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CALIX LIMITED

Half-Year FY22 Update

February 23rd, 2022



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Mars is for quitters

We believe our responsibility starts at home.

That's why we're driven to use our unique technology to repair, preserve and prevent future harm to it.

Because there's only one Earth, and it's already ours.



Calix Limited is developing multiple environmental business opportunities



Water

Water Treatment
Aquaculture



CO₂ Mitigation

Cement
Lime



Biotech

Crop Protection
Marine Coatings
Health and Pharma



Advanced Batteries

Advanced
Cathode & Anode
Materials



Sustainable Processing

Renewable-powered
Mineral and Chemical
Processing

(Spodumene, Iron and Steel etc)

Common Technology Platform - Each a multi-\$B opportunity*

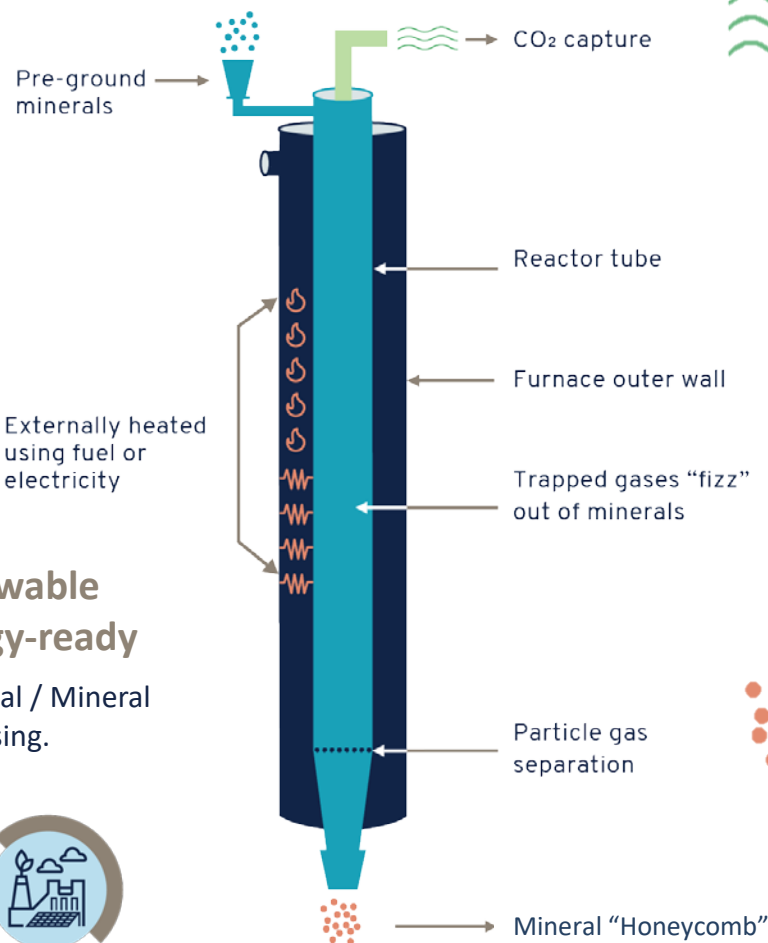
Growing direct /
distributor sales

JV / Licensing and / or Equity farm-in / Spin-out

**Frost and Sullivan - Market Opportunity for Calix Flash Calcination : Calix Prospectus 2018, Section 2 for Water, CO₂, Advanced Battery (including Sustainable Processing) and Biotech opportunities*

Our core technology platform

A patented platform technology with 3 key features



CO₂ capture

When processing limestone, gas exhaust is high purity CO₂



Renewable energy-ready

Chemical / Mineral Processing.



Highly-active materials

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



calix

A new way to "heat stuff up"



26 patent families covering core technology and applications



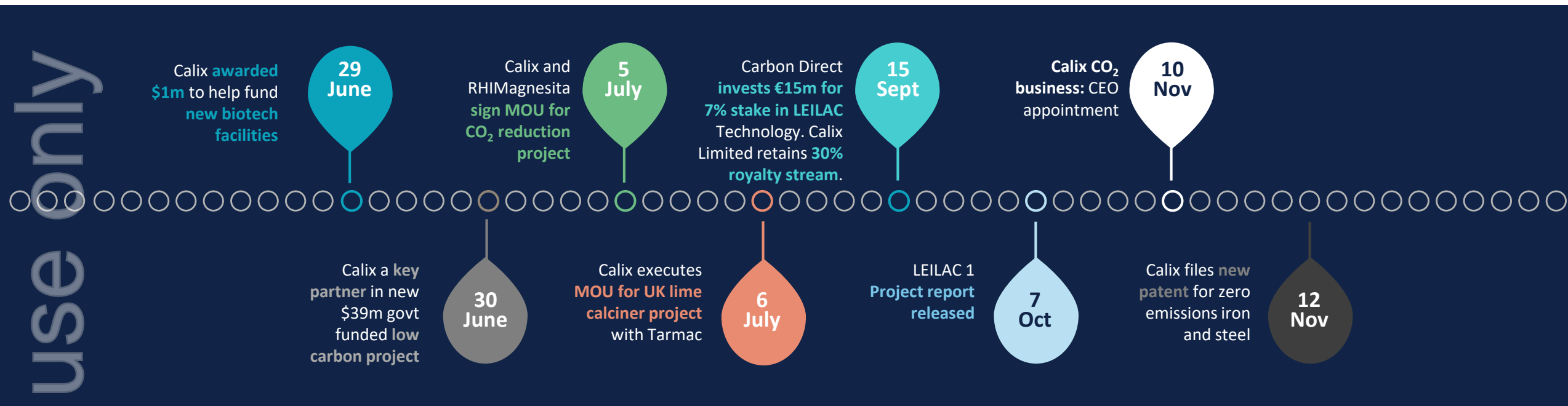
>A\$100m has been invested to date in developing the technology.

Key Highlights – H1 FY22



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Investing for growth

Employed 8 engineers, 5 finance and business development and 3 R&D FTEs

Invested \$3.5m on capital items to enhance and accelerate our technology development

Invested \$1.5m on external commercial / advisory / legal / tax to advance our commercialisation along multiple business lines and geographies

Our FY22 priorities...and progress in 6 months



ACHIEVED SO FAR ✓



Water

Revenue and Gross Margin growth via...

