pit. A composite survey plan merging the 2 sets of data was prepared.

### GEOLOGICAL SETTING AND MINERALISATION

- Regional Geology

Magnesite outcrops in the Northern Flinders Ranges, northwest of Leigh Creek, on the COPLEY, ANDAMOOKA & CURDIMURKA 1:250,000 geological map sheets. Regional Geology and Magnesite locations are shown on figure 2 below.

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia



Skillogalee Dolomite is a persistent stratigraphic unit in the Adelaide Geosyncline and occurs over a distance of 700 km from the Mount Lofty ranges in the south, through to the Willouran ranges in the north. While magnesite has been identified throughout the entire length of the Skillogalee Dolomite, the magnesite interbeds are more numerous and attain their thickest development in the Copley-Myrtle Springs–Mount Playfair- Witchelina areas (McCallum W.S., 1990).

The formation of dolomite and magnesite mud are thought to have been deposited in an extensive late Precambrian sedimentary basin during an extensional regime, precipitated in a low-energy ephemeral lake or marginal lagoon analogous to the current Coorong in South east South Australia.

Figure 5: Simplified Regional geological plan and deposit location

- Stratigraphy

Magnesite formed as interbeds in the Skillogalee Dolomite, widespread Late Proterozoic Burra Group sediments in the Adelaide Geosyncline. Burra Group rocks near Leigh Creek comprise (in descending stratigraphic order):

**Myrtle Spring Formation:** grey and green siltstone and greywacke, with minor dolomite and quartzite interbeds.

**Skillogalee Dolomite:** dark-grey dolomite with repetitive lithologies of intraformational carbonates (magnesite and dolomite), algal laminated carbonates and argillaceous siltstones and sandstones (Belperio 1998). Dolomite mudstone is the prevalent facies, minor dolomite facies present include intraclastic, ooid, and oncoid grainstones, and stromatolitic dolomite (Uppill, R.K. 1989).

**Copley/Witchelina Quartzite:** red sandstone with minor dolomite and red and green shale, overlain by grey and white quartzite with minor shale.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia



Plate 5: Magnesite beds out cropping south end of ML 5001

- Structure

The northwest extension of the Adelaide Geosyncline comprises inliers of folded and fractured Proterozoic sedimentary rocks. Deposition of the Burra Group sediments occurred within a discontinuous series of half-grabens within the Adelaide Geosyncline. The Torrens Hinge Zone delineates the junction of stable Stuart Shelf to the west and Northern Flinders Ranges rocks affected by the Delamarian Orogeny to the east (Preiss, W.V.1987).

The northwest-southeast fold trend of the Delamarian Orogeny controls the geological structure of the Skillogalee Dolomite. The magnesite deposits of this study are positioned parallel to this major structural trend.

The Norwest fault cuts this NW-SE trending magnesite geology in an area of diapiric disturbance at Termination Hill. Witchelina and the magnesite deposits south of Termination Hill are positioned on the eastern side of the Norwest Fault. West of the Norwest Fault, Termination Hill, Mt Norwest and Screechowl Creek magnesite deposits are part of the same continuous westerly dipping geology.

Northwest-southeast trending folds and major faults, typify local mine-site structures. Many small (< 10m offset) fractures, perpendicular to the major fold axis, have been mapped.

The deposit represents the south western limb of a regional syncline, which includes the Camel Flat, Mount Hutton, Myrtle Springs, and Mount Playfair magnesite deposits. A quartzitic dolomite marker bed outcrops along the eastern margin of MPL 18 and a similar bed of massive dolomite outcrops along the western margin of ML's 5000 and 5001. These markers provide excellent correlation with the deposits along strike and confirm the continuity of the magnesite beds.

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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- Magnesite Formation

#### Depositional Environment

Deposited in the Adelaide Geosyncline, an extensive late Pre-Cambrian sedimentary basin, during an extensional tectonic regime. Cryptocrystalline magnesite mud precipitated in a low energy marginal marine lagoon/ephemeral lake, similar in nature to the current day Coorong area in south-east South Australia.

Commonly, 1-20 m thick cycles of intraclastic magnesite - dolomitic sandstone -dolomite mudstone - magnesite mudstone, record a repetitive depositional history. Uppill, R.K. (1989) describes this cycle: High-energy flooding events disturb the magnesite mudflats and lead to deposition of intraclastic magnesite and the introduction of sand to the basin. As protected areas developed behind offshore sandbars or the basin shallowed due to progradation, widespread dolomite mud depositor occurred, largely on submerged mudflats. With further shallowing and progradation, the developing isolated ephemeral lagoons became sites of magnesite deposition.

Uppill, R.K. (1989) suggests that, due to the absence of calcite (Mg/Ca ratio >1) and calcium-sulphates, an extensive shallow lake or inland sea removed from marine influence is a likely sedimentary scenario. However, carbonate isotope values of three Skillogalee magnesite samples reflect shallow-marine conditions, with some evaporitic or meteoric influence Belperio (1989). Schroll, E. (1989) assumes that continental groundwater contributes to magnesite formation in the Coorong. Stromatolite biostromes and ripple-marks are interpreted as being of shallow subtidal-intertidal origin.



Plate 6. Ripple Marks indicating shallow water deposition

The formation of these magnesite beds in the Skillogalee Dolomite is thought to be the result of the following processes:

#### Magnesite Mudstone

Evaporation of water in this closed environment resulted in increased pH and CO<sub>3</sub><sup>2-</sup> concentration (Uppill, R.K. 1989) in this Mg rich/Ca poor solution. This led to magnesite precipitated as a primary magnesite mudstone rather than from dolomite replacement (Uppill, R.K. 1989). The lack of detrital influx indicates a very low energy environment.

A period of continued low energy precipitation is represented by the magnesite mudstones which commonly overly dolomite mudstones. Teepee structures in unconsolidated magnesite mud suggest upwelling of groundwater during compaction. Rip-up structures on the upper surface of these muds suggest high-energy erosional events before lithification and burial. Aeolian deflation or subsequent flooding events may have removed saline minerals formed during exposure of these mudflats (Uppill, R.K. 1989).

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report

Myrtle Springs Magnesite Mine

Leigh Creek, South Australia

### Intraclastic Magnesite



Plate 7: Intraclastic magnesite sample

Magnesite facies are represented most commonly within the Skillogalee Dolomite as discreet beds of clastic reworked magnesite mudstone.

During storm events, soft, recently precipitated magnesite muds are "ripped-up" and reworked. Resulting in magnesite intraclastic conglomerates. Clasts range in size, sorting, roundness and sphericity (Pontifex 1999). Well-sorted, spherical magnesite sands (mgs) represent prolonged, uniform-energy events, whilst large (10-50mm), angular, elongate, "ripped-up" magnesite mud-clasts with sand matrix reflect intense high-energy events.

Some thicker magnesite beds record the full sequence from primary laminar magnesite precipitation with tepees structures at the base and rip structures on the top surface, overlain by unsorted mud-clast conglomerates, through to a series of graded and inverse-graded, cross-bedded magnesite pebble/gravel conglomerates and sands.

### Nodular Magnesite

Nodular magnesite consists of micritic magnesite of botryoidal and folded appearance. Nodular magnesite developed by replacement of magnesite mudstone and intraclasts during periods of subaerial exposure (Uppill, R.K. 1989) (analogous to nodular calcrete growth). Mosaic textures are seen as a result of nodular growth on magnesite intraclasts.

Table 4 Typical mineral content of Magnesite beds at Mount Hutton (Pontifex, I.R. 1999).

MINERAL	CHEMICAL FORMULA	PERCENTAGE CONTENT
Magnesium Carbonate	MgCO <sub>3</sub>	85
Calcium Carbonate	CaCO <sub>3</sub>	5
Talc	Mg <sub>3</sub> Si <sub>4</sub> O <sub>10</sub> (OH) <sub>2</sub>	6-8
Albite	NaAlSi <sub>3</sub> O <sub>8</sub> .	1-2
Quartz	SiO <sub>2</sub>	1-2
Tourmaline	NaMg <sub>3</sub> (AL, Mg) <sub>6</sub> B <sub>3</sub> Si <sub>6</sub> O <sub>27</sub> (OH)	Trace

Magnesite typically occurs as 1 to 100 mm cryptocrystalline clasts. A microcrystalline dolomite matrix cements these clasts. Metamorphic talc commonly occurs as ultrafine 'beards' around magnesite clasts and disseminated throughout clasts and matrix. Albite and quartz are sometimes present as minor accessory minerals (Pontifex & Associates Pty Ltd, 1999<sup>2</sup>).

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HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia



Plate 8: Nodular magnesite with interstitial dolomite and talc. (Pontifex and Associates 1999 <sup>2</sup>)

## RESOURCE AND RESERVES ESTIMATES

**The Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves** (the “**JORC Code**” or “**the Code**”) sets out minimum standards, recommendations and guidelines for public reporting in Australasia of Exploration Results, Mineral Resources or Ore Reserves (the JORC code 2012 edition).

**The Code** states that “Public Reports are reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Ore Reserves. They include, but are not limited to, annual and quarterly company reports, press releases, information memoranda, technical papers, website postings and public presentations”.

Appendix 5 outlines the JOR Code criteria for the estimation and reporting of **Mineral Resources** and Appendix 6 outlines the criteria for the estimation and reporting of **Ore Reserves** and includes an explanation of the each of the criteria referred to in the estimation and reporting of the magnesite resources at the Myrtle Springs mine.

The reserves and resources have been determined using a specified thickness for each bed, a specified height of the bench for each bed given the terrain, the division of the beds into 50m panels along the strike of the beds and an average specific gravity for each magnesite, dolomite and waste bed. The grade assigned to each bed has been determined from rock chip sampling at Myrtle Springs and from the sampling of core from diamond drilling at Mount Hutton. The average grade for the **Resource** and **Reserves** is the weighted average of the beds considered in each estimation.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

The magnesite deposit at Myrtle Springs comprises a steeply dipping sequence of magnesite and dolomite interbeds which outcrop continuously throughout ML's 5000 and 5001. These beds strike northwest - southeast and dip between 60° and 70° to the northeast (Plates 9 & 10). A total of twenty five individual beds have been identified within the area of the mining leases. These extend throughout the mining leases over a strike length of 1km and extend both north and south of the mining leases to the Mount Playfair deposit and Mount Hutton deposit respectively.

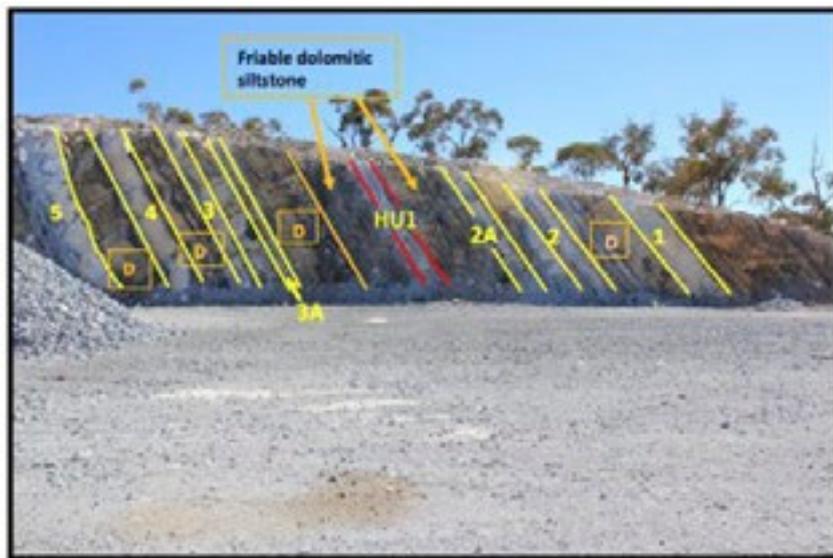


Plate 9: Beds 1-5 north face 2014. Beds 1, 2 and 2A mined out

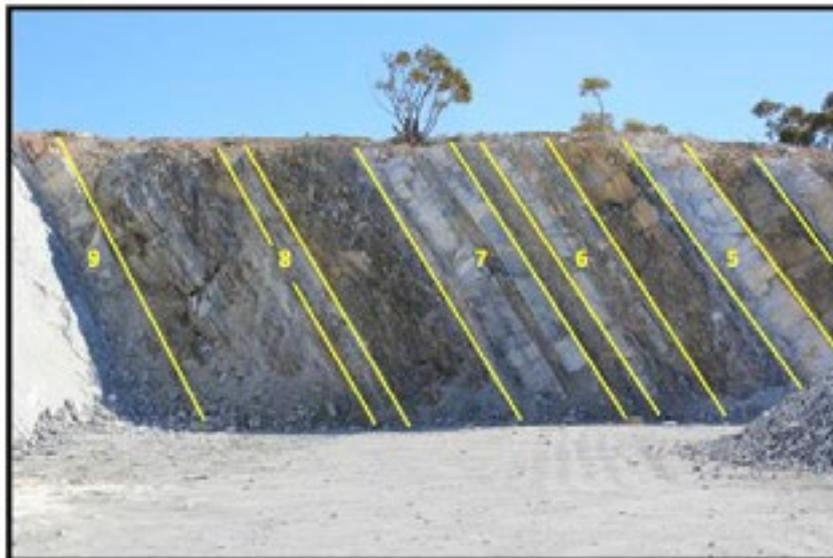


Plate 10: Beds 5-9 north face of current Open cut

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### Drilling

No drilling has been undertaken at the Myrtle Springs Mine, however 61 holes for 3,952 metres was drilled between 1998 – 1999 at the Mt Hutton deposit, 4km's southeast of Myrtle Springs and 6 holes for 397 metres were drilled in 1999 at the Mt Playfair deposit, 2km's northwest of Myrtle Springs mine. Data acquired from these exploration programs has been applied to the resource estimates at Myrtle Springs.

### Sampling Techniques and Data

Sampling undertaken at Myrtle Springs has consisted of random chips across the beds, sampling of drill blast holes and random samples of stockpiles from the beds. Typical chemical analyses for selected bed are shown in table 5. Below.

Samples have been submitted to Intertek Genalysis laboratories for analysis for Al<sub>2</sub>O<sub>3</sub>, CaO, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, MgO, MnO, Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, SiO<sub>2</sub>, TiO<sub>2</sub> applying the analytical technique Code: FB6/OE Lithium metaborate/tetraborate fusion analysed by Inductively Coupled Plasma (ICP) Optical (Atomic) Emission Spectrometry and for **LOI/GR** loss on Ignition, Gravimetric Determination.

Table 5: Myrtle Springs mine typical sample analytical results

Sample Number	Description	MgO %	CaO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	Na <sub>2</sub> O %	MnO %	SiO <sub>2</sub> %	P <sub>2</sub> O <sub>5</sub> %
13410	Bed 1 Chip/channel	43.79	2.95	0.16	0.54	0.16	0.02	3.52	0.001
13411	Bed 2 Chip/channel	44.59	2.18	0.11	0.27	0.16	0.01	3.05	0.002
13412	Bed 4 Chip/channel	43.67	1.75	0.11	0.13	0.19	0.01	8.0	0.001
13414	Bed 7 Chip/channel North face	46.61	0.39	0.05	0.14	0.04	X	2.43	0.003
13415	Bed 8 Chip/channel	38.82	6.18	0.25	0.37	0.01	X	12.55	0.007
13416	Bed 9 Chip/channel	45.96	0.63	0.05	0.16	0.01	X	2.61	0.003
13417	Bed 6 Chip channel Slot below bench 1	37.74	3.33	0.78	0.26	0.01	X	17.39	0.004
13419	Bed 7 crushed ore stockpile	44.95	1.76	0.01	0.10	0.01	X	3.73	0.007
13421	Bed 9 Broken foot wall ore	44.49	1.29	0.13	0.18	0.01	X	5.55	0.004
13422	Bed 5 chip/channel North face	42.61	2.13	0.07	0.09	0.01	X	10.37	0.007
13423	Bed 9 Chip /channel north face	46.60	0.45	0.04	0.13	0.05	X	2.71	0.017
13424	Bed 9 grab -40 mm stockpile	45.36	1.12	0.16	0.16	0.10	X	4.53	0.018
13425	Bed 9 grab -40 mm stockpile	42.04	3.56	0.25	0.20	0.12	X	8.69	0.015
13426	Bed 9 Coarse stockpile	45.15	0.93	0.12	0.21	0.10	X	5.78	0.013
13427	Bed 9 ore to Bacchus Marsh	46.50	0.60	0.05	0.05	0.06	X	2.71	0.015

X = not detected at the limit of detection.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report

Myrtle Springs Magnesite Mine

Leigh Creek, South Australia

Samples have also been submitted to the Calix laboratory at Bacchus Marsh for analysis using X-Ray Fluorescence (XRF). Duplicate samples were submitted to Intertek Genalysis Laboratories for ICP analysis. Table 4 shows the comparison of results.

Table 6: Comparison of XRF and ICP analytical results

ELEMENTS	MgO	MgO	CaO	CaO	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	K <sub>2</sub> O
UNITS	%	%	%	%	%	%	0.01	0.01
DETECTION	0.01	0.01	0.01	0.01	0.01	0.01	%	%
METHOD	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE
SAMPLE NO								
134435	41.71	41.29	4.04	3.98	0.35	0.35	0.08	0.09
134436	41.18	41.56	4.53	4.50	0.36	0.36	0.08	0.09
134437	41.69	42.69	4.11	4.08	0.44	0.43	0.10	0.11
134438	41.76	41.89	3.88	3.89	0.40	0.40	0.09	0.11
134439	42.52	42.58	3.57	3.54	0.27	0.27	0.06	0.07
134440	39.22	40.06	5.55	5.60	0.63	0.64	0.17	0.18
134441	41.69	41.94	3.98	3.96	0.53	0.53	0.13	0.14
134442	39.60	39.65	5.65	5.67	0.64	0.63	0.17	0.18
134443	41.13	41.68	3.96	3.92	0.52	0.53	0.13	0.14
134444	42.25	42.73	3.13	3.13	0.35	0.35	0.06	0.07
134445	40.50	41.91	4.85	4.82	0.47	0.50	0.10	0.11
CHECKS								
134435	46.30	42.04	4.03	4.01	0.35	0.37	0.08	0.09

ELEMENTS	SiO <sub>2</sub>	SiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	Na <sub>2</sub> O	Na <sub>2</sub> O	MnO	MnO
UNITS	%	%	%	%	%	%	%	%
DETECTION	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
METHOD	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE	FB1/XRF	FB6/OE
SAMPLE NO								
134435	6.98	7.27	0.33	0.49	0.16	0.01	0.02	X
134436	7.46	7.75	0.33	0.48	0.15	0.11	0.02	X
134437	7.11	7.43	0.33	0.48	0.20	0.14	0.02	X
134438	6.85	7.16	0.32	0.50	0.19	0.13	0.02	X
134439	6.10	6.46	0.31	0.45	0.14	0.09	0.01	X
134440	8.60	9.13	0.33	0.49	0.25	0.21	0.01	X
134441	8024	8.53	0.32	0.52	0.20	0.16	0.02	X
134442	8.69	8.73	0.33	0.51	0.25	0.20	0.02	X
134443	8.12	8.70	0.34	0.58	0.21	0.16	0.01	X
134443	7.44	7.86	0.32	0.46	0.19	0.14	0.02	X
134445	6.70	7.27	0.33	0.50	0.20	0.17	0.02	X
CHECKS								
134445	6.98	7.38	0.32	0.53	0.18	0.10	0.02	X

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Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### Estimation and Reporting of Mineral Resources and Reserves

Regular site visits have been undertaken by the Competent Person and surface outcrop mapping completed using a hand-held Garmin GPS undertaken. A Differential GPS survey was also used to accurately locate the main beds (1, 7, 9 and 17). The data base has been validated and geological interpretation of the deposit has been confidently described.

The extent and variability of the mineral resource is expressed as continuous throughout the length and the grade of the beds is remarkably uniform although varies from bed to bed. The beds at Myrtle Springs are known to extend to a depth of 20m and at Mt Hutton, 4km south east of Myrtle Springs, to the south to a depth of 50m.

### Bulk Density

Bulk density of the ore has been determined for representative samples of each of beds 1 – 18 at Myrtle Springs and from drill core at Mt Hutton. The assumed bulk density estimates for each bed is listed in Table 5.

Table 7: ML's 5000-5001 Average Specific Gravity and Average Grade Data per Bed

Bed	Thickness (m)	SG	Mg %	Ca %
1	1.20	3.03	24.00	2.30
2	1.10	2.94	22.20	2.70
2A	0.60	2.93	22.00	2.70
3A	0.30	2.93	21.60	2.70
3	0.80	2.94	22.10	4.10
4	1.10	2.93	24.70	1.50
5	1.50	2.98	24.40	1.20
6	0.50	2.96	22.70	2.10
7	2.30	3.02	25.20	1.00
8	1.80	2.94	22.90	2.80
9	2.30	3.01	26.10	0.60
10	2.10	2.95	21.80	3.60
11	2.00	2.94	24.00	1.70
12	1.20	2.95	24.00	2.30
13	1.70	2.95	21.90	3.00
14	3.10	2.96	22.40	1.84
15	2.00	2.96	25.00	1.00
16	1.60	2.95	22.70	2.11
17	1.50	2.90	24.80	1.04

Potential environmental impacts have been identified and a Program for Environmental Protection and Rehabilitation (**PEPR**) prepared and lodged with Department of State Development (**DSD**). Approval to extend the current mining operation was received on 14<sup>th</sup> February 2014.

