18 April 2023

Calix Investor Presentation – April 2023

Sydney, Australia | 18 April 2023 – Australian environmental technology company, Calix Limited (ASX: CXL) ("Calix" or "the Company") is pleased to provide a copy of its presentation to the Canaccord CG Sustainability Series, a virtual conference addressing the themes of climate change, sustainability and pollution control and the companies at the forefront of this activity domestically.

The following presentation was delivered by Managing Director and CEO, Phil Hodgson at 8:30am on Tuesday 18 March 2023.

-ENDS-

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

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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_2 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.

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Decarbonisation technology for multiple industries

Canaccord Sustainability Series
April 2023

Important Disclaimer

This presentation has been prepared by Calix Limited (ABN 36 117 372 540) (“Company”).

SUMMARY INFORMATION

This presentation contains summary information about the Company and its subsidiaries (“Calix”) and their activities current as at 18th April, 2023. The information in this presentation is a general background and does not purport to be complete.

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FINANCIAL DATA

All dollar values are in Australian dollars ($ or A$) and financial data is presented as at or for the full financial year ended 30 June 2021, unless stated otherwise.

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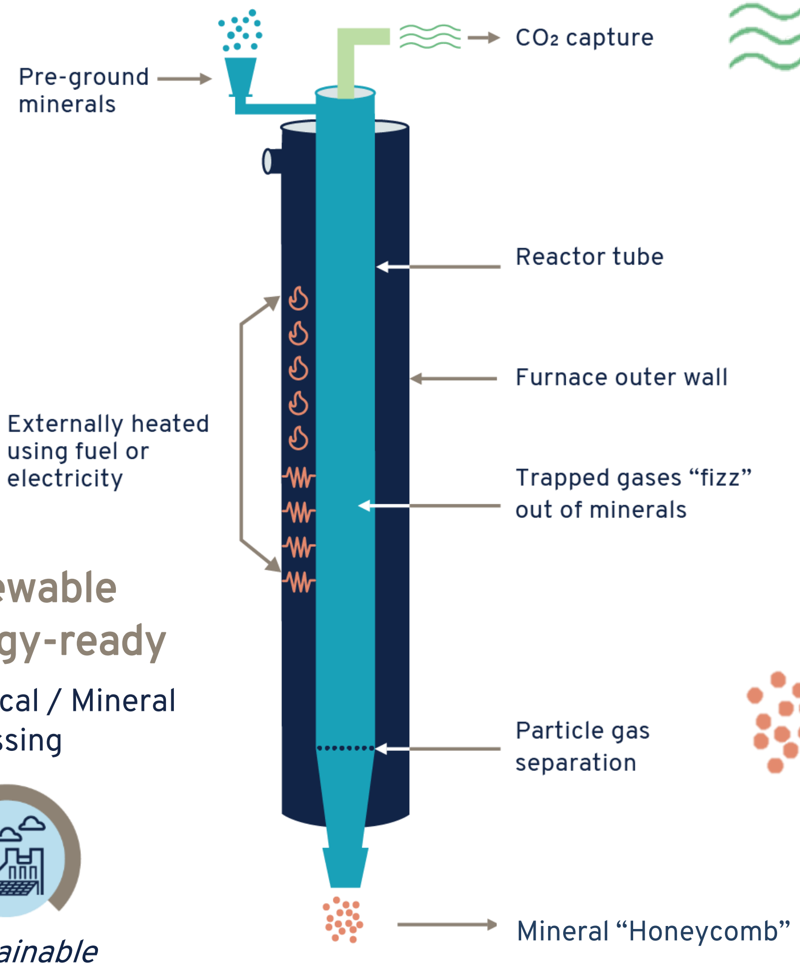
Calix's core technology platform

A new way to heat stuff up...



CO_2 capture

Capture of high purity CO_2 when processing limestone

Leilac
Lime and Cement

Renewable energy-ready

Chemical / Mineral processing

Sustainable Processing

Highly-active materials

Highly porous "honeycomb" structure = more chemical- and/or bio-activity

Biotech *Battery Materials* *Water*

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An AUSTRALIAN invention...

