

19 October 2022

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## Calix announces global licence agreement with Heidelberg Materials and equity raising to accelerate commercialisation of Calix’s technology for industrial decarbonisation

**Sydney, Australia | 19 October 2022** – Australian environmental technology company, Calix Limited (ASX: CXL) (“Calix” or “the Company”) announces today that Leilac, Calix’s 93% owned subsidiary focusing on decarbonisation of cement and lime, has signed a global licence agreement with Heidelberg Materials (FWB: HEI) for the use of the Leilac decarbonisation technology. Calix is also announcing a fully underwritten institutional Placement (“Placement”) to raise A\$60 million comprising the issue of 13.2 million shares at an issue price of A\$4.55 per share; and a non-underwritten Share Purchase Plan (“SPP”) to raise up to an additional A\$20 million.

### Key points

- Leilac, a Calix subsidiary, has signed a perpetual global licence agreement for the use of its decarbonisation technology with Heidelberg Materials, one of the world’s largest building materials companies.
- The licence agreement applies to any Heidelberg Materials facility where the Leilac technology is installed. Heidelberg Materials operates 149 cement plants across five continents.
- The technology licence fee is a first-of-a-kind for the industry, and comprises a royalty floor, variable component linked to carbon price/value, and a royalty cap linked to costs versus alternative technologies.
- Cement and lime are amongst the largest industrial contributors to climate change, accounting for roughly 8% of global CO2 emissions.
- The agreement with Heidelberg Materials is a key milestone in Calix’s commercialisation of the Leilac technology, and Calix’s strategy to develop great businesses that deliver positive global impact.
- Calix is launching a fully underwritten institutional Placement to raise A\$60 million and a non-underwritten SPP to raise up to an additional A\$20 million.
- The Placement and SPP will accelerate commercialisation of the Calix technology platform and enable rapid further technology development targeted at significant strategic market opportunities.
- Specifically, proceeds from the Placement will be applied to accelerate:
  - commercialisation of Leilac’s cement and lime decarbonisation technology;
  - construct a lithium salt demonstration processing plant in JV with Pilbara Minerals; and
  - fund a FEED study for a ZESTY Green Iron demonstration plant.
- Proceeds from the Share Purchase Plan will fund discretionary spend to accelerate alternative energy options, including electrification and alternative fuels development.

# Global licence agreement with Heidelberg Materials

## Global licence agreement

Cement and lime decarbonisation technology company Leilac, a Calix subsidiary, has signed a perpetual global licence agreement with Heidelberg Materials.

The technology licence fee is a first-of-a-kind for the industry, and comprises a royalty floor, variable component linked to carbon price/value, and a royalty cap linked to costs versus alternative technologies. The terms of the agreement with Heidelberg Materials require the royalty quantum to remain commercial-in-confidence.

The licence agreement applies to any Heidelberg Materials facility where the Leilac technology is installed.

Calix will retain all improvements to Calix intellectual property.

## Decarbonisation technology

Leilac is a collaborative technology partner enabling sustainable decarbonisation of cement and lime. Leilac's patented technology is being developed to deliver a highly efficient and low cost carbon capture solution, equipping producers to take action against climate change and protect their industries' jobs and prosperity.

Leilac's unique technology is being developed to efficiently separate and capture unavoidable CO<sub>2</sub> process emissions in cement and lime production, with no additional chemicals or processes. Leilac's modular, scalable and retrofittable technology is being developed to be energy agnostic and electrification ready, providing viable, flexible and economical pathways to net zero cement and lime.

## Cement, lime and climate change

Cement and lime provide the foundations of our societies and economies. They are also amongst the largest industrial contributors to climate change, accounting for 8% of global CO<sub>2</sub> emissions. Unlike other industries, most of the CO<sub>2</sub> produced in the manufacture of cement and lime is unavoidable. It is estimated that 1.37 billion tonnes of CO<sub>2</sub> from cement will need to be captured and stored annually by 2050.