US: At least

- 1 new plant
- 1 major new US state entry



EU:

- First partner agreement
- Convert paid trials to customers
- 1 new plant



Asia:

- Re-establish Chinese AQUA-Cal+ sales



CO₂ Mitigation

Cement and Lime

- Successful test campaign conclusion – LEILAC-1
- Successful FID – LEILAC-2
- Convert at least two MOU's to full project / license agreements – “full-scale” application



Biotech

Crop Protection

- 2nd license agreement
- APVMA approval

Marine Coatings

- Successful initial trials with MTA partners

Next new biotech application...health / pharma

- Successful in-vitro study



Advanced Batteries

Successful full (coin) cell results

Initial positive pouch cell results

Scale-up production trials – cathode materials

First battery module – commercial format



Sustainable Processing

Refractories

- Convert MOU to full Project or License agreement

Spodumene

- Successful feasibility study
- Convert MOU to full Project or License MOU

Develop next new sustainable processing application ✓

Look-through valuation achieved – Carbon Direct investment into the LEILAC Group ✓



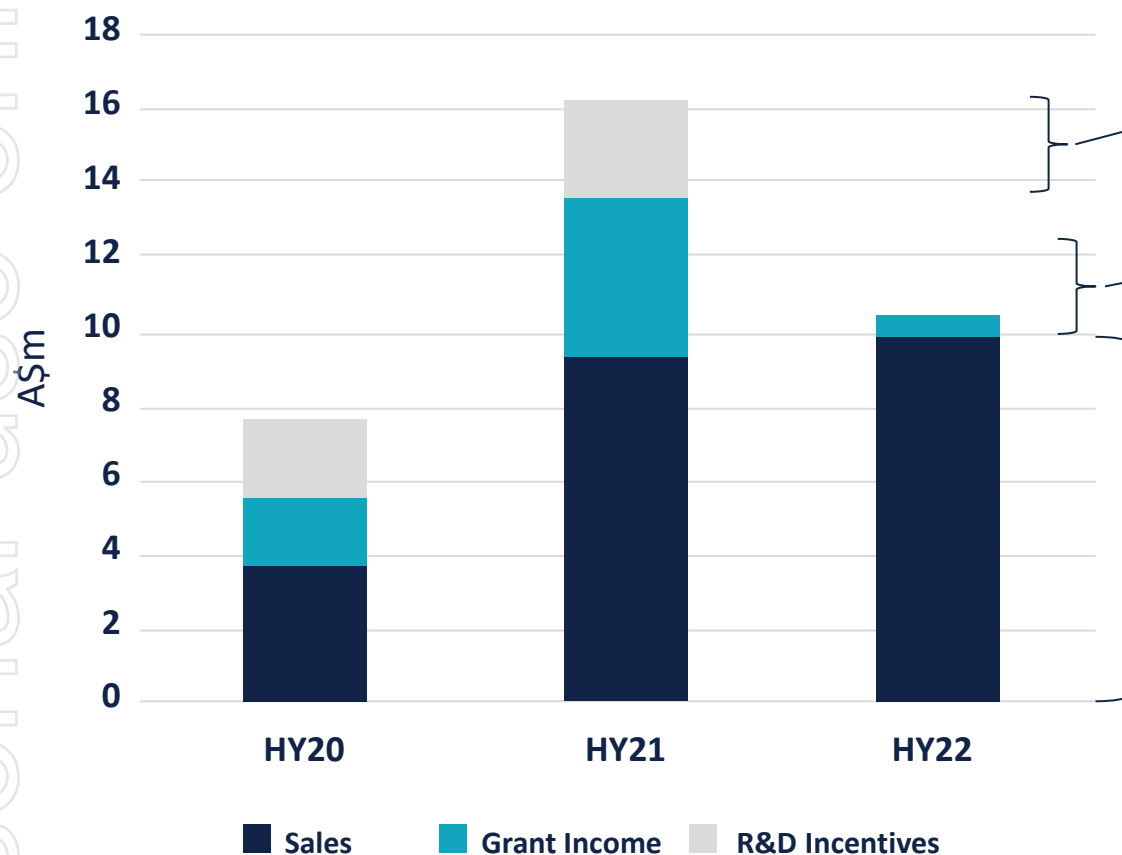
Half Year FY22 Financials

Summary of Results H1 FY22

TRANSITIONING REVENUE PROFILE, STRONG BALANCE SHEET



Revenue & Other Income



Key Take-aways...

R&D tax incentive is likely to be received as a carry forward tax offset rather than cash refund (accounted as income), as total aggregated turnover is likely to exceed \$20m this year

Project grant income continues with R&D projects funded for up to 3 years – current spend (and therefore grant income) is low as LEILAC1 is completed and LEILEC-2 not yet in construction

Modest growth in total sales & revenue in a COVID constrained environment, although US GM growth from 31.4% to 36.4% pleasing on continued cost optimisation with our technology

Balance sheet remains strong with \$26.3m in cash reserves and \$8m in grant receivables due this FY

Summary of Results HY22 – Profit & Loss Highlights

INVESTING HEAVILY IN CAPABILITY TO CAPITALISE ON TECHNOLOGY COMMERCIALISATION



	HY22 (\$m's)	HY21 (\$m's)	Comments
Sales revenue	9.8	9.2	
Grant income recognised	0.7	4.5	Leilac 1 to Leilac 2 transition
R&D tax incentive	-	2.6	Tax rebate to tax incentive
Total revenue	10.5	16.3	
Gross Profit & Other income	3.5	9.9	
Sales & Marketing expenses	3.7	2.9	Investing in commercialisation
R&D	2.6	2.7	
Admin	2.4	1.2	Includes non-recurring expenses, mainly LEILAC Group deal
Operating Profit	(5.2)	3.0	

Grant income for the LEILAC projects differed period to period as L1 finalised construction/operation phase in HY20 and L2 was in engineering phase in HY21. L2 grants sit within the deferred revenue account on the balance sheet – \$6.4m

The Group's aggregated turnover likely to exceed the cap of \$20m; therefore, rather than a tax rebate, the company will receive a tax incentive – this year and in the future [R&D projects already approved by AusIndustry for next 3 years]

As set out in our March 21 cap raise, we're executing plans to invest in people to assist with commercialisation of technology in CO2, Sustainable Processing & Water business – many near term, exciting opportunities are now in the pipeline

Admin costs include one-off transaction expenses associated with the LEILAC Group sell down and increases in insurances & recruitment fees as headcount has grown

Summary of Results HY22 – Balance Sheet highlights

BALANCE SHEET STRENGTHENED THROUGH STRATEGIC SELL DOWN IN ONE OF OUR LINES OF BUSINESS



	31 Dec 21 (\$m's)	30 June 20 (\$m's)
Total Assets	66.2	51.6
Total Liabilities	11.8	13.5
Net Assets/Total Equity	54.4	38.1
<i>Excluding deferred revenue</i>		
Current assets	39.2	27.0
Current liabilities	4.0	5.2
Net surplus of current assets over current liabilities [ex deferred revenue]	35.2	21.8
Property, plant & equipment	16.5	14.5
Intangible assets, including goodwill	9.5	8.9

Sale of minor stake [~7%] in our LEILAC Group demonstrated underlying value in the assets and technology platform we have built.

This value is starting to be reflected in the strength of the balance sheet which will allow us to pursue the many opportunities that are developing to leverage the technology in to new projects [Sustainable Processing for example] and licensing opportunities.