28 patent families covering core technology and applications

>A$120m has been invested to date in developing the technology

Industrial decarbonisation tailwinds

Calix's mission is being propelled by net zero commitments

Government policy

~90%

of global GDP now under net zero commitments.[1]

Investor activity

US$42tn

assets of signatories to the '**2022 Global Investor Statement to Governments on the Climate Crisis**'.[2]

Net zero spending

US$275tn

Estimated spend required by 2050 to fund the global energy transition.[3]

1. https://zerotracker.net/
2. 2022 Global Investor Statement to Governments on the Climate Crisis. The Investor Agenda
3. The net-zero transition: What it would cost, what it could bring. McKinsey Sustainability.

Policies driving decarbonisation

Carbon penalties, value & support in Europe, US, and now Australia…

EUROPE

Emissions Trading Scheme

- €80 – 2022 average EU ETS price, up from €50 in 2021
- 2.2% year-on-year reduction in free CO_2 permits to 2030

Carbon Border Adjustment Mechanism

- A new carbon tariff, commencing in 2023
- Paves the way for phase out of exemptions for heavy industry

Innovation Fund

- Energy, CCU/S, Energy Storage
- €10b funding from 2020 to 2030
- Up to 60% contribution for innovative projects

US

Inflation Reduction Act

- US$85 / tonne of CO_2 permanently stored
- US$180 / tonne for DAC + permanent CO_2 storage
- US$130 / tonne for DAC + used CO_2
- Open to projects commencing construction before 2033
  - > 12ktpa industry
  - > 1ktpa DAC

DAC hubs

- US3.5 billion to establish Regional Direct Air Capture hubs
- Develop networks to facilitate sequestration or carbon utilization.

AUSTRALIA

Safeguard Mechanism

- A price on carbon, capped at AU$75

National Reconstruction Fund

- $15b fund with up to $3b for renewables and low-emission technologies & $1b for value-adding in resources.

Powering the regions fund

- AU$600m for decarbonisation of trade-exposed businesses
- **Carbon Capture Technologies Program**
- AU$141m for hard-to-abate industries, such as cement

Critical Minerals Strategy

- Value-add, downstream processing & decarbonisation

Carbon Border Adjustment Mechanism?

- Introduction of an Australian CBAM under review…

Leilac

Decarbonising cement and lime

Largest single source of industrial emissions

- ~8% of global emissions[1]
- Unavoidable process emissions released directly from limestone.

Net zero commitments

- GCCA member companies covering 40% of global cement production (80% outside of China) – have set a net zero by 2050 target.[2]
- 1.4 billion tonnes of CO_2 from cement needs to be captured and stored annually by 2050 to reach net zero.[2]

"Carbon Capture and Storage (CCS) plays a major role in decarbonizing the industry sector in the context of 1.5° C and 2° C pathways, especially in industries with higher process emissions, such as cement." – IPCC[3]

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Market drivers

Carbon pricing: 36 carbon taxes & 32 Emissions Trading Systems, covering 23% of global emissions & generating $84bn in revenue[4]

>€80/tonne average EU carbon price for 2022

US$85/tonne
US tax credit for stored CO_2

SDG Impact

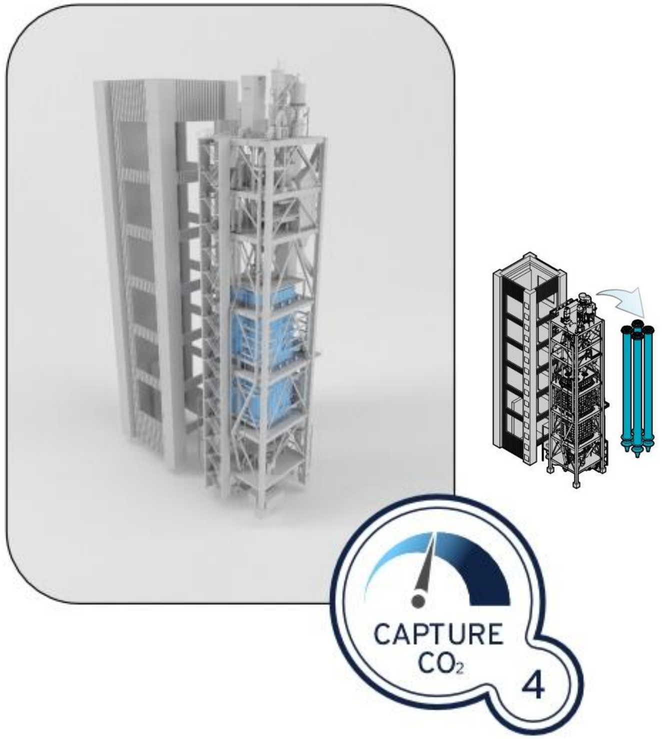
1. Trends in global CO2 emissions; 2016 Report, The Hague: PBL Netherlands Environmental Assessment Agency
2. Global Cement & Concrete Association. Concrete Future Roadmap.
3. SR1.5 Chapter 2. IPCC. 2018
4. https://zerotracker.net/, https://carbonpricin