Scalable and low cost decarbonisation technology solutions for cement and lime are essential to ensuring a just transition to net zero that balances social, economic and environmental sustainability.

## Heidelberg Materials partnership

Heidelberg Materials is a founding and key member of a consortium of companies and institutions partnering with Calix to develop and apply the Leilac technology. The global licence agreement with Heidelberg Materials follows many years of close collaboration and partnership.

Leilac-1, located at Heidelberg Materials' plant in Lixhe, Belgium, is a pilot plant supported by EU funding, with a capacity to capture 25,000 tonnes per annum of CO<sub>2</sub>. In operation since 2019, Leilac-1 has successfully piloted separation of unavoidable process CO<sub>2</sub> emissions from cement and lime production using the Leilac technology.

Leilac-2, also supported by EU funding and due to commence construction in 2023, will be located at Heidelberg Materials' plant in Hanover, Germany. Once retrofitted to Heidelberg Materials' operational plant, Leilac-2 should have the capacity to capture 100,000 tonnes per annum of CO<sub>2</sub> or 20% of a typical cement plant's emissions, and is aiming to have a low CO<sub>2</sub> capture cost. The project paves the way for future deployments of the Leilac technology that scale to capture all of the unavoidable process

CO<sub>2</sub> emissions from cement and lime plants.

### **Calix's commercialisation strategy**

The licence agreement with Heidelberg Materials is a key milestone in the development and commercialisation of the Leilac technology. It forms the basis for the technology's use throughout Heidelberg Materials, providing a model for the commercialisation of the technology at global scale.

#### **Calix Managing Director and CEO, Phil Hodgson said:**

*"Calix is leveraging our core platform technology to create businesses focused on solving our planet's greatest environmental challenges."*

*"The agreement with Heidelberg Materials for the commercial use of the Leilac technology represents the next chapter of a long and successful partnership. It is a partnership based on shared values, and a shared mission to urgently and affordably decarbonise the production of cement. We are grateful for their support and collaboration in the development of this globally important technology."*

## **Equity raising**

### **Equity raising**

The fully underwritten Placement will raise A\$60 million via the issue of 13.2 million new ordinary fully paid shares ("New Shares") at A\$4.55 per share ("Placement Price"). In addition, Calix will offer eligible Australian and New Zealand shareholders the opportunity to acquire up to A\$30,000 in New Shares via a SPP to raise up to an additional A\$20 million.

UBS Securities Australia Limited and Canaccord Genuity (Australia) Limited are acting as Joint Lead Managers and Underwriters to the Placement.

### **Purpose of the equity raising**

Calix's key industrial decarbonisation solutions are being fast tracked and commercialised through a combination of joint ventures, licensing and spin-out strategies. Propelled by governments, companies and investors committing to net zero CO<sub>2</sub> emissions, Calix has a rapidly growing pipeline of projects across the globe, each addressing urgent decarbonisation challenges in industry.

The equity raising will accelerate commercialisation of the Calix technology platform and enable rapid further technology development targeted at significant strategic market opportunities.

- 1. Enable Leilac, Calix's 93% owned subsidiary, to accelerate the commercialisation of its patented cement and lime decarbonisation technology:**
  - Fund the capex requirements for completion of Leilac-2 construction at Heidelberg Materials' plant in Hanover, Germany. Once retrofitted to Heidelberg Materials' plant, Leilac-2 should have the capacity to capture 100,000 tonnes per annum of CO<sub>2</sub>, paving the way for future deployments of the Leilac technology to scale to capture all of the unavoidable process CO<sub>2</sub> emissions from cement and lime plants.
  - In conjunction with two Australian Government grants totalling A\$41 million announced in May 2022, fully fund two decarbonised lime calciner Build Own Operate Transfer ("BOOT") projects for the deployment of the Leilac technology with Boral (ASX: BLD) and Adbri (ASX: ABC).
  
