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Sally Auld
Chief Investment Officer



PointsBet Holdings Limited / ASX:PBH

Sam Swanell
Chief Executive Officer



Graincorp Limited / ASX:GNC

Robert Spurway
Managing Director and Chief Executive Officer



Pacific Edge Limited / ASX:PEB

Dr. Peter Meintjes
Chief Executive Officer



Vulcan Energy Resources Limited / ASX:VUL

Dr. Francis Wedin
Managing Director and Chief Executive Officer



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Housekeeping: trouble shooting

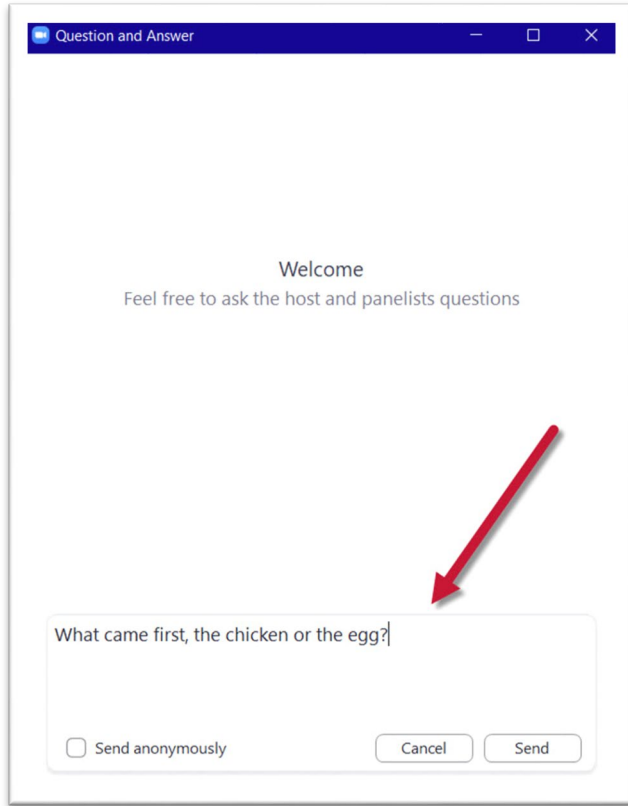
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Housekeeping: trouble shooting



The screenshot shows a window titled "Question and Answer" with a dark blue header. The main content area is white and contains the text "Welcome" and "Feel free to ask the host and panelists questions". At the bottom, there is a text input field containing the text "What came first, the chicken or the egg?". A red arrow points to the input field. Below the input field, there is a checkbox labeled "Send anonymously", a "Cancel" button, and a "Send" button.

Your Participation

- > To submit your written questions, use the Q&A tab at the bottom of your screen
- > Note that your questions will not be seen by other attendees

Agenda

- | | |
|---------|---|
| 10:00am | ASX Introduction, Ian Irvine, MC |
| 10:05am | Market Update, Sally Auld
Chief Investment Officer |
| 10:20am | Pacific Edge Limited, Dr Peter Meintjes
Chief Executive Officer |
| 10:40am | PointsBet Holdings Limited , Sam Swanell
Chief Executive Officer |
| 11:00am | Graincorp Limited , Robert Spurway
Managing Director and Chief Executive Officer |
| 11:20am | Vulcan Energy Resources Limited, Dr. Francis Wedin
Managing Director and Chief Executive Officer |

Market Update

Sally Auld
Chief Investment Officer

JBWere

Pacific Edge Limited / ASX:PEB

Dr Peter Meintjes
Chief Executive Officer



PACIFIC EDGE LTD
CANCER DIAGNOSTICS COMPANY



ASX CEO CONNECT

Dr Peter Meintjes
Chief Executive

6 December 2022



PACIFIC EDGE
CANCER DIAGNOSTICS COMPANY

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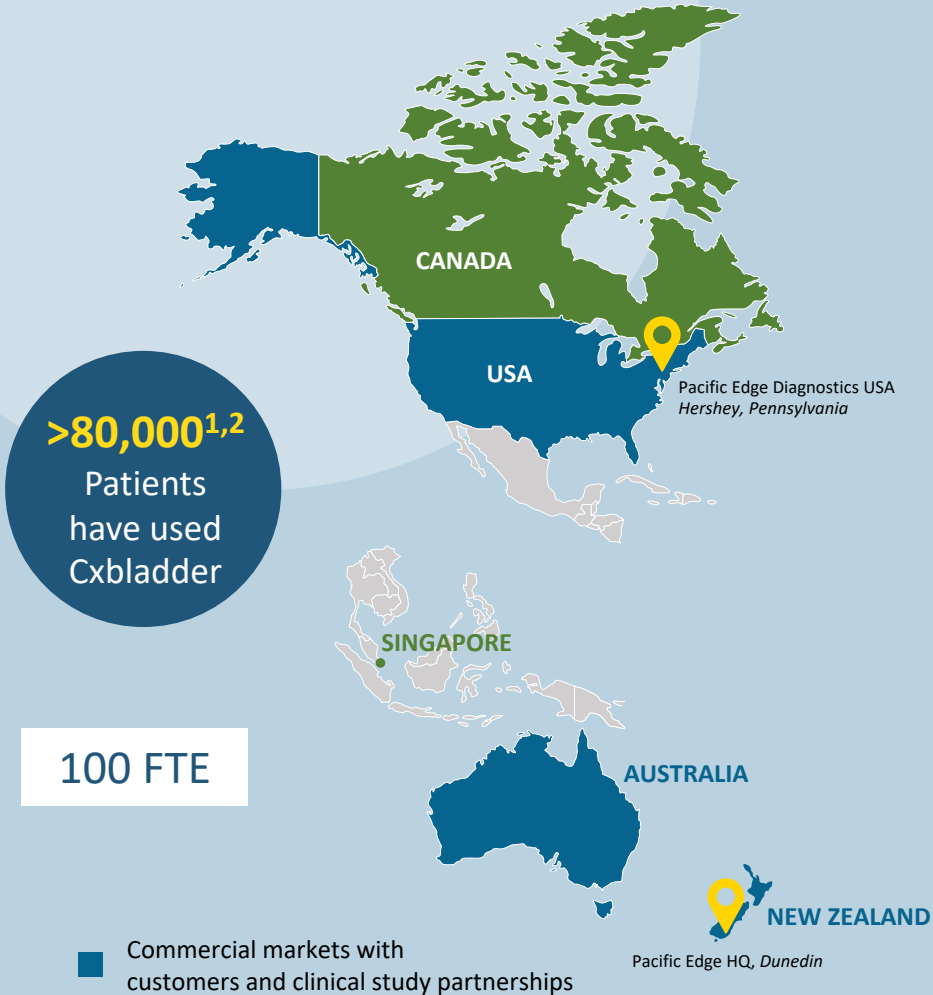
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PACIFIC EDGE AT A GLANCE: GROWING GLOBALLY



>80,000^{1,2}
Patients have used Cxbladder

100 FTE

- Commercial markets with customers and clinical study partnerships
- Markets with clinical study partnerships

1. Company data
2. Figures are cumulative across company history and represent unique patients
3. Total laboratory throughput (TLT)
4. Cash, short term deposits and term-deposits at 30 September 2022

FROM IP DEVELOPMENT TO PATIENT

- **IP:** 4x patent families in bladder cancer, with >80 patents including RNA biomarkers and their analysis algorithms
- **Cxbladder:** Advanced genomic biomarker tests from a non-invasive urine sample for the early detection and management of bladder cancer
- **Clinical Evidence:** Peer-reviewed clinical validity and utility data that shows Cxbladder outperforms Standard of Care (SoC)
- **Reimbursement:** Cxbladder tests reimbursed by Medicare and Kaiser Health Plan in the USA
- **Patient Empowerment:** Non-invasive efficacious testing offers opportunity for increased patient compliance with surveillance and management regimes

34%
Growth in 1H23 test volumes to >14.9k tests³

69%
Growth in 1H23 operating revenue to \$8.7m

\$93.5M⁴
Cash reserves to support growth



CXBLADDER IN THE PATIENT CARE PATHWAY

Typical standard of care on the patient care pathway

Primary Care Physician
Patient presents with hematuria and clinician cannot rule out cancer. Patient referred to urologist

Urologist
Current guidelines for hematuria evaluation recommend ~95% get cystoscopy¹ ahead of diagnosis & treatment

Urologist
Monitor for recurrence with cystoscopy, frequency varies according to patient presentation

VALUE PROPOSITION

Cxbladder TRIAGE (CxbT) Cxbladder DETECT (CxbD) Cxbladder MONITOR (CxbM)



For use in the **PRIMARY CARE** and **SPECIALIST** settings to de-intensify hematuria workup or rule out urothelial cancer (UC)

Assists clinicians to **safely de-intensify** hematuria evaluation from low incidence populations
Sensitivity 95% / NPV 99%

For use by **SPECIALISTS** to detect the presence of urothelial cancer and adjudicate diagnostic dilemmas

Assists clinicians to **adjudicate diagnostic dilemmas** (e.g., equivocal cystoscopy & atypical cytology) in any patient population
Sensitivity 82% / Specificity 85% / NPV 97%

For use by **SPECIALISTS** to monitor for recurrence at a frequency proportional to risk

Assists clinicians in **monitoring for UC recurrence**. Intended to reduce the frequency of surveillance cystoscopy and improve patient compliance
Sensitivity 93% / NPV 97%

Cxbladder
TRIAGE

Cxbladder
DETECT

Cxbladder
MONITOR

Sensitivity: the likelihood of the test to be positive in a patient with the disease **Specificity:** the likelihood of the test to be negative when the patient does not have the disease; **NPV:** the likelihood of a negative test being a true negative.