Significant growth in cash reserves to \$26.3m – and a further \$8m in current grants receivable this FY. \$35.2m surplus of current assets over current liabilities

Calix has no debt – we are strongly positioned to leverage the financial strength we have created as additional project opportunities emerge

Summary of Results HY22 – Cash Flow Statement highlights

INVESTING IN COMMERCIALISATION – AND MORE OPTIONS OPENED UP FOR FUNDING OUR LINES OF BUSINESS



	HY22 (\$m's)	HY21 (\$m's)
Operating Cashflows	(8.0)	(3.6)
Receipts from govt bodies	0.5	6.2
Payments to LEILAC partners	-	(4.3)
Investing Cashflows	(4.3)	(4.8)
PPE	(3.5)	(4.5)
Intangibles	(0.8)	(0.3)
Financing Cashflows	23.4	1.1
New share issue	0.8	0.5
Partial sale of Leilac Group	22.8	-
Payments for leases	(0.3)	-
Movement in borrowings	-	0.5
Cash at end of period	26.3	3.7

Operating cashflows impacted by timing on receipt of R&D cash refund and EC grant cycle. In addition, as promised in our March 21 cap raise, we've accelerated investment in commercialisation opportunities and built the team to do this

Capex investment predominantly in core tech – L2 project \$2.1m, Bacchus Marsh upgrades to support Battery and Sustainable Processing \$0.8m and \$0.5m for US expansion capability.

Partial sale of ~7% of LEILAC Group to Carbon Direct, valuing that LOB at ~A\$485m, provides a guide to the different options we have to source the right financing from the right investor group in support of the range of opportunities we have to leverage the technology in to large addressable markets.



Decarbonisation – CO₂ and Sustainable Processing

“Environment / Social / Governance” (ESG) Interest is growing

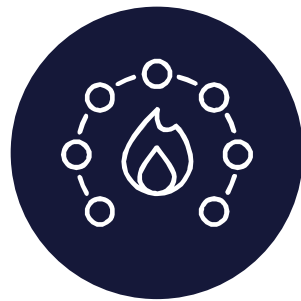


GLOBAL ECONOMIES, COMPANIES AND INVESTMENT FUNDS ARE ALL HEADING IN ONE DIRECTION



66% of global GDP*
and carbon emissions currently
under net-zero commitments.

Source: Energy and Climate
Intelligence Unit



**Companies committed
to net-zero emissions**
CAC 40, DOW 30, FTSE100 and
IBEX 35. Source: ECOACT



**ESG Exchange Traded Funds
double in 2020**
US\$8 billion net inflows in Oct 2020
compared to US\$3 billion in Dec 2019
globally. Source: BloombergNEF



**From USD1.3 to USD4 trillion *per
year by 2030***
Global investment capital
required to achieve
net zero outcome**

**Includes US – re-joined the Paris Accord in 2021*

***IEA World Energy Outlook 2021*

Our business opportunities and ESG tailwinds

Multiple “shots on goal” ESG opportunity using the one patented core platform technology



Water

- Safe, environmentally friendly water treatment product
- In-market since 2014
- Growing revenue engine for the business
- Successful US acquisition 2019



CO₂ Mitigation

- LEILAC technology for cement and lime – no theoretical energy penalty
- Developing with €28m of EU funding
- Partnering with some of the largest cement and lime companies



Biotech

- Safe, environmentally friendly biotech product – multiple applications
- Crop Protection – initial sales
- Anti-Foul Marine Coatings – major trial underway
- Health – antibiotic crisis



Advanced Batteries

- Targeting safe, environmentally friendly, more recyclable, better performing batteries
- Highly prospective early results
- Substantial global battery development network



Sustainable Processing

- Targeting renewable-energy driven industrial processes
- First license agreement executed- energy storage
- Several opportunities being developed – chemical industries

Our Business

ESG Issue

Waste water discharge limits becoming tougher

Top economies, and cement companies, committing to net zero CO₂ by 2050

Increasing concern wrt biocides and their impact on the environment

Increasing concern wrt expensive battery materials and their recyclability, cost, safety and provenance

Industrial processes coming under increasing pressure to identify how they will electrify

ESG Examples

Germany taken to court by the EU for polluting European waterways with P and N

The price of CO₂ – as measured by the EU Emissions Trading Scheme - has jumped >10-fold in 4 years

The EU has banned one of the largest selling broad spectrum fungicides from Feb 2021 - Mancozeb

Tesla announces a return to simpler, cheaper, safer chemistries at Battery Day - September 2020

Recent Deloitte survey found industrial manufacturers targeting 45% overall electrification by 2035

INDUSTRIAL DECARBONISATION



With significant thematic tailwinds, Calix's business is very well positioned to benefit...

Our CO₂ business: pilot-proven and funded to demonstration scale

POTENTIAL LOWEST COST CEMENT AND LIME CO₂ SOLUTION



LEILAC represents one of the most advanced, and also the lowest theoretical cost solution to CO₂ mitigation for cement

Option	TRL* (Cement)	Cost € / TCO ₂ Avoided ^e	Advantages	Challenges	Development Pathway	
Amine	6 ^a - 8	55 – 189 ^f	Most advanced technically Can use some lower grade (waste) heat	Millions of tonnes of spent amine to atmosphere – uncertain impact Energy penalty High CAPEX and OPEX	SECURED Norcem Project (400kTpa CO ₂) to TRL 8 by 2025	
LEILAC	6 ^b	<23 - 27 ⁱ	Lowest theoretical cost Easily electrified – energy agnostic No new chemicals needed Simple materials of construction	Heat and process integration - retrofit	SECURED LEILAC-2 Project (100kTpaCO ₂) to TRL 7/8 By 2024	
Calcium Looping	5 ^c	58.6 ^g	No new chemicals needed	High CAPEX and OPEX – end-of-pipe application Heat and process integration – integrated retrofit	UNCLEAR Taiwan Cement no firm commitment Beyond CLEANKER unclear	
Svante (Temp swing – MOF sorbent)	4-5 ^d	? (Claim Capital Cost is ½ Amine) OPEX ?	No new chemicals needed	OPEX / Footprint at scale ? MOF Performance over time ? Complex materials and machinery	PLANNED Holcim Colorado Project (725kTpa CO ₂) to TRL 8 Date ?	
Oxyfuel	4 ^d	42 ^f - 66		Air ingress Air sep energy costs Gas flows	PLANNED Mergelstetten Project (725kTpa CO ₂) to TRL 6/7 Date?	
Project Discussions	Initial Scoping	Detailed Scoping / MOU	Pre FEED / BOD	FEED	FID + Construction	Operational
26	11	7 / 1* Lime * 	2 Hynet - Lime  EU Lime Project	1 LEILAC-2		1 LEILAC-1

*Pending grant funding support

**Assuming 12 to 23 % growth in the cement market to 2050 (IEA 2019)

a. Based upon Anhui Conch capture project 50kTpa CO₂ capacity

b. Based upon LEILAC-1 project 20kTpa CO₂ capacity

c. Based upon Taiwan Cement / ITRI 350 Tpa CO₂ capacity, similar "La Pereda" Spain. Also being developed in integrated cycle in CLEANER project

d. Based upon CEMCAP Project – some elements tested at lab scale and in relevant industrial environment. And Carbon Capture in the Cement Industry: Technologies, Progress, and Retrofitting in *Environmental Science & Technology* 50(1) · December 2015

e. Based upon 1 Mtpa Cement Plant – NOAK technology deployed at scale. Includes OPEX + annualised CAPEX (12.5% capital charge, where known) and excluding cost of compression

f. The Swing Adsorption Reactor Cluster for Post-Combustion O₂ Capture from Cement Plants – *Journal of Cleaner Production* 223 (2019) 692 - 703

g. Lower bound of 26.4 was claimed by ITRI for power production – unclear if compression cost included, no public domain information for cement. Higher bound as per the CEMCAP project

h. As tested in CEMCAP project – CO₂ Capture in the Cement Industry, Norcem CO₂ Capture Project (Norway) *Energy Procedia* 63 (2014) 6455 – 6463

i. LEILAC-1 Output report: 2050 Roadmap, Coal ~27, RDF ~23 including cost of compression, for a LEILAC-2 module (FOAK). The "<" is for NOAK

j. Based upon 30TPD test unit (10kTpa) – power plant flue gas (not cement)