- 2. Construct a lithium salt demonstration processing plant in joint venture with Pilbara Minerals (ASX: PLS):**

- Fund Calix's capex share of construction costs for a demonstration-scale lithium processing plant. Following the award of a A\$20 million grant from the Australian Government, full documentation is in essentially final form for JV with Pilbara Minerals for sustainable processing of lithium salt.
- Australia currently produces nearly half of the world's lithium<sup>1</sup>, with the global market for Lithium Carbonate and Equivalents projected to grow six times by 2030<sup>2</sup>. Calix's technology as applied to spodumene processing has the potential to significantly reduce the waste and CO<sub>2</sub> footprint of an Australian-produced lithium salt.

### **3. Accelerate Calix's Zero Emissions Iron and Steel Technology (ZESTY) development for green iron and steel:**

- Fund the continued development of ZESTY, including further performance optimisation with hydrogen, more extensive ore trials and a Front-End Engineering Design ("FEED") study on a 30,000tpa demonstration plant.
- Initial testing shows promising results for a range of iron ore types including haematite, the ore constituting 96% of Australia's iron ore exports. Many alternative developing technologies considering green hydrogen reduction processes connected to electric arc furnaces ("EAFs") require higher grade (beneficiated) ores than haematite. ZESTY is being developed to produce green iron from various ore grades suitable for blast furnaces / basic oxygen furnaces and, eventually, EAF, allowing fully renewably powered zero emissions steel.

### **4. Discretionary capital for future strategic opportunities:**

- SPP proceeds will fund discretionary spend of up to A\$20 million to accelerate the development of electrification and alternative fuels for the Calix technology.
- Electrification of industrial calcination is a rapidly growing opportunity. Calix's fully electric BATMn calciner has proven highly adaptable for testing multiple applications. Further investment will target increased development of electrification and scaling options, helping to accelerate commercialisation of electric calcination into multiple industries.
- The use of alternative fuels, with stable and often negative prices, can enable the low cost decarbonisation of fuel emissions in calcination. Further investment will target the development and demonstration of several additional alternative fuel technologies at relevant commercial scale, helping to provide flexible lower carbon and/or lower cost decarbonisation solutions for industry.

## **Industrial decarbonisation technology**

The decarbonisation of industry in the pursuit of a net zero economy is one of the greatest global challenges. Industries such as cement, lime, iron and steel provide the foundations of societies and economies. They also represent approximately 15% of global CO<sub>2</sub> emissions<sup>3,4</sup>, and require urgent, affordable and scalable decarbonisation solutions. The transition to net zero will also require vastly increased use of minerals essential to the decarbonisation of economies. From lithium for batteries to metals used in advanced manufacturing, the materials of the future also require sustainable processing solutions.

Calix is applying its unique calcination technology to enable the urgent and economical decarbonisation of essential industries. By separating the heat source from the chemical reaction,

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<sup>1</sup> <https://www.visualcapitalist.com/sp/charted-lithium-production-by-country-1995-2020/>

<sup>2</sup> Lithium mining: How new production technologies could fuel the global EV revolution - McKinsey Apr 2022

<sup>3</sup> Trends in global CO<sub>2</sub> emissions; 2016 Report, The Hague: PBL Netherlands Environmental Assessment Agency

<sup>4</sup> Climate change and the production of iron and steel - WorldSteel Association

Calix's technology provides three pathways to industrial decarbonisation:

**1. Enabling the electrification of industry**

Calix's patented technology provides a new way to heat industrial processes. Calix's technology is being developed to be energy agnostic and electrification ready, providing sustainable and economical pathways for industrial processes to enter the electric age.

**2. Enabling efficient capture of unavoidable emissions**

For industries like cement and lime, a majority of the CO<sub>2</sub> produced is released directly and unavoidably from the chemical process of converting limestone to lime. With no additional chemicals or processes, Calix's technology is being developed to efficiently separate process CO<sub>2</sub> for use or storage, delivering low cost abatement of unavoidable emissions.