¹ AUA Guidelines and Woldu SL, Ng CK, Loo RK, Slezak JM, Jacobsen SJ, Tan WS, et al. (2021a). "Evaluation of the New American Urological Association Guidelines Risk Classification for Hematuria." *J Urol* 205(5): 1387-1393.

BLADDER CANCER

IS A SIGNIFICANT GLOBAL HEALTHCARE CHALLENGE

US\$7.6b
Total
Addressable
Market (TAM)⁷

~550K

Annual cases
and growing¹

~200K

Annual
deaths¹

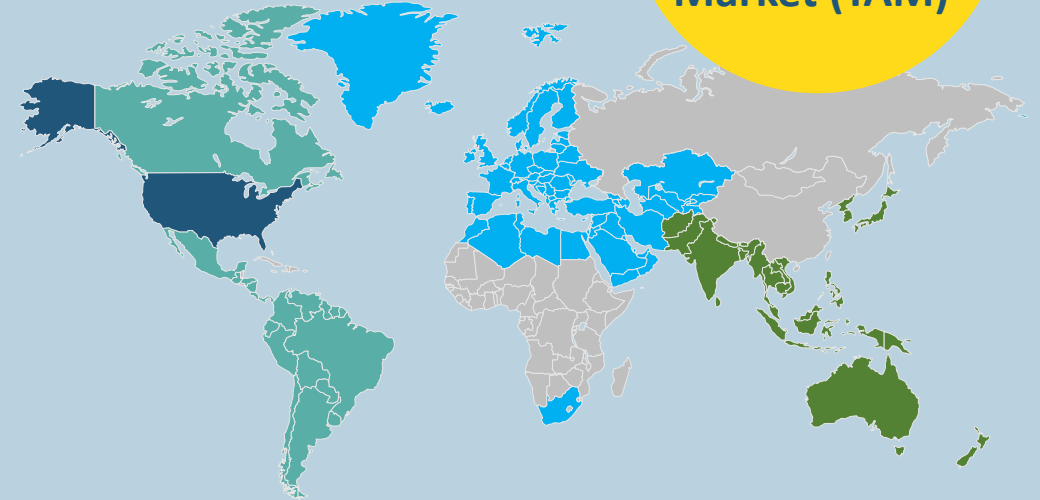
6TH

Most common
cancer in men¹

~70%

Recurrence

- Hematuria evaluation for suspected urothelial cancer has high detection and surveillance costs²
- Current American Urological Association guideline leads to recommendation for >90% cystoscopy of patients presenting with hematuria³
- Under guidelines in the US, 3.4 million patients should be worked up for cystoscopy, but only 1 million undergo the procedure⁴
- Only 40% of patients comply with existing standards of care due to invasive and high-cost diagnostic procedures⁵



- USA – TAM⁶ US\$3.5b
- Americas (non-US) – TAM US\$0.5b
- EMEA (w/o most of Africa) – TAM US\$1.4b
- APAC (w/o China) – TAM US\$2.2b

1. Bray et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 3 cancers in 185 countries. *Ca Cancer J Clin.* 2018;68:394-424

2. Botterman et al. The health economics of bladder cancer: a comprehensive review of the published literature. *Pharmacoeconomics* 2003;21(18):1315-30.

3. AUA Guideline and Woldu SL, Ng CK, Loo RK, Slezak JM, Jacobsen SJ, Tan WS, et al. (2021a). "Evaluation of the New American Urological Association Guidelines Risk Classification for Hematuria." *J Urol* 205(5): 1387-1393.

4. Kenigsberg, A, et al. The Economics of Cystoscopy: A Microcost Analysis, *Urology* 157: 29–34, 2021.

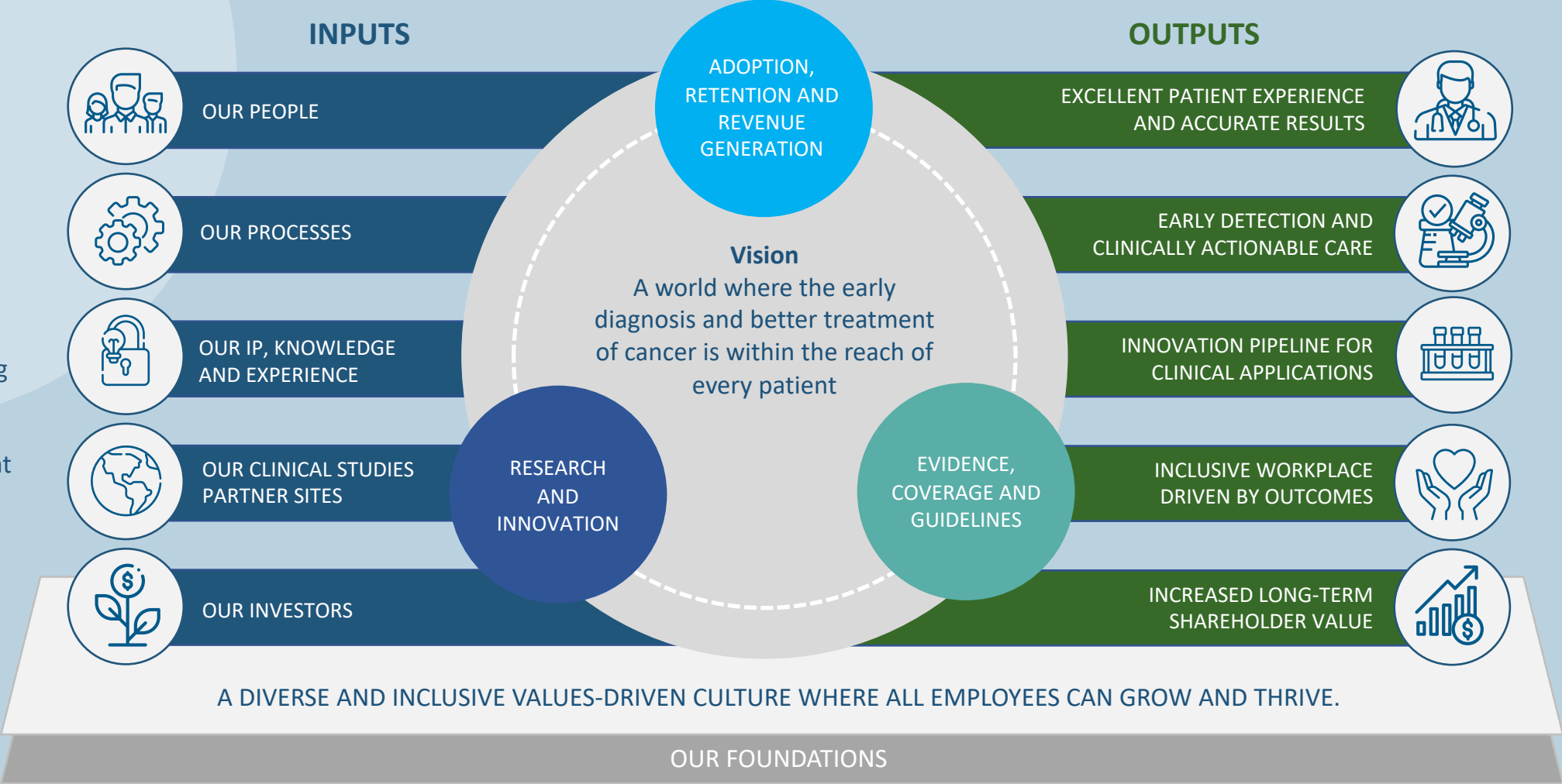
5. Schrag, D et al. Adherence to Surveillance Among Patients With Superficial Bladder Cancer JN1C, Volume 95, Issue 8, 16 April 2003.