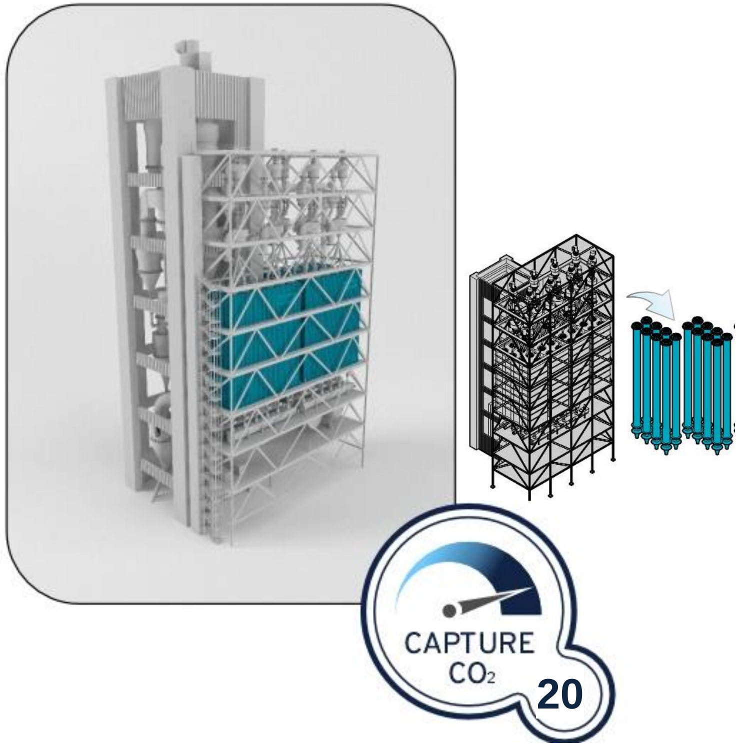
Scaling up the Leilac technology

Leilac-1, Lixhe, Belgium
25,000 tonnes / year CO_2
1 tube
Built: operational 2019

Leilac-2, Hannover
100,000 tonnes / year CO_2
4 tubes – 1 module
Passed FID

Leilac-3
0.5 million+ tonnes / year CO_2
Several multi-tube modules
Multiple in planning





Leilac's full scale vision

BUT…we need to mitigate 1.4 billion tonnes per annum of process CO_2 emissions

= up to 3,000 Leilac-3s

~2 built every week from now until 2050 !!

Leilac A growing pipeline of projects

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	Project discussions	Initial scoping	Detailed scoping / MOU	Pre-FEED / BOD	FEED	FID + construction	Operational	Total
Aug 2021	21	7	4	1			1	34
Aug 2022	25	13	9	5		1	1	54
Feb 2023	34	19	8	ADBRI BORAL 6 CEMEX	2 TARMAC A CRH COMPANY	1 *Leilac-2*	1 *Leilac-1*	71