**3. Enabling green industrial processing**

Decarbonising iron and steel requires alternatives to carbon intensive processes for heating and reducing iron ore. Calix's Zero Emissions Steel Technology (ZESTY) can be renewably powered and enables the use of green hydrogen as a reducing agent, promising new pathways to green iron and steel.

Sustainable industrial processing must also solve environmental challenges across the mineral supply chain, including reducing waste and transport emissions. Calix is developing innovative refining solutions that enhance recovery of ore and create near zero-waste products, with the potential for renewably powered at-mine processing enabling a significant reduction in the total CO<sub>2</sub> footprint of minerals.

## Details of the Placement

The fully underwritten Placement will raise A\$60 million via the issue of 13.2 million new ordinary fully paid shares at the Placement Price of A\$4.55 per share. It is intended that eligible institutional shareholders who bid for up to their 'pro-rata' share of New Shares under the Placement will be allocated their full bid, on a best endeavours basis. The Placement Price will be A\$4.55 per share representing a 11.1% discount to closing price of A\$5.12 per share on 18 October 2022 and a 9.5% discount to the 5 day VWAP of A\$5.03 per share on 18 October 2022. New Shares issued under the Placement will rank pari passu with existing ordinary shares from the date of issue.

## Details of the Share Purchase Plan

Calix will offer eligible Australian and New Zealand shareholders as at the record date of 7:00pm Tuesday, 18 October 2022 the opportunity to acquire up to A\$30,000 in New Shares via a SPP. The issue price for New Shares issued under the SPP will be at the lower of the Placement Price and the price that is a 2.5% discount to the volume weighted average price of ordinary shares in Calix traded on the Australian Securities Exchange (ASX) over the five trading days up to, and including, the day on which the SPP closes.

The SPP aims to raise up to A\$20 million which may be increased or subject to scale back and is not underwritten. No brokerage or transaction costs are payable for New Shares issued under the SPP. New Shares issued via the SPP will rank equally with existing ordinary shares from the date of issue. An SPP booklet containing further details of the SPP offer will be sent to eligible shareholders in due course.

## Details of Directors' Selldown

To fund respective tax and debt obligations created by options vesting, Calix Managing Director and Chief Executive Officer, Dr. Phil Hodgson, and Calix Executive Director and Chief Scientist, Dr. Mark

Sceats, are selling approximately 4% of each of their shareholdings respectively (A\$2.4 million in aggregate at the Placement Price) in conjunction with the Placement, via a fully underwritten sell-down.

**Calix Managing Director and Chief Executive Officer, Dr. Phil Hodgson said:**

*“Calix is pleased to announce the launch of an equity raising to accelerate the development and commercialisation of Calix’s industrial decarbonisation technologies. Propelled by net zero commitments, Calix has a rapidly growing pipeline of projects across the globe.*

*“Today’s announcement follows the achievement of a number of significant milestones for Calix, including the first full licence agreement, with Heidelberg Materials, for the commercialisation of Leilac’s decarbonisation technology for cement and lime. This comes after the recent announcement of two significant Australian Government grants for the deployment of the Leilac technology with Boral and Adbri.*

*“Full Documentation is in essentially final form for JV with Pilbara Minerals to develop the sustainable processing of lithium salt, and we’re seeing highly promising results from the initial testing of Calix’s Zero Emissions Steel Technology, ZESTY.*

*“Calix is urgently developing great businesses that deliver positive global impact through our patented technology. The combination of joint ventures, licensing and spin-out strategies is helping us deliver on this promise.*

*“The decarbonisation of industry, particularly hard to abate sectors such as cement, lime, iron and steel, represents one of humanity’s greatest global challenges. We are grateful for the continued support of our partners and shareholders as we urgently develop and commercialise innovative industrial decarbonisation solutions, leveraging the core Calix technology platform.”*