6. TAM is the Total Addressable Market based on Pacific Edge estimates.

7. Pacific Edge estimates

OUR INVESTMENT PROGRAM FOR GROWTH

Mission
To help improve lives and patient outcomes by providing leading solutions for the early detection and management of cancer.



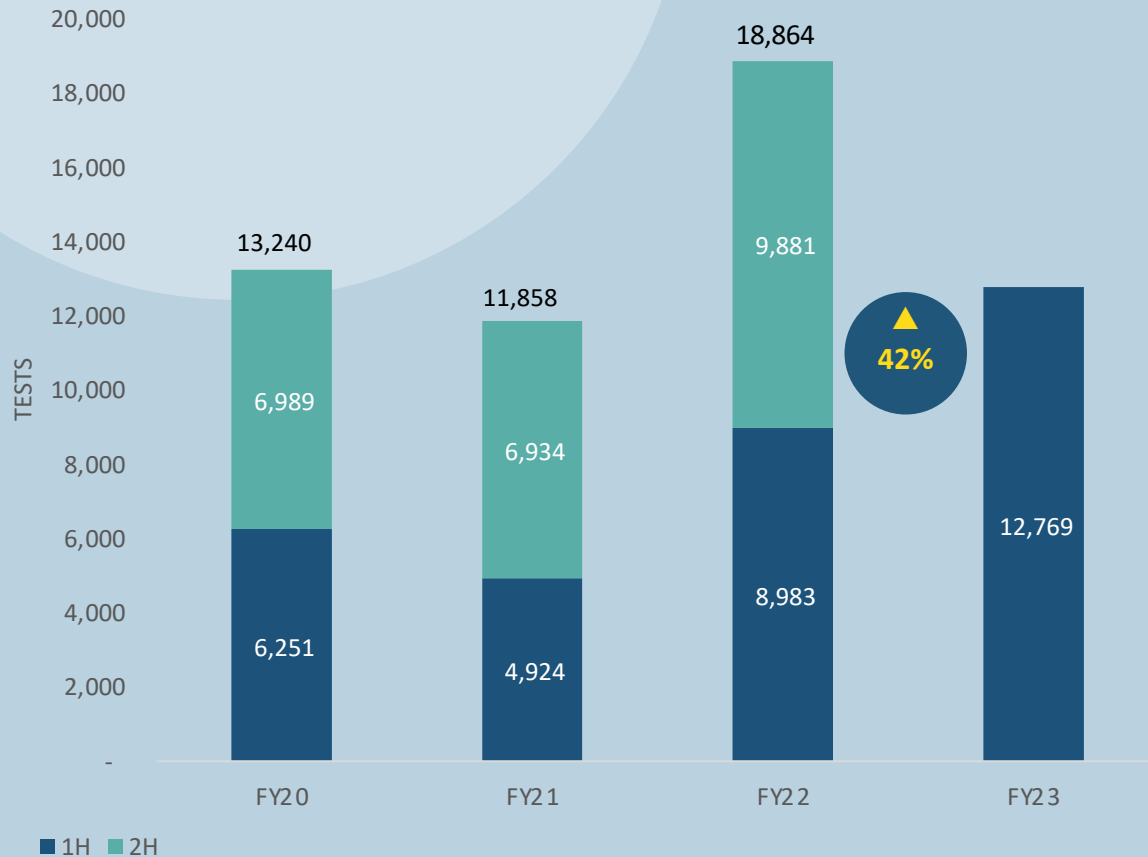


STRONG GROWTH IN THE US: PACIFIC EDGE'S LARGEST MARKET

US GENERATES 86% OF TEST VOLUME

USA test volumes¹

Commercial tests represent 83% of 1H23 TLT in the USA



KEY US PAYORS ACTIVATED



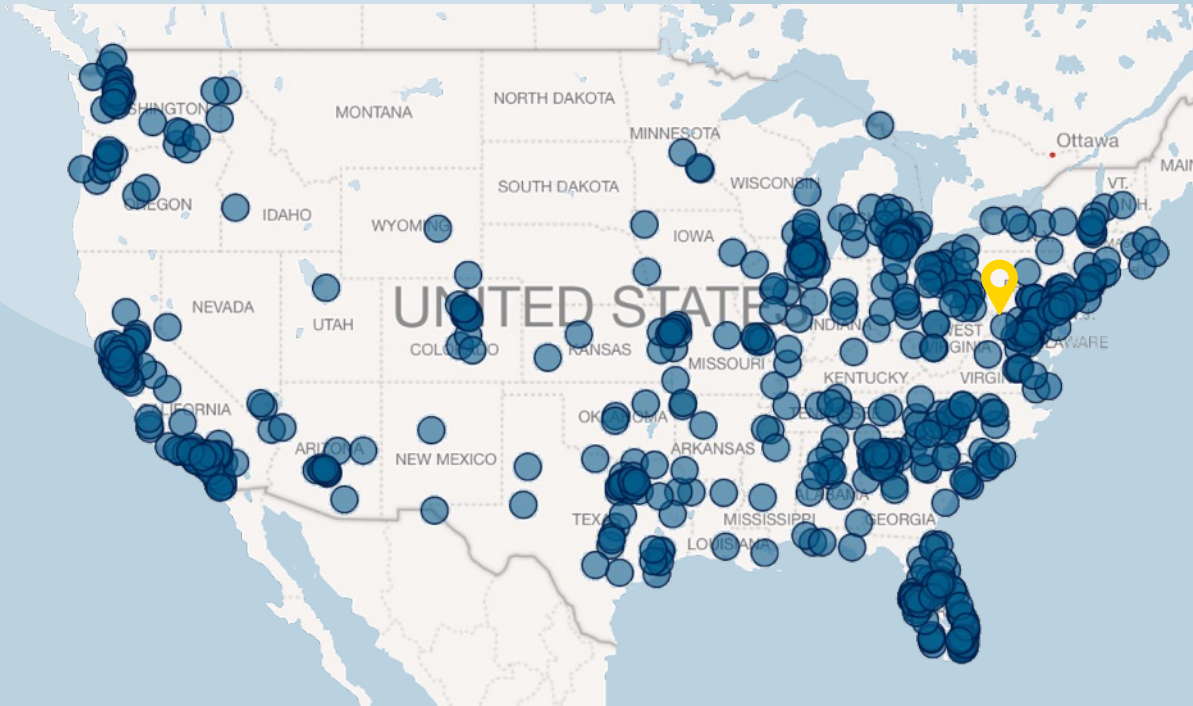
- The Kaiser Health Plan covers over 12.5m members, with >85% of those members in California
- 2 Kaiser accounts in PEB's Top 20 Accounts. 11 Kaiser sites across Southern California ordering in 1H23
- EMR integration on track with Kaiser dedicating a project team to the implementation
- The Veterans Administration (VA) is the second largest integrated healthcare system in the US serving >9m veterans each year
- DRIVE clinical study, has enrolled 80% of target patients. It is an important engagement with VA urologists to determine utility in a cohort of VA patients
- Centers for Medicare & Medicaid Services (CMS) covers more than 61.5m US citizens over 65 and people on low incomes
- CMS continues to reimburse but proposed LCD creates uncertainty
- Focus on selling to urologists who order based on medical necessity

¹Total Laboratory Throughput including commercial, pre-commercial and clinical studies testing