LEILAC-1 Output Report Released – Roadmap "2050" - Confirms LEILAC has potential to be lowest cost CO₂ capture technology for lime and cement

Key Updates

- Watch point – COVID impacts on supply chain / construction / people – budget and timeline
- Final Investment Decision milestone LEILAC2 - to be taken soon

Project Pipeline Movements

- From December 2021 to February 2022, another 4 projects have come into the pipeline
- 3 projects have moved into detailed scoping
- 1 project has moved into initial scoping

Sustainable Processing

CALIX TECHNOLOGY ... EVERYWHERE! -



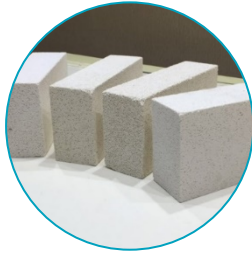
SALTX

Mineral looping energy storage



First runs on pilot project completed successfully. Design basis verified for throughput and energy usage

Bloomberg New Energy Finance predicts Cumulative Energy storage to grow to 942GW by 2040^{*1}



REFRACTORY

CO₂ reduction into existing magnesia production processes



Successful pre-FEED, into FEED phase industrial-scale testing underway

15 million tonnes ^{*2} per annum global addressable market



SPODUMENE

Revolutionary at-mine low CO₂ footprint Li salt manufacturing in Australia



Scoping study finalisation subject to PLS and CXL Board approval, final decision on capacity (possibly larger scale) and JV terms. Pilot test program designed

World Bank modelling shows 500% growth of Lithium to 2050^{*3}



LC3

Next Generation Clay Cement

Pre-FEED study complete for European Project

Potential Clay production to meet demand 1.1B Tonnes p.a. ^{*4}



ALUMINA

Electrifying Aluminium Oxide production

First runs planned Q1/2 2022 at Bacchus Marsh

Global Alumina production on steady growth past 125Mtpa in 2021 ^{*5}



IRON AND STEEL

New patent filed for Calix's ZESTY process

Design upgrade of Calix's pilot scale reactor underway. Ores received from potential customer for testing from March 2022

Iron and steel is responsible for 7% of global CO₂ emissions^{*6} – just behind cement and lime

^{*1} Environment and Energy Study Institute (2019)

^{*2} Based on RHIM being 15% of the global market (RHIM Annual Report 2020)

^{*3} Forecasts indicate that Lithium is on a 500% growth curve by 2050 (World Bank 2017)

^{*4} Mining Industry worldwide statistics and facts (M. Garside 2021, Statista)

^{*5} Global aluminium oxide production survey, Statista 2021

^{*6} IEA – Iron and Steel Technology Roadmap <https://www.iea.org/reports/iron-and-steel-technology-roadmap>





Water



Our Water business – Magnesium Hydroxide Liquid “MHL” – a safe alkali chemical

OUR REVENUE ENGINE...TARGETING MULTI-US100M REVENUE MARKETS...



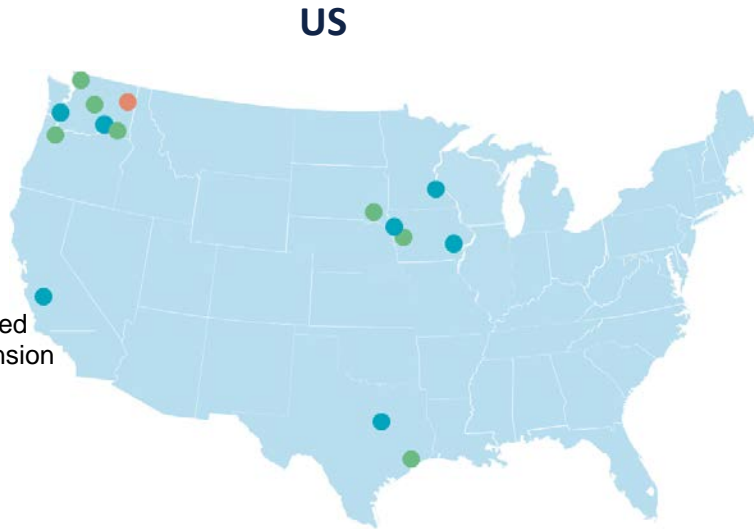
Corporate Office:

- Spokane, WA

Operations:

- Pasco, WA
- Centralia, WA
- Sioux City, IA
- Hills, IA
- Waco, TX
- Fresno, CA
- Minneapolis, MN

} Planned Expansion



Sales/Technical Support Staff:

- Wenatchee, WA
- Sumas, WA
- Walla Walla, WA
- Denison, IA
- Gaston, OR
- Houston, TX
- Sioux Falls, SD

} New Sales Staff

Strategy:

- **Aggressive growth** plan continues – US\$1.5m FY22 investment to:
 - Continue to Seed market in 2 new US states
 - Up to 3 new hydration plants in 2022
 - Growth in 2 new states
 - Focus on Caustic Industrial Segment and Odour Control Municipalities
 - Complete Successful trial in Drinking Water
 - Hire 3 new sales resources
 - Strong marketing leads, 4 quality leads per month per salesperson, 1 in 4 conversion, 3-month sales cycle, \$250K average customer revenue size

H1 Updates:

- **Revenues** – US\$5.098 H1 FY22 vs 5.465 H1 FY21 down 7 % on prior period - Key issues COVID (truck drivers, delay in establishing new plants, sales access) + Mid-West strong competitive response
- **Gross Margins** – H1 FY22 36.4% vs H1 FY21 31.4% - good trend continues
- TX market entry underway – run-rating at \$US500k+ sales, growing pipeline
- 2 new sales resources hired
- Odour control new segment with new customers, with a strong pipeline. New Product called Alka-Mag+
- US approval achieved for our MHL in Drinking Water applications - additional caustic replacement opportunity