- Pipeline growth: as at February 2023 there were **71 projects** in the pipeline
  - Projects are ~ 2/3 cement and 1/3 lime, at average capacity of 500kTpa CO_2 for cement and 80 kTpa CO_2 for lime.
  - Leilac pipeline represents potential for over **20 Mtpa of CO_2 abatement projects.**
- Heidelberg Materials global perpetual license executed 1H FY23
- TARMAC project moves into FEED phase: 30kTpa lime facility with partial H_2 firing and CO_2 capture as part of HYNET project, UK.
- Three new projects with CEMEX announced in Germany, Poland and the US.
- Adbri – work continues on pre-FEED for a 20kTpa electric facility with CO_2 capture – **with up to 15kTpa CO_2 now targeted for supply to the HyGATE Project[1], to produce green methanol a precursor for sustainable aviation and marine fuels**
- **Windship** – Leilac awarded £1m as part of the £ 5m award to the Windship consortium to decarbonise shipping using zero emissions lime

1. https://arena.gov.au/funding/german-australian-hydrogen-innovation-and-technology-incubator-hygate/

Decarbonising shipping & aviation

Leilac's core technology applied into new markets

Carbon capture for shipping

- Combining renewably powered propulsion & lime-based carbon capture to develop a low-cost decarbonisation solution for shipping, in partnership with Windship Technologies Ltd.
- The project is supported by £5m (AU$8.73m) funding from the UK Government[1].
- It aims to demonstrate the potential for zero emissions lime to reduce and eliminate emissions from diesel powered vessels.
- Calcium looping for carbon capture with low emissions lime is an exciting application with significant potential into several markets.

Sustainable fuels from captured CO_2

- The Solar Methanol Project is developing a world-first methanol production plant using renewable energy, green hydrogen and captured industrial CO_2.
- Awarded ~$40m funding as part of the German-Australian HyGATE initiative.
- The project intends to use CO_2 captured by the Leilac technology during the production of low emissions lime, in partnership with Adbri (ASX: ABC).

Shipping & aviation are two of the hardest-to-abate transport sectors, responsible for 4.3% of global CO_2 emissions[3].

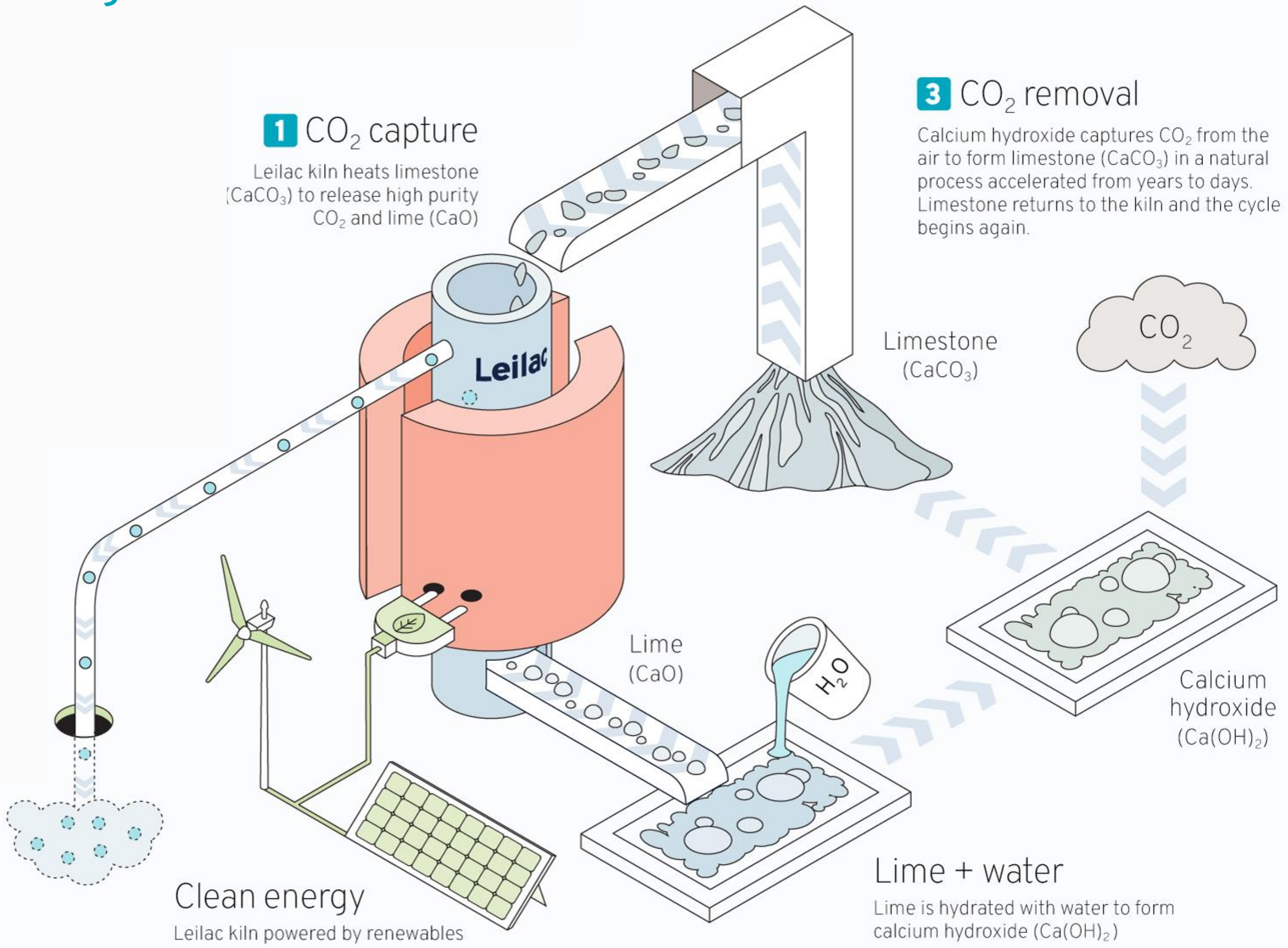
1. Leilac and Windship awarded £5m funding to demonstrate zero emissions shipping technology
2. Calix part of Australian-German consortium awarded funding to manufacture sustainable fuels from captured CO2
3. https://www.iea.org/reports/transport