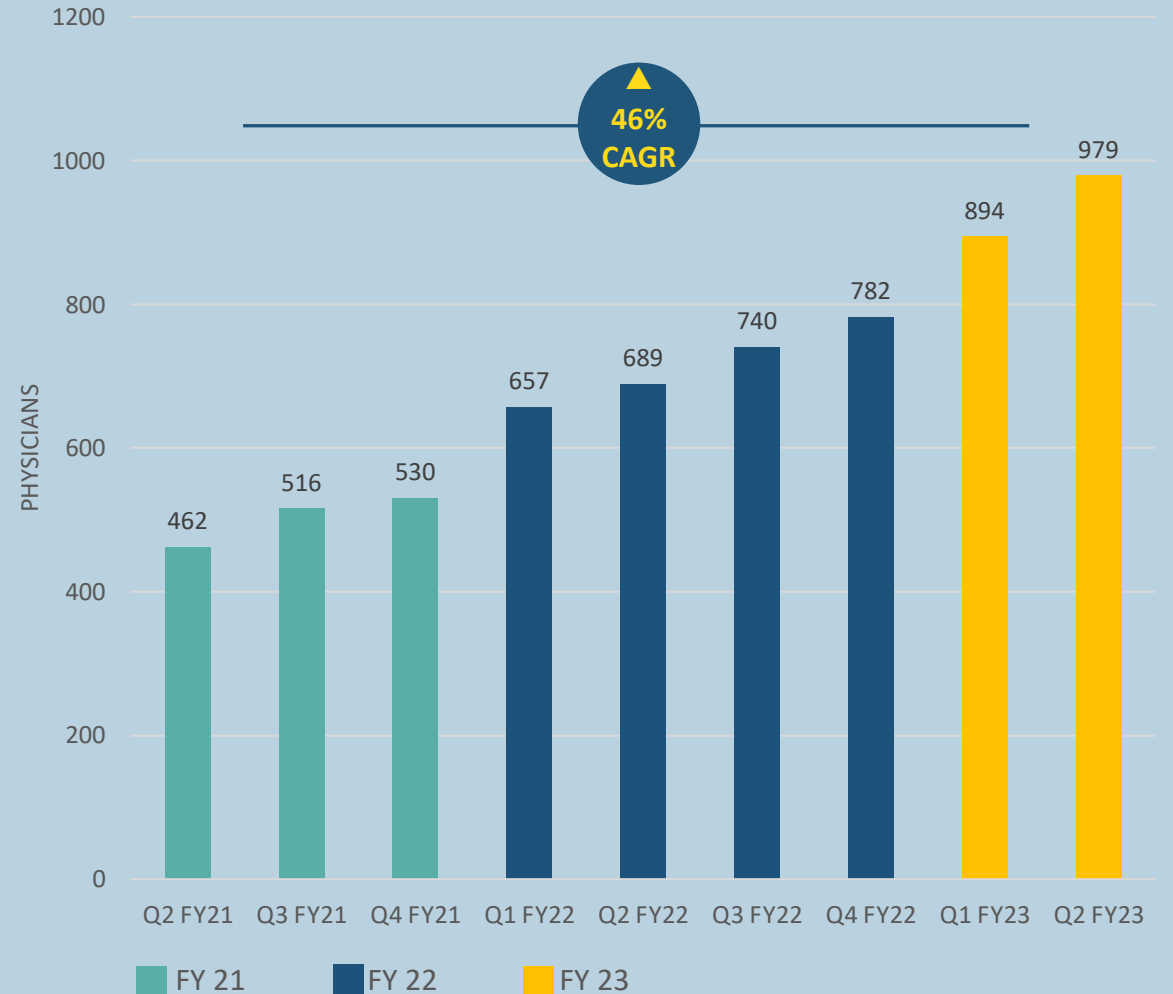


INVESTMENTS ALREADY DRIVING US ADOPTION AND RETENTION



- Distribution of Current U.S. Customers
- 📍 Pacific Edge Diagnostics USA, Hershey, Pennsylvania

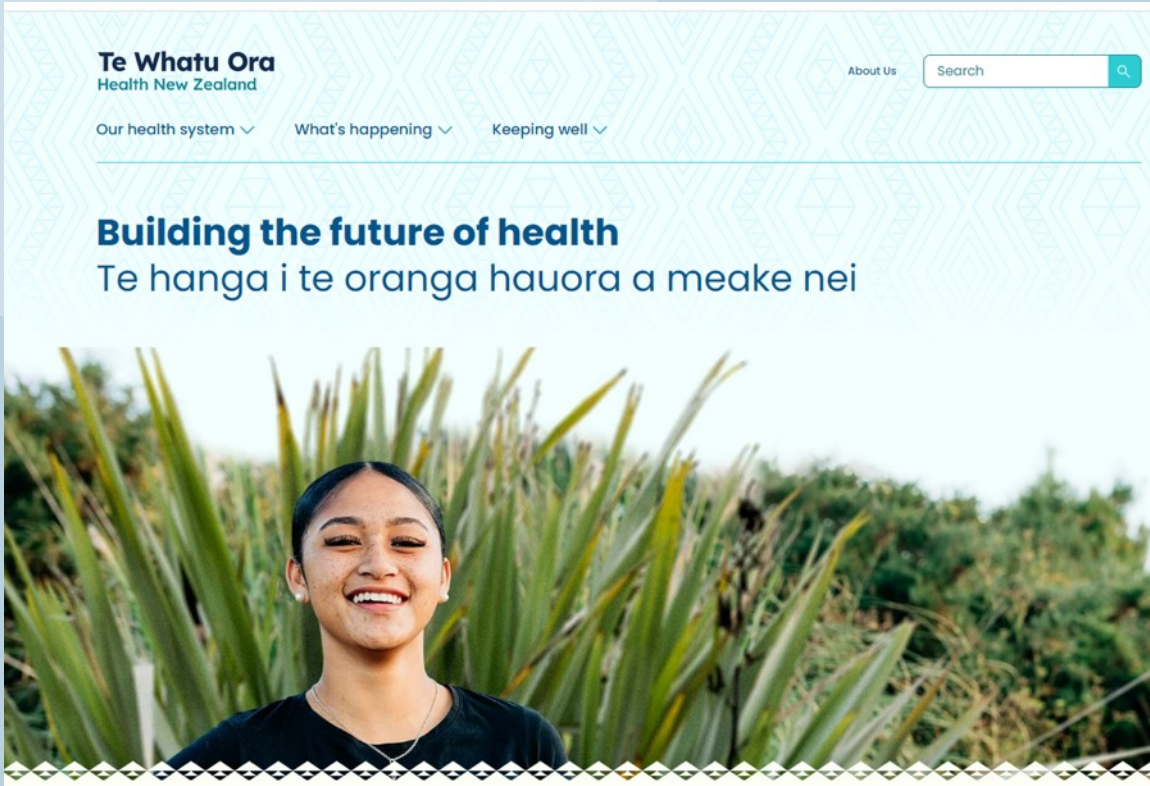
Unique physicians ordering Cxbladder





APAC: NEW ZEALAND AT THE FOREFRONT WITH ADOPTION BY PRIMARY CARE

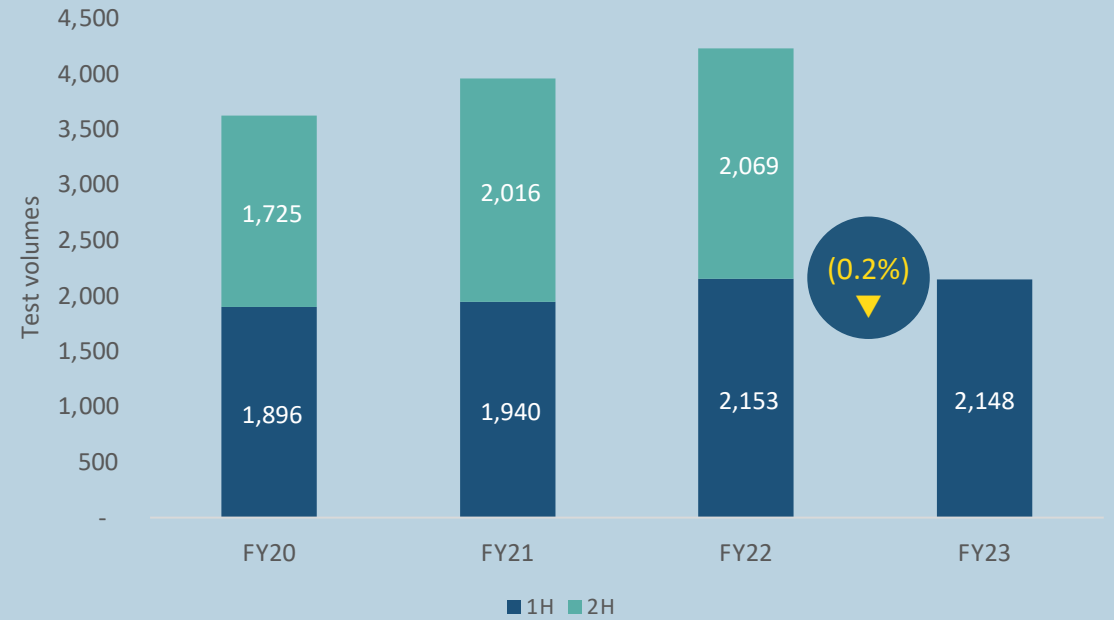
APAC GENERATES 14% OF TEST VOLUME



Pacific Edge has Cxbladder coverage in 14 of the 20 new Te Whatu Ora, Health New Zealand, regions, representing >70% of the country's population

APAC QUARTERLY TEST VOLUMES¹

Commercial tests represent 84% of TLT in 1H23 for APAC



- Volumes unchanged in APAC driven by slower growth in NZ
 - MidCentral and Whanganui district health regions adopted Cxbladder in the primary care setting (Sept, 2022)
- Australia and Southeast Asia still in business development
 - New SEA BDM (+1 FTE, hired in Sept, 2022)
 - User experience studies initiated in Australia and Singapore

¹Total Laboratory Throughput including commercial, pre-commercial and clinical studies testing





GLOBAL GUIDELINES PIVOTAL TO THE WIDESPREAD ADOPTION OF CXBLADDER

Recognition in national guidelines deepens and accelerates commercial use of Cxbladder tests and entrenches coverage by nationally relevant healthcare institutions.