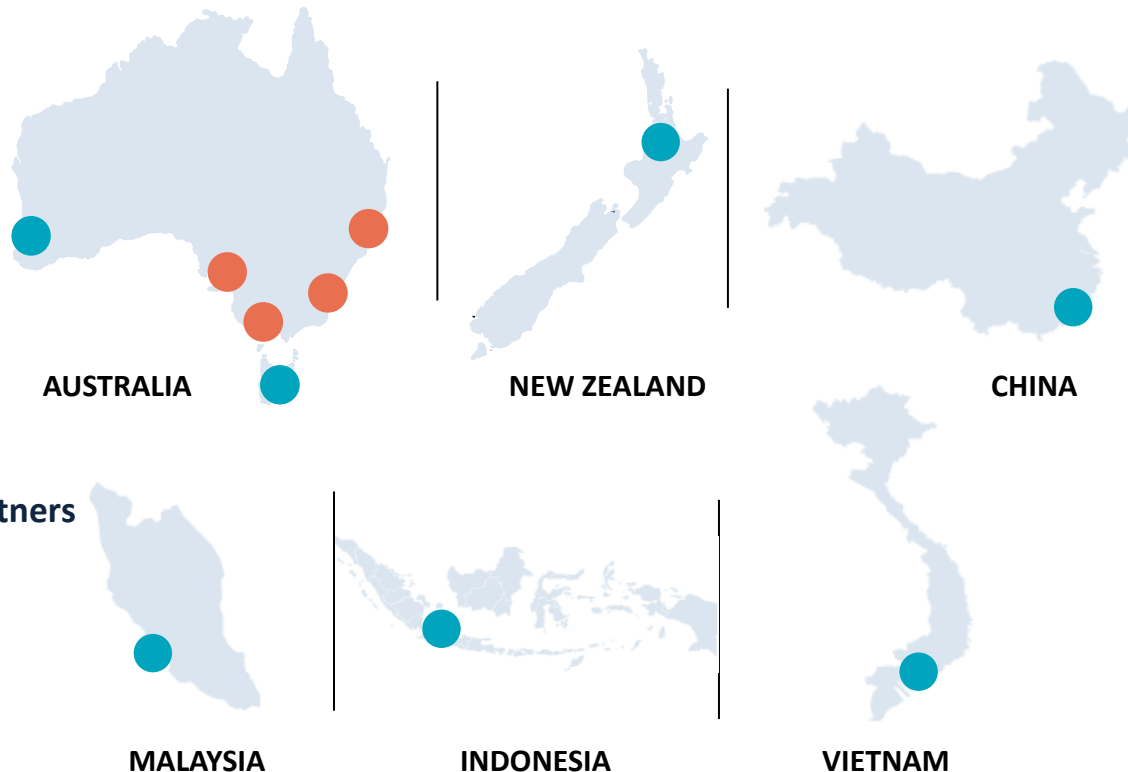


Our Water business – Magnesium Hydroxide Liquid “MHL” – a safe alkali chemical

OUR REVENUE ENGINE...TARGETING MULTI-US100M REVENUE MARKETS...



Operations
Locations



Distribution Partners

Strategy:

- AUS/NZ – **SHARE OF WALLET:** Focus on organic growth in key accounts - industry leading monitoring & dosing solutions with ongoing service and maintenance.
- China – **REBUILD!**
- SEA – **GROW:** FY22 targeting 2 new distributors: Thailand & India
- EU - **NEW MARKET ENTRY:** FY22 - establish raw materials supply, more paid trials and target an EU Hydration plant

H1 Updates:

- AUS/NZ - ANZ \$2.177m vs \$2.043m up 7 % on prior period: Gross Margin steady ~ 24%
- SEA – Market entry into Thailand and India on track with established Aquaculture Distributors. Established New Retailer in Quanzhou after successful trials, other trials in progress
- EU - FY21 Market Entry Reseller agreement with partner in Germany executed – second trial underway. Continuing to look for portfolio opportunity for EU expansion, and sufficient sales for EU plant





Biotech

Our biotech business...very high surface area magnesium oxide - “nano/bio-active”



CROP PROTECTION

Proof-Of-Concept

- 6th consecutive year of field trials
- broad spectrum anti-fungal & anti-pest efficacy
- 1st EU distribution licence; already in-market

Market Value Drivers

- reduced toxic pesticide use
- substitute for banned actives
- safe, sustainable

MARINE COATINGS

Proof-Of-Concept

- 26-month exposure trial completed – Bowen QLD – material efficacy vs control
- End-user trials nearly 50% complete with 2 coatings manufacturers and 1 major end-user; Vic & Qld.

Market Value Drivers

- reduced expensive + toxic copper use
- safe, sustainable

ANTI-MICROBIALS

Proof-Of-Concept

- Calix materials suppress anti-biotic resistant bacteria = “Superbugs”

Market Value Drivers

- pathogen suppression, not a biocide
- excellent safety profile
- low / limited antibiotic resistance
- safe, sustainable

Latest Updates

Commercialisation: progress

- Australia: label registration; FY22 – in final stage of assessment as a crop protection product – APVMA (Australian Pesticides and Veterinary Medicines Authority)
- 2nd license in negotiation - EU distribution
- 3rd license in negotiation - global distribution

11 months' exposure – Williamstown, Vic



Test formulation 1.
- 50% copper (Cu), 50% Calix MgO

In-market formulation
- 100% Cu loading

Test formulation 2.
- 0% Cu, 100% MgO

- Soft Fouling: seaweed, slime etc = higher soft fouling cf. 100% Cu standard
- Hard, calcareous fouling: tube worms, barnacles, etc. = none evident, **equivalent control**

Development pathway; Stage 1 - Industry and Academic Engagement

Queensland Uni. Centre for Super Bug Solutions;

- collaborative research agreement & program finalised in cl. \$20k grant from state government – in-vitro testing underway
- Calix has also been invited as a participant in two Australian “superbug” project grant submissions



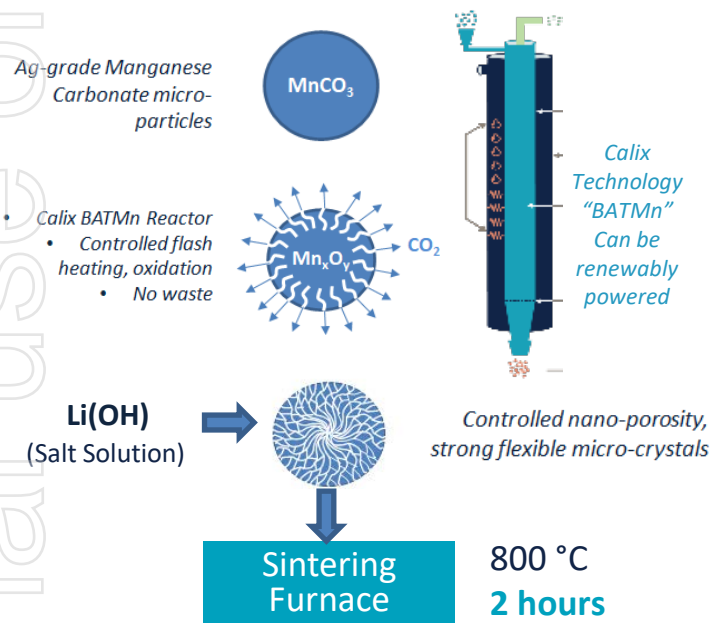


Advanced Batteries

Advanced Batteries – novel structured high power electrode materials

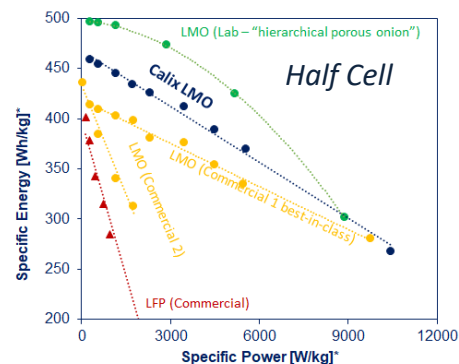
LOWER COST, SIMPLE, SAFE CHEMISTRY

Approx. 6x **lower energy** route than conventional lithium manganese oxide (LMO) production, and is producing **strong, active** “hierarchical porous onion (HPO) structures in the tiny crystals...”