Leilac Direct Air Capture

Heirloom calix

Non-binding MOU for DAC global licence agreement with Heirloom

- Heirloom[1] is a Direct Air Capture company with an objective of capturing 1 billion tonnes of CO_2 by 2035.
- Heirloom's backers include Gates-led Breakthrough Energy Ventures, Carbon Direct and Microsoft.
- The MOU outlines key collaboration terms, including US$3m in R&D contribution from Heirloom to advance Leilac calcium looping.
- The MOU also covers key terms for a global licence agreement, which once executed, will apply to any Heirloom facility.
- The technology licence fee comprises:
  i. A royalty floor of US$3 per tonne of CO_2 captured; and
  ii. A variable royalty rate based on the prevailing CO_2 price for lime decarbonisation, less the amortised cost of capital of the Leilac kiln per tonne of CO_2 separated.



1. https://www.heirloomcarbon.com/

Decarbonising iron and steel

Indispensable, carbon-intensive & hard-to-abate.

CO_2

~7%
of global emissions[1]

~53%
of global iron ore supplied by Australia[2]

80-85%
CO_2 from iron ore reduction[3]

Australian iron

- >A$150b…44% of Australian export earnings in 2021[4]
- 96% of Australian iron ore is haematite[5]
- Value creation opportunity
  - 3-4x value add: iron ore → iron
  - Green Iron…