American Urological Association

- Most influential and largest urological association in the world
- U.S. based - 23,000 members worldwide.
- Standards of care relevant to Cxbladder:
 - Hematuria and micro-hematuria management
 - Non-muscle invasive bladder cancer (NMIBC). (Standard makes an allowance for the use of biomarkers in surveillance)
- Guidelines reviewed as new evidence emerges
- Pacific Edge can influence this process by publishing new clinical evidence

www.auanet.org



European Association of Urology

- Leading urologic authority in Europe
- Netherlands-based, 18,000 members
- Standards relevant to Cxbladder
 - Non-muscle invasive bladder cancer (NMIBC)
 - Guidelines loosely followed in New Zealand, Australia and Singapore, but localised at a national and regional level
- Guidelines recently reviewed with favourable biomarker language and are updated regularly

www.uroweb.org

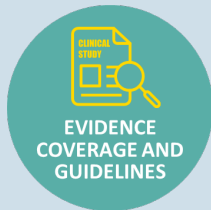


National Comprehensive Cancer Network®

- US-based not-for-profit alliance of 32 leading US cancer centres
- Bladder cancer standard suggests biomarkers may be considered during surveillance of high-risk non-muscle-invasive bladder cancer
- Guidelines reviewed annually. PEB will resubmit in every year where there is new peer-reviewed evidence for Cxbladder
- Clinical Dossier updated for next review in April 2023

www.nccn.org





CLINICAL EVIDENCE GENERATION TOWARDS GUIDELINE INCLUSION (1/2)

STUDY	AIM	LOCATIONS	ENROLLED SITES*	STATUS**
US Primary Study	Prospective, single-arm, observational study to develop clinical evidence for Cxbladder tests, accurate risk stratification, intensifying or de-intensify hematuria evaluation and assistance in adjudicating equivocal cystoscopy or urine cytology	USA	12/12	<ul style="list-style-type: none"> - Enrolment complete - Analysis complete - Publication pending
Singapore Study	Prospective, single-arm, observational study to develop clinical evidence for Cxbladder tests, accurate risk stratification, intensifying or de-intensify hematuria evaluation and assistance in adjudicating equivocal cystoscopy or urine cytology	Singapore	4 / 4	<ul style="list-style-type: none"> - Enrolment complete - Analysis complete - Publication pending
STRATA	<p><u>S</u>afe <u>T</u>esting of <u>R</u>isk for <u>A</u>symptomatic <u>M</u>icrohematuria</p> <p>Demonstrate the clinical utility of Cxbladder using a prospective, two-arm randomized design to safely risk-stratify patients and rule out from further hematuria evaluation</p> <ul style="list-style-type: none"> • Safely risk stratifying patients in order to rule out from cystoscopy • Demonstrate the clinical utility of Cxbladder against the AUA guidelines 	USA Canada	11 / 11	<ul style="list-style-type: none"> - Enrolment total is 421, including 103 'low risk' subjects that are the focus of the study - Target enrolment: ~600 patients, including 120 low risk subjects randomized to test arm - Last patient in: Q2 2023 - Follow up: until Q2 2024
DRIVE	<p><u>D</u>etection and <u>R</u>isk Stratification in <u>V</u>eterans Presenting with Hematuria</p> <p>Prospective, single-arm, observational study to demonstrate the clinical validity & utility of Cxbladder tests in risk stratifying Veterans presenting with hematuria</p> <ul style="list-style-type: none"> • Demonstrate performance with Veterans and contribute to commercial adoption of Cxbladder for use with Veterans • Critical for adoption of Cxbladder by VA. Contributes to AUA Guidelines • Recruitment re-started after COVID-related delays • Targeting inclusion of all veterans presenting for evaluation of hematuria 	VA Sites (USA)	10 / 11	<ul style="list-style-type: none"> - Enrolment total is 507 - Target enrolment: ~600 patients - Last patient in: Q2 2023 - Follow up: until Q2 2025

*Estimated number of enrolled sites

**All dates are best-case estimates and subject to change



CLINICAL EVIDENCE GENERATION TOWARDS GUIDELINE INCLUSION (2/2)

STUDY	AIM	LOCATIONS	ENROLLED SITES*	STATUS**
DEDUCT	<p><u>D</u>etection of <u>D</u>isease in the <u>U</u>pper tra<u>C</u>T Prospective, single-arm, observational study to validate performance of Cxbladder for the detection of urothelial carcinoma (UC) in the upper tract (UTUC)</p> <ul style="list-style-type: none"> Evaluate Cxbladder to safely avoid ureteroscopy Safely risk stratify patients suspected to have UTUC and avoid unnecessary ureteroscopy and radiation exposure through imaging Targeting inclusion of Cxbladder utility for UTUC in AUA guidelines 	USA	1 / 3	- One site is open for this pilot study and the first patient is expected by Dec 2022
LOBSTER	<p><u>L</u>ongitudinal <u>B</u>ladder Cancer <u>S</u>tudy for <u>T</u>umor <u>R</u>ecur<u>R</u>ence Prospective, single-arm, observational study to evaluate the performance characteristics and clinical utility of CxbM in a new surveillance protocol vs standard of care over four visits</p> <ul style="list-style-type: none"> Safely risk stratify patients under surveillance for recurrence of UC Safely alternate CxbM with cystoscopy for intermediate and high-risk patients under surveillance for recurrence of UC Targeting AUA guidelines inclusion for biomarkers as an alternative to cystoscopy in a surveillance setting 	USA (including some VA sites) Australia	2 / 10	<ul style="list-style-type: none"> Two sites are open and another 8 are at pre-activation. Enrolment is now 27 patients. Each site will enroll 100 patients within 12 months and follow up for another 12 months

*Estimated number of enrolled sites

**All dates are best-case estimates and subject to change





INVESTIGATOR INITIATED TRIALS – SUPPLEMENTING OUR EVIDENCE PROGRAM

What are Investigator Initiated Trials?

- Investigator Initiated Studies (IITs) are proposed by investigators and supported by Pacific Edge
- IITs typically provide clinical utility evidence at modest scale
- They promote familiarity and confidence with Cxbladder, the test result and how Cxbladder can be used to manage patients
- Supports local data development for market access and adoption



Left to right - Royal Prince Alfred Hospital (Sydney), UT Southwestern (Dallas), Canberra Hospital (ACT)

- ***Return on investment is expected in the form of publications, abstracts and presentations from Principle Investigators of an IIT***

IIT Study Aim	Sites	Publications
Hematuria Evaluation: Local clinical validity evidence for internal hospital guidelines and budget development	6	2x Conference Abstracts
Surveillance: Local clinical validity evidence for internal hospital guidelines and budget development	7	2x Conference Abstracts
CU of Cxbladder to identify subclinical tumors in white light negative patients, confirmed by blue light	1	Pending
Risk-based hematuria evaluation of microhematuria patients by Cxbladder	1	Pending
Risk-stratification of surveillance patients for prioritization of post-TURBT care by Cxbladder	2	1x Conference Abstract



RESEARCH AND INNOVATION

DRIVING IP TO TECHNOLOGY

- Evaluate ‘product concepts’ to address unmet clinical needs
- +2 scientists to explore market potential of various product concepts including:
 - Prognostics or companion diagnostics in urology
 - Adjacent disease (with molecular signal in the urine)
- +2 developers and bioinformaticians to improve platforms, integrations and analysis capabilities
- MONSTER Study
- Examining new markers of **Minimum Residual Disease (MRD)**
 - Surveillance for bladder cancer immediately following surgical intervention (vs CxbM which is used six months after intervention for recurrence)