The ore reserves are reported in addition to the mineral resources. The ore reserves are calculated for the area of the approved PEPR and are an extension of the existing open pit,

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	

along strike to the north-west, on the western side of the open cut and below the current open cut. The beds are continuous along strike and down dip and are of a uniform thickness for each bed as mapped at the northern face of the existing pit and per drilling undertaken at the Mt Hutton deposit. The mining widths of each bed (thickness) is shown in Table 7 as is the specific gravity of the ore from each bed and the average grade for Mg and Ca. Selective mining has been undertaken since 1984 and the material is currently used to produce calcined magnesium oxide. Deleterious elements are silica and calcium. The magnesite ore often contains fine dolomite and talc interstitial to the magnesite nodules.

A sub-lease agreement has been signed with the landowner, PIDIA Aboriginal Corporation and the Indigenous Land Corporation.

The main risk is lack of verified and validated drill-hole data below the existing pit in ML 5000 and in ML 5001 and that the beds may thin or completely disappear. This is considered a very low risk given the nature of the deposit and the known continuity at the Mount Hutton deposit. However, drilling is strongly recommended.

### PARAMETERS FOR JORC RESOURCE AND RESERVES

- The measured thickness of beds 1 – 18 is shown in Table 5, the thinnest bed is bed 3A at 0.3m and the thickest is bed 14 at 3.0m.
- The measured specific gravity is shown in Table 5 for each of the beds 1 – 18 and these figures have been used in the calculation of tonnage.
- Mining panels are designed at a 50m length parallel to the strike of the beds. During the 2017 mining campaign two panels (Numbers 1 and 3 on figure 10) were opened up.
- Grades assigned to beds 1 – 9 is a combination of assay data from samples collected from the north face and from stockpiles of mined ore for beds 7 & 9. For beds 10 – 17, the grades used are those from drilling undertaken at the Mt Hutton and Mt Playfair deposits.
- The calculation of the proved ore reserve for the north extension is based on surface outcrop mapping, the beds exposed in the face within the existing pit, and the approved PEPR panels 1, 3, 5 and 7 which are each 50m in length.
- Proved ore reserve below the pit floor assumes a depth for bench 2 of 10m, verified by a mining slot excavated on bed 6 and 7 in 2000, which demonstrated continuity of the beds to at least a depth of 20m below the surface.
- Probable ore reserve for the western extension is based on a 10m bench as currently mined in the open pit.
- The indicated and inferred resource within ML 5001 excludes beds 1 – 8 in the northern half of the lease and 1 – 9 in the southern half of the lease as these beds extend outside the eastern boundary of the lease and into MPL 18.
- The beds are of a uniform thickness and continuous with the only faulting being a small dextral offset at the northern end of ML 5000.

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HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

#### Mineral Lease 5000

Reserve estimates have been calculated for the north-west extension from the existing pit based on the mapped geological section of the current (March 2018) pit face. The estimate is assigned a **“proved ore reserve”** from surface to 10m in depth i.e., the existing pit floor and **“probable ore reserve”** for 10 – 20m depth.

Magnesite ore persists below the existing pit floor at least to a depth of 10m and a **“proved ore reserve”** has been calculated for the existing pit floor. The limitation placed on the reserve is the geometry of beds 1 – 3 in relation to the eastern boundary of Mineral Lease 5000. Beds 1 – 3 pass outside the lease boundary and into MPL 18 and therefore legally they cannot be mined.

JORC compliant reserve estimates for magnesite and dolomite for Beds 1 – 17 located within ML 5000 and available for extraction are summarised in Table 8 below.

Table 8: Summary of JORC Proved Ore Reserves Estimate ML 5000

JORC Category	Location	Bench	Beds	Magnesite Tonnes	Grade Mg%	Grade Ca%	Dolomite Tonnes	Waste
Proved ore Reserve	North West Extension	1	3 – 9	30 700	24.7	2.1	19 300	53 950
Proved ore Reserve	Below pit floor	2	1-9	98 000	24.4	2.1	18 400	211 000
Proved ore Reserve	North – west Extension	2	1 – 9	35 000	24.0	2.0	5 200	65 000
<b>TOTAL</b>				<b>163 700</b>	<b>24.3</b>	<b>2.0</b>	<b>42 900</b>	<b>329 950</b>

Table 9: Summary of JORC Probable Ore Reserves Estimate ML 5000

JORC Category	Location	Bench	Beds	Mg Tonnes	Grade Mg%	Grade Ca%	Dolomite Tonnes	Waste
Probable ore reserve	North West Extension	1	1 – 9	62 000	24.0	2.0	37 300	128 000
Probable ore reserve	West Extension	1	10 - 17	210 000	23.3	2.0	42 000	458 900
Probable ore reserve	North West Extension	2	1 – 9	30 000	24.0	2.0	5 000	60 000
<b>TOTAL</b>				<b>302 000</b>	<b>23.5</b>	<b>2.0</b>	<b>84 300</b>	<b>646 900</b>

Resource estimates have been calculated for the western extension within ML 5000, i.e., the western side of the existing pit and includes beds 10 – 17. The resource is an “indicated mineral resource” from 0 – 10 m depth and an “inferred mineral resource” from 10 - 20m depth. A shallow costean was excavated adjacent to Section 420 to confirm the existence of beds 10 to 17 within the **Indicated Resource** area as shown on Figure 6.

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Myrtle Springs Magnesite Mine Leigh Creek, South Australia

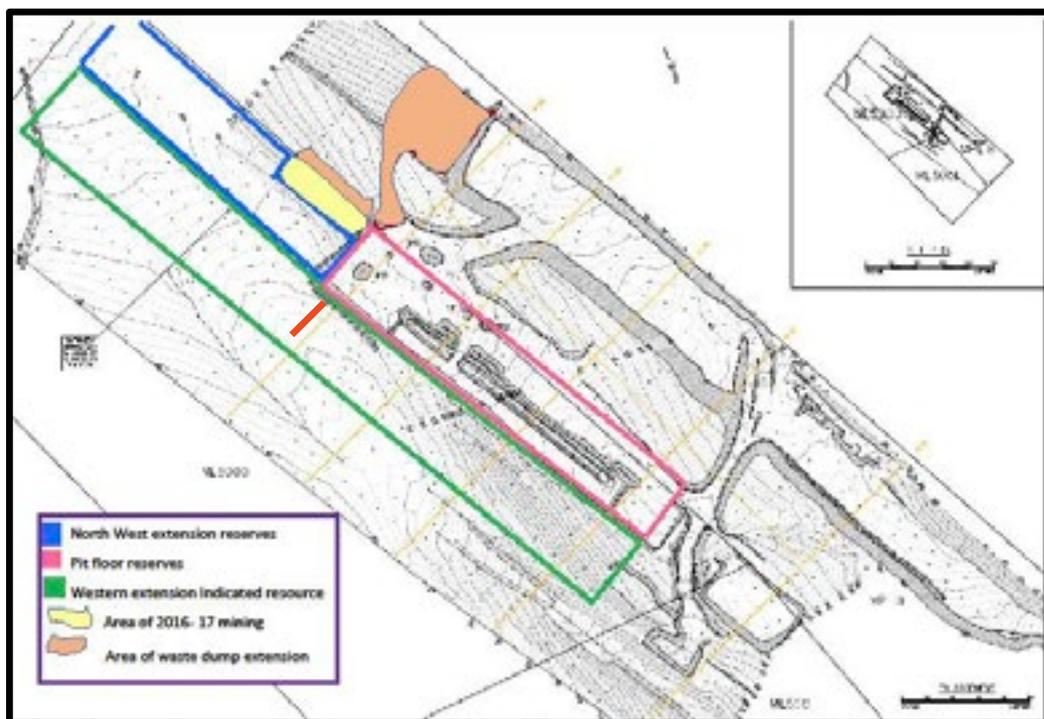


Figure 6: plan showing areas where Mineral Resources and Ore Reserves have been calculated.

Table 10 Summary of JORC Indicated Mineral Resource Estimate ML 5000

JORC Category	Location	Bench	Beds	Magnesite Tonnes	Grade Mg%	Grade Ca%	Dolomite Tonnes	Waste
Indicated	West Extension	2	10 - 17	210 000	23.0	2.0	42 000	458 900
<b>TOTAL</b>				<b>210 000</b>	<b>23.0</b>	<b>2.0</b>	<b>42 000</b>	<b>458 900</b>

Table 7 provides the specific gravity of the beds for which the tonnage and grade has been calculated. There is no drill-hole data within the area defined as the western extension and therefore it is not possible to assign an “ore reserve” either proved or probable at this stage although there is a high degree of certainty that these beds are continuous along strike and down dip and are of uniform grade.

### Mineral Lease 5001

Within ML 5001 magnesite beds have been mapped extending continuously throughout the lease and beyond the southern boundary using a differential GPS technique, Figure 7 below. The beds are continuous and uniform in thickness. However, there is insufficient data available to confirm depth continuity and grade of the beds to assign a **Mineral Reserve** status.

CALIX LIMITED	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	

The beds dip at 60° to the east. Beds 1 – 3 at the proposed bench 1 level are located outside the eastern boundary of the tenement and lie within MPL 18. They were not included in the Resource calculation.

At the proposed Bench 2 level, beds 1 – 7 are located outside the eastern and within MPL18 so have not been included in the resource calculation.

A JORC compliant “**Indicated Resource**” of 182 000 tonnes of magnesite with a grade of 23.0 % Mg based on grades from the adjoining Mineral Lease, has been calculated for beds 8 – 17 to a depth of 10 metres. The grade of the beds is an average of the same assay data used for the beds in Mineral Lease 5000.

Table 11 Summary of Indicated Mineral Resource Estimate ML 5001

JORC category	Bench	Beds	Magnesite tonnes	Grade Mg%	Grade Ca%	Dolomite	Waste tonnes
Indicated resource *	1	8 – 17	182 000	23.0	2.0	NA	355 000

\*= JORC Compliant



Figure 7: ML 5001 GPS surface mapping of beds 1, 7, 9 and 17

# 9. JORC REPORT

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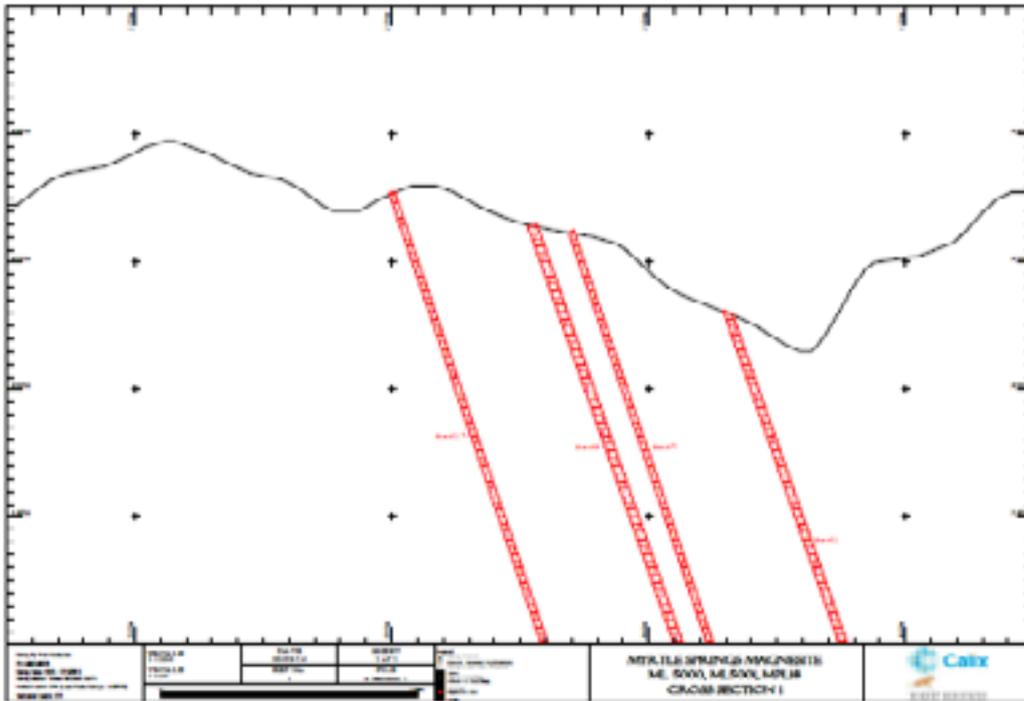


Figure 8: ML 5001 Cross Section 1 location shown on Figure 6

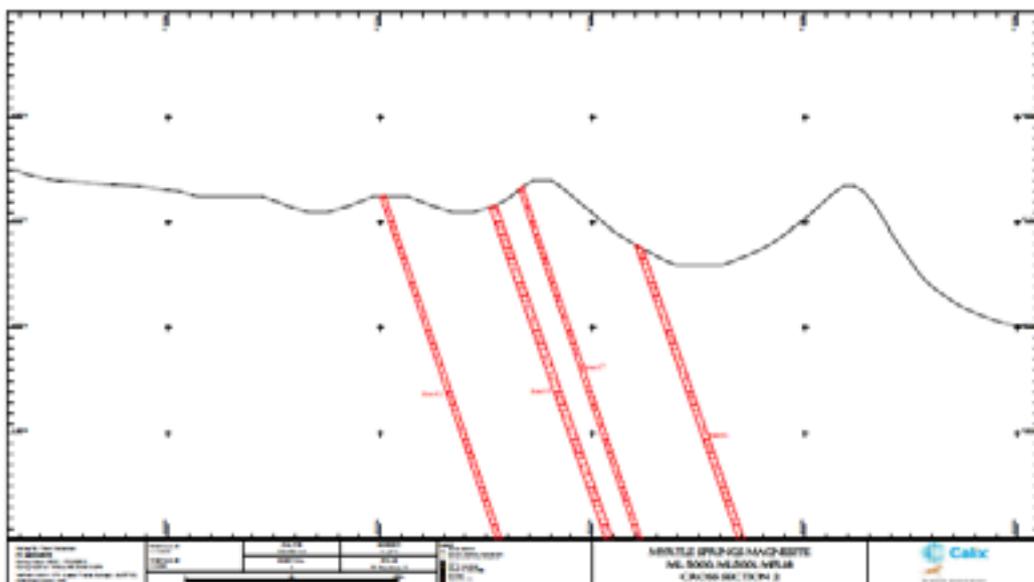


Figure 9 ML 5001 Cross section 2 location shown on Figure 6.

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MINING OPERATIONS

The magnesite beds occur as a package of relatively thin (up to 2.5m), steeply dipping sedimentary beds that extend continuously over the full extent of the mining tenements. Interbeds of dolomite, dolomitic siltstone and thinly-laminated siltstone up to 5 metres in thickness occur between the magnesite beds. Several carbonaceous quartz sand and dolomite mud beds outcrop throughout the sequence and form resistant prominent marker beds. Soil cover is very thin, 20-30 cm, and weathering is minor 50-100 cm.

The mining operation commences with the removal and stockpiling of the vegetation cover (if any) and the removal and stockpiling of the top soil and weathered layer (plate 11). The beds are then clearly visible. Dolomite and dolomitic siltstone interbeds are usually drilled and blasted. Waste rock from interbeds is hauled out-of-pit and dumped on a waste stockpile on MPL 18 adjoining the eastern side of the mining leases.



Plate 11: Top Soil and Weathered layer stripped

Prior to the placement of the waste rock, the topsoil and vegetation cover is removed ahead of the dumping to be used for the later rehabilitation of the waste rock (plate12). Ore grade magnesite beds are broken from the face using a hydraulic rock breaker attached to a 30 tonne excavator. The ore layers (beds) are “peeled” from the mining faces which is generally opened up in 50 - 100m slots. Mining is sequentially from east to west enabling the pit to propagate along the length of the deposit. Ore is broken at the toe of a clean face to create a void and mining continues up the length of the face).



Plate 12: Waste dump in MPL 18 showing top soil removal

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia



Plate 13: Excavator breaking ore from the face

The broken ore is loaded by excavator into CAT 30 tonne dump trucks and hauled to the in-pit ore stockpile for crushing using a mobile crushing plant.



Plate 14: In pit crushing plant and crushed ore stockpiles

### FUTURE MINING

Beds 3, 4 and 5 on bench 1 in slots 1 and 3 (100 m) of the **PEPR** are the next beds available for mining (Plate 15). Prior to the extraction of bed 3, a 1.5 m bed of dolomite and dolomitic siltstone must be removed. Due to the hardness of this bed it will need to be drilled and blasted rather than using a rock breaker on an excavator.

Extraction of bed 3 should produce approximately 2300 tonnes of magnesite. The footwall tends to be more thinly laminated and does contain stingers of dolomite which could lower the grade.

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Plate 15: Beds 3, 4 and 5 north face of the main open cut.

Bed 4 is a thicker (1.1 m) more massive, finer grained magnesite mud, thinly laminated on the footwall and is estimated to produce 3100 tonnes at a grade of 24.7 Mg. Bed 5 is estimated to produce 4 400 tonnes at a grade of 24.4% Mg from the next campaign.



Figure 10: Mining sequence showing panels 1 – 12



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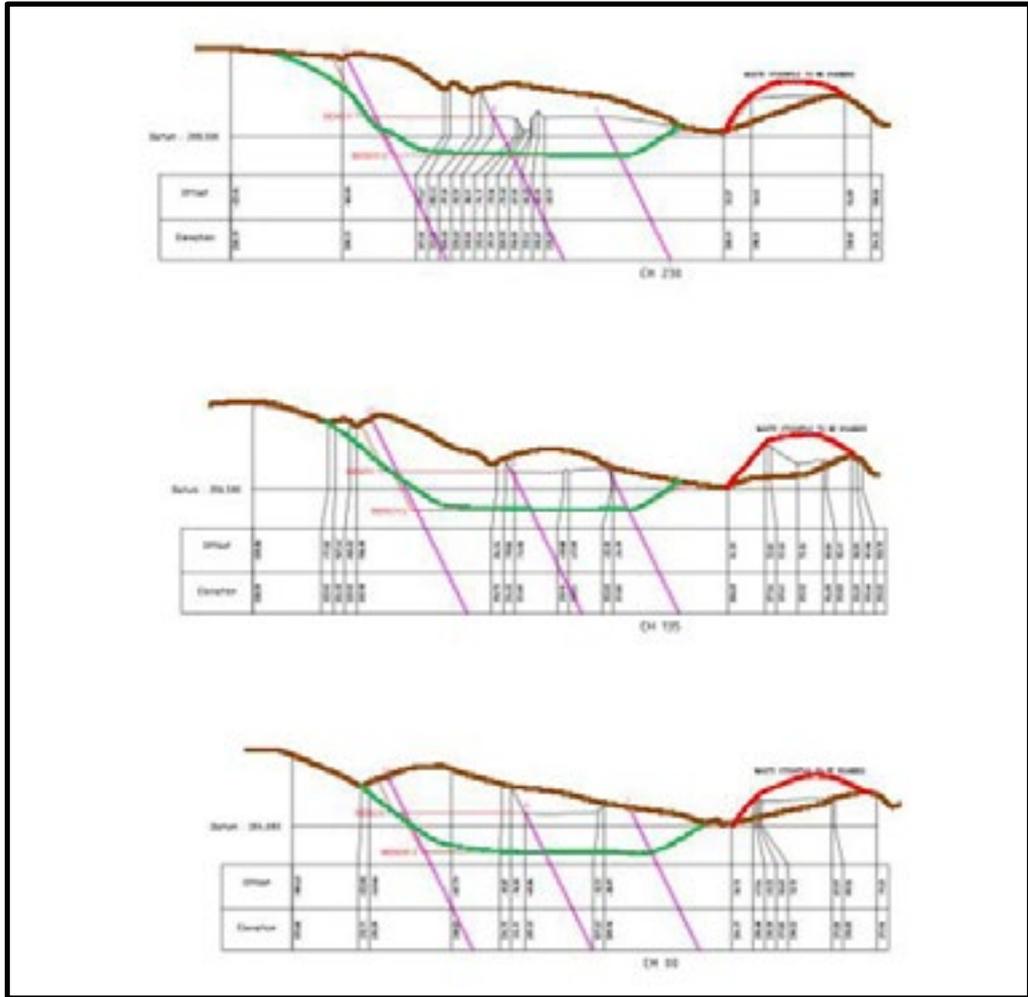


Figure 12 Cross Sections 230, 135 and 00 refer figure 9

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### EXPLORATION TARGET

Mining is not permitted on a Miscellaneous Purpose Licence. An MPL is granted for the purpose of providing amenities for the persons engaged in the conduct of mining operations or the drainage from the mine or for the disposal of overburden or waste from a mining operation or a water bore or power line.

With this in mind and because of the dip to the east, the magnesite beds 1 – 9 are outside the eastern boundary of ML 5001 and are covered by MPL 18 (figure 12). These beds present an Exploration Target as there has been no drilling or mine openings, apart from the original pit in the north-east corner of the lease, to confirm the estimated inferred and indicated resources.