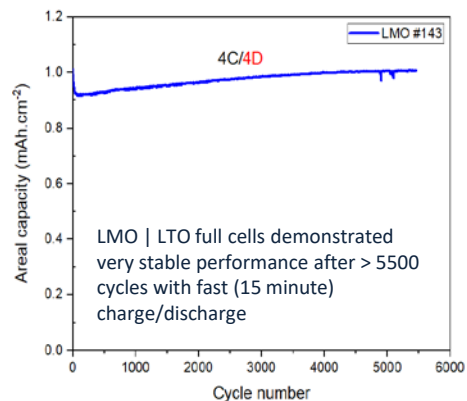


... we continue to develop and scale the process to further reduce the time and energy required for “product lithiation” = minimise the CO_2 footprint, and cost, of our cathode materials.

PROMISING PERFORMANCE



* Specific energy and power presented on a per unit weight of the cathode active material (CAM) basis
* All results are from half-cell electrochemical discharge rate screening tests with CAM loadings of 0.5 mAh/cm²

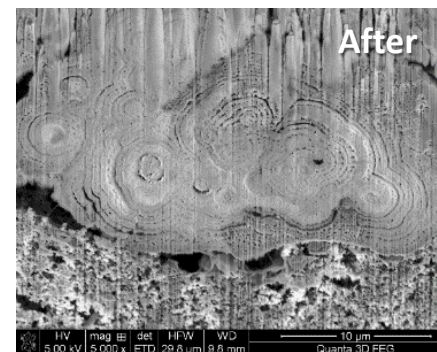
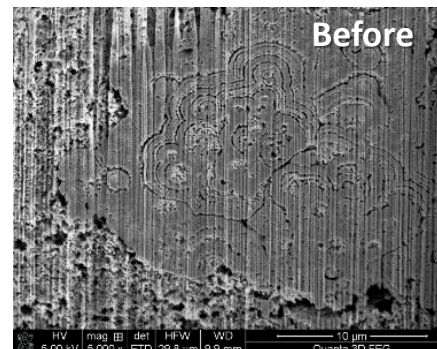


*full LMO | LTO coin cell, 1mAh/cm² cathode loading

Very promising early test results! Novel “HPO” (Hierarchical Porous Onion) structure suited to high power (fast charging/discharging) applications.

NOVEL STRUCTURE

Early test results very promising



Structure of Calix HPO LMO is preserved with no observed decay in novel structure of Calix LMO following extended electrochemical cycling (high magnification, cross-sectional images of cathode foils)



SCALE-UP UNDERWAY

Pilot line prototyping of Calix LMO pouch cells (30-50 test cells)

Q2 2022

Pilot production of Calix LMO (150-200 kg)

Q3 2022

Pilot line production of Calix LMO pouch cells for 2.4kWh battery pack

Q3 2022

Integration and demonstration of pack in EV application

Q4 2022

MEP Technologies
Battery Systems & Support

amte
QINETIQ



Our FY22 priorities...looking forward, target achieving all our milestones



ACHIEVED SO FAR ✓



Water

Revenue and Gross Margin growth via...

US: At least

- 1 new plant
- 1 major new US state entry



EU:

- First partner agreement
- Convert paid trials to customers
- 1 new plant



Asia:

- Re-establish Chinese AQUA-Cal+ sales



CO₂ Mitigation

Cement and Lime

- Successful test campaign conclusion – LEILAC-1
- Successful FID – LEILAC-2
- Convert at least two MOU's to full project / license agreements – “full-scale” application



Biotech

Crop Protection

- 2nd license agreement
- APVMA approval

Marine Coatings

- Successful initial trials with MTA partners

Next new biotech application...health / pharma

- Successful in-vitro study



Advanced Batteries

Successful full (coin) cell results

Initial positive pouch cell results

Scale-up production trials – cathode materials

First battery module – commercial format



Sustainable Processing

Refractories

- Convert MOU to full Project or License agreement

Spodumene

- Successful feasibility study
- Convert MOU to full Project or License MOU

Develop next new sustainable processing application ✓

Look-through valuation achieved – Carbon Direct investment into the LEILAC Group ✓



Board of Directors and Equity Structure

Board of Directors



Peter Turnbull, AM
Non-Executive Chair

Experienced Chair and Non-Executive Director with significant board and senior executive experience in the Australian and global resource, energy and technology commercialisation sectors.

Non-Executive Director of Karoon Energy Ltd. (ASX: KAR), Chair of medtech Auxita Pty Ltd, Chair of Airlie Energy, Chair of QADO Group/QADO Ventures and President of the Chartered Governance Institute (London).

Chair of Calix Remuneration and Nomination Committee, and Member of Audit and Risk Management Committee.



Helen Fisher
Non-Executive Director

CEO and Managing Director of Bio Capital Impact Fund (BCIF), a Non-Executive director and Chair of the Audit and Risk Management Committee of Paradigm Biopharmaceuticals Ltd (ASX:PAR) and Chair of the Victorian branch of AusBiotech.

Previously a partner of Deloitte for over 11 years, and led Deloitte's life sciences practice in Australia for 5 years, specialising in the financial services sector, with significant M&A transactions and strategic tax advice to publicly listed and large multinational companies.

Chair of Calix Audit and Risk Management Committee.



Jack Hamilton
Non-Executive Director

30 years multidisciplinary experience in local and overseas energy industries, including as a Director of NWS Ventures (Woodside North-West Shelf project).

Currently the Chairman of AnteoTech Ltd (ASX:ADO) and Non-Executive Director of Hazar Group (ASX:HZR). Previous Non-Executive Director positions include Renu Energy (ASX:RNE) and DUET Group (ASX:DUE).

Chair of Calix Technology Committee, and member of Audit and Risk, and Rem and Nom Committees.



Phil Hodgson
Managing Director & Chief Executive Officer

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.

7 years running a private consultancy providing strategy and M&A services across energy, food, infrastructure and water sectors.

Joined Calix in 2013 as CEO, became a Director in 2014 and is a member of Calix's Technology Committee.



Dr Mark Sceats
Executive Director And Chief Scientist

Co-founder of Calix, and a member of Calix's Technology Committee.

Qualified physical chemist with over 52 years' experience, numerous academic roles, and numerous fellowships and recognitions.

CEO of the Australian Photonics CRC for 14 years.