Christchurch Hospital

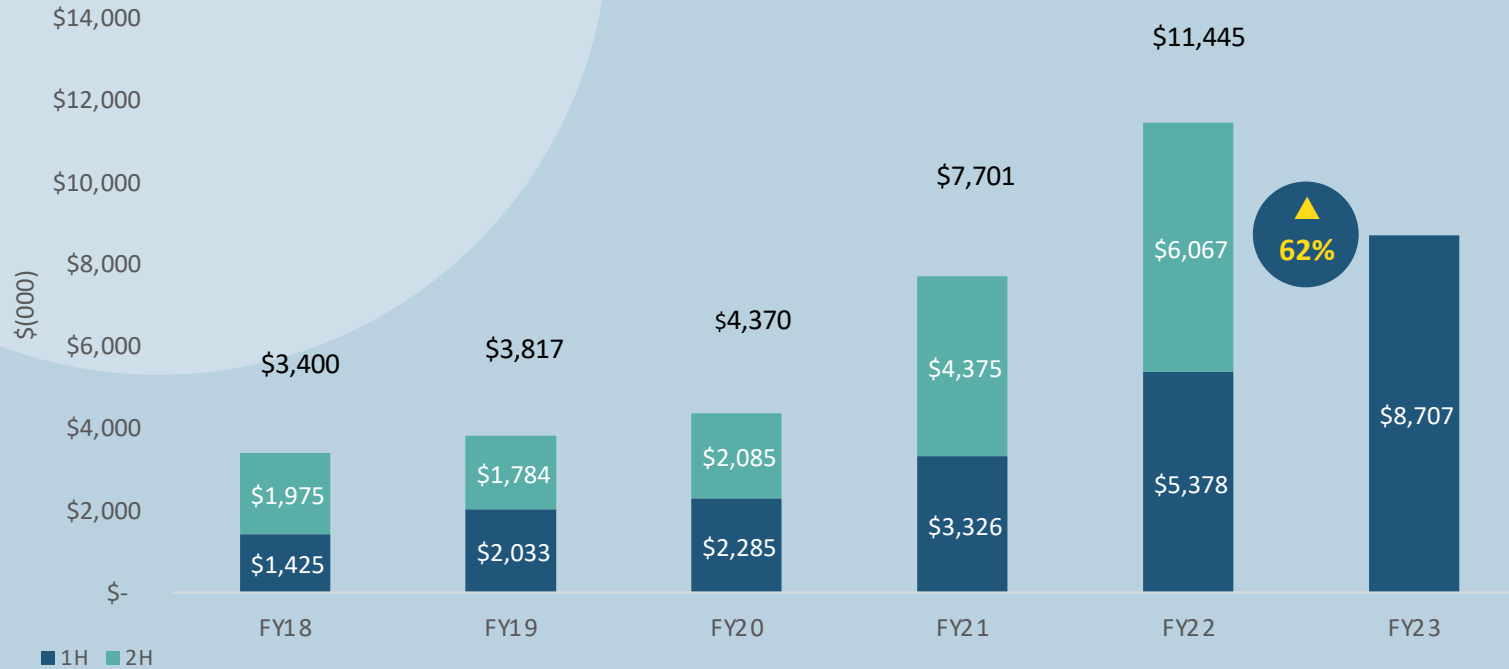


<p>MONSTER</p>	<p><u>M</u>ONitoring <u>S</u>tudy of post-<u>T</u>reatment <u>E</u>ffectiveness for <u>R</u>esidual Disease Single-arm, observational study to validate the performance characteristics of Cxbladder against white light cystoscopy during surveillance of UC</p> <ul style="list-style-type: none"> • Christchurch study to measure residual disease • To safely risk stratify patients for residual disease prior to the 6-week re-resection for high grade patients or the 3-month flexible cystoscopy check for all patients 	<ul style="list-style-type: none"> - Finalizing protocol documentation and commenced engagement with ethics committee - Target (Q1 2023) first patient
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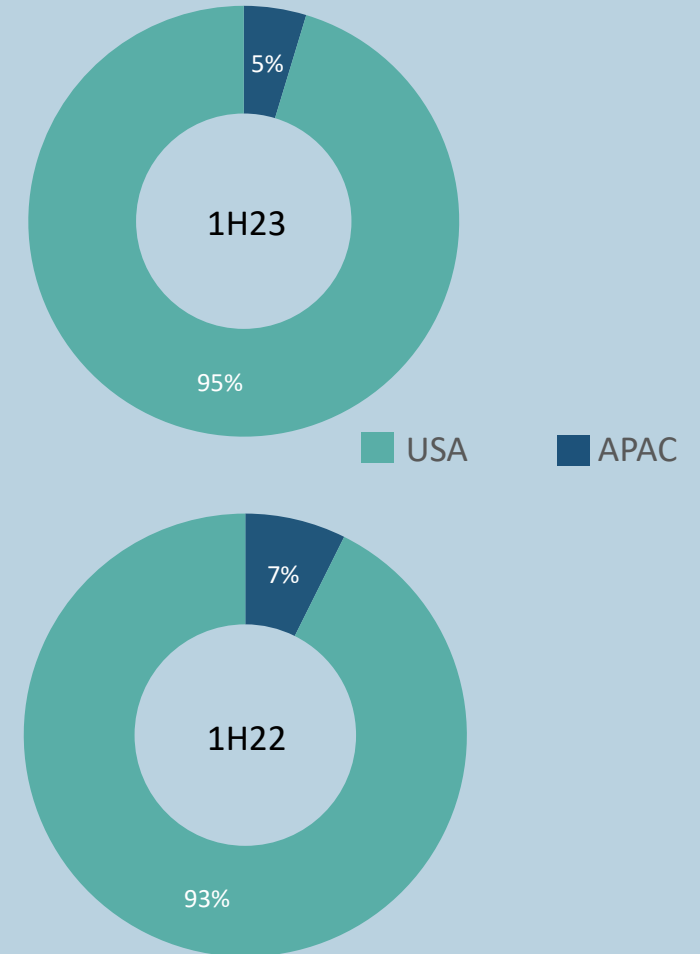
1H23 FINANCIAL RESULTS OVERVIEW

US TEST COMMERCIAL TEST VOLUME GROWTH AND FX DRIVING REVENUES

Pacific Edge 1H23 Operating Revenue



Regional Revenue Split



- Operating Revenue grew \$3.3m, with \$2.4m driven by the 35% increase in commercial tests (42% increase in the US) and \$0.9m of the growth due to the weakening of the New Zealand dollar against the United States Dollar
- US continues to grow share of total revenue

US TEST VOLUME GROWTH AND FX GAINS LIFT REVENUE

STRONG BALANCE SHEET SUPPORTS GROWTH INVESTMENTS

Half year to 30 September	2022	2021	Variance	Change
	\$000	\$000	\$000	%
Operating revenue	\$8,707	\$5,378	\$3,329	62%
Total revenue	\$13,593	\$6,730	\$6,863	102%
Operating expenses	\$24,164	\$15,715	\$8,449	54%
Total comprehensive loss	-\$10,571	-\$8,985	-\$1,586	18%
Cash receipts from customers	\$7,316	\$5,370	\$1,946	36%
Net operating cash outflow	-\$13,972	-\$8,616	-\$5,356	62%
Net cash, cash equivalents and short term deposits	\$93,455	\$91,586	\$1,869	2%

- Total income lifted by increase in interest income and FX gains on mark to market of US cash balances (~\$3.0m)
- Expense rise lifted by investments for growth, led by sales and marketing and the translation effect of a weaker NZD (~\$1.7m)
- At constant currency, expenses would have increased 43%
- APAC expenses up 20% 1H23 over 1H22
- Operating cash outflow in 1H23 of \$14.0m
- Cash and cash equivalents of \$93.5m¹ down \$12.0m on \$105.4m in March FY2022

¹ 30 September 2022

OUTLOOK

- Cautious optimism for the final four months of FY23 as we continue to implement our strategy recognizing the potential for disruption
- We are delivering growth in line with our expectations and investing prudently
- The proposed Novitas LCD has not impacted commercial or clinical trial throughput
- Even in the event of an adverse LCD, Pacific Edge has a path to re-establish coverage
- We have world-leading technology, a strong balance sheet and we are building momentum in the world's most important market