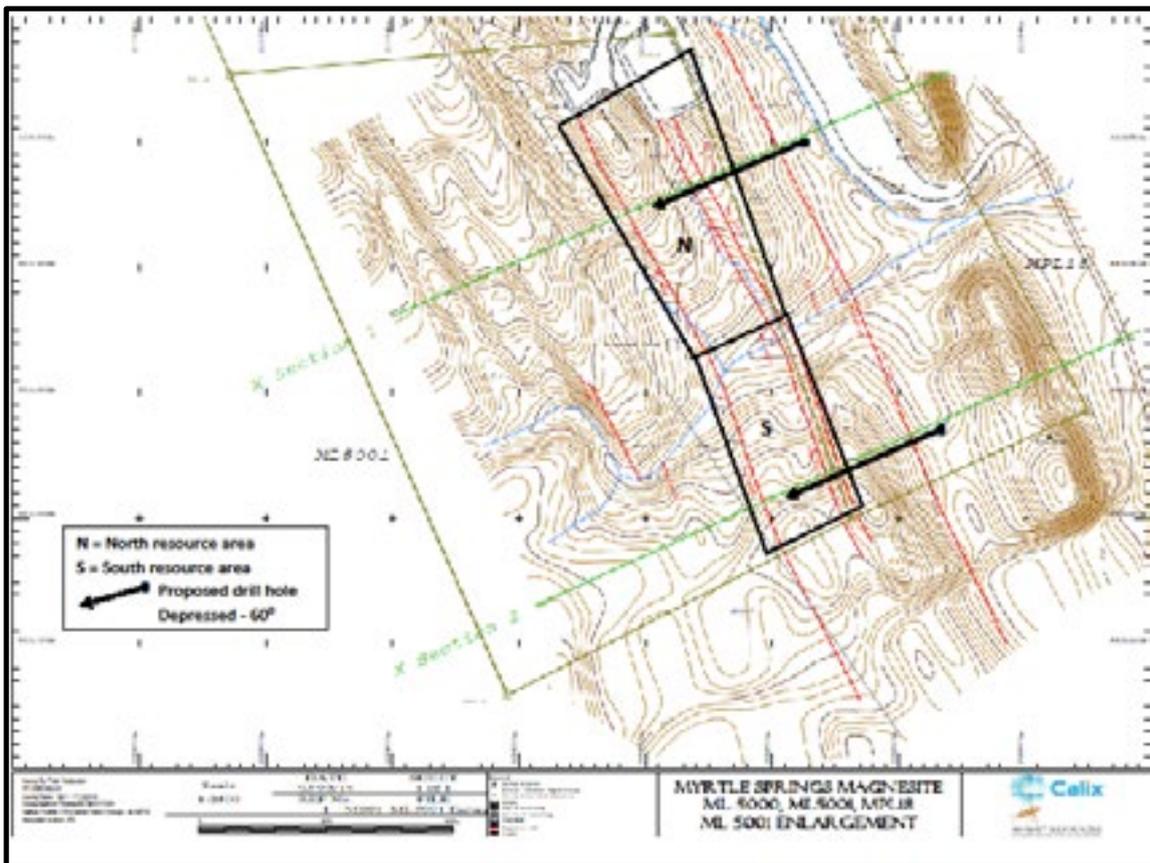


Figure 13: Proposed location of drill holes to test the resource in ML5001

The exploration target below bench 2 in ML 5001 is estimated between 350,000 and 450,000 tonnes with a grade between 23 and 24%Mg to a depth of 40 metres over a strike length of 350 metres.

The exploration target below bench 2 level for beds 4 – 17 in ML 5000 is estimated between 280,000 – 300,000 tonnes to a depth from 20 to 40 metres over a strike length of 450 metre.

CALIX LIMITED  
 HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
 Myrtle Springs Magnesite Mine  
 Leigh Creek, South Australia

## REHABILITATION

Rehabilitation strategies outlined include the following aspects:

- waste dump stockpile
- final pit face (western and northern faces)
- pit floor
- Crusher site and ore sorting platform
- Drainage

Table 11 provides a rehabilitation liability estimate.

Rehabilitation of the pit cannot commence until the second bench is established and mined completely out to allow the final western face to be blasted to the angle of repose and stockpiled topsoil and vegetation respread over the rubble surface. This is not anticipated to commence for at least 10- 15 years and could vary depending on production and product sales. Development of a four bench pit to a depth of 40 metres is quite conceivable given that the resource is expected to extend at least to that depth.

Final rehabilitation of the pit floor will require blasting to provide a rough surface and the spreading of available topsoil, dolomitic fines and available vegetation to encourage natural regrowth of the l vegetation. Available topsoil and dolomitic fines will be respread over the pit floor together with any available vegetation previously removed from the path of mining and stockpiled adjacent to the pit.

Rehabilitation of the existing waste dump will commence in 2018. The waste overburden (dolomitic siltstone interbeds) is currently being stockpiled within MPL 18 on the eastern side of ML 5000. The western face of the stockpile has reached the limit of the approval and the face is at repose and currently revegetating. The top of the stockpile will be rounded off progressively over the next 2 years with additional overburden.

No rehabilitation work is proposed in ML 5001. The southern workings (old pit) are in a safe and stable condition and currently trap run-off and silt during rainfall events. The camp site area located in ML 5001 will be maintained in a clean and tidy state. Rehabilitation of the camp site cannot take place until the final closure of the mine.

No rehabilitation work is required with MPL 27 which is used for acquiring water from a bore. This bore is also used by the PIDIA Aboriginal Corporation and will be maintained in a safe condition.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

Table 12: Rehabilitation Liability Estimate

Aspect	Strategy	Action	Cost \$ Estimate
Waste dump stockpile	Additional waste to be deposited on top of existing dump. Dump to be extended north in MPL 18. Round off dump surface to conform to surrounding landscape. Where possible spread available topsoil and vegetation.	Earthmoving	25,000
Final pit face - west	Blast face to slope of repose along entire pit of 100m. Where possible us available topsoil to cover slope and revegetate.	Blasting Earthmoving	40,000 35,000
Final pit face - north	Blast face to slope of repose along entire face of 130m. Where possible us available topsoil to cover slope and revegetate.	Blasting Earthmoving	44,000 28,000
Pit floor	Blast pit floor to create rough surface to promote revegetation. Create a small water retention pond for stock watering.	Blasting Earthmoving	55,000 30,000
Crusher site and ore sorting platform	Remove all equipment and waste material. Rip the crusher site and sorting platform to promote revegetation.	Earthmoving	30,000
Drainage	Maintain drainage from the pit area south into the Mine Creek. Leave tank and pipe from the water bore in MPL 27 in place for stock watering.	Earthmoving	10,000
<b>Total Cost</b>			<b>\$267,000</b>



Figure 14: Pit outline at end of mine life

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#### ENVIRONMENTAL COMPONENTS

- Public safety – the mine site is located on Aboriginal pastoral land owned by the PIDIA Aboriginal Corporation and is not accessible to the general public.  
The main safety aspect is the use of the access track to the Myrtle Springs station which is a gazetted public access track maintained by Transport S A. MSM and TSA have signed a Deed and S221 Authorisation which permits the mining operator to undertake grading and certain works to maintain the condition of the track.  
Safety aspects have been discussed with the PIDIA management committee and measures established to ensure safe access during the trucking of ore from the mine site.  
The mine site will be fenced, signposted and gates padlocked when not in use and upon completion of the mining operations to prevent access by the public.
- Traffic – the main concern is the access from highway 83 onto the Myrtle Springs station track, however, there is a clear line of sight north and south of the station gate and access by trucks is not likely to create an issue.
- Heritage – no Aboriginal, European or Geological heritage items have been identified. Items of Aboriginal heritage located during the mining operations will be notified under the *Aboriginal Heritage Act 1998* and reported as soon as practicable to the responsible Minister. Mining operations will cease upon the discovery of any objects or remains believed to be of Aboriginal origin.
- Weeds and pests – no weeds, pest plants have been identified within the mine area or along the access track. The site will be monitored for any future infestation. The area is subject to feral goat invasion which is being controlled by the PIDIA Corporation. Provisions of the *Natural Resources Act 2004* relate to control of plant and/or animal pests and diseases.
- Soil – soil cover is generally less than 50 cms and often there is no soil cover on the exposed magnesite and dolomite rocks. Available soil will be removed ahead of mining operations and stockpiled for rehabilitation. Soil conservation and land care are controlled under the *Natural Resources Management Act 2004*.
- Waste disposal – industrial waste including tyres, oil and general rubbish will be removed from the site and disposed of at the Leigh Creek Waste Disposal Depot.
- Visual amenity – the mine site is not visible from any public access areas or roads and is well hidden in a valley between two parallel ridges which rise 200m above the mine.
- Noise – due to the isolation of the mine site from settlements noise will not be an impact on the public or local inhabitants. All mine and quarry operators must comply with provisions relating to Occupational Health, Safety and Welfare under the *Occupational Health, Safety and Welfare Act 1986*. The *Environment Protection Act 1993* regulates noise and air pollution associated with mining operations. The EPA has issued guidelines on what are considered practicable measures to avoid environmental harm.
- Dust – trucking movement along the Myrtle Springs access will create some dust. Watering of the track and the mine site area will be undertaken as required for dust suppression. Water sprays will also be used for dust suppression on the crushing plant. Dust is not considered a significant health or safety issue. *Occupational Health, Safety and Welfare Act 1986*. And Regulations.
- Blasting vibration – blasting of the dolomitic siltstone interburden is likely to occur on a two weekly basis or as required. Vibration from the drilling and blasting activities cannot be felt by the station people or persons in Copley, Leigh Creek or Lyndhurst which are the nearest townships. This is covered by the *Environmental Protection Act 1993*.
- Native vegetation – mining operations will require the removal of 78 trees ahead of the pit development and 37 trees ahead of the waste dump extension. This will require an approval under the *Native Vegetation Act 1991*.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report

Myrtle Springs Magnesite Mine

Leigh Creek, South Australia

- Surface water – a permit is required to undertake activities in water courses specified in relevant water catchment areas. The *Natural Resources Management Act 2004* relates to control and protection of surface and underground water resources.
- Groundwater - there is no likelihood of groundwater being encountered during the course of mining. However, oil and fuel spills could potentially enter the groundwater. Protection of the underground water resource is covered by the *Natural Resources Management Act 2004*.

### ENVIRONMENTAL OUTCOMES

The PEPR is an important document that details the work program and in particular the risk assessment, control and management strategies for the protection of the environment and to minimise the impact of mining on all the stakeholders. Every two years the tenement holder is required to complete an operator compliance monitoring report for the DPC which assesses measurement criteria against the overall goals to be achieved.

Table 13 Summary of the outcomes and measurement criteria for the Compliance Monitoring Report

OUTCOME	MEASUREMENT CRITERIA
Landowner – Pastoral lease Involve the PIDIA in the impact of the operations on the land	Resolution of all landowner complaints through discussion
No loss or modification the abundance or diversity of native vegetation in the leases	Clearance will be undertaken in accordance with the approved management plan
No introduction of new species of weeds, plant pathogens or pests	Annual site inspections and recording and control of infestations
No disturbance to Aboriginal or European artefacts.	Records of any discoveries and cease work until the relevant authorities are notified
No adverse impact to the quality and quantity of groundwater to existing users	Analytical testing of bore water and photos of the pit floor showing no groundwater encountered
No contaminated storm water as a result of mining operations allowed to leave the lease	No incidents involving major alteration to or impact upon drainage within the leases
No accelerated soil erosion caused by or resulting from mining activities	Photos of topsoil stockpiles and reinstated soil and weathered rock on rehabilitated areas
No evidence of industrial waste or rubbish within the mine site	Records of the disposal of all putrescible or industrial waste and showing a clean and tidy site
Ensure that unauthorised entry to the site does not result in injuries to the public	Record all unauthorised entry to the mine site and investigated independently
There are no public health and/or nuisance impacts from air blast, fly rock or vibration caused by blasting activities at the mine site	Record and demonstrate that each blast has been planned and undertaken in accordance with AS 2187.2-2006
Demonstrate that mine closure outcomes are expected to be achieved and sustained after mine closure. No risk to the health and safety of the public, native fauna or livestock.	Final land form and vegetation to integrate and harmonise with the surrounding landscape. Where practical establish a pre-pastoral landscape function
Rehabilitation of the rock waste dump and the mine faces to conform with the local landscape	Progressively rehabilitate the waste dump and mines faces when extraction completed.

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

## CONCLUSIONS

- There is sufficient ore reserves of a suitable quality to supply 100% of the plant's ore requirements for at least 20 years at the current rate of production.
- The ore can be supplied simply and effectively to a timetable that meets the projected plant usage
- There are no political, social or environmental issues that would adversely affect the ore supply, the tenements are in good standing and all reporting requirements are up to date.
- The potential environmental impact of the Myrtle Springs mining and ore haulage operations has been subjected to a rigid assessment by appropriate State authorities.
- A diamond drilling program is required to confirm the resource to the proposed depth of a four bench pit (40m) below ML 5001.

## RECOMMENDATIONS

In order to permit mining of beds 1 – 3 on bench 2 within ML 5000 and beds 1 – 9 on benches 1 and 2 in ML 5001 it will be necessary to peg a superimposed Mineral Claim and subsequently apply for a superimposed mining Lease over MPL 18.

The drilling of at least four fully cored diamond drill holes in ML 5001 is recommended to demonstrate the continuity of the beds below the surface outcrops.

The drilling of six fully cored, diamond drill holes are recommended in ML 5000 to permit the conversion of the inferred and indicated resources to reserves status.

It is recommended that the **PEPR** be reviewed updated to reflect the existing state of the mining operations following the next mining campaign and resubmitted to the Director –Mining Regulation at the Department of Premier and Cabinet prior to the next Mining and Rehabilitation Compliance Report due on the 14 February 2018.

## 9. JORC REPORT

CALIX LIMITED	Independent Geologist's Report
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Myrtle Springs Magnesite Mine Leigh Creek, South Australia

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CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
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## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### APPENDIX 1: Notification of approved PEPR



Government of South Australia

Department for Manufacturing,  
Innovation, Trade, Resources and Energy

Ref: MO6537.002  
ID:A1690651

14 February 2014

Tenement Holder  
MS Minerals Pty Ltd  
Level 1, 9 Bridge Road  
PYMBLE NSW 2073

RESOURCES & ENERGY  
GROUP

Mining Regulation Branch

Level 3  
501 Grenfell Street  
Adelaide SA 5000  
GPO Box 1268  
Adelaide SA 5001  
DX 452

Tel +61 8 8463 3049  
Fax +61 8 8463 3100  
[www.dmitre.sa.gov.au/minerals](http://www.dmitre.sa.gov.au/minerals)  
ABN 83 824 915 929

Dear Sir/Madam

**Mining Act 1971 – Notification of approved Program for Environmental Protection and Rehabilitation (PEPR) for ML 5000, ML 5001, MPL 18 and 27**

The program for ML 5000, ML500, MPL18 and MPL27, Version November 2013 as submitted 23 January 2014 has been approved as PEPR No. MPEPR2014/007 in accordance with Section 70B(5) of the *Mining Act 1971*.

You are reminded that in accordance with Section 70D (3), you must at all times implement and comply with this approved PEPR.

Any significant proposed changes to mining operations stated in this PEPR will require a review of the PEPR in accordance with Section 70C of the *Mining Act 1971*.

The PEPR also includes a native vegetation management plan for the clearance of 12.5 ha of vegetation on ML 5000 and MPL 27. The Significant Environmental Benefit (SEB) for the removal of this vegetation has been calculated as \$11, 250 by DMITRE in accordance with the delegation from the Native Vegetation Council.

As your preferred option is to pay into the Native Vegetation Fund, a cheque for \$11, 250 must be forwarded to DMITRE made out to the "Native Vegetation Council". Once we have received the cheque we will forward it to the Native Vegetation Council. You can then undertake the vegetation clearance as outlined in this approved PEPR.

MS Minerals Pty Ltd are reminded of their obligation to notify me of when you commence mining operations at the mine, in accordance with Regulation 9 of the *Mines Works Inspection Regulations 1998*.

This approval does not constitute endorsement of the systems that you have in place to manage the mining operations in compliance with the *Mining Act 1971*.

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

Whilst the PEPR you have provided and your capability to undertake this activity have been considered in making the approval under Section 70B of the *Mining Act 1971*, the responsibility for compliance with the *Mining Act 1971*, *Mining Regulations 2011* and lease conditions, remains at all times with the lessee.

The target values described in the Operator Compliance Monitoring Plan of the PEPR will be used by DMITRE to determine achievement of the relevant outcomes as per Section 65(d) (iii) of *Mining Regulations 2011*.

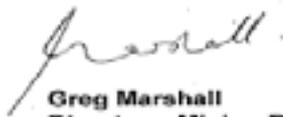
Prior to commencing mining operations:

- A bond must be paid. This bond will be formally requested under separate cover.

In accordance with Mining Regulation 86 and Ministerial Determination 009, you are required to provide DMITRE with a Compliance Report every two years. The report will commence on the date of this PEPR approval letter and the report must be submitted within 2 calendar months of the recurring approval date. If the proposed submission date is not suitable, please contact your Compliance Officer Peter Talbot so that a mutually agreed date can be determined.

Should you require any further assistance, please contact Peter Talbot, Compliance Officer, Mine Regulation, Ph: 8664 1408, Mobile: 0417 824 359

Yours sincerely



**Greg Marshall**  
Director – Mining Regulation  
Delegate of the Director of Mines

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### APPENDIX 2: Approval to change photo point reporting requirements

Ref: MO6537.002  
ID NO: 2017D001529



13 January 2017

Mr John Phipps  
MS MINERALS PTY LTD  
Level 1, 9 Bridge Street PYMBLE, NSW 2073

Dear John

**REQUEST TO CHANGE THE PHOTO POINT REPORTING REQUIREMENTS FOR MINING LEASE (ML) 5000, ML 5001 AND MISCELLANEOUS PURPOSES LEASE (MPL) 18**

Thank you for your letter of 5 January 2017 requesting to change photo point reporting requirements for ML 5000, ML 5001 and MPL 18, Myrtle Springs Magnesite Mine.

The Department of State Development (DSD) has assessed your request against section 5.2 (Operator compliance monitoring plan) of your approved Program for Environmental Protection and Rehabilitation (PEPR) No. 2014/007, and considers that annual reporting on the defined photo points will satisfy DSD's requirement for compliance reporting.

DSD further recommends that the annual photo point surveys should be submitted in the form of appendices to the compliance report which is required to be provided to DSD every two years. As per the letter DSD sent you dated 2 January 2017, the next compliance report is due for submission by 14 February 2017.

If you have any enquiries or require assistance, please contact Peter Lane, Principal Compliance Officer. Ph: 08 8429 0273. Mobile: 0477 307 661.

Yours sincerely

**Scott Marshall**  
MANAGER MINING COMPLIANCE & REGULATION

Mining Regulation  
GPO Box 320 Adelaide SA 5001  
Tel (+61) 08 8463 3488 | Fax (+61) 08 8463 3268 | www.statedevelopment.sa.gov.au | ARN 81 524 925 929



<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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APPENDIX 3: Memorandum of Authorisation to produce extractive minerals



Government of South Australia  
Department of State Development

T00285

INSTRUMENT:	40843
AUTHORITY:	Minerals
REGISTER:	30 Sep 2016
EXPIRES:	

MEMORANDUM OF AUTHORISATION

*MINING ACT 1971*

*Authorisation to produce extractive minerals on a Mineral Lease*

**MINERAL LEASE 5000 and MINERAL LEASE 5001**

Pursuant to section 39(2) of the *Mining Act 1971* and being satisfied that circumstances exist that meet the criteria to justify me in so doing, I hereby grant the holder of Mineral Lease 5000 and Mineral Lease 5001 authorisation for the recovery, use and sale or disposal of Extractive Minerals, including but not limited to Dolomite, produced as a result of operations conducted in pursuance of the mineral leases.

**Pru Freeman**  
**DEPUTY EXECUTIVE DIRECTOR, MINERAL RESOURCES**  
Signed in accordance with delegated  
Ministerial powers and functions.

Date: 30 September 2016

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### APPENDIX 4: Authorisation to produce extractive minerals on a mineral lease

Our Ref: T00289  
Contact: Cathi Duffield  
Telephone: 08 8463 3137



5 October 2016

MS Minerals Pty Limited  
C/- Mr Ric Horn  
Hornet Resource Assessment Services Pty Ltd  
3/15 Manston Court  
MOUNT BARKER SA 5251

Dear Mr Horn

#### **AUTHORISATION TO PRODUCE EXTRACTIVE MINERALS ON MINERAL LEASES 5000 and 5001**

I advise that on 30 September 2016 the Deputy Executive Director, Mineral Resources, in accordance with delegated Ministerial powers and functions, consented to an Authorisation pursuant to Section 39(2) of the *Mining Act 1971* (the Act) to produce extractive minerals, including but not limited to Dolomite, on Mineral Leases (ML) 5000 and 5001 (the leases). The Authorisation has now been endorsed in the Mining Register and a copy is enclosed for your records.

MS Minerals Pty Limited must not remove extractive minerals from the leases until a revised Program for Environment: Protection and Rehabilitation has been approved to cover mining of extractives on ML5000 and ML5001. Failure to comply with this requirement will be an offence under Regulation 35 of the *Mining Regulations 2011*.

Please note that pursuant to Section 39(6) of the Act the royalty payable on extractive minerals produced on the leases will be imposed at the rate that applies under section 17(4)(a) of the Act which states:

*17(4) Subject to this or any other relevant section, royalty will be equivalent to—  
(a) in the case of extractive minerals – 55 cents per tonne, or such lesser amount as may be prescribed by the regulations, as assessed at the mine gate."*

For queries specific to royalties please contact Michelle Lavingdale, Senior Royalties Analyst, Resource Royalties on 08 8463 3095 or email [Michelle.Lavingdale@sa.gov.au](mailto:Michelle.Lavingdale@sa.gov.au).