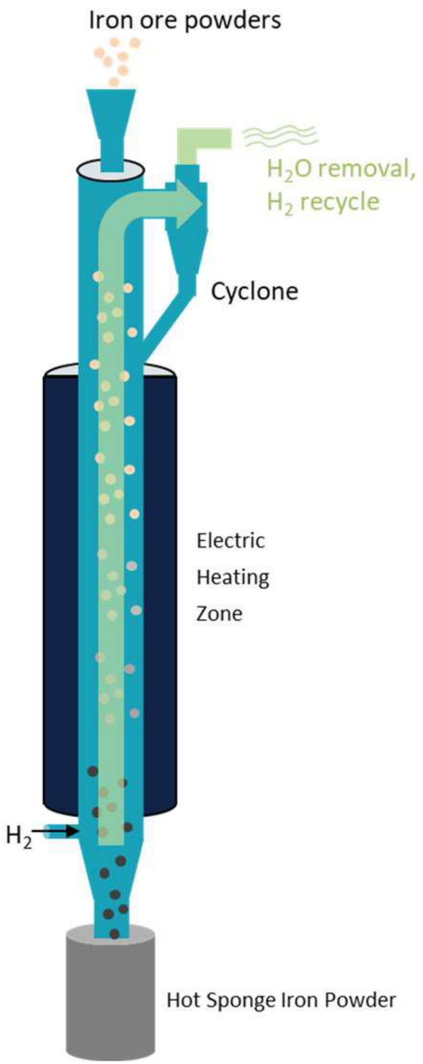
Decarbonisation solutions…ideally

- Resource efficient
  - Compatible with multiple ore types
  - Low waste
- Minimal supply chain disruption
- Fast route to impact
- Economical
  - Leverage existing assets
  - Efficient use of energy, reductant & raw material

1. Climate change and the production of iron and steel. World Steel Association. 2021
2. www.statista.com
3. Climate change and the production of iron and steel. World Steel Association. 2021
4. https://www.minerals.org.au/news/record-high-resources-export-revenue
Global Cement & Concrete Association. Concrete Future Roadmap.
5. Iron Ore | Geoscience Australia
6. https://zerotracker.net/

Zero Emissions Steel TechnologY

Potential lowest cost zero emissions iron & steel



About ZESTY

- Hydrogen reduction of iron ore
- Can be easily and efficiently renewably powered
- Targeting theoretical minimum hydrogen use – simple gas recycle
- Processes fines <~0.3mm, no pelletisation
- Targeting zero emissions iron and steel*

	Simple process (low pressure / no fluid beds)	Compatible with fines & lower grade ores	No fossil fuel requirement	No CCS required	H_2 not combusted / easily recycled
BF / BOF + H_2	✓	✗	✗	✗	✗
DRI-MIDREX	✓	✗	✗	✗	✗
DRI-HISARNA	✓	✓	✗	✗	✗
FINMET	✗	✓	✗	✗	✗
HYBRIT	✓	✗	✓	✓	✗
DRI_MIDREX H_2	✓	✗	✗	✗	✗
Flash iron making	✓	✓	✓	✓	✗
HYFOR	✗	✓	✓	✓	✗
ZESTY	✓	✓	✓	✓	✓