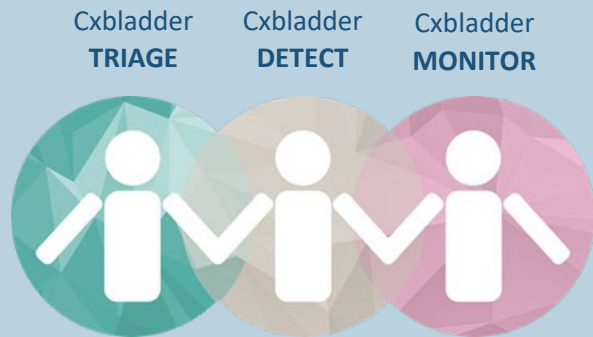
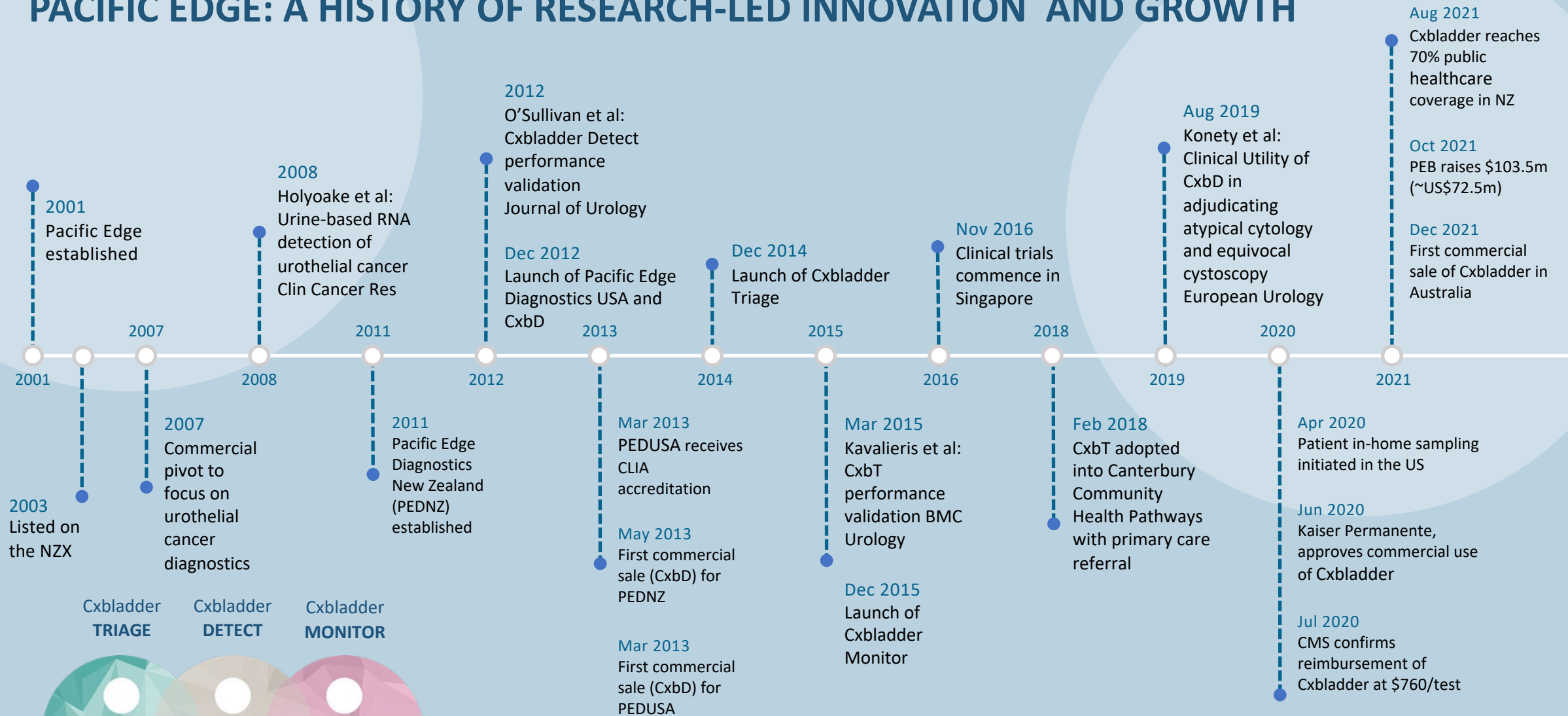


QUESTIONS



APPENDIX

PACIFIC EDGE: A HISTORY OF RESEARCH-LED INNOVATION AND GROWTH



FOR MORE INFORMATION:

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PointsBet Holdings Limited
/ ASX: PBH

Sam Swanell
Chief Executive Officer & Co-Founder

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ASX CEO Connect

December 2022

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Q1 FY23 GROUP TRADING METRICS

All figures in A\$		Q1 FY22	Q1 FY23	PCP
SPORTS BETTING	Turnover / Handle	\$979.9m	\$1156.7m	+18%
	Gross Win Margin %	11.9%	10.0%	(2.0pp)
	Gross Win	\$117.1m	\$115.1m	(2%)
	Net Win Margin %	6.9%	6.1%	(0.8pp)
	Net Win	\$67.3m	\$70.3m	+4%
	iGAMING	Net Win	\$2.2m	\$8.5m
TOTAL	Total Net Win	\$69.5m	\$78.8m	+13%

1. Average AUD/USD FX rate was 0.6839 for Q1FY23 and 0.7349 for Q1FY22 , Average AUD / CAD rate was 0.8921 for Q1FY23

Turnover / Handle is the dollar amount wagered by clients before any winnings are paid out or losses incurred. **Gross Win** is the dollar amount received from clients who placed losing bets less the dollar amount paid to clients who placed winning bets, excluding the cost of pricing promotions. **Net Win** is the dollar amount received from clients who placed losing bets less the dollar amount paid to clients who placed winning bets, less client promotional costs (the costs incurred to acquire and retain clients through bonus bets, money back offers, early payouts and enhanced pricing initiatives).



HIGHLIGHTS: US¹ Q1 FY23

<i>All figures in A\$</i>		Q1 FY22	Q1 FY23	PCP	QoQ
SPORTS BETTING	Turnover / Handle	\$348.6m	\$523.8m	+50%	(24%)
	Gross Win Margin %	8.4%	7.7%	(0.6pp)	+1.6pp
	Gross Win	\$29.2m	\$40.5m	+39%	(3%)
	Net Win Margin %	3.6%	4.3%	+0.7pp	+0.8pp
	Net Win	\$12.5m	\$22.3m	+78%	(6%)
	iGAMING	Net Win	\$2.2m	\$7.2m	+229%
TOTAL	Total Net Win	\$14.7m	\$29.5m	+101%	(3%)

1. Average AUD/USD FX rate was 0.6839 for Q1FY23 and 0.7349 for Q1FY22.

2. Cash Active Clients are clients that have placed a cash bet in the 12 months preceding the relevant period end.

3. Marketing expense includes all direct and indirect marketing costs, including production, agency/placement fees and working media, expensed as incurred during the period including amounts unpaid at the end of the period.

4. The sum of PBH online sportsbook GGR (for states which were operational for full quarter) divided by sum of those operational states' online sportsbook GGR for the quarter as reported by the relevant US State regulatory body. States whose regulatory body had not yet reported the September data, the September online GGR market share was assumed to be consistent with July and August.