It should be noted that this authorisation is for the recovery, use and sale or disposal of extractive minerals produced as a result of operations conducted in the pursuance of the leases. Should there be a change to production and the extractive minerals become a dominant or primary objective of operations then an application for a superimposed extractive minerals lease may be required.

Mineral Tenements Program | Mineral Resources Division

Level 5, 381 Grenfell Street Adelaide 5000 | GPO Box 823 Adelaide SA 5001 | 51542  
Tel (+62) 08 8463 3100 | Fax (+62) 08 8463 3101 | [www.statelibrarydevelopment.sa.gov.au](http://www.statelibrarydevelopment.sa.gov.au) | ABRN 63 524 915 929



CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

If you have any queries in relation to this matter, please do not hesitate to contact Cathi Buttfield, Team Leader, Mineral Production Tenements on 08 8463 3137 or email [Cathi.Buttfield@sa.gov.au](mailto:Cathi.Buttfield@sa.gov.au).

Yours sincerely



**Cathi Buttfield**  
Team Leader  
Mineral Production Tenements

Attachment:

1. Memorandum of Authorisation dated 30 September 2016
2. Instrument Printout – MS Minerals Pty Limited – ML5000
3. Tenement Printout – MS Minerals Pty Limited – ML5000
4. Instrument Printout – MS Minerals Pty Limited – ML5001
5. Tenement Printout – MS Minerals Pty Limited – ML5001

## 9. JORC REPORT

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
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### APPENDIX 5: JORC CODE CRITERIA AND EXPLANATION OF ESTIMATION AND REPORTING OF MAGNESITE RESOURCES AT MYRTLE SPRINGS MINE

CRITERIA	JORC CODE EXPLANATION	EXPLANATION
Site Visits	<p>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</p> <p>If no site visits undertaken indicate why this is the case.</p>	<p>Ric Horn has visited the site on numerous occasions over the past 17 years.</p> <p>The site has been visited by the author in April 2009, July 2009, February 2010, May 2012, November 2012, December 2013, September 2014, November 2014, June 2016, November 2016, June 2017, and March 2018.</p> <p>The most recent visit was on the 12 March 2018. The exposed faces in the mine were mapped and measured. Vegetation photo points photographed</p>
Mineral tenements and land tenure status	<p>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historic sites, Aboriginal heritage, wilderness or national parks and environmental settings.</p> <p>Security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate.</p>	<p>Two Mineral Leases (ML 5000 and ML 5001), registered to MS Minerals Pty Ltd, (MSM), a wholly owned subsidiary of Calix Limited, cover the existing mining operations. The tenements expire on the 29.03 2022 and can be renewed.</p> <p>The mine is located 25 km north of Leigh Creek town site on the Myrtle Springs pastoral lease owned by the PIDIA Aboriginal Corporation.</p> <p>MSM have an under- lease agreement with PIDIA covering the southern half of the pastoral lease which provides haulage road access from the mining operations and unrestricted use of the mining tenements for mining operations and obviates the need for a compensation agreement with the land owner. This agreement expires on the 30 June 2020</p> <p>No Aboriginal or European heritage sites identified and no wilderness or national parks in close proximity.</p> <p>The mining tenements were granted prior to the <i>Native Title Act 1993</i> being passed by the Australian Parliament. Native Title has been extinguished and the tenements do not require a Mining Native Title Agreement. There is an approved PEPR for the Mining Operations and the mining tenements are in good standing</p>
Geology	Deposit type, geological setting and style of mineralisation	<p>Magnesite deposits occur within the Skillogalee Dolomite carbonate sequence, a persistent stratigraphic unit in the Adelaide Geosyncline.</p> <p>Skillogalee Dolomite is a widespread Late Proterozoic sequence.</p>

CALIX LIMITED	Independent Geologist's Report
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Myrtle Springs Magnesite Mine Leigh Creek, South Australia

		<p>Magnesite occurs as interbeds within a carbonate sequence that extends for 120 km north- west from Leigh Creek. Nine significant deposits have been identified within this sequence.</p> <p>Magnesite beds vary in thickness from 0.3m to 2.2m in the "economic "package. They strike north-west south-east and dip steeply ( 60°) to the east. Beds are of a uniform thickness and are continuous in outcrop along strike with no significant fault offsets.</p>
Geological Interpretation	<p>Confidence in (or conversely the uncertainty of) the geological interpretation of the magnesite deposit</p> <p>Nature of the data used and any assumptions made.</p> <p>The effect, if any, of an alternative interpretation on Mineral Resource estimation.</p> <p>The use of geology in guiding and controlling Mineral Resource estimation.</p> <p>The factors affecting continuity both of grade and geology</p>	<p>The geology of the deposit is simple and is part of the well mapped and documented Skillogalee Dolomite carbonate sequence.</p> <p>The style of the magnesite deposits is well understood and has been the subject of numerous studies.</p> <p>The geological interpretation is based on the detailed exploration of the adjoining Mount Hutton and Mount Playfair deposits and the mapping, drilling and sampling undertaken on those deposits as well as the mapping and sampling of the existing open cut mining operations at Myrtle Springs.</p> <p>The magnesite beds have been shown to have uniformity in thickness and remarkable continuity along strike as well as a consistency of grade.</p>
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<p>The magnesite beds have been mapped continuously throughout the length of the Mining Tenements and at the Mount Hutton deposit, 4 km south- east of Myrtle Springs, drilling has demonstrated they persist to a depth of 60 metres.</p> <p>The author is of the opinion and confident that at Myrtle Springs the magnesite beds persist to a depth of at least 40 metres and certainly persist along strike north-west and south- east of the Mineral Leases.</p>
Exploration done by other parties	Acknowledgement and appraisal of exploration by other parties.	<p>The deposit was originally opened up by Commercial Minerals Limited in 1994.</p> <p>Of significance is the detailed exploration from 1999-2002, including the drilling of 61 fully cored diamond drill holes, geological and structural mapping and metallurgical test work, by Magnesium International Ltd for the SAMAG at the Mount Hutton deposit, located 4 km south east of Myrtle Springs mine.</p> <p>In 2013 a detailed survey of the mine workings and the construction of cross sections compiled by Lester Franks Pty Ltd. This survey was extended to include all of Mineral Lease 5001 in 2014.</p>

## 9. JORC REPORT

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD		Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
		At the Mount Hutton Deposit, 4 km south-east of the mine, a 61 hole fully cored diamond drill program was completed between 1998 – 1999 for 3952 metres. Results of this program demonstrate a remarkable continuity and uniformity of the magnesite beds at both the deposits and data from the drilling has been used for the Myrtle Springs deposit.
Relationship between mineralisation widths and intercept lengths	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. "down hole length, true width not known").</p>	<p>There has been no drilling at the Myrtle Springs mine. However 61 fully cored diamond drill hole were drilled between 1998 and 1999 for 3952 m at the Mount Hutton deposit, 4 km south-east of Myrtle Springs.</p> <p>Down hole surveys using an Eastman single shot camera together with orientation marks provided the geometry of the deposit. Geological information recorded included a qualitative estimate of the mineralogy of each lithology. Magnesite beds were logged in detail and the unique character and constituents used to match the beds between drill holes.</p>
Mining Factors or assumptions	<p>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</p>	<p>Mining of the beds using an excavator mounted rock breaker is used to selectively separate the magnesite beds from the waste dolomitic siltstone and dolomite beds. This method produces a clean, high grade product.</p> <p>Beds as thin as 30cm can easily be separated from the underlying waste as the contacts are usually very sharp and well defined.</p> <p>The economic beds range in thickness from 30cm to 2.5 m.</p>
Bulk Density	<p>Whether assumed or determined. If assumed the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature size and representativeness of the samples.</p> <p>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc), moisture and difference between rock and alteration zones within the deposit.</p> <p>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials..</p>	<p>The bulk data acquired from the Mount Hutton drilling program and bulk sampling has been used in conjunction with specific gravity testing of samples of Myrtle Springs ore.</p> <p>The average specific gravity measurements used in the resource calculations is shown in Table 7.</p> <p>Samples of the dolomite and dolomitic siltstone interbeds has also been subject of specific gravity tests.</p> <p>Bulk density measurements have been recorded for both magnesite and dolomite.</p>
Diagrams, tables and plates.	<p>Appropriate maps and sections (with Scales and tabulations should be included.</p>	<p>Survey maps prepared by Lester Franks and by PP Crettenden have been included in the report and are considered of high quality.</p> <p>Google Earth images have been used to shown the vegetation cover in relation to the mine workings. And the geology.</p>

CALIX LIMITED	Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	

		A simplified regional geological plan prepared by the Mineral Resources Division of the Department of Premier and Cabinet is included
Estimation and modelling techniques.	<p>The nature and appropriateness of the estimation technique(s) applied and key assumptions including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</p> <p>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</p> <p>The assumptions made regarding recovery of by-products.</p> <p>Estimation of deleterious elements or other non-grade variables of economic significant (e.g. sulphur for acid mine drainage characterisation).</p> <p>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</p> <p>Any assumption behind modelling of selective mining units.</p> <p>Any assumptions about correlation between variables.</p> <p>Description of how the geological interpretation was used to control the resource estimation.</p> <p>Discussion of basis for using or not using grade cutting or capping.</p> <p>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</p>	<p>Mining Panels of 50 metres have been used for the resource calculations. The current mining operations have opened two panels (100m) on bench 1 in the North East Extension. This has provided conclusive evidence of the continuity of the beds.</p> <p>Drilling at Mount Hutton demonstrated that drill hole sections at 250m spacing provide an adequate test of the deposit for continuity of the beds and the consistency of the magnesite and calcium grades.</p> <p>The main by product that can be produced is dolomite rock that is suitable for aggregate, road sub-base and sealing aggregate. Although the market is limited due to the remoteness of the mine and the high transport costs an opportunity may exist for the sale of the by-product for the proposed reconstruction of the Strzelecki Track to Moomba as well as other Outback roads.</p> <p>The blocks of ore have been calculated based on the average thickness of the bed, height of the bench and length of each mining panel.</p> <p>Beds of magnesite are uniform in continuity and persistent along strike.</p> <p>· Not applicable</p> <p>Geological interpretation assumed the thickness of each bed is constant and that each bed in continuous. This has been clearly demonstrated in the existing open Cut mine.</p> <p>The grade from bed to bed varies but the grade of each bed is consistent and the weighted average grade for each pane is calculated using and average grade from each bed based on samples results</p>
Environmental factors or assumptions	<p>Assumptions made regarding possible waste and process residue disposal options.</p> <p>Consider the potential environmental impacts of the mining and processing operations. The status of these aspects should be reported with an explanation of the environmental assumptions made.</p> <p>Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</p>	<p>A Program for Environmental Protection and Rehabilitation (<b>PEPR</b>) has been approved by the relevant State Mining authority and is being complied with by the mining operator.</p> <p>A Significant Environmental Benefit payment has been made to the Natural Resources fund to permit the removal of vegetation ahead of the mining operations.</p> <p>Run-off from the mine is being captured in a silt retention dam draining the main creeks</p>

## 9. JORC REPORT

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD		Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
		draining the workings and is operating successfully
Database Integrity	Measures taken to ensure that data has not been corrupted by, for example.. Transcription or keying errors, between its initial collection and its use for Mineral Resources estimation purposes.  Data validation procedures used.	The South Australian Resources Information Gateway (SARIG) has been accessed for data from the Mt Hutton deposit and tenement information. The data is considered to be adequately recorded and valid
Sampling Techniques	Nature and quality of sampling (eg cut channels , random chips or specialized industry standard tools)  Include reference to measurements taken	Sampling of the ore in the open cut has been by random chips across the outcropping bed in the face of the open cut as well as sampling of the ore from the stockpiles.  Drill hole used to blast the toe off each bed have been sampled where appropriate.  Sampling of the Drilling done at Mount Hutton was done to a very rigorous protocol. Magnesite beds were sampled at one metre intervals with in 20 samples a duplicate. Two random selected samples in each run of 50 samples were routinely repeated for assay. Samples were analysed by the Amdel laboratories.  An independent check samples were submitted for analysis by Assay Corp laboratories.
Classification	The basis for the classification of the Mineral Resources into varying categories.  Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data)  Whether the results appropriately reflects the Competent Person's view of the deposit.	The <b>Proved Ore Reserve</b> is appropriate given the knowledge of the beds from the existing mine workings and the continuity and uniformity of the beds and grade of the magnesite.  <b>Probable Ore Reserves</b> have a high degree of certainty that they will be mined and are only Probable in that there are insufficient mine openings to confirm the reserve.  The <b>Indicated and Inferred Resources</b> are outlined by surface geological mapping and an intimate knowledge of the deposit but require some drilling to confirm them to the depth of the proposed mining.  All relevant factors have been considered in the confidence level of the calculation of the resources and reserves.  The results of exploration and mining appropriately reflect the Competent Persons view of the deposit and of the Proved and Probable Reserve outlined for mining.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits of sampling techniques have been undertaken

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

## APPENDIX 6: JORC CODE CRITERIA AND EXPLANATION FOR THE ESTIMATION AND REPORTING OF ORE RESERVES

CRITERIA	JORC CODE EXPLANATION	EXPLANATION
Mineral Resource estimate for conversion to Ore Reserves	<p>Description of the Mineral Resource estimate used as the basis for the conversion to an Ore Reserve.</p> <p>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of the Ore Reserves.</p>	<p>The Proved Ore and Probable Ore Reserves are separate from the Indicated and inferred Mineral Resources.</p> <p>An Exploration Target has been defined below the pit in ML5000 and in ML 5001 in addition to the Resource and Reserves outlined.</p>
Study Status	<p>The type and Level of the study undertaken to enable Mineral Resources to be converted to Ore Reserves.</p> <p>The code requires that a study to at least Pre-feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</p>	<p>There has been no Pre- feasibility or Feasibility undertaken with respect to the Myrtle springs deposit as this is an operating mine.</p> <p>The mine plan is in operation and the mining operations are efficiently producing a high grade magnesite product that meets the specifications required at the Bacchus Marsh plant and at a cost that is competitive in the market place.</p>
Cut-Off Parameters	<p>The basis of the cut-off grades or quality parameters considered.</p>	<p>The grade of the ore beds being mined meet 22.0 % Mg. This requires a highly selective mining technique and well trained excavator operators.</p>
Mining Factors or assumptions	<p>The method and assumptions used as reported in the Pre- Feasibility or Feasibility study to convert the Mineral resource to an Ore Reserve (i.e. either by application of the appropriate factors by optimisation or by preliminary or detailed design.</p> <p>The choice, nature and appropriateness of the selected mining methods and other mining parameters including associated design issues such as pre strip, access, etc.</p> <p>The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc).</p> <p>The major assumptions made and Mineral Resource model used for pit and slope optimisation (if appropriate).</p> <p>Mining dilution factors used.</p> <p>Any minimum mining widths used.</p> <p>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</p> <p>The Infrastructure requirements of the selected mining method.</p>	<p>The magnesite beds are well- defined, extremely sharp contacts with the overlying and underlying dolomite and dolomitic siltstones.</p> <p>The magnesite beds are steeply dipping and are easily extracted using an excavator with a rock breaker. There is a minimal use of explosives necessary and the quarry benches are between 10 and 12 m in height making it easy to reach the top of the bed with an excavator.</p> <p>An appropriate mining method</p> <p>The beds dip at 60° and form a very competent, stable and safe pit face. There is no underground mining and no stopes.</p> <p>Mining dilution factors not applied</p> <p>Dilution of the magnesite is due to the presence of other carbonate minerals, dolomite and talc.</p> <p>Mining of magnesite beds as thin as 0.5 m is possible provided there are sharp hanging wall and footwall contacts.</p> <p>Not applicable</p>

## 9. JORC REPORT

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD		Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
		A well-trained and skilled excavator operator using a rock breaker can satisfactorily mine the beds
Metallurgical factors or assumptions	<p>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</p> <p>Whether the metallurgical process is well-tested technology or novel in nature.</p> <p>The nature ,source and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors</p> <p>Any assumptions or allowances made for deleterious elements.</p> <p>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.</p> <p>For minerals that are defined by specification, has the Ore Reserve estimation been based on appropriate mineralogy to meet the specification.</p>	<p>Calix has developed a world-first patented "kiln" built in Bacchus Marsh, Victoria that produces "mineral honeycomb" – very highly active minerals.</p> <p>Calix's unique, patented "Calix Flash Calcination" or "CFC" technology reinvents the kiln. The CFC process involves grinding minerals to around one thousandth of a millimetre in size, and then "flash" heating them in a very short time at up to 800° C. As the trapped gasses in the mineral "bubble out" of the particles they snap freeze them in a very high energy state, leaving a very porous, honey-comb like structure.</p> <p>The Calix technology is well tested with the full-scale plant commissioned in late 2013 and operational since then. Many thousands of tonnes of calcined materials produced and sold since then.</p> <p>Not applicable, the magnesite ore is used as mined, there is no concentration and thus recovery factors..</p> <p>Not applicable. The ore is used as selectively mined and contains no deleterious elements.</p> <p>Not applicable The plant production is based on bulk mined ore direct from the mine.</p> <p>The Ore Reserve estimation is based on the magnesite beds identified in the open cut mine and from the mineralogy identified from drilling at the adjacent Mount Hutton deposit.</p> <p>Not applicable, ore mineralogy does not impact the calciner.</p>
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential site, status of design options considered and, where applicable, the status of approvals for the process residue storage and waste dumps should be reported.	Apart from the crushing and screening of the magnesite ore there is no other processing at the mine site. The main residue is the dolomite and dolomitic siltstone interbeds that are stockpiled in a waste dump on MPL 18 that adjoins ML5000 and ML5001 approved by the South Australian Government authority.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation;	The nearest town is Copley, 20 km south east of the mine. A small camp site has been established at the mine site. Power is supplied by generator. A SWER line is located at MPL 27, located 2 km south of

CALIX LIMITED	Independent Geologist's Report
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD	Myrtle Springs Magnesite Mine Leigh Creek, South Australia

	or the ease with which the infrastructure can be provided or accessed.	the mine and power could be easily supplied. Water is sourced from a bore in MPL27 and trucked from Leigh Creek.
Costs	<p>The derivation of or assumptions made, regarding projected capital costs in the study.</p> <p>The methodology used to estimate operating costs.</p> <p>Allowances made for the content of deleterious elements.</p> <p>Derivation of transportation charges.</p> <p>The allowances made for royalties payable, both Government and private.</p>	<p>No applicable in this report.</p> <p>Not applicable in this report</p> <p>There are no deleterious elements present in the magnesite ore.</p> <p>Ore is transported to Bacchus Marsh in B-Double road trains. Transport cost were derived by a tender process.</p> <p>A Government royalty of 3.5% of the value of the mineral ex min gate on magnesite and \$0.52cents per tonne on extractive minerals.</p>
Revenue factors	The derivation of assumptions made of metal or commodity price(s) for the principal minerals and co-products.	No applicable to this report. Applies to the processed product at Bacchus Marsh.
Market Assessment	<p>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</p> <p>A customer and competitive analysis along with the identification of likely windows for the products</p> <p>Price and volume forecasts and the basis for these factors</p> <p>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</p> <p>A description of the products produced from the magnesite and their uses</p> <p>The derivation of assumptions made of the metal or commodity price(s), for the principal metals, minerals and co-products.</p>	<p>Utilising ore as a feed to downstream unique products that can only be made by Calix technology. Volumes in the market will grow as applications are more widely adopted.</p> <p>Wide range of applications specific to Calix technology. Customers are typically end users such as water authorities and aquaculture farmers.</p> <p>The ore is used internally to produce higher value add products so price and volume forecasts for magnesite are not applicable.</p> <p>Calix is the customer and can use a wide range of ore grades in its process to make a range of products via blending with other ore sources.</p> <p>Calix produces Magnesium Hydroxide from the magnesite via two patented processes. At present the commercial products are ACTI-MAG for waste water treatment and PROTECTA-MAG for sewer infrastructure protection. Calix also has two products in advanced stages of development being AQUA_Cal= for Aquaculture water conditioning and BOOSTER-Mag for pest and fungal inhibition in agriculture.</p> <p>Not applicable, Calix does not sell the magnesite but rather manufactures unique higher value products from it and sells these into various markets.</p>

## 9. JORC REPORT

CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD		Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	An under-lease agreement exists with the landowners PIDIA Aboriginal Land Corporation.
Economic	The inputs to the economic analyses to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate , etc.	Not applicable to this report
Other	<p>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore reserves.</p> <p>Any identified material naturally occurring risk.</p> <p>The status of material legal agreements and marketing arrangements.</p> <p>The status of governmental agreements and approvals critical to the viability of the project. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframe anticipated in the Pre-feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</p>	<p>At current production rates there are adequate Reserves available to supply the Bacchus Marsh plant for at least 20 years. None identified</p> <p>The PIDIA under-lease is current until 2023.</p> <p>There are valid Mineral Tenements in place and an approved Mine and Rehabilitation Plan.</p> <p>No other Government approvals are required. Mining operations are approved.</p> <p>A rehabilitation Bond has been lodged with the relevant South Australian Mining Authority.</p>
Classification	<p>The basis for the classification of the Ore Reserve into varying confidence categories.</p> <p>Whether the results appropriately reflects the Competent Person's views of the deposit.</p> <p>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</p>	<p>The Proved and Probable Ore Reserves are based on magnesite bed exposures in the existing pit, extrapolation along strike based on outcrop mapping and knowledge of drilling at the deposits along strike.</p> <p>The results appropriately reflect the Competent Persons views of the deposit.</p>
Audits or Reviews	Results of any audits or reviews of Ore Reserves.	No audits or reviews undertaken.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person.	The Competent Person is extremely confident of the accuracy of the Ore Reserves and Mineral Resource and believes the Reserve Estimate accurately affirms the mineable ore available.