*in conjunction with Calix's "Leilac" zero emissions lime

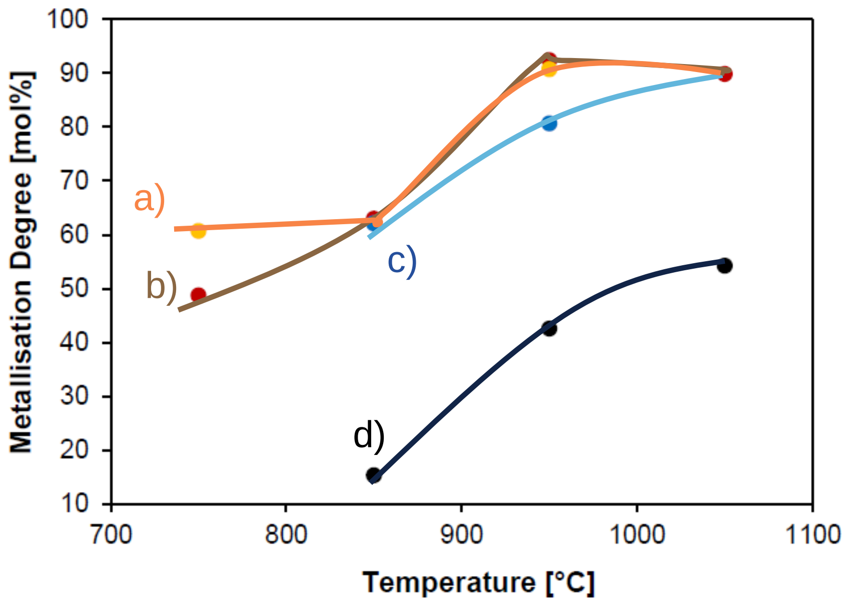
Zero Emissions Steel TechnologY

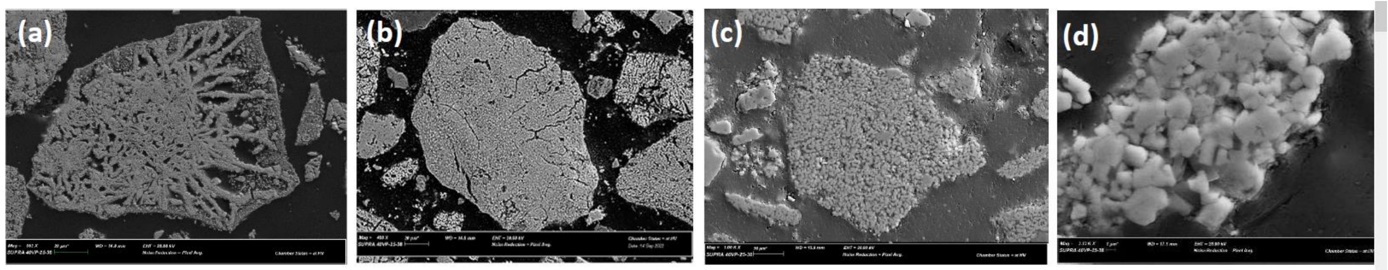
ZESTY development to date...

Phase 1 & 2: completed

- ✓ Theoretical kinetic studies
- ✓ Conversion of electric calciner to run hydrogen
- ✓ Confirmation of electric calciner + hydrogen reduction performance
- ✓ Successful pilot testing with multiple ores

		Fe Wt %)	D50 (um)	SSA (m^2/g)	Pore Volume (cm3/g)
a)	Siderite	43	87	25	0.035
b)	Goethite / Hematite	57	130	15	0.034
c)	Goethite / Hematite	59	129	14	0.039
d)	Magnetite	67.5	38	0.8	0.003

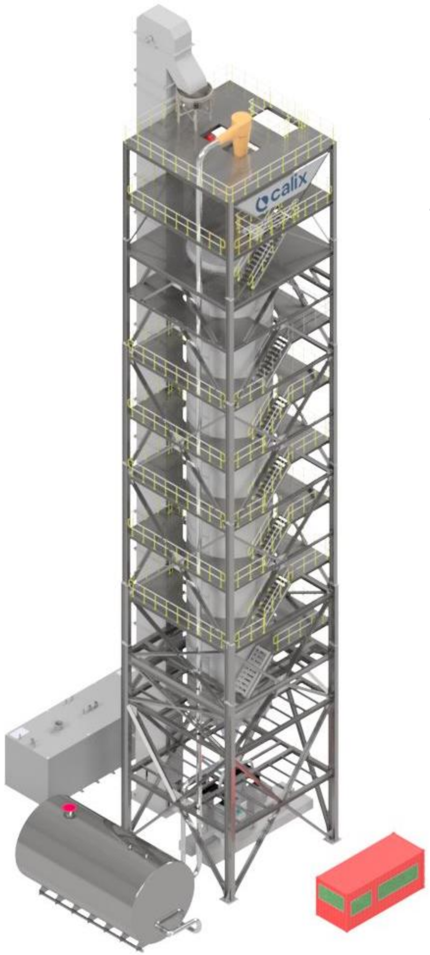




SEM Images of the different samples after processing @950C; H_2/O_{red} =2

Calix's ZESTY Technology: pre-FEED / FEED study

Towards Financial Investment Decision by end-2023



A render of the Calix fully electric ZESTY reactor rated for 30kTpa iron production

Pre-FEED / FEED study

- A$947,035 ARENA grant.
- Proposed 30,000 tpa, zero CO_2 emissions ZESTY-iron demonstration plant.
- Study towards final investment decision, including:
  - Testing / confirmation / design input from pilot test runs
  - Beneficiation / passivation / briquetting / smelting trials
  - Multiple ore testing
  - Site determination
  - Knowledge sharing & partnership development