POINTSBET

NET WIN PERFORMANCE

Sports Betting Net Win +78% vs PCP

iGaming Net Win +229% vs PCP

Total Net Win +101% vs PCP

Promotions as a % of Sports Betting Gross Win improved from 57% in the PCP to 45% in Q1 FY23

CASH ACTIVE CLIENTS

Cash Active Clients² for the 12 months to 30 Sept 2022 were 272,447, +47% vs PCP

US Marketing expense³ for Q1 FY23 was US\$22.8m, with a focus on regional/local investment in live states

CONTINUED TAM EXPANSION

Launched Kansas and Louisiana Online Sportsbooks and retail in Maryland

Online sportsbook live in 12 states, iGaming live in 4 states

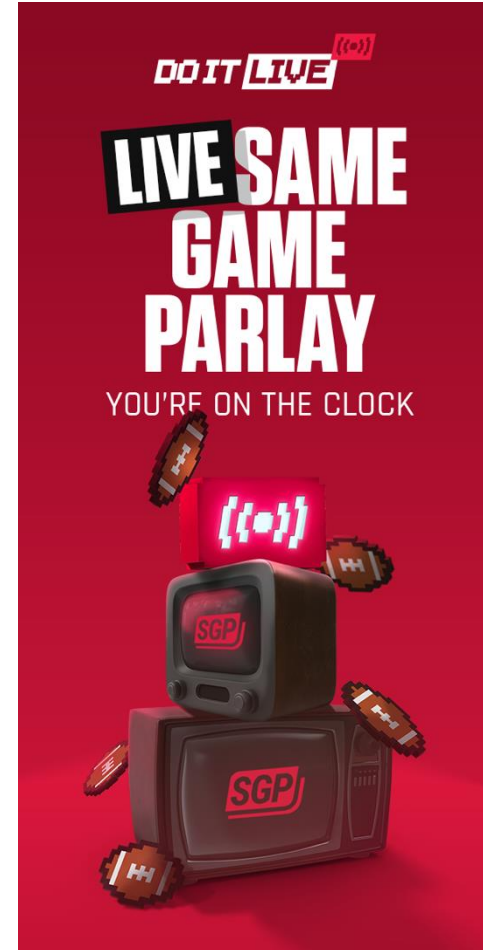
Blended online sports wagering GGR market share was 3.1%⁴

OUR UNITED STATES TARGET SEGMENT – THE ‘SUPER USER’

- These are highly engaged users who bet on average three days per week
- They require a personalised level of service and we believe that they are underserved in the US market.
- They love to bet on live events – double that of the average user – and they love to bet across a wide range of sports.
- These users want an elite product and user experience; they appreciate the best odds, breadth of markets and being able to place their bets quickly and easily.
- The Super Users are very strong PointsBet advocates across their network.

SUPER USERS ARE BETTORS FIRST, SPORTS WATCHERS SECOND

POINTSBET



LEAD ON LIVE BETTING (IN-PLAY)

HIGHLIGHTS

Continued product expansion

- MLB completes 4 of the 6 major US sports priced inhouse within OddsFactory

Odds Factory delivers unmatched complex computing capability

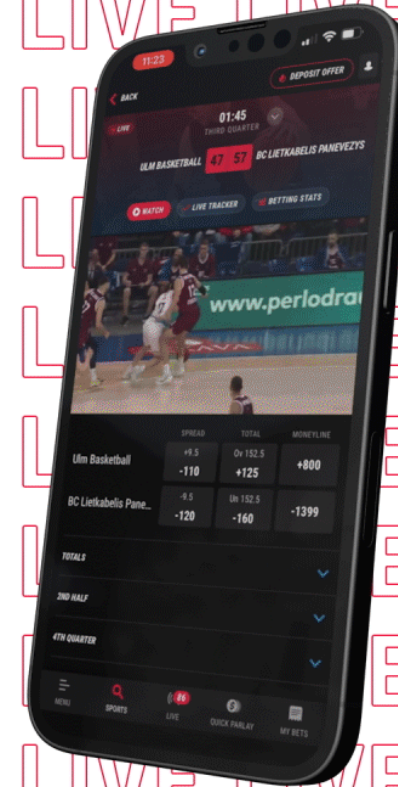
- At peak loads across 240+ concurrent matches, Odds Factory will produce up to 8 billion calculations in one second
- Delivering millions of live betting selections, and billions of combinations when considering Same Game Parlay

One pricing engine delivers:

















- The broadest core market offering in the industry
- Same Game Parlay both pre-match and live
- Lightning Bets
- Player props
- A market leading user experience

**LIVE BETTING HANDLE AS % OF OVERALL HANDLE
WAS 59% FOR Q1 FY23 VS 48% FOR Q1 FY22**

POINTSBET



POINTS BET RANKS THIRD IN EILERS & KREJCIK'S APP-BY-APP TESTING

OVERALL RANK	APP	100% OWNED TECH STACK?
1	 FANDUEL	
2	 DRAFT KINGS	
3 / 40	POINTS BET	
4	 BETMGM	 ¹
5	 BETRIVERS	
6	 BARSTOOL SPORTS	
7	 CAESARS SPORTSBOOK	
8	bet365	
9	FOX BET	
10	<i>wynnBET</i>	

Source: Eilers & Krejcik, Product Analysis: Testing, Scoring, And Ranking U.S. Sports Betting Apps report, Oct-22
 1. BetMGM rely on Entain's technology stack.

POINTS BET

Overall Rank

3rd/40
SPORTSBOOKS



Eilers & Krejcik
Gaming

UNLIKE MANY OF ITS PEERS, POINTSBET OWNS AND CONTROLS ITS OWN TECH STACK

METHODOLOGY

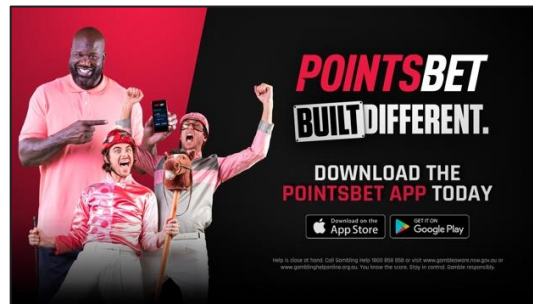
Eilers & Krejcik, an independent US research firm, tested 40 US sportsbetting apps in 3QCY22, using a proprietary matrix consisting of the following categories:

1. **USER EXPERIENCE** - app navigation and speed
2. **BETTING INTERFACE** - ease of finding, placing and checking bets
3. **FEATURES** - cash out, live streaming and data visualisation
4. **CORE** - sign-up, deposits and withdrawals
5. **AESTHETICS** - clean and visually appealing

“Few apps on the market today compete with PointsBet’s fast speed, quick load times, and button feedback and response. Across the board, the UX and UI on PointsBet is on point”

HIGHLIGHTS: AUSTRALIA Q1 FY23

SPORTS BETTING	All figures in A\$	Q1 FY22	Q1 FY23	PCP	QoQ
	Turnover / Handle	\$631.4m	\$611.9m	(3%)	+2%
	Gross Win Margin %	13.9%	11.9%	(2.0pp)	(1.3pp)
	Gross Win	\$87.9m	\$73.0m	(17%)	(8%)
	Net Win Margin %	8.7%	7.8%	(0.9pp)	(1.4pp)
	Net Win	\$54.8m	\$47.5m	(13%)	(14%)



1. Cash Active Clients are clients that have placed a cash bet in the 12 months preceding the relevant period end.

2. Marketing expense includes all direct and indirect marketing costs, including production, agency/placement fees and working media, expensed as incurred during the period including amounts unpaid at the end of the period.

POINTS BET

BUSINESS UPDATE

- Sports turnover grew vs the PCP, offset by declines in racing turnover vs the PCP
- PCP racing turnover was positively impacted by Q1 FY22 lockdowns in Victoria and NSW
- Quarterly racing turnover grew vs the PCP in states less impacted by Q1 FY22 lockdowns
- Lower Gross Win Margin resulted from an increased weighting to sports turnover vs racing turnover in the quarter and short-term negative variance in multi's and racing margins
- Client promotions as a percentage of Gross Win improved from 37.7% in the PCP to 34.9%
- Launched new PointsBet “Built Different” campaign featuring Shaq and Inspired Unemployed
- Launched Light Mode, Racing.com expert form factors and race selections, new same game multi offerings and improved fast withdrawals

CASH ACTIVE CLIENTS

For the 12 months to 30 Sept 2022 Cash Active Clients¹ were 231,627 +4% on the PCP and -3% QoQ

The Australia marketing expense² for Q1 FY23 was A\$25.2m

HIGHLIGHTS: CANADA¹ Q1 FY23

All figures in A\$		Q1 FY23	QoQ
SPORTS BETTING	Turnover / Handle	\$20.9m	+31%
	Gross Win Margin %	7.6%	+3.4pp
	Gross Win	\$1.6m	+138%
	Net Win Margin %	2.1%	+5.1pp
	Net Win	\$0.4m	n.m
iGAMING	Net Win	\$1.3m	+96%
TOTAL	Total Net Win	\$1.7m	+887%

BUSINESS UPDATE

- Sequential quarter-over-quarter improvements across all KPIs
- Live betting represented 59% of total sportsbook handle in Q1 FY23
- Gross Win Margin improvement due to higher mix of parlays and favourable results
- Launched a series of improvements to our online casino offering that had an immediate positive impact
- Held the PointsBet Invitational, a March Madness-style single elimination curling event, which was broadcast nationally on TSN (#1 sports network)
- Launched our new brand campaign “Play On” which has helped us increase brand awareness and consideration relative to key peers



CASH ACTIVE CLIENTS