CALIX LIMITED  
HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

## GLOSSARY OF TECHNICAL TERMS

Aeolian:	atmospheric or wind borne
Adelaide Geosyncline:	Large generally linear trough that subsided throughout a long period of time in which there was a thick accumulation of stratified sediments that occurred during the Adelaidean (late Proterozoic) and Cambrian. These sediments later became folded, metamorphosed and uplifted. Recently referred to as the "Adelaide Fold Belt".
Albite:	Is the sodium end member of the plagioclase feldspar solid solution series. The pure <b>albite</b> end member has the formula $\text{NaAlSi}_3\text{O}_8$
Amdel:	Australian Mineral Development Laboratories.
ASIC:	Australian Securities and Investments Commission. An independent Australian government body that acts as Australia's corporate regulator to enforce and regulate company and financial services laws to protect Australian consumers, investors and creditors.
ASX:	Australian Stock Exchange
<i>Atriplex vesicaria</i> :	Bladder saltbush. Erect silvery-grey shrub of the Chenopodiaceae family of flowering plants growing to 1m height
AusIMM:	Australasian Institute of Mining and Metallurgy. Founded in 1893 the AusIMM provides services to professionals engaged in all facets of the global minerals sector in Australasia and internationally.
Burra Group:	A suite of sedimentary rocks mainly sandstones shales and carbonates that include the magnesite deposits of the Flinders Ranges.
Calcium carbonate:	A chemical compound with formula $\text{CaCO}_3$ , a common component found in rocks as the minerals calcite and aragonite.
Cambrian Period:	The first period of the Palaeozoic era from 541- 485 Million years ago
Copley Witchelina Quartzite:	A well bedded, pale grey medium to coarse grained feldspathic quartzite with minor siltstone interbeds.
CSIRO:	Commonwealth Scientific and Industrial Research Organisation.
Delamarian Orogeny:	Orogeny is the process of building mountains by folding and thrusting. Delamarian is the early Palaeozoic age of the major deformation of the Proterozoic and Cambrian rocks of the Adelaide Geosyncline, 514 to 500 Million years.
Dextral Fault:	A fault where the block on the far side appears to be offset to the right.
Diamond drilling:	Achieved by an annular diamond-impregnated drill bit attached to the end of hollow drill rods to cut a cylindrical core of solid rock.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

Dip:	The angle at which rock strata or beds are inclined from the horizontal.
DMITRE:	Department of Manufacturing, Industry, Trade, Resources and Energy now Department of State Development. (Included former Resources and Energy Group).
Dolomite:	A common rock forming mineral $\text{CaMg}(\text{CO}_3)_2$ .
DPC:	Department of Premier and Cabinet, includes Mineral resources Division.
Drill core:	A solid, cylindrical sample of rock extracted from beneath the Earth's surface by drilling.
End Member:	One of Two or more relatively simple compounds or substances in a mixture.
Ephemeral Lake:	A lake or lagoon that are not continuously water filled and are flooded at infrequent intervals.
<i>Eucalyptus socialis</i> :	Commonly known as the Grey Mallee or Pointed Mallee a tree that grows to 12m in height and has white to cream flowers.
Exploration Target:	An " <b>Exploration Target</b> " is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonne and a range of grade, relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource.
Extractive Minerals:	means sand, gravel, stone, shell, shale or clay, but does not include— (a) any such minerals that are mined for prescribed purposes; or (b) fire clay, bentonite or kaolin.
Fault:	A geological fracture along which rocks on one side of the fault are dislocated relative to those on the other side.
Fold:	When one or a stack of originally flat and planar surfaces, such as sedimentary strata, are bent or curved as a result of plastic deformation.
Footwall:	The section of rock beneath a bed, lode or vein of ore.
Geol.Soc.Australia:	Geological Society of Australia. The premier Australian geoscience society that provides members with the opportunity to follow geoscientific developments.
GPS:	acronym for Global Positioning System.
Greywacke:	A consolidated rock in which sand size particles of feldspar, rock fragments and quartz are set in a matrix of clay minerals.
Half- Graben:	A block, generally long compared to its width that has been downthrown along a fault on one side.

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

Hanging Wall:	The rock on the upper side of a bed, lode or vein of ore.
HyMap™:	An airborne hyperspectral imaging sensor that was developed in Australia.
Indicated Mineral Resource:	An ' <b>Indicated Mineral Resource</b> ' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and a devaluation of the economic viability of the deposit.
Inferred Mineral Resource:	An ' <b>Inferred Mineral Resource</b> ' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity.
Intraclastic:	Consisting of fragments of rocks or of organic structures that have been moved individually from their places of origin.
IPO:	Initial Public Offering is when a company seeking capital, 'floats' shares to the public for the first time.
JORC Code 2012:	The Australasian <b>Code</b> for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the <b>JORC Code</b> ') is a professional <b>code</b> of practice that sets minimum standards for Public Reporting of minerals Exploration Results, Mineral Resources and Ore Reserves.
Late Proterozoic:	period of Time between 1100 and 600 Million years.
Lithification:	Complex process that converts a newly deposited sediment into an indurated rock. Lithify means, "to turn into rock".
Magnesite:	A mineral, Magnesium carbonate with the chemical formula $MgCO_3$ .
<i>Maireana sedifolia</i> :	also known as the bluebush or pearl bluebush is a compact shrub endemic to the arid parts of Australia.
Marker bed:	A stratigraphic bed selected for use in structure maps.
Measured Mineral Resource:	A ' <b>Measured Mineral Resource</b> ' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.
Mineral Resource:	A ' <b>Mineral Resource</b> ' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known from specific geological evidence and Knowledge, including sampling.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report

Myrtle Springs Magnesite Mine

Leigh Creek, South Australia

Mining Act:	The Mining Act of South Australia 1971, as amended, is the state's regulatory stewardship before, during and following exploration and mining operations.
Modifying Factors:	are considerations used to convert Mineral Resources to Ore Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.'
Myrtle Springs Formation:	A distinct sequence of siltstone and greywacke conformably overlying the Skillogalee Dolomite and widespread in the northern Flinders Ranges.
Native Title Act:	The <b>Native Title Act</b> 1993 ("NTA") is a law passed by the Australian Parliament the purpose of which is "to provide a national system for the recognition and protection of <b>native title</b> and for its co-existence with the national land management system".
Ore Reserve:	An ' <b>Ore Reserve</b> ' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.
PEPR:	Program for Environmental Protection and Rehabilitation ( <b>PEPR</b> ). Tenement holders must hold an approved program for environment protection and rehabilitation ( <b>PEPR</b> ) before conducting any <b>mining</b> operations.
PIDIA:	PIDIA Aboriginal Corporation was registered 27th March 2000, and is the registered owner of the Myrtle Springs pastoral lease.
PIRSA:	Department of Primary Industries and Regions of South Australia. Formerly included the Mineral Resources and Energy divisions.
Probable Ore Reserve:	A ' <b>Probable Ore Reserve</b> ' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.
Proved Ore Reserve:	A ' <b>Proved Ore Reserve</b> ' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.
Quartz:	The second most abundant mineral in Earth's continental crust, composed of silicon and oxygen atoms in a continuous framework of SiO <sub>4</sub> .
Quartzite:	Hard metamorphic rock consisting essentially of interlocking quartz crystals.

<p>CALIX LIMITED HORNET RESOURCE ASSESSMENT SERVICES PTY LTD</p>	<p>Independent Geologist's Report Myrtle Springs Magnesite Mine Leigh Creek, South Australia</p>
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Rip Structures:	created when an erosive current containing suspended sediment flows over a shale or mudstone bed, tears up pieces of it, and carries these "rip ups" some distance.
SARIG:	South Australian Resources Information Gateway. A comprehensive State wide geological database with drilling and sampling information, publications reports maps and tenement data.
Shale:	A laminated sediment in which the constituent particles are predominantly of the clay grade.
Siltstone:	A very fine-grained consolidated clastic rock composed predominantly of particles of silt grade.
Skillogalee Dolomite:	A sequence of carbonate rocks that extend throughout the length of the Adelaide Geosyncline.
Strata:	Layers of sedimentary rock visually separable from other layers above.
Stratigraphy:	The science of rock strata recognised as a unit for description, mapping or correlation.
Strike:	The direction or bearing of the outcrop of an inclined bed or structure on a level surface. It is perpendicular to the direction of dip.
Stuart Shelf:	An area of thinner almost undeformed sediments overlying the north eastern part of the Gawler Craton in the vicinity of Mount Gunson.
Syncline:	A fold in rocks in which the strata dip inwards from both sides towards the axis.
Talc:	A clay mineral composed of hydrated magnesium silicate with the chemical formula $H_2Mg_3(SiO_3)_4$ or $Mg_3Si_4O_{10}(OH)_2$ .
Teepee structure:	formed when crystallization pressures expand an evaporative mineral sheet until it breaks and bends.
Tenement:	An area granted by the appropriate authority for an exploration or mining purpose or ancillary use.
Torrens Hinge Zone:	Is a long but narrow (up to 40km wide) geological transition zone between the relatively stable Eastern Gawler Craton 'Olympic Domain, to the west, and the sedimentary basin known as the Adelaide Geosyncline to the east.
Tourmaline:	A crystalline boron silicate mineral compounded with elements such as aluminium, iron, magnesium, sodium, lithium, or potassium.
Vughs	a Vugh is a cavity, often with a mineral lining of a different composition from that of the surrounding rock. Vuggy porosity refers to the porosity due to vughs in calcareous rocks.

## 9. JORC REPORT

CALIX LIMITED

HORNET RESOURCE ASSESSMENT SERVICES PTY LTD

Independent Geologist's Report  
Myrtle Springs Magnesite Mine  
Leigh Creek, South Australia

### ABBREVIATIONS

ha	Hectare
km	kilometres
m	metres
mm	millimetres
ML	Mining Lease
MPL	Miscellaneous Purpose Licence.
Mt	Million tonnes
ppb	parts per billion
ppm	Parts per million

**ADDITIONAL  
INFORMATION**

**10**

## 10. ADDITIONAL INFORMATION

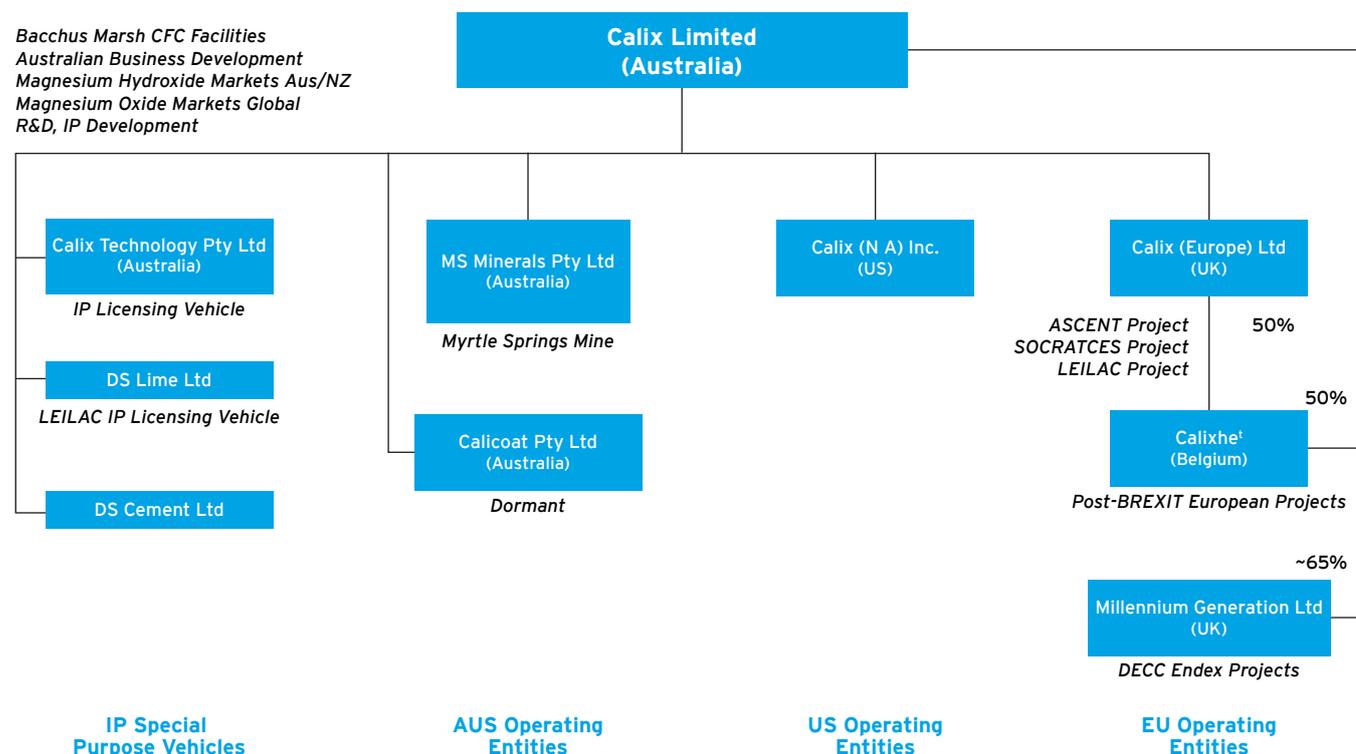
### 10.1 REGISTRATION

Calix Limited was registered in New South Wales, Australia, on 13 November 2005 as a proprietary limited company, and converted to a public company on 24 May 2007.

### 10.2 TAX STATUS

Calix is and will be subject to tax at the Australian corporate tax rate. Calix's financial year ends June 30 annually. Any subsidiaries of Calix (current and future) will be subject to taxes in the relevant jurisdictions in which they operate.

### 10.3 CORPORATE STRUCTURE



### 10.4 CAPITAL STRUCTURE

	Shares held immediately prior to Completion		Shares held on Completion		Warrants held on Completion	Shares held on Completion (fully diluted)	
	(m)	(%)	(m)	(%)	(m)	(m)	(%)
Existing Shareholders	107.6m	100%	107.6m	87.7%	7.1m	114.7m	87.1%
New investors in the Offer	-	-	15.1m	12.3%	-	15.1m	11.5%
Other Warrants holders	-	-	-	-	1.8m	1.8m	1.4%
<b>Total Shares</b>	<b>107.6m</b>	<b>100%</b>	<b>122.7m</b>	<b>100%</b>	<b>8.9m</b>	<b>131.6m</b>	<b>100%</b>

## 10.5 CONSTITUTION AND RIGHTS AND LIABILITIES ATTACHED TO THE SHARES

A summary of the significant rights and liabilities attached to the all Shares under Calix's Constitution, and a description of the other material provisions of the Constitution, is summarised below:

### Voting Rights

Subject to any rights or restrictions for the time being attached to any class of classes of Shares (at present there are none), every holder of Shares present in person or by proxy, attorney or corporate representative has one vote on a show of hands and one vote per Share on a poll.

### Dividend Rights

The Board may declare or pay dividends as it sees fit and determine that a dividend is payable and fix the amount, the time for payment and the method of payment.

Subject to the rights of holders of Shares issues with any special or preferential rights (at present there are none), holders of Shares on which any dividend is declared or paid are entitled to participate in that dividend equally.

### Rights on Winding Up

Subject to the rights of holders of Shares issued upon special terms and conditions (at present there are none) a liquidator may, with a sanction of a special resolution of Shareholders, divide among holders of Shares any surplus assets on a winding up of Calix in proportion to the number of Shares held by them respectively (irrespective of the amounts paid or credited as paid on the Shares) or vest all of Calix's assets in a trustee on trust determined by the liquidator for the benefit of the Shareholders.

### Transfer of Shares

Subject to the constitution, the Corporations Act and any other applicable laws of Australia and listing rules of the ASX, Shares are freely transferable. The Board may refuse to register a transfer of shares if permitted by the Corporations Act or the ASX listing rules. The ASX listing rules also require the Board to refuse to register a transfer if it relates to Shares which are subject to escrow requirements.

### Future Increases in Capital

The allotment and issue of any Shares or other Securities is under the control of the Directors. Subject to the constitution and the Corporations Act, the Directors may allot or otherwise dispose of Shares or other securities on such terms and conditions as they think fit.

### Variation of Rights

The rights attached to the Shares and other Securities may be varied by the written consent of holders of such Shares or other Securities with at least 75% of the votes in a class or with the sanction of a special resolution passed at a meeting of the class of holders holding Shares or other Securities in the relevant class.

### Meetings and Notice

A Director may call a meeting of Shareholders. Annual meetings and meetings requested by the Shareholders are called and arranged in accordance with the Corporations Act (including requirements as to notice).

### Directors - appointment and removal

Directors may be appointed by the Board at any time, however, they must be re-elected by the Shareholders at the next annual general meeting. At each annual meeting one third of existing Director must retire by rotation with the longest in office being first to retire each year. Retiring Directors shall be eligible for re-election. The Shareholders may, by passing an ordinary resolution, remove any Director, however there must never be less than 3 Directors in office.

### Directors - powers and duties

The Directors shall exercise all the general power of management subject to the Corporation Act and the Constitution. The Directors may borrow money or give any other security for a debt of Calix. The Directors may give any person the right or option to acquire a Share at some future date. At least 2 Directors may execute a negotiable instrument.

### Directors - voting

Directors shall make decisions based on a majority of votes. The Chairperson does not have a casting vote.

## 10. ADDITIONAL INFORMATION

### Directors - remuneration

The Directors shall be entitled to receive remuneration for their services as directors as determined by the Shareholders in a general meeting. Fees payable to non-executive Directors shall be fixed and not based on commission or a percentage of revenue or profit. Fees payable to executive Directors shall not include a commission on or percentage of revenue.

The remuneration of Directors is discussed at section 5.3.

### Directors - indemnities and access to records

Calix indemnifies current and past officers against liability for an act or omission by the officer or past officer in the capacity of an officer of Calix. Calix carries insurance for directors and officers liability. Directors have the right to access all records of Calix and may determine when and to whom these records are available other than Directors.

### Amendment

The constitution can only be amended by special resolution passed by at least three quarters of Shareholders present (in person or by proxy) and entitled to vote on the resolution at a general meeting of Calix.

### 10.6 OTHER SECURITIES ON ISSUE

As at the date of this Prospectus, Calix has 6,560,800 Warrants on issue, exercisable at A\$0.50 at any time up to 31 October 2019.

On Completion, Calix will issue 2.4 million Warrants, exercisable at \$0.66 at any time up to 30 June 2022.

### 10.7 EMPLOYEE SHARE SCHEME (CALIX ESS)

The Calix Employee Share Scheme Trust was established in October 2013 and allocated to provide incentives to employees of Calix or its subsidiaries to produce a superior return to the Shareholders and to encourage such employees to remain in the employ of Calix.

Each financial year beginning in FY14 employees selected to participate in the scheme would be entitled to receive bonus Shares, allocated within the trust, subject to the level of achievement of company and individual key performance indicators. Targets for company and individual performance are set annually by the Board.

Such Shares allocated within the trust vest in the year they are earned subject to the Chair's discretion over any Share withdrawals from the trust. The trust is perpetual.

At the Prospectus Date, there are 6,159,689 Shares issued under the Calix ESS, of which, approximately half have been vested to individuals for performance outcomes in FY14, FY15, FY16 and FY17. The remaining Shares will vest to employees on a proportional basis upon a successful Offer and admission of Calix to the Official List.

Under the Calix ESS:

- The Board may make written invitations to eligible officers and employees to acquire rights and/or options over fully paid ordinary Shares in Calix. The rights and/or options will be granted for nil cash consideration, unless the invitation specifies otherwise.
- An invitation under the Calix ESS is personal to the eligible person to whom it is made and may not be transferred.
- An application to take up an invitation by an eligible person, will only be valid if that person is still a member of the Board or still employed by Calix or its subsidiaries.
- Subject to any limitations that might apply under the Corporations Act or limits under Australian Securities and Investments Commission class order relief (should Calix rely on this in the future), there is no limit on the number of shares, rights and/or options that may be issued under the Calix ESS.
- Each right or option (subject to payment of the applicable exercise price) entitles the participant to one Share held by the Calix ESS trust, which will be transferred to the relevant participant on the vesting of the right or exercise of option (which, in each case, will depend on the performance hurdles for that right or option being satisfied).
- Rights and options will only vest and become exercisable in accordance with the performance hurdles described in the invitation for them. Rights and options may also vest and become exercisable, at the Board's discretion, if the participant suffers a "qualifying event" (death, serious injury, redundancy and the like) or if there is a change of control event with respect to Calix such as a recommended takeover bid or scheme of arrangement.
- Any right or option that has not vested by its last vesting date will lapse.
- The rights and options may not be transferred or otherwise dealt with by the participant.

- Any Shares issued on exercise of the rights or options are subject to the disposal restrictions (if any) prescribed in the invitation relevant to those Shares. The Board may make any arrangements it considers necessary to enforce any such restrictions (including through the imposition of a holding lock (if Calix is listed) or the entry into a trust arrangement).
- The Board may suspend or terminate the Calix ESS at any time by resolution of the Board.
- The Board may amend the rules of the Calix ESS at any time provided the amendments do not reduce or prejudice any existing rights of any participants in the Calix ESS.
- The Board has the flexibility to offer shares, rights, options or a combination of all, to participants on a variety of terms and conditions which will be specified in the particular invitation, which in turn will have different tax implications for the participant.
- The last exercise date for a right or option will be specified in the invitation for that right or option. Any vested right or option that has not been exercised, or share that has not been withdrawn from the ESS trust, by its last exercise date, will lapse.
- Rights and options may also lapse earlier than the last exercise date if the participant ceases to be employed by, or ceases to be a director or officeholder of, Calix. Rights and options will immediately lapse in the case of fraud, dishonesty or material breach of the participant's obligations to Calix. This does not apply if the Board determines otherwise.
- Shares issued or transferred on the exercise of rights or options rank equally in all respects with other issued Shares.
- If Calix makes a bonus issue of Shares or a rights issue of Shares or reorganises its share capital after a right or option has been issued, or share allocated within the ESS trust, but before it is exercised, the Board will review and modify the terms of the rights and options in accordance with the ASX listing rules (if Calix is listed) or having regard to the ASX listing rules while Calix is not listed.

## 10.8 EMPLOYEE INCENTIVE SCHEME (CALIX EIS)

The Calix Officers & Employees Incentive Scheme (EIS) provides for the grant of rights and/or options to eligible officers and employees of Calix (as determined by the Board), was adopted in April 2018 and is intended to provide competitive, performance-based remuneration supporting the retention, incentive and reward functions of that remuneration and drive alignment with shareholders.

Under the Calix EIS:

- The Board may make written invitations to eligible officers and employees to acquire rights and/or options over Shares. The rights and/or options will be granted for nil cash consideration, unless the invitation specifies otherwise.
- An invitation under the Calix EIS is personal to the eligible person to whom it is made and may not be transferred.
- An application to take up an invitation by an eligible person, will only be valid if that person is still a member of the Board or still employed by the Calix group.
- Subject to any limitations that might apply under the Corporations Act or limits under ASIC class order relief (should Calix rely on this in the future), there is no limit on the number of rights and/or options that may be issued under the Calix EIS. However, the Board initially intends to limit the number of Shares over which options or rights will be issued to 6% of the total number of Shares on issue (i.e. undiluted), on admission of Calix to the Official List, assuming Calix is listed on the ASX. If Calix is not listed on the ASX, then the Board will re-assess the number of rights and/or options to be issued under the Calix EIS.
- Each right entitles the participant to one fully paid ordinary share in the capital of Calix, which will be issued or transferred to the relevant participant on the vesting of the right (which will depend on the performance hurdles for that right being satisfied).
- Each option entitles the participant to one fully paid ordinary share in the capital of Calix which will be issued or transferred to the relevant participant only if it vests (which will depend on the performance hurdles for that option being satisfied) and the participant elects to exercise that option by giving Calix an exercise notice and paying the option exercise price (specified in the invitation).
- Rights and options will only vest and become exercisable in accordance with the performance hurdles described in the invitation for them. Rights and options may also vest and become exercisable, at the Board's discretion, if the participant suffers a "qualifying event" (death, serious injury, redundancy and the like) or if there is a change of control event with respect to Calix such as a recommended takeover bid or scheme of arrangement.
- Any right or option that has not vested by its last vesting date will lapse.
- The rights and options may not be transferred or otherwise dealt with by the participant.
- Any Shares issued on exercise of the rights or options are subject to the disposal restrictions (if any) prescribed in the invitation relevant to those Shares. The Board may make any arrangements it considers necessary to enforce any such restrictions (including through the imposition of a holding lock (if Calix is listed) or the entry into a trust arrangement).

## 10. ADDITIONAL INFORMATION

- The Board may suspend or terminate the Calix EIS at any time by resolution of the Board.
- The Board may amend the rules of the Calix EIS at any time provided the amendments do not reduce or prejudice any existing rights of any participants in the Calix EIS.
- The Board has the flexibility to offer rights, options or both to participants on a variety of terms and conditions which will be specified in the particular invitation, which in turn will have different tax implications for the participant.
- The last exercise date for a right or an option will be specified in the invitation for that right or option. Any vested option that has not been exercised by its last exercise date will lapse.
- Rights and options may also lapse earlier than the last exercise date if the participant ceases to be employed by, or ceases to be a director or officeholder of, Calix. Rights and options will immediately lapse in the case of fraud, dishonesty or material breach of the participant's obligations to Calix. This does not apply if the Board determines otherwise.
- Shares issued or transferred on the exercise of rights or options rank equally in all respects with other issued ordinary shares.
- The rights and options carry no right to participate in rights issues or bonus issues.
- If Calix makes a bonus issue of Shares or a rights issue of Shares or reorganises its Share capital after a right or option has been issued but before it is exercised, the Board will review and modify the terms of the rights and options in accordance with the ASX listing rules (if Calix is listed) or having regard to the ASX listing rules while Calix is not listed.

No rights or options over Shares have been issued under the Calix EIS as at the Prospectus Date.

### 10.9 ISSUE OF RIGHTS TO PHIL HODGSON AND MARK SCEATS UNDER THE CALIX EIS

#### Terms of rights

The Board proposes to issue up to:

- 1,500,000 rights to Phil Hodgson; and
- 1,100,000 rights to Mark Sceats,

for nil consideration subject to the admission of Calix to the Official List. The rights are proposed to be issued shortly after the commencement of the 2019 financial year, but in any event, no later than 12 months after Calix's admission to the Official List. Each right converts into one Share. The rights are subject to certain vesting conditions. A summary of the vesting conditions follow:

- Threshold condition 1 - Performance against Calix's annual Safety Action Plan, to be agreed each year with the Board.
- Threshold condition 2 - Share price performance as measured by Total Shareholder Return (**TSR**), as described below.
- Threshold condition 3 - KPI performance based upon key performance indicators, to be agreed each year with the Board, but will initially be a weighted combination of a range (minimum threshold to maximum/cap) of gross margin on revenue (excluding grants and rebates), revenue growth (excluding grants and rebates), and other indicators related to performance against key milestones such as technology development. Above-maximum cap performance on KPIs can qualify for a cash bonus that will not exceed 2% of EBITDA (in the case of Phil Hodgson) and 1.5% of EBITDA (in the case of Mark Sceats), provided Calix is EBITDA-positive.

Additional conditions related to the vesting of the rights issued to Phil Hodgson and Mark Sceats are:

- *Timing of vested rights*: the rights will vest in 3 equal tranches at the end of each full financial year following the grant of the rights (i.e. commencing on 1 July 2019), Any cash bonus declared in respect of a financial year will also be paid at the same time. The vesting of the rights is subject to the vesting criteria outlined with respect to TSR, below.
- *Conditions related to TSR*: TSR is measured as Calix's share price performance, being the 30 day VWAP (over the 15 days preceding, and the 15 days after, Calix announcement of its financial year results) (**Measured TSR**) as compared to:
  - for year 1, the Offer Price; and
  - for each subsequent financial year, the 30 day VWAP over the 15 days preceding, and the 15 days after, Calix announcement of its financial year results for the prior financial year, (each a **Baseline TSR**).

If the Measured TSR for a particular financial year is not higher than the Baseline TSR for that period of measurement, the rights remain unvested. However, such unvested rights may vest if at any time before the end of the financial year immediately after the full vesting period (i.e. 30 June 2022) the 30 day VWAP for Calix's Shares meets the applicable Baseline TSR for those unvested rights.

- *Discretionary vesting of rights:* at the end of the vesting period, if any rights remain unvested (other than due to timing of the grant of such rights), the Board in its discretion will be able vest:
  - 50% of the remaining unvested rights if the Measured TSR at the end of the vesting period has exceeded the Offer Price by 150%; and
  - the remaining 50% of the unvested rights if the Measured TSR at the end of the vesting period has exceeded the Offer Price, by 250%.
- *Takeover events:* In event of a successful takeover offer for Calix:
  - all rights not already vested will vest and convert into shares, and are included in the equity transaction as part of the takeover; and
  - all rights that have vested are converted into shares and are included in the equity transaction as part of the takeover.

## 10.10 MATERIAL CONTRACTS

### 10.10.1 LEILAC

The LEILAC Project is an EU Horizon 2020 funded R&D undertaking. It began on the 1st of January 2016 and runs for a total of 60 months. The project total value is €20.77 million of which €11.9million is provided by the EU and the remainder is provided by the consortium members as in-kind contributions.

The original consortium consisted of 12 entities, including Calix (Europe) Ltd, HeidelbergCement, Cemex Research Group, Tarmac, Lhoist, Calix Limited, Amec Foster Wheeler, ECN, Imperial College, Process Systems Enterprise Limited, Quantis and the Carbon Trust. This has now reduced to 11 entities with Amec Foster Wheeler leaving the consortium in late 2017. Calix (Europe) Ltd has undertaken the role of coordinator for the project.

The LEILAC project seeks to establish the CFC as a suitable technology for use in the production of Low Emissions Intensity Lime and Cement (LEILAC) via its ability to provide the CO<sub>2</sub> from calcination of limestone in a high purity capture ready form.

The project's objectives are:

- Undertake a prefeasibility study into the design and construction of a pilot scale Calix Flash Calciner for use in a cement meal production plant.
- Build and operate the pilot plant on the HeidelbergCement production site at Lixh in Belgium to test all aspects of the design and operation of the plant on various feed sources over a period of 2 years.
- Establish a roadmap to full scale implementation of the technology into lime and cement manufacturing facilities worldwide.

Calix has two entities involved in the project, Calix (Europe) Ltd and Calix. Calix (Europe) Ltd can receive maximum funding of €7.5 million and has a cost budget (including 25% uplift) of €7.5 million and does not provide any in-kind contribution, i.e all costs are grant funded. Calix has a cost budget of €3.9 million which is all in-kind contribution.

Calix (Europe) Ltd is also the coordinator of the project with the following specific responsibilities:

- Monitor that the project is implemented properly;
- Act as an intermediary for all communications between members and the commission;
- Submit the deliverables and reports to the commission;
- Ensure that all payments are made to members without unjustified delay; and
- Inform the commission of the amounts paid to each member when required under the agreement.

The project is governed by a grant agreement with the EU and a consortium agreement amongst the members. These agreements govern all aspects of the project including:

- claiming of costs - Eligible costs must be incurred by the consortium members during the relevant claim period, and be incurred in connection with the action described in the project and necessary for its implementation. Eligible costs must be identifiable and verifiable and are subject to audit at the commissions discretion

## 10. ADDITIONAL INFORMATION

- obligations of the consortium members to each other - The members are jointly and severally liable to the commission for the **technical implementation** of the action. If a member fails to implement its part of the action, the other members become responsible for implementing this part without being entitled to additional EU funding unless the commission approves a grant amendment. Each member undertakes to take part in the efficient implementation of the project, and to cooperate, perform and fulfil, promptly and on time, all of its obligations under the grant agreement and the consortium agreement as may be reasonably required from it and in a manner of good faith as prescribed by Belgian Law. **Financial responsibility:** each member is responsible for their own claim eligibility and cost management.
- grant funding risk - Costs may be deemed ineligible and rejected:
  - If the project has not been implemented properly as described or another obligation under the agreement has been breached, the maximum grant amount for the consortium member may be reduced.
  - Should any amount be paid to any beneficiary that was not due, it will be recovered by the commission. Each member's financial responsibility in case of recovery is limited to its own debt.

IP ownership - developed IP is owned by the inventing party, except that the inventing party has no right, title or interest in the background IP of others that may have been used or was used to generate, develop or create the results (including any intellectual property rights contained within).

- liability between consortium members is limited to a member share of the total costs (Calix (Europe) Ltd capped at €7.5 million and Calix €3.9 million) of the project provided such damage was not caused by a wilful act or gross negligence. Under no circumstance shall a member be liable for the consequential loss of another member.

### 10.10.2 SOCRATCES

The SOCRATCES Project is an EU Horizon 2020 funded R&D undertaking. It began on the 1st of January 2018 and runs for a total of 36 months. The project total value is €4.975 million of which €4.975 million is provided by the EU. The consortium consisted of 14 entities, including Calix (Europe) Ltd, with the University of Seville undertaking the role of coordinator for the project.

The SOCRATCES project seeks to establish and operate a pilot plant for Solar Calcium Looping Integration for Thermo-Chemical energy storage (SOCRATCES). The CFC powered by solar energy is a suitable technology for separation of the lime (CaO) and CO<sub>2</sub> in limestone which can later be recombined in a process which releases chemical energy in the form of heat. This heat is used to operate a steam turbine and thus recover the stored energy in the lime and CO<sub>2</sub>.

Calix is a member of the consortium via Calix (Europe) Ltd and Calixhe Europe SA. Calix (Europe) Ltd can receive maximum funding of €941,000 and has a cost budget (including 25% uplift) of €941,000 and does not provide any in-kind contribution, i.e. all costs are grant funded.

The project is governed by a grant agreement with the EU and a consortium agreement amongst the members. These agreements govern all aspects of the project including:

- claiming of costs - Eligible costs must be incurred by the consortium member during the relevant claim period, and be incurred in connection with the action described in the project and necessary for its implementation. Eligible costs must be identifiable and verifiable and are subject to Audit at the commissions discretion
- obligations of the consortium members to each other - The members are jointly and severally liable to the commission for the **technical implementation** of the action. If a member fails to implement its part of the action, the other members becomes responsible for implementing this part without being entitled to additional EU funding unless the commission approves a grant amendment. Each member undertakes to take part in the efficient implementation of the project, and to cooperate, perform and fulfil, promptly and on time, all of its obligations under the grant agreement and the consortium agreement as may be reasonably required from it and in a manner of good faith as prescribed by Belgian Law. **Financial responsibility:** each member is responsible for their own claim eligibility and cost management.
- grant funding risk - Costs may be deemed ineligible and rejected:
  - If the project has not been implemented properly as described or another obligation under the agreement has been breached, the maximum grant amount for the consortium member may be reduced. Should any amount be paid to any beneficiary that was not due, it will be recovered by the commission. Each member's financial responsibility in case of recovery is limited to its own debt.
- IP ownership - developed IP is owned by the inventing party.
- liability between consortium members is limited to a member share of the total costs (Calix (Europe) Ltd capped at €941,000) of the project provided such damage was not caused by a wilful act or gross negligence. Under no circumstance shall a member be liable for the consequential loss of another member.

### 10.10.3 TIMAB Exclusive Distribution Agreement

Calix entered into an exclusive sales and marketing agreement for a “white label” HSA MgO speciality product on 27 May 2015 for an initial term of 3 years, with automatic renewal annually after the initial term expires. Under the agreement, Calix supplies HSA MgO to TIMAB for exclusive sale and marketing in Europe. The exclusivity extends to “white labelled” HSA MgO only, and does not restrict the sale of Calix’s other product lines in those jurisdictions by either itself or others. There are no minimum order requirements under the agreement, and accordingly, future sales are subject to the receipt of purchase orders from TIMAB, at its discretion. Either party can cancel the agreement on an anniversary date by providing the other party with 6 months’ notice. The agreement is currently extended to the 27 May 2019.

Under the agreement Calix provides a warranty that the product meets the agreed specification, but otherwise provides no express warranties. The agreement is governed by the laws of Switzerland, with disputes subject to Arbitration in Geneva.

### 10.10.4 PROTECTA-Mag Partner Agreements

Calix has entered into a number of similar agreements covering various territories in Australia, NZ and the United States with application partners for surface infrastructure coating of concrete sewer assets with PROTECTA-Mag. The key terms of these agreements are:

- The contractor must use both the equipment (under a separate hire agreement) and PROTECTA Mag product supplied by Calix when undertaking coating projects.
- The contractor must follow the cleaning and application process developed by Calix.
- Any developed IP related to either the coating process, coating equipment or coating product will become the property of Calix.
- The contractor has exclusive rights to undertake projects within a territory which is defined either by council area boundaries or state boundaries.
- Calix provides the product and technical support; the contractor supplies all labour and hires the equipment from Calix.
- Pricing is agreed by the parties.
- There are no minimum performance or order volumes.
- The initial term is for 1 year with automatic renewal for a further year unless either party gives the other 6 months’ notice of termination. Either party can terminate at any time for breach of the agreement.
- Calix warrants only that the product supplied for application by the contractor meets the product specification. Calix will have no liability to the contractors’ customers and is indemnified by the contractor on this basis.

## 10.11 CONSENTS

Written consents to the issue of this Prospectus have been given and, at the time of lodgement of this Prospectus with ASIC, had not been withdrawn by the following parties:

- Shaw and Partners Limited has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as a Joint Lead Manager to the Offer in the form and context in which it is named. Shaw and Partners Limited takes no responsibility for any part of this Prospectus other than any reference to its name.
- Foster Stockbroking Pty Ltd has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as a Joint Lead Manager to the Offer in the form and context in which it is named. Foster Stockbroking Pty Ltd takes no responsibility for any part of this Prospectus other than any reference to its name.
- Piper Alderman has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as Australian legal advisor to Calix (except in relation to taxation and stamp duty) in the form and context in which it is named. Piper Alderman takes no responsibility for any part of this Prospectus other than any reference to its name.
- BDO Corporate Finance (East Coast) Pty Ltd has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as Investigating Accountant to Calix in the form and context in which it is named and has given and not withdrawn its consent to the inclusion in this Prospectus of its Independent Limited Assurance Report in the form and context in which it is included. BDO Corporate Finance (East Coast) Pty Ltd takes no responsibility for any part of this Prospectus other than any reference to its name, and the Independent Limited Assurance Report.

## 10. ADDITIONAL INFORMATION

- BDO East Coast Partnership has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as Auditor to Calix in the form and context in which it is named. BDO East Coast Partnership takes no responsibility for any part of this Prospectus other than any reference to its name.
- Alder IP Pty Ltd has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus in the form and context in which it is named and the inclusion of its Patent Report, in the form and context included in this Prospectus. Alder IP Pty Ltd takes no responsibility for any part of this Prospectus other than any reference to its name and the inclusion of its Patent Report, in the form and context included in this Prospectus.
- Boardroom Pty Ltd has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as the Share Registry in the form and context in which it is named. Boardroom Pty Ltd has not authorised or caused the issue of and expressly disclaims and takes no responsibility for any part of this Prospectus.
- Pitt Capital Partners has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus as financial advisor to Calix in the form and context in which it is named. Pitt Capital Partners takes no responsibility for any part of this Prospectus other than any reference to its name.
- Frost and Sullivan has given, and has not withdrawn prior to the lodgement of this Prospectus with ASIC, its written consent to be named in this Prospectus in the form and context in which it is named and the inclusion of the data attributed to it, in the form and context included in this Prospectus. Frost and Sullivan takes no responsibility for any part of this Prospectus other than any reference to its name and the inclusion of the data attributed to it, in the form and context included in this Prospectus.
- Each of Professor Doug MacFarlane from Monash University and Associate Professor Pat Howlett from Deakin University have given, and have not withdrawn prior to the lodgement of this Prospectus with ASIC, their written consent to be named in this Prospectus in the form and context in which they are named and the inclusion of the statements attributed to them, in the form and context included in this Prospectus. Each of Professor Doug MacFarlane from Monash University and Associate Professor Pat Howlett from Deakin University takes no responsibility for any part of this Prospectus other than any reference to their name and the inclusion of the statements attributed to them, in the form and context included in this Prospectus.

### 10.12 OFFER EXPENSES

The total costs of the Offer are estimated to be \$2.0 million which includes the \$0.5 million of accrued costs for the issue of Warrants to the JLM's and the Financial Advisor. Further, on Completion, 3.4 million Shares held by the ESS will vest to Directors, management and staff and \$1.8 million in accrued ESS Share costs will also be bought to account as a cost of the Offer.

The pro forma statement of financial position as presented in Section 3 of the Prospectus sets out how these Offer costs will be brought to account.

### 10.13 ASIC AND ASX RELIEF

Calix has applied for a declaration from ASIC that the Corporations Act is modified such that Calix does not have a relevant interest in its own shares by virtue of entering into the voluntary escrow deeds for the purposes of the takeover provisions of the Corporations Act. If Calix is not granted relief, Calix will not be able to enter into any voluntary escrow arrangements which would result in Calix having greater than 20% relevant interest in its own shares.

### 10.14 LITIGATION

As at the Prospectus Date, Calix is not involved in any material legal proceeding, and the Directors are not aware of any material legal proceeding either threatened or pending against Calix.

### 10.15 GOVERNING LAW

This Prospectus and the contracts that arise from the acceptance of the Applications and bids under this Prospectus are governed by the law applicable in New South Wales, Australia and each Applicant and bidder submits to the exclusive jurisdiction of the courts of New South Wales, Australia.

### 10.16 STATEMENT OF DIRECTORS

The issue of this Prospectus is authorised by each Director who consents to the lodgement of this Prospectus with ASIC and has not withdrawn that consent.

# GLOSSARY

11

## 11. GLOSSARY

Term	Meaning
<b>\$ or A\$</b>	Australian Dollars.
<b>AAS</b>	Australian Accounting Standards.
<b>ACTI-Mag</b>	Calix MHL product sold directly to end users in the sewer and waste water industries for odour control and alkalinity under its Commercial function.
<b>Advanced Manufacturing Growth Fund</b>	Australian Federal Government fund to support capital projects to establish and expand advanced manufacturing activities in Victoria and South Australia.
<b>Anaerobic Technologies</b>	Technologies that involve a single or series of biological processes in which microorganisms (i.e. bacteria) to break down biodegradable material in the absence of oxygen.
<b>Applicant</b>	A person who applies for Offer Shares through the submission of an Application Form under and the Offer.
<b>Application</b>	An application for Offer Shares made on an Application Form and accompanied by the correct Application Monies.
<b>Application Form</b>	An application form attached to or accompanying this Prospectus.
<b>Application Monies</b>	The Offer Price multiplied by the number of Offer Shares applied for.
<b>APVMA</b>	Australian Pesticides and Veterinary Medicine Authority.
<b>AQUA-Cal+</b>	A modified Calix MHL product for water conditioning in aquaculture under its Pre-Commercial function.
<b>ASIC</b>	Australian Securities and Investments Commission.
<b>ASX</b>	ASX Limited (ACN 008 624 691) or the securities exchange operated by it, as the context requires.
<b>ASX Listing Rules</b>	The Listing Rules of ASX.
<b>ASX Recommendations</b>	The Corporate Governance Principles and Recommendations issued by the ASX.
<b>Auditor</b>	BDO East Coast Partnership ABN 83 236 985 726.
<b>Baseline TSR</b>	The baseline VWAP as calculated year to year for the purpose of determining Measured TSR, to calculate any award under the Employee Incentive Scheme.
<b>BDO Audit</b>	BDO East Coast Partnership.
<b>Board</b>	The board of Directors of Calix.
<b>BOOSTER-Mag</b>	Calix's Nano-Active magnesium oxide formulation which is a broad spectrum anti-fungal and anti-pest fertiliser, under its Pre-Commercial function.
<b>Broker</b>	Any ASX participating organisation selected by the Joint Lead Managers and Calix, to act as Broker to this Offer.
<b>Broker Firm Offer</b>	The offer of Offer Shares to Australian resident retail clients of Brokers who have received an invitation to participate from their Broker.
<b>Calix</b>	Calix Limited (ACN 117 372 540).
<b>Calix EIS</b>	The Calix Officers & Employee Incentive Scheme, summarised in Section 10.9.
<b>Calix ESS</b>	The Calix Employee Share Scheme, summarised in Section 10.8.
<b>Calix Flash Calcination or CFC</b>	The core technology developed by Calix for producing Nano-Active Materials using indirect heating, and where applicable to processing carbonate materials, capturing CO <sub>2</sub> .

<b>Term</b>	<b>Meaning</b>
<b>Calix Hydration</b>	Calix's patented process for the manufacture of Magnesium Hydroxide Liquid.
<b>Carbon Capture and Storage</b>	The process of capturing CO <sub>2</sub> from fossil fuel and industrial CO <sub>2</sub> emissions and sequestering or storing it such that it does not re-enter the atmosphere.
<b>Chair</b>	The Chair of the Board. In relation to Calix, Peter Turnbull.
<b>CHES</b>	Clearing House Electronic Sub-register System.
<b>Closing Date</b>	The date on which the Offers close, being 5.00pm (Sydney time) on 12 June 2018, or such other date as determined by Calix and SaleCo in accordance with the Corporations Act.
<b>COGS</b>	Cost of goods sold.
<b>Commercial</b>	Calix's business involved with sales of products and services to end-customers or via distributors.
<b>Completion</b>	The completion of the Offer, being the date on which Offer Shares are issued or transferred to successful Applicants in accordance with the terms of the Offer.
<b>Constitution</b>	The constitution of Calix.
<b>Corporations Act</b>	Corporations Act 2001 (Cth).
<b>Director</b>	A director of Calix.
<b>EBIT</b>	Earnings before net interest and financing costs and tax expenses.
<b>EBITDA</b>	Earnings before net interest and financing costs, tax, depreciation and amortisation expenses.
<b>Economic Demonstrated Resource</b>	Defined by Geoscience Australia as resources for which profitable extraction or production under defined investment assumptions is possible.
<b>Employee Incentive Scheme or EIS</b>	A scheme for awarding performance share rights and cash for employees as described in Section 10.8.
<b>Employee Share Scheme or ESS</b>	A scheme for awarding performance shares for employees as described in Section 10.7.
<b>Escrowed Security</b>	A Share or Warrant that is subject to voluntary escrow, or mandatory escrow, as set out in Section 6.5.
<b>Escrowed Securityholder</b>	Means those Shareholders who are the holders of Escrowed Securities.
<b>ESS Share</b>	A Share held in the ESS Trust as per the rules of the Calix ESS in Section 10.7.
<b>Existing Share</b>	A Share issued by Calix prior to the Opening Date.
<b>Existing Shareholder</b>	Those persons or entities that are Shareholders of Calix as at the Prospectus Date and hold Shares.
<b>Feed Conversion Ratio</b>	The ration of input feed (to livestock) to end-product output.
<b>Financial Advisor</b>	Pitt Capital Partners Ltd (ACN 000 651 427).
<b>Financial Year or FY</b>	The financial year commencing on 1 July and ending on the next 30 June.
<b>Gross Margin</b>	The revenue less COGS.
<b>Group</b>	Calix and each of its subsidiaries, as set out in Section 10.3
<b>GST</b>	Goods and Services Tax.
<b>H<sub>2</sub>S</b>	Hydrogen sulphide or "rotten egg gas".

## 11. GLOSSARY

Term	Meaning
<b>HSA MgO</b>	High Surface Area MgO.
<b>IFRS</b>	International financial reporting standards.
<b>Independent Limited Assurance Report</b>	The report of the Investigating Accountant contained in Section 7.
<b>Indicated Mineral Resource</b>	That part of a Mineral Resource for which limited sampling and other evidence is sufficient to support mine planning and evaluation of the economic viability of a deposit as per the JORC Code.
<b>Inferred Mineral Resource</b>	That part of a Mineral Resource for which limited sampling and other evidence is sufficient to imply (but not verify) geological and grade continuity as per the JORC Code.
<b>Institutional Investor</b>	Means investors who are (a) persons in Australia who are wholesale clients under section 761G of the Corporations Act and either "professional investors" or "sophisticated investors" under sections 708(11) and 708(8) of the Corporations Act; or (b) institutional investors in certain other jurisdictions, as agreed by Calix and the Joint Lead Managers, to whom offers of Offer Shares may lawfully be made without the need for a lodged or registered prospectus or other form of disclosure document or filing with, or approval by, any government agency (except one which Calix is willing, in its discretion, to comply with), in either case provided that such investors are not investors in the United States of America.
<b>Institutional Offer</b>	The invitation to institutional investors to acquire Shares, as described in Section 6.4.
<b>IP</b>	Intellectual property.
<b>Investigating Accountant</b>	BDO Corporate Finance (East Coast) Pty Ltd ABN 70 050 038 170 IPO Initial public offering.
<b>Issue</b>	The issue of an Offer Security pursuant to this Prospectus.
<b>Joint Lead Managers or JLM</b>	Shaw and Partners Limited (ACN 003 221 583) and Foster Stockbroking Pty Ltd (ACN 088 747 148).
<b>JORC Code</b>	The Australasian code for reporting of exploration results, mineral resources and ore reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.
<b>LEILAC</b>	The EU Horizon 2020 funded project seeking to establish the Calix Flash Calciner as a suitable technology for use in the production of Low Emissions Intensity Lime And Cement, as detailed in Sections 2.7.1.5 and 10.11.1.
<b>Listing</b>	The admission of Calix to the Official List of the ASX.
<b>Listing Rules</b>	The official listing rules of the ASX.
<b>LNH</b>	A holder of a Loan Note.
<b>LNH Warrants</b>	6.6 million warrants held by Loan Note holders exercisable at \$0.50 per warrant at any time before 31 October 2019.
<b>Loan Notes</b>	A debt instrument created in November 2016 to assist with the working capital of Calix, and which have been repaid or redeemed in full at the date of this Prospectus.
<b>Magnesium Hydroxide Liquid or MHL</b>	A slurry of magnesium hydroxide particles in water, made by mixing and reacting magnesium oxide with water in a patented Calix Hydration process.
<b>Measured TSR</b>	The calculated VWAP for the purpose of measuring TSR in determining any award under the Employee Incentive Scheme.
<b>MgO</b>	Magnesium oxide.
<b>MTA</b>	A material transfer agreement.

<b>Term</b>	<b>Meaning</b>
<b>Mineral Resource</b>	A concentration or occurrence of solid material of economic interest in the earth's crust such that there are reasonable prospects for eventual economic extraction as per the JORC Code.
<b>Nano-Active Material</b>	A material that exhibits special optical, chemical, physical, electric, magnetic, catalytic or other properties usually associated with Nano Particles, despite being much larger in size.
<b>Nano Particles</b>	Broadly defined as a particle with at least two dimensions smaller than 100 nano-metres (1 nano metre being 1 billionth of a metre).
<b>Offer</b>	The offer of 15,094,340 Offer Shares under the Broker Firm Offer, Priority Offer and Institutional Offer by Calix, and to which this Prospectus relates.
<b>Offer Period</b>	In relation to the Offer, the period between the Opening Date and the Closing Date of the Offer.
<b>Offer Price</b>	The offer price of an Offer Security under this Prospectus of A\$0.53.
<b>Offer Shares</b>	A Share offered under this Offer.
<b>Official List</b>	The Official List of ASX
<b>Opening Date</b>	The date on which the Offer opens, being 3 July 2018.
<b>Patent Attorney</b>	Anthony Alder trading as Alder IP Pty Ltd (ABN 28 157 949 114).
<b>Patent Report</b>	The report of the Patent Attorney contained in Section 8.
<b>Pathogens</b>	Microorganisms such as bacteria or viruses typically associated with causing disease.
<b>pH</b>	A scale of acidity of a solution, from 0 (strong acid) through 7 (neutral) to 14 (strong alkali).
<b>Pre-Commercial</b>	Calix's business involved with trials of products and services to end-customers or via distributors that may be paid, or unpaid.
<b>Priority Offer</b>	The personal invitation to certain investors identified by Calix and the Joint Lead Managers under this Prospectus to acquire Shares, as described in section 6.3.2
<b>Probable Ore Reserve</b>	Economically mineable part of an Indicated Mineral Resource as per the JORC Code.
<b>Prospectus</b>	This prospectus and any supplementary or replacement prospectus.
<b>Prospectus Date</b>	The date this Prospectus was lodged with ASIC, being 25 June 2018.
<b>PROTECTA-Mag</b>	Calix's modified MHL product for sewer infrastructure protection sold under its Commercial function.
<b>Proved Ore Reserve</b>	Economically mineable part of a Measured Mineral Resource as per the JORC Code.
<b>R&amp;D</b>	Research and Development.
<b>Related Party</b>	Same meaning as per the Listing Rules.
<b>Retail Offer</b>	The invitation to non-institutional investors under this Prospectus to acquire Shares, including the Broker Firm Offer and the Priority Offer, as described in Section 6.3.
<b>Sculptor Finance Shareholders</b>	Sculptor Finance (MD) Ireland Designated Activity Company, Sculptor Finance (AS) Ireland Designated Activity Company, Sculptor Finance (SI) Ireland Designated Activity Company and their associated entities. The Sculptor Finance Shareholders are entities affiliated with Och Ziff Capital Management Group.
<b>Securities</b>	Has the meaning given to that term in section 92(4) of the Corporations Act.
<b>Senior Management</b>	The senior management of Calix named in Section 5.2
<b>Share</b>	A fully paid ordinary share in the capital of Calix.

## 11. GLOSSARY

Term	Meaning
<b>Shareholder</b>	A registered holder of a Share.
<b>Share Registry</b>	Boardroom Pty Ltd (ACN 003 209 836).
<b>SOCRATCES</b>	Means the EU Horizon 2020 project seeking to establish and operate a pilot plant for Solar Calcium Looping Integration for Thermo-Chemical energy storage, as detailed further in Sections 2.7.2.4 and 10.11.2.
<b>Substantial Shareholder</b>	A Shareholder who has a relevant interest of 5% or more in Calix either directly, or via associates.
<b>Total Addressable Market or TAM</b>	Is the total revenue opportunity available for the relevant Calix product or service (and not the actual market revenue aggregate of active suppliers in the market), assuming a 100% market saturation.
<b>TSR</b>	Total shareholder return, as determined within the EIS methodology in Section 10.8 as a comparison between Baseline TSR and Measured TSR.
<b>US\$</b>	United States Dollars.
<b>VWAP</b>	Volume weighted average price of Calix shares over a specified period.
<b>Warrant</b>	A right to acquire a Share in Calix for an agreed price, up until an agreed date.
<b>Working Capital</b>	Is trade and other receivables and other current assets less trade and other payables and income tax payable and employee entitlements.

# APPENDICES

12

## 12. APPENDICES

### APPENDIX 1 - SUMMARY OF KEY ACCOUNTING POLICIES

#### Consolidation

Business combinations occur where an acquirer obtains control over one or more businesses and results in the consolidation of assets and liabilities. A business combination is accounted for by applying the acquisition method, unless it is a combination involving entities or businesses under common control. The acquisition method requires that for each business combination one of the combining entities must be identified as the acquirer (ie parent entity).

The business combination will be accounted for as at the acquisition date, which is the date that control over the acquiree is obtained by the parent entity. At this date, the parent shall recognise, in the consolidated accounts, and subject to certain limited exceptions, the fair value of the identifiable assets acquired and liabilities assumed. In addition, contingent liabilities of the acquiree will be recognised where a present obligation has been incurred and its fair value can be reliably measured.

The acquisition may result in the recognition of goodwill or a gain from a bargain purchase. The method adopted for the measurement of goodwill will impact on the measurement of any non-controlling interest to be recognised in the acquiree where less than 100% ownership interest is held in the acquiree.

The acquisition date fair value of the consideration transferred for a business combination plus the acquisition date fair value of any previously held equity interest shall form the cost of the investment in the separate financial statements.

Consideration may comprise the sum of the assets transferred by the acquirer, liabilities incurred by the acquirer to the former owners of the acquiree and the equity interest issued by the acquirer.

Included in the measurement of consideration transferred is any asset or liability resulting from a contingent consideration arrangement. Any obligation incurred relating to contingent consideration is classified as either a financial liability or equity instrument, depending upon the nature of the arrangement. All transaction costs incurred in relation to the business combination are expensed to the consolidated income statement.

#### Foreign currency transactions and balances

##### *Functional and presentation currency*

The functional currency of each of the Group's entities is measured using the currency of the primary economic environment in which that entity operates. The consolidated financial statements are presented in Australian Dollars which is the Group's functional and presentation currency.

##### *Transactions and balances*

Foreign currency transactions are translated into functional currency using the exchange rates prevailing at the date of transaction. Foreign currency monetary items are translated at the year-end exchange rate. Non-monetary items measured at historical cost continue to be carried at the exchange rate at the date of the transaction. Non-monetary items measured at fair value are reported at the exchange rate at the date when fair values were determined.

Exchange differences arising on the translation of monetary items are recognised in the profit or loss, except where deferred in equity as a qualifying cash flow or net investment hedge.

Exchange difference arising on translation of non-monetary items are recognised directly in equity to the extent that the gain or loss is directly recognised in equity, otherwise the exchange difference is recognised in the profit or loss.

##### *Group companies*

The financial results and position of foreign operations whose functional currency is different from the Group's presentation currency are translated as follows:

- assets and liabilities are translated at year-end exchange rates prevailing at that reporting date;
- income and expense are translated at average exchange rates for the year; and
- retained earnings are translated at the exchange rates prevailing at the date of the transaction.

Exchange differences arising on translation of foreign operations are transferred directly to the Group's foreign currency translation reserve in the statement of financial position. These differences are also recognised in the statement of comprehensive income as other comprehensive income. The foreign currency reserve is recognised in profit or loss when the foreign operation is disposed of.

**Employee benefits**

Provision is made for the Group's liability for employee benefits arising from services rendered by employees to balance date. Employee benefits that are expected to be settled within one year have been measured at the amounts expected to be paid when the liability is settled, plus related on-costs. Employee benefits payable later than one year have been measured at the present value of the estimated future cash outflows to be made for those benefits. In determining the liability, consideration is given to employee wage increases and the probability that the employee may satisfy vesting requirements. Those cash flows are discounted using market yields on national government bonds with terms to maturity that match the expected timing of cash flows.

**Short-term employee benefits**

Liabilities for wages and salaries, including non-monetary benefits, annual leave and long service leave expected to be settled within 12 months of the reporting date are recognised in current liabilities in respect of employees' services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled.

**Other long-term employee benefits**

The liability for annual leave and long service leave not expected to be settled within 12 months of the reporting date are recognised in non-current liabilities, provided there is an unconditional right to defer settlement of the liability. The liability is measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date using the projected unit credit method. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields at the reporting date on national government bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

**Goods and services tax**

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Tax Office. In these circumstances the GST is recognised as part of the cost of acquisition of the asset or as part of an item of the expense. Receivables and payables in the statement of financial position are shown inclusive of GST.

Cash flows are presented in the cash flow statement on a gross basis, except for the GST component of investing and financing activities which are disclosed as operating cash flows.

**Revenue**

Revenue is measured at the fair value of the consideration received or receivable after taking into account any trade discounts and volume rebates allowed. Sales revenue is recognised at the point of sale, which is when the customer has taken delivery of the goods, the risks and rewards are transferred to the customer and there is a valid sales contract.

Interest revenue is recognised using the effective interest rate method, which for floating rate financial assets is the rate inherent in the instrument. Grant revenue and other revenue is recognised when it is received or when the right to receive payment is established. All revenue is stated net of the amount of goods and services tax (GST).

**R&D incentive income**

The R&D incentive income recognised as other income is in relation to eligible research expenditure incurred for the current projects. The claimed amounts have been reviewed externally to ensure they are in accordance with the requirements of Australian Taxation Offices.

**Impairment of assets**

At the end of each reporting period, the Group assesses whether there is any indication that any assets have been impaired. The assessment will include the consideration of external and internal sources of information including dividends received from subsidiaries, associates or jointly controlled entities deemed to be out of pre-acquisition profits. If such an indication exists, an impairment test is carried out on the asset by comparing the recoverable amount of the asset, being the higher of the asset's fair value less costs to sell and value in use, is compared to the asset's carrying value. An excess of the asset's carrying value over its recoverable amount is expensed to the statement of comprehensive income. Where it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs. Impairment testing is performed annually for goodwill and intangible assets with indefinite lives.

## 12. APPENDICES

### Income tax

The income tax expense/(benefit) for the year comprises current income tax expense/(benefit), research and development claim and deferred tax expense/(benefit). Current income tax expense charged to the profit or loss is the tax payable on taxable income calculated using applicable income tax rates enacted, or substantially enacted, as at the end of the reporting period together with the research and development claim submitted for the reporting period. Current tax liabilities/assets are therefore measured at the amounts expected to be paid to/recovered from the relevant taxation authority.

Deferred income tax expense reflects movements in deferred tax asset and deferred tax liability balances during the year as well as unused tax losses. Current and deferred income tax expense/(benefit) is charged or credited directly to equity instead of the profit or loss when the tax relates to items that are credited or charged directly to equity.

Deferred tax assets and liabilities are ascertained based on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. Deferred tax assets also result where amounts have been fully expensed but future tax deductions are available. No deferred income tax will be recognised from the initial recognition of an asset or liability, excluding a business combination, where there is no effect on accounting or taxable profit or loss.

Deferred tax assets and liabilities are calculated at the tax rates that are expected to apply to the period when the asset is realised or the liability is settled, based on tax rates enacted or substantively enacted at the end of the reporting period. Their measurement also reflects the manner in which management expects to recover or settle the carrying amount of the related asset or liability. Deferred tax assets relating to temporary differences and unused tax losses are recognised only to the extent that it is probable that future taxable profit will be available against which the benefits of the deferred tax asset can be utilised.

Where the temporary difference exists in relation to investments in subsidiaries, branches, associates and joint ventures, deferred tax assets and liabilities are not recognised where the timing of the reversal of the temporary difference can be controlled and it is not probable that the reversal will occur in the foreseeable future.

Current tax assets and liabilities are offset where a legally enforceable right of set-off exists and it is intended that net settlement or simultaneous realisation and settlement of the respective asset and liability will occur. Deferred tax assets and liabilities are offset where a legally enforceable right of set-off exists, the deferred tax assets and liabilities related to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where it is intended that the net settlement or simultaneous realisation and settlement of the respective asset and liability will occur in future periods in which significant amounts of deferred assets or liabilities are expected to be recovered or settled.

### Cash and cash equivalents

Cash and cash equivalents include cash on hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less, and bank overdrafts. Bank overdrafts are shown within short-term borrowings in current liabilities on the statement of financial position.

### Trade and other receivables

Trade receivables are initially recognised at fair value and subsequently measured at amortised cost using the effective interest method, less any provision for impairment. Trade receivables are generally due for settlement within 30 days.

Collectability of trade receivables is reviewed on an ongoing basis. Debts which are known to be uncollectable are written off by reducing the carrying amount directly. A provision for impairment of trade receivables is raised when there is objective evidence that the consolidated entity will not be able to collect all amounts due according to the original terms of the receivables. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganisation and default or delinquency in payments (more than 60 days overdue) are considered indicators that the trade receivable may be impaired. The amount of the impairment allowance is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. Cash flows relating to short-term receivables are not discounted if the effect of discounting is immaterial. Other receivables are recognised at amortised cost, less any provision for impairment.