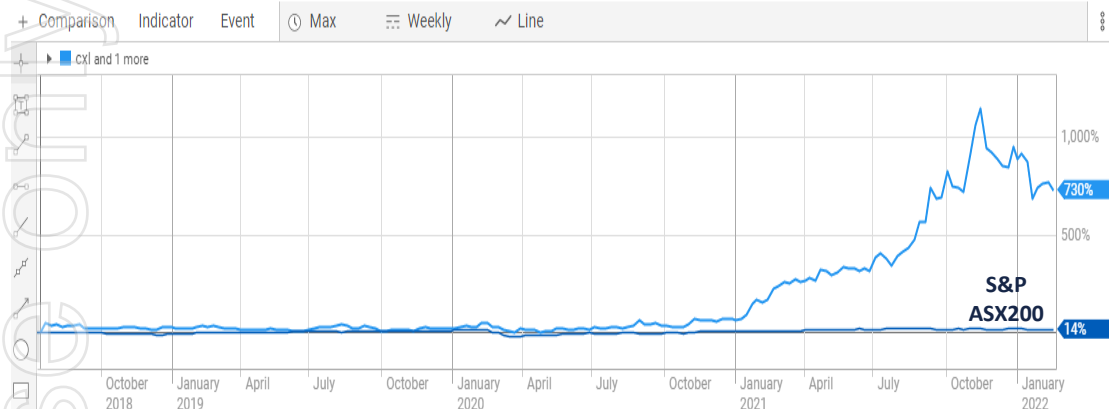
Author of more than 145 academic papers in physical chemistry and inventor of 42 patented inventions.

Listed on the ASX in July, 2018

ASX:CXL



Share Price Performance Since Listing



Further Equity Detail

As at 21 February 2022

Free Float	161.3m shares
Employee Incentive Scheme Options	5.6m options

As at 21 February 2022

Shares on issue	~161.3m
Share price for IPO Capital Raise	\$0.53 per share
Share price on IPO	\$0.62 per share
Current Share price	\$5.20 per share
Market capitalisation	~\$839m

Major shareholders

As at 21 February 2022

Board & Management	14.5%
Australian Super Pty Ltd	8.2%
Nicholas Merriman and associates	6.8%
Regal Funds Management	5.4%
Paul Crowther and family	5.3%

Glossary



Term	Meaning
Aluminium (Al)	Chemical element with the symbol Al
Anode	The negative electrode of a battery
APVMA	Australian Pesticides and Veterinary Medicines Authority
BATMn	Calix's core kiln technology – electrified – for battery and catalyst materials production
C, 2C, 4C, D	Charge rate, 1 C = charge in 1 hour, 2C charge in 30 min, 4C charge in 15 min etc. D is discharge – same metrics
Calcium (Ca)	Chemical element with the symbol Ca
Carbonation	The capture of carbon dioxide by contacting with lime (calcium oxide), to form limestone (calcium carbonate)
Cathode	The positive electrode of a battery
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Utilisation and Storage
CO ₂	Carbon Dioxide
Copper (Cu)	Chemical element with the symbol Cu
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
Electrode	The material that stores the lithium ions in a charged (anode) or discharged (cathode) state in a lithium ion battery
Electrolyte	The medium that allows ions to move between the battery electrodes, via the separator
ESG	Environment, Social and Governance considerations
FID	Final Investment Decision
Fines	Small particles, which are usually very difficult to handle in kilns etc as they simply get blown out
Green Hydrogen	Hydrogen that is produced from an electrolyser using renewable energy
HBI	Hot Briquetted Iron – “bricks” of relatively high purity iron ready for steel-making
HPO	“Hierarchical Porous Onion” - a crystal structure of lithium manganese oxide resembling tiny onion layers – allowing both strength and easier passage of lithium ions

Glossary



Term	Meaning
Iron	The chemical element, represent by “Fe” on the periodic table
Iron Ore	Iron oxide mixed with various other minerals, as mined and “pre-processed” (purified) as best as possible
LFP	Lithium Iron Phosphate – a battery cathode material
LMO	Lithium Manganese Oxide – a battery cathode material
Lithium (Li)	Chemical element with the symbol Li
Lithium Concentrate / Lithium Salt / “Mid-Stream” Lithium	A form of lithium that is high in lithium content, to be shipped and utilised by battery producers
Lithium ion	The ionic form of lithium (Li+) – a positively charged atom of lithium
LTO	Lithium Titanium Oxide – a battery anode material
LEILAC	Calix’s core kiln technology for Low Emissions Intensity Lime and Cement production with CO ₂ capture
Manganese Carbonate (MnCO₃)	Form of manganese used mainly in agriculture as a fertiliser supplement
Magnesium (Mg)	Chemical element with the symbol Mg
Manganese (Mn)	Chemical element with the symbol Mn
Metallurgical Coal	Very high carbon coal
MgO	Magnesium Oxide
MHL	Magnesium Hydroxide Liquid

Glossary



Term	Meaning
Nickel (Ni)	Chemical element with the symbol Ni
NCA	A battery cathode material made from nickel, aluminium and cobalt
NCM, or NMC	A battery cathode material made from nickel, manganese and cobalt
Pelletisation	The formation of pellets from finer materials to aid in handling
Potassium (K)	Chemical element with the symbol K
Separator	The barrier between the anode and the cathode that prevents them touching, inside the battery
Sodium (Na)	Chemical element with the symbol Na
Spodumene	A high lithium-containing ore, and the source of the majority of the world's lithium supply
α -Spodumene	A tight Li-crystal formation, from which extraction of Li is difficult
β -Spodumene	A loose Li-crystal formation, from which extraction of Li is much easier than the alpha-form
Reduce / Reduction	The process by which oxygen is removed
Reductant	A material that, through its chemical properties, carries out reduction
Sponge Iron	Iron Ore that has been reduced (had the oxygen removed)
Steel	Mainly iron, with some carbon and other trace metals such as nickel, manganese etc depending upon the grade of steel being made
Sulphur (S)	Chemical element with the symbol S
Tpa	Tonnes per annum
Wh / kWh	Watt-hours / kilowatt-hours - a measure of energy