HILTCRC
Heavy Industry
Low-carbon Transition

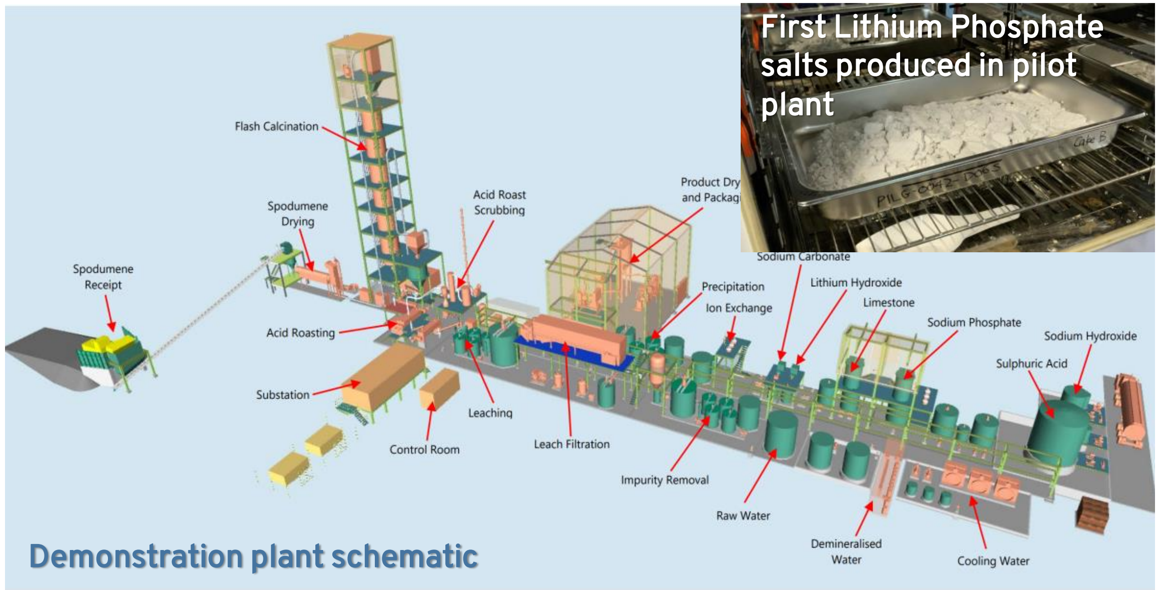
Australian Government
Australian Renewable Energy Agency
ARENA 10 YEARS

The ZESTY reactor will be the same scale as Leilac-1 reactor for cement and lime

Development of lithium salt project with Pilbara Minerals

TARGETING JV FORMATION AND COMPLETION OF FEED IN FY23

- PILBARA MINERALS (ASX:PLS): JV Full Documentation Executed with $20m in Federal Government funding announced under the Modern Manufacturing Initiative[1]
- Project CAPEX budget estimate from scoping study is $50-70m
- CXL will own 45% of the JV and contribute 35% of the capital (10% free carry negotiated as per Calix IP contribution)
- Majority of world's lithium forecast to be sourced from hard rock lithium – projected to grow 5x in this decade[2]
- Global market Lithium Carbonate and equivalents: 0.54 MTpa in 2021; 3.3 MTpa by 2030[3]
- The demonstration plant will have 2 distinct advantages:
  - Low-carbon: solar-powered electrification of calcination
  - Recovery: Calix technology gives higher recovery from ore body
- **At current lithium prices, the demonstration scale plant running at full capacity could generate ~US$85m revenue for the JV[4] on an annual basis**



Demonstration plant schematic

First Lithium Phosphate salts produced in pilot plant

Next Steps

JV established (covering Demo plant, joint marketing of technology)

FID targeted H1 2023

Market development – lithium phosphate salt

Construction targeted from Q2/Q3 2023 to 2024

Commissioning and testing late 2024, on way to achieving full production and sales, subject to market developing for lithium phosphate salt product

Li-salt production technology to then be licensed by the JV to Pilbara Minerals and the global spodumene industry

1. Grant funding announced, awaiting contract finalisation following change in Federal Government in May 2022
2. Benchmark Minerals Intelligence, Oct 2020
3. McKinsey Apr 2022
4. Calix share is projected to be 45% of the JV. JV total revenue Assumes prevailing lithium prices Li-Carbonate-equivalent of US28.9k/tonne (43k A$/tonne) and targeted lithium phosphate production of ~3,000tpa (source: Argus metals 17 April 2023)

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