### Fair value and credit risk

Due to the short-term nature of the receivables, their carrying amount is assumed to approximate fair value. The maximum exposure to credit risk at the end of the reporting period is the carrying amount of each class of receivables mentioned above. Refer to note 28 for more information on the risk management policy of the Company and credit quality of the receivables.

### **Outstanding receivables**

The balances of receivables that remain within initial trading terms are considered to be of high credit quality, therefore no impairment is required.

### **Intangible assets**

#### **Patents and trademarks**

Patents and trademarks are recognised at cost of acquisition. Patents and trademarks have a finite life and are carried at cost less any accumulated amortisation and any impairment losses.

#### **Research and development**

Expenditure during the research phase of a project is recognised as an expense when incurred. Development costs are capitalised only when technical feasibility studies identify that the projects will deliver future economic benefits and these benefits can be measured reliably. Development costs have a finite life and are amortised on a systematic basis matched to the future economic benefits over the useful life of the project.

### **Associates**

Associates are entities over which the consolidated entity has significant influence but not control or joint control. Investments in associates are accounted for in the consolidated financial statements using the equity method. Under the equity method, the share of the profits or losses of the associate is recognised in profit or loss and the share of the movements in equity is recognised in other comprehensive income. Investments in associates are carried in the statement of financial position at cost plus post-acquisition changes in the consolidated entity's share of net assets of the associates. Dividends received or receivable from associates reduce the carrying amount of the investment.

When the consolidated entity's share of losses in an associate equals or exceeds its interest in the associate, including any unsecured long-term receivables, the consolidated entity does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associate.

### **Property, plant and equipment**

Each class of plant and equipment is carried at cost or fair value as indicated less, where applicable, any accumulated depreciation and impairment losses. Plant and equipment are measured on the cost basis less depreciation and impairment losses.

The carrying amount of plant and equipment is reviewed annually by Directors to ensure it is not in excess of the recoverable amount from these assets. The recoverable amount is assessed on the basis of the expected net cash flows that will be received from the assets' employment and subsequent disposal. The expected net cash flows have been discounted to their present values in determining recoverable amounts.

The cost of plant and equipment constructed includes the cost of materials, direct labour, borrowing costs and an appropriate proportion of fixed and variable overheads.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance expenses are charged to the income statements during the financial period in which they are incurred.

#### **Mining tenements and associated mineral resources**

The costs of acquiring mining tenements and associated mineral resources are capitalised as part of property plant and equipment and amortised over the estimated productive life of each applicable resource. Amortisation commences when extraction of the mineral resource commences.

#### **Depreciation**

The depreciable amount of fixed assets is calculated on a straight-line basis over the asset's useful life to the Group commencing from the time the asset is held ready for use. The depreciation rates used for each class for depreciable assets are shown in the list below. Land is not subject to depreciation.

- Furniture and fittings - 10%
- Office equipment - 25%
- Software - 25%

## 12. APPENDICES

- Commercial calciner equipment - 5%-20%
- Slurry manufacturing and application assets - 7%-50%

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each reporting date. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposal are determined by comparing proceeds with the carrying amount. These gains or losses are included in the statement of comprehensive income. When re-valued assets are sold, amounts included in the revaluation reserve relating to that asset are transferred to retained earnings.

### Trade and other payables

Trade and other payables represent the liability outstanding at the end of the reporting period for goods and services received by the Group during the reporting period which remains unpaid. The balance is recognised as a current liability with the amount being normally paid with 30 days of recognition of the liability.

### Borrowings

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds and the redemption amount is recognised as profit or loss over the period of the borrowings using the effective interest rate method.

Where there is an unconditional right to defer the settlement of the liability for at least 12 months after the reporting date, the loans or borrowings are classified as non-current.

### Provisions

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event, and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the reporting date. If the effect of the time value of money is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability. The increase in the provision resulting from the passage of time is recognised in finance costs.

### Deferred revenue

Deferred revenue includes billings or payments received in advance of revenue recognition and is recognised as the revenue recognition criteria are met. Deferred revenue primarily consists of unearned portion of the projects.

### Fair value measurement

When an asset or liability, financial or non-financial, is measured at fair value for recognition or disclosure purposes, the fair value is based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date; and assumes that the transaction will take place either: in the principle market; or in the absence of a principal market, in the most advantageous market.

Fair value is measured using the assumptions that market participants would use when pricing the asset or liability, assuming they act in their economic best interest. For non-financial assets, the fair value measurement is based on its highest and best use.

Valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, are used, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

Assets and liabilities measured at fair value are classified, into three levels, using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. Classifications are reviewed each reporting date and transfers between levels are determined based on a reassessment of the lowest level input that is significant to the fair value measurement.

For recurring and non-recurring fair value measurements, external valuers may be used when internal expertise is either not available or when the valuation is deemed to be significant. External valuers are selected based on market knowledge and reputation. Where there is a significant change in fair value of an asset or liability from one period to another, an analysis is undertaken, which includes a verification of the major inputs applied in the latest valuation and a comparison, where applicable, with external sources of data.

# Calix Limited

ACN 117 372 540

## Broker Firm Offer Application Form

**Applicants under the Broker Firm Offer must contact their broker for information on how to submit this Broker Firm Offer Application Form**

Broker Reference – Stamp Only
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This is an Application Form for Shares in Calix Limited (**Company**) on the terms set out in the Prospectus dated 25 June 2018. Defined terms in the Prospectus have the same meaning in this Application Form. You may apply for a minimum of 3,774 Shares. This Application Form and your cheque or bank draft must be received by **5.00pm (AEST) on 10 July 2018**.

Broker Code	Advisor Code

**This Application Form is important. If you are in doubt as to how to deal with this Application Form, please contact your accountant, lawyer, stockbroker or other professional adviser. The Prospectus dated 25 June 2018 contains information relevant to a decision to invest in the Securities of the Company and you should read the entire Prospectus carefully before applying for Securities.**

The Company's Privacy Policy (**Privacy Policy**) also sets out important information relating to the collection, use and disclosure of all personal information that you provide to the Company. Please ensure that you and all relevant individuals have read the Privacy Policy carefully before submitting this Application Form. The Privacy Policy can be found on our website [www.calix.com.au](http://www.calix.com.au)

To meet the requirements of the *Corporations Act 2001* (Cth), this Application Form must not be distributed to another person unless included in, or accompanied by the Prospectus dated 25 June 2018. A person who gives another person access to this Application Form must, at the same time and by the same means, give the other person access to the Prospectus. The Company will send you a free paper copy of the Prospectus if you have received an electronic prospectus and you ask for a paper copy before the Broker Firm Offer closes at 5.00pm (AEST) on 10 July 2018.

PLEASE FOLLOW THE INSTRUCTIONS TO COMPLETE THIS APPLICATION FORM (SEE REVERSE) AND PRINT CLEARLY IN CAPITAL LETTERS USING BLACK OR BLUE PEN.

<b>A</b> Number of Shares you are applying for	<b>x \$0.53 per Share =</b>	<b>B</b> Total amount payable
		\$
Minimum of 3,774 Shares to be applied for		

<b>C</b> Write the name(s) you wish to register the Securities in ( <i>see reverse for instructions</i> )
Applicant #1
Name of Applicant #2 or <Account Designation>
Name of Applicant #3 or <Account Designation>

<b>D</b> Write your postal address here		
Number/Street		
Suburb/Town	State	Postcode

<b>E</b> CHESS participant – Holder Identification Number (HIN)	<i>Important please note</i> if the name and address details above in sections C and D do not match exactly with your registration details held at CHESS, any Securities issued as a result of your Application will be held on the Issuer Sponsored subregister.
<input checked="" type="checkbox"/>	

<b>F</b> Enter your Tax File Number(s), ABN, or exemption category	
Applicant #1	Applicant #2
Applicant #3	

<b>G</b> Cheque payment details – <b>✚</b> PIN CHEQUE(S) HERE	<i>Please enter details of the cheque(s) that accompany this application.</i>			
Name of drawer of cheque	Cheque no.	BSB no.	Account no.	Cheque Amount A\$

<b>H</b> Contact telephone number (daytime/work/mobile)	<b>I</b> Email address

**By submitting this Application Form with your Application Amount, I/we declare that I/we:**

**Declaration**

- ✓ have read the prospectus in full;
- ✓ have read the Privacy Policy (available at [www.calix.com.au](http://www.calix.com.au)) in full;
- ✓ have received a copy of the electronic Prospectus or a print out of it;
- ✓ have completed this Application Form in accordance with the Prospectus and the instructions on the reverse of the Application Form and declare that all details and statements made by me/us are complete and accurate;
- ✓ agree and consent to the Company collecting, holding, using and disclosing my/our personal information in accordance with the Privacy Policy (available at [www.calix.com.au](http://www.calix.com.au));
- ✓ where I/we have been provided information about another individual, warrant that I/we have obtained that individual's consent to the transfer of their information to the Company and have provided that individual with a copy of, or details as to where to obtain, the Privacy Policy;
- ✓ acknowledge that once the Company accepts my/our Application Form, I/we may not withdraw it;
- ✓ apply for the number of Shares that I/we apply for (or a lower number allocated in a manner allowed under the Prospectus);
- ✓ acknowledge that my/our application may be rejected by the Company in consultation with the Lead Manager in its absolute discretion;
- ✓ authorise the Lead Manager and the Company and their respective officers and agents to do anything on my/our behalf necessary (including the completion and execution of documents) to enable the Securities to be allocated to me/us;
- ✓ am/are over 18 years of age;
- ✓ agree to be bound by the constitution of the Company;
- ✓ acknowledge that neither the Company nor any person or entity guarantees any particular rate of return on the Securities, nor do they guarantee the repayment of capital;
- ✓ represent, warrant and agree that I/we am/are not in the United States or a US Person and am/are not acting for the account or benefit of a US Person; and
- ✓ represent, warrant and agree that I/we have not received this Prospectus outside Australia and am/are not acting on behalf of a person resident outside Australia unless the Securities may be offered in my/our jurisdiction without contravention of the security laws of the jurisdiction or any need to register the Prospectus, the Securities or the Offer.

**Guide to the Broker Firm Offer Application Form**

**YOU SHOULD READ THE PROSPECTUS CAREFULLY BEFORE COMPLETING THIS APPLICATION FORM.**

Please complete all relevant sections of the appropriate Application Form using BLOCK LETTERS. These instructions are cross-referenced to each section of the Application Form.

**Instructions**

- A** If applying for Shares insert the **number** of Share for which you wish to subscribe at Item **A** (not less than 3,774 Shares). Multiply by A\$0.53 to calculate the total Application Amount for Shares and enter the **A\$amount** at Item **B**.
- C** Write your **full name**. Initials are not acceptable for first names.
- D** Enter your **postal address** for all correspondence. All communications to you from the Company will be mailed to the person(s) and address as shown. For joint Applicants, only one address can be entered.
- E** If you are sponsored in CHESS by a stockbroker or other CHESS participant you may enter your CHESS HIN if you would like the allocation to be directed to your HIN. **NB: your registration details provided must match your CHESS account exactly.**
- F** Enter your Australian **tax file number** (TFN) or ABN or exemption category, if you are an Australian resident. Where applicable, please enter the TFN/ABN of each joint Applicant. Collection of TFN's is authorised by taxation laws. Quotation of your TFN is not compulsory and will not affect your Application Form.
- G** Complete **cheque details** as requested. Make your cheque payable to Calix Limited – Application Account. Cross it and mark it 'Not Negotiable'. Cheques must be in Australian currency, and cheques must be drawn on an Australian bank. If you receive a firm allocation of shares from your Broker, make your cheque payable to your Broker in accordance with their instructions.
- H** Enter your **contact details** so we may contact you regarding your Application Form or Application Monies.
- I** Enter your **email address** so we may contact you regarding your Application Form or Application Amount or other correspondence.

**Correct Form of Registrable Title**

Note that ONLY legal entities can hold the Shares. The Application must be in the name of a natural person(s), companies or other legal entities acceptable to the Company. At least one full given name and surname is required for each natural person. Examples of the correct form of registrable title are set out below.

Type of Investor	Correct Form of Registrable Title	Incorrect Form of Registrable Title
Individual	Mr John David Smith	J D Smith
Company	ABC Pty Ltd	ABC P/L or ABC Co
Joint Holdings	Mr John David Smith & Mrs Mary Jane Smith	John David & Mary Jane Smith
Trusts	Mr John David Smith <J D Smith Family A/C>	John Smith Family Trust
Deceased Estates	Mr Michael Peter Smith <Est Lte John Smith A/C>	John Smith (deceased)
Partnerships	Mr John David Smith & Mr Ian Lee Smith	John Smith & Son
Clubs/Unincorporated Bodies	Mr John David Smith <Smith Investment A/C>	Smith Investment Club
Superannuation Funds	John Smith Pty Limited <J Smith Super Fund A/C>	John Smith Superannuation Fund

**Lodgment**

Mail your completed Application Form with your cheque(s) or bank draft attached to your broker, and complete the broker details below:

Broker Contact Number	Broker Name
<input type="text"/>	<input type="text"/>

**The Offer closes at 5.00pm (AEST) 10 July 2018, unless varied in accordance with the Corporations Act and ASX Listing Rules.**

It is not necessary to sign or otherwise execute the Application Form.

**If you have any questions as to how to complete the Application Form, please contact Boardroom Pty Limited on 1300 737 760 within Australia and + 61 2 9290 9600 outside Australia.**

**Privacy Statement**

Calix Limited advises that Chapter 2C of the Corporations Act requires information about you as a shareholder (including your name, address and details of the shares you hold) to be included in the public register of the entity in which you hold Shares. Information is collected to administer your shareholding and if some or all of the information is not collected then it might not be possible to administer your shareholding. Your personal information may be disclosed to the entity in which you hold shares. You can obtain access to your personal information by contacting us at the address or telephone number shown on the Application Form. Our privacy policy is available on our website (<http://www.calix.com.au>), accordance with the Privacy Policy. For more detail on how the Company collects, stores, uses and discloses your information, please refer to our Privacy Policy. Alternatively contact the Company and the Company will send you a copy. It is recommended that you obtain a copy of the Privacy Policy and read it carefully.

# Calix Limited

ACN 117 372 540

## Broker Firm Offer Application Form

**Applicants under the Broker Firm Offer must contact their broker for information on how to submit this Broker Firm Offer Application Form**

This is an Application Form for Shares in Calix Limited (**Company**) on the terms set out in the Prospectus dated 25 June 2018. Defined terms in the Prospectus have the same meaning in this Application Form. You may apply for a minimum of 3,774 Shares. This Application Form and your cheque or bank draft must be received by **5.00pm (AEST) on 10 July 2018**.

**This Application Form is important. If you are in doubt as to how to deal with this Application Form, please contact your accountant, lawyer, stockbroker or other professional adviser. The Prospectus dated 25 June 2018 contains information relevant to a decision to invest in the Securities of the Company and you should read the entire Prospectus carefully before applying for Securities.**

The Company's Privacy Policy (**Privacy Policy**) also sets out important information relating to the collection, use and disclosure of all personal information that you provide to the Company. Please ensure that you and all relevant individuals have read the Privacy Policy carefully before submitting this Application Form. The Privacy Policy can be found on our website [www.calix.com.au](http://www.calix.com.au)

To meet the requirements of the *Corporations Act 2001* (Cth), this Application Form must not be distributed to another person unless included in, or accompanied by the Prospectus dated 25 June 2018. A person who gives another person access to this Application Form must, at the same time and by the same means, give the other person access to the Prospectus. The Company will send you a free paper copy of the Prospectus if you have received an electronic prospectus and you ask for a paper copy before the Broker Firm Offer closes at 5.00pm (AEST) on 10 July 2018.

PLEASE FOLLOW THE INSTRUCTIONS TO COMPLETE THIS APPLICATION FORM (SEE REVERSE) AND PRINT CLEARLY IN CAPITAL LETTERS USING BLACK OR BLUE PEN.

Broker Reference – Stamp Only
-------------------------------

Broker Code	Advisor Code
<input type="text"/>	<input type="text"/>

<b>A</b> Number of Shares you are applying for	x \$0.53 per Share =	<b>B</b> Total amount payable
<input type="text"/>		\$ <input type="text"/>
Minimum of 3,774 Shares to be applied for		

<b>C</b> Write the name(s) you wish to register the Securities in ( <i>see reverse for instructions</i> )
Applicant #1
<input type="text"/>
Name of Applicant #2 or <Account Designation>
<input type="text"/>
Name of Applicant #3 or <Account Designation>
<input type="text"/>

<b>D</b> Write your postal address here		
Number/Street		
<input type="text"/>		
<input type="text"/>		
Suburb/Town	State	Postcode
<input type="text"/>	<input type="text"/>	<input type="text"/>

<b>E</b> CHESS participant – Holder Identification Number (HIN)	<i>Important please note if the name and address details above in sections C and D do not match exactly with your registration details held at CHESS, any Securities issued as a result of your Application will be held on the Issuer Sponsored subregister.</i>
<input checked="" type="checkbox"/> <input type="text"/>	

<b>F</b> Enter your Tax File Number(s), ABN, or exemption category	
Applicant #1	Applicant #2
<input type="text"/>	<input type="text"/>
Applicant #3	
<input type="text"/>	

<b>G</b> Cheque payment details – † PIN CHEQUE(S) HERE	<i>Please enter details of the cheque(s) that accompany this application.</i>			
Name of drawer of cheque	Cheque no.	BSB no.	Account no.	Cheque Amount A\$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

<b>H</b> Contact telephone number (daytime/work/mobile)	<b>I</b> Email address
<input type="text"/>	<input type="text"/>

**By submitting this Application Form with your Application Amount, I/we declare that I/we:**

**Declaration**

- ✓ have read the prospectus in full;
- ✓ have read the Privacy Policy (available at [www.calix.com.au](http://www.calix.com.au)) in full;
- ✓ have received a copy of the electronic Prospectus or a print out of it;
- ✓ have completed this Application Form in accordance with the Prospectus and the instructions on the reverse of the Application Form and declare that all details and statements made by me/us are complete and accurate;
- ✓ agree and consent to the Company collecting, holding, using and disclosing my/our personal information in accordance with the Privacy Policy (available at [www.calix.com.au](http://www.calix.com.au));
- ✓ where I/we have been provided information about another individual, warrant that I/we have obtained that individual's consent to the transfer of their information to the Company and have provided that individual with a copy of, or details as to where to obtain, the Privacy Policy;
- ✓ acknowledge that once the Company accepts my/our Application Form, I/we may not withdraw it;
- ✓ apply for the number of Shares that I/we apply for (or a lower number allocated in a manner allowed under the Prospectus);
- ✓ acknowledge that my/our application may be rejected by the Company in consultation with the Lead Manager in its absolute discretion;
- ✓ authorise the Lead Manager and the Company and their respective officers and agents to do anything on my/our behalf necessary (including the completion and execution of documents) to enable the Securities to be allocated to me/us;
- ✓ am/are over 18 years of age;
- ✓ agree to be bound by the constitution of the Company;
- ✓ acknowledge that neither the Company nor any person or entity guarantees any particular rate of return on the Securities, nor do they guarantee the repayment of capital;
- ✓ represent, warrant and agree that I/we am/are not in the United States or a US Person and am/are not acting for the account or benefit of a US Person; and
- ✓ represent, warrant and agree that I/we have not received this Prospectus outside Australia and am/are not acting on behalf of a person resident outside Australia unless the Securities may be offered in my/our jurisdiction without contravention of the security laws of the jurisdiction or any need to register the Prospectus, the Securities or the Offer.

**Guide to the Broker Firm Offer Application Form**

**YOU SHOULD READ THE PROSPECTUS CAREFULLY BEFORE COMPLETING THIS APPLICATION FORM.**

Please complete all relevant sections of the appropriate Application Form using BLOCK LETTERS. These instructions are cross-referenced to each section of the Application Form.

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<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>

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## 13. CORPORATE DIRECTORY

### CALIX LIMITED REGISTERED OFFICE

Level 1,  
9-11 Bridge Street  
Pymble, NSW, 2073 Australia

### JOINT LEAD MANAGERS

#### **Shaw and Partners Limited**

Level 15,  
60 Castlereagh Street  
Sydney, NSW, 2000 Australia

#### **Foster Stockbroking Pty Ltd**

Level 25,  
52 Martin Place  
Sydney, NSW, 2000 Australia

### FINANCIAL ADVISOR

#### **Pitt Capital Partners**

Level 2,  
160 Pitt Street  
Sydney, NSW, 2000 Australia

### LEGAL ADVISOR

#### **Piper Alderman**

Level 23,  
Governor Macquarie Tower  
1 Farrer Place  
Sydney, NSW, 2000 Australia

### INVESTIGATING ACCOUNTANT

#### **BDO Corporate Finance (East Coast) Pty Ltd**

Level 11,  
1 Margaret Street  
Sydney, NSW, 2000 Australia

### AUDITOR

#### **BDO East Coast Partnership**

Level 11,  
1 Margaret Street  
Sydney, NSW, 2000 Australia

### SHARE REGISTRY

#### **Boardroom Pty Limited**

Grosvenor Place,  
Level 12  
225 George Street  
Sydney, 2000, NSW Australia

### OFFER WEBSITE

[www.boardroomlimited.com.au/calix](http://www.boardroomlimited.com.au/calix)

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[www.calix.com.au](http://www.calix.com.au)



Calix