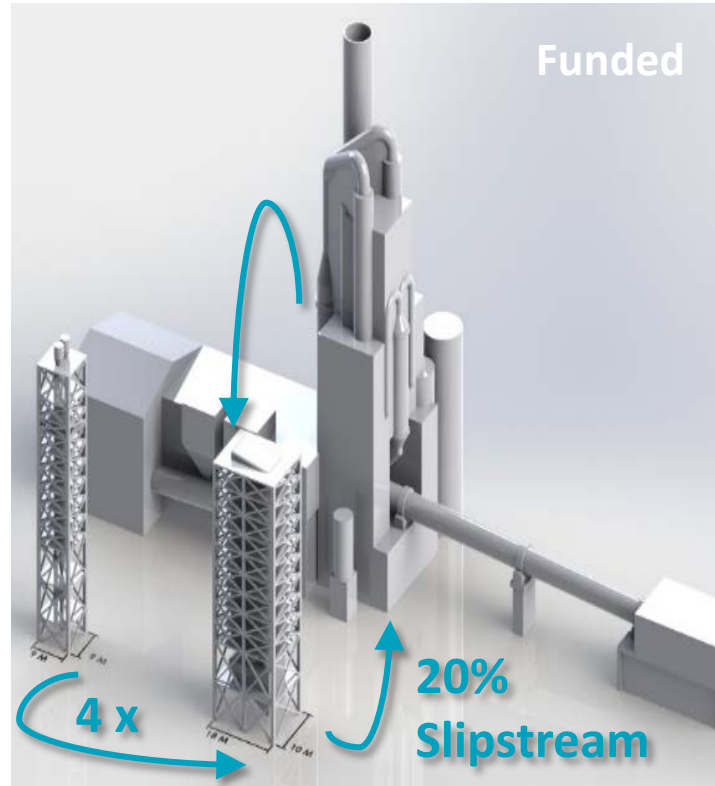
Additional Slides

CO₂ Mitigation – Calix's LEILAC Technology

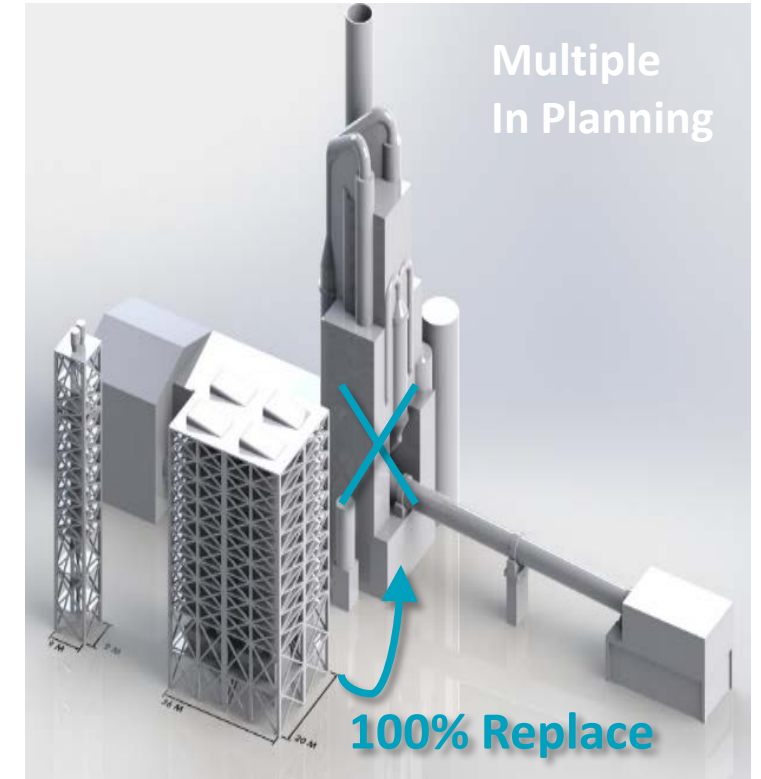
LEILAC-1 Belgium 2019
25,000 Tonnes / Year CO₂



LEILAC-2 Hanover early 2024
100,000 Tonnes / Year CO₂



LEILAC-3
500,000 Tonnes / Year CO₂



20 partners, including

HEIDELBERGCEMENT

TARMAC
A CRH COMPANY

CEMEX
Building a better future

SOLVAY

Lhoist

CINAPOR

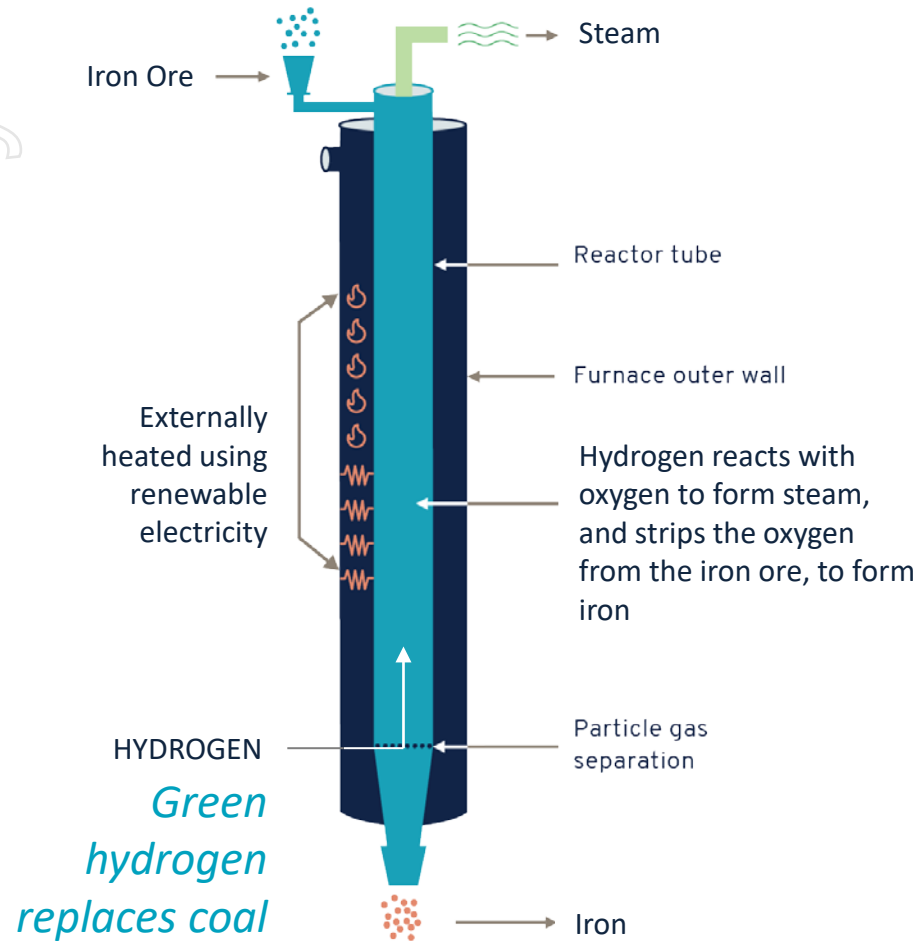
ENGIE
Laborelec

POLITECNICO
MILANO 1863

BUT we need to mitigate 2.2 billion tonnes pa = 4,400 LEILAC-3's = 1 built every ~3 days from now until 2050 !!

Sustainable Processing – Zero Emissions Steel Technology (“ZESTY”)

New Patent Filed for Zero Emissions Iron and Steel... **Key Update**



Iron and Steel-making is responsible for 7% of global CO₂ emissions – just behind cement and lime as the largest industrial emitter.

Calix’s “ZESTY” (Zero Emissions Steel TechnologY) Process is using green hydrogen instead of coal, replaces the blast furnace, and is targeting:

- **REDUCED TEMPERATURE OF OPERATION**
- **NO PELLETISATION REQUIRED – CAN PROCESS FINES**
- **ABLE TO BE RENEWABLY POWERED, WITH INTERMITTENT OPERATION**
- **CAN APPROACH THEORETICAL MINIMUM HYDROGEN USE**

Design upgrade of Calix’s pilot scale reactor underway. Ores received from potential customer for testing from March, 2022.

Because there's only one Earth...



...Mars is for quitters

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