**Indicative offer timetable**

Institutional Placement	Date <sup>5</sup>
Trading halt and announcement of Placement and SPP	Wednesday, 19 October 2022
Placement bookbuild	Wednesday, 19 October 2022
Trading halt lifted and Calix shares recommence trading on ASX	Thursday, 20 October 2022
Settlement of Placement	Monday, 24 October 2022
Allotment of New Shares issued under the Placement	Tuesday, 25 October 2022

<sup>5</sup> These dates are indicative only and are subject to change. Calix, reserves the right, subject to the Corporations Act 2001(Cth) and the ASX Listing Rules, to amend this indicative timetable. In particular, Calix reserves the right to extend the Closing Date, accept late applications under the SPP Offer (either generally or in particular cases), and to withdraw or vary the Placement or SPP Offer without prior notice. Any extension of the closing date will have a consequential effect on the date for the allotment and issue of New Shares. Calix will consult with the Underwriters in relation to any proposed change to this indicative timetable and any such change will require the consent of the Underwriters.

Share Purchase Plan	Date <sup>6</sup>
Record date for determining eligible participation to subscribe for New Shares via the SPP	7:00pm Tuesday, 18 October 2022
SPP booklet dispatched to eligible shareholders	Wednesday, 26 October 2022
SPP opens	Wednesday, 26 October 2022
SPP closes	Thursday, 10 November 2022
Announce SPP results	Monday, 14 November 2022
Allotment of New Shares issued under the SPP	Thursday, 17 November 2022
Dispatch of holding statements in respect of New Shares issued under SPP	Friday, 18 November 2022

### More information

The investor presentation titled, 'Calix Limited Investor Presentation October 2022' and lodged with the ASX today, provides more information on the equity raising.

This announcement has been authorised for release to the ASX by:

Phil Hodgson  
Managing Director and CEO  
**Calix Limited**  
9-11 Bridge Street  
Pymble  
NSW 2073  
Ph +61 2 8199 7400

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## About Leilac

Leilac is the collaborative technology partner accelerating a just transition to net zero by providing the most compelling decarbonisation solution for global cement and lime.

Leilac's technology is being developed to efficiently separate unavoidable carbon emissions ready for use or storage, without additional chemicals or processes. It is designed to be scalable, retrofittable, energy agnostic and electrification ready, providing flexible and economical pathways to carbon free cement and lime.

Operating across Europe, the Americas and Asia Pacific, Leilac has imagined the future for sustainable cement and lime. And we're creating it. Today.

Sustainable industry. Sustainable planet.

More information: [www.leilac.com](http://www.leilac.com)

## About Heidelberg Materials

Heidelberg Materials (FWB: HEI) is one of the world's largest manufacturers of building materials and has been contributing to progress for 150 years. Operating in more than 50 countries across the world, Heidelberg Materials stands for competence and quality. Our products are used in the construction of houses, traffic routes, and commercial and industrial facilities.

We are pioneers on the road to carbon neutrality and have set ourselves the goal of producing climate-neutral concrete by 2050. Together with our customers and partners, we drive innovation and work on building material for the future. So that the world can always build on us.

More information: [www.heidelbergmaterials.com/en](http://www.heidelbergmaterials.com/en)

## About Calix

Calix is a team of dedicated people who are urgently developing great businesses, leveraging our patented technology, that deliver positive global impact.

The core technology is being used to develop more environmentally-friendly solutions for water treatment, CO<sub>2</sub> mitigation, biotechnology, advanced batteries, and more sustainable mineral and chemical processing.

Calix develops its technology via a global network of research and development collaborations, including governments, research institutes and universities, some of world's largest companies, and a growing customer base and distributor network for its commercialised products and processes.

Because there's only one Earth – Mars is for Quitters.

**Website:** <https://www.calix.global/>

**Twitter:** @CalixLimited

**YouTube:** [CalixLimited](https://www.youtube.com/CalixLimited)



**For more information:**

Phil Hodgson  
**Managing Director and CEO**  
phodgson@calix.com.au  
+61 2 8199 7400

Darren Charles  
**CFO and Company Secretary**  
dcharles@calix.com.au  
+61 2 8199 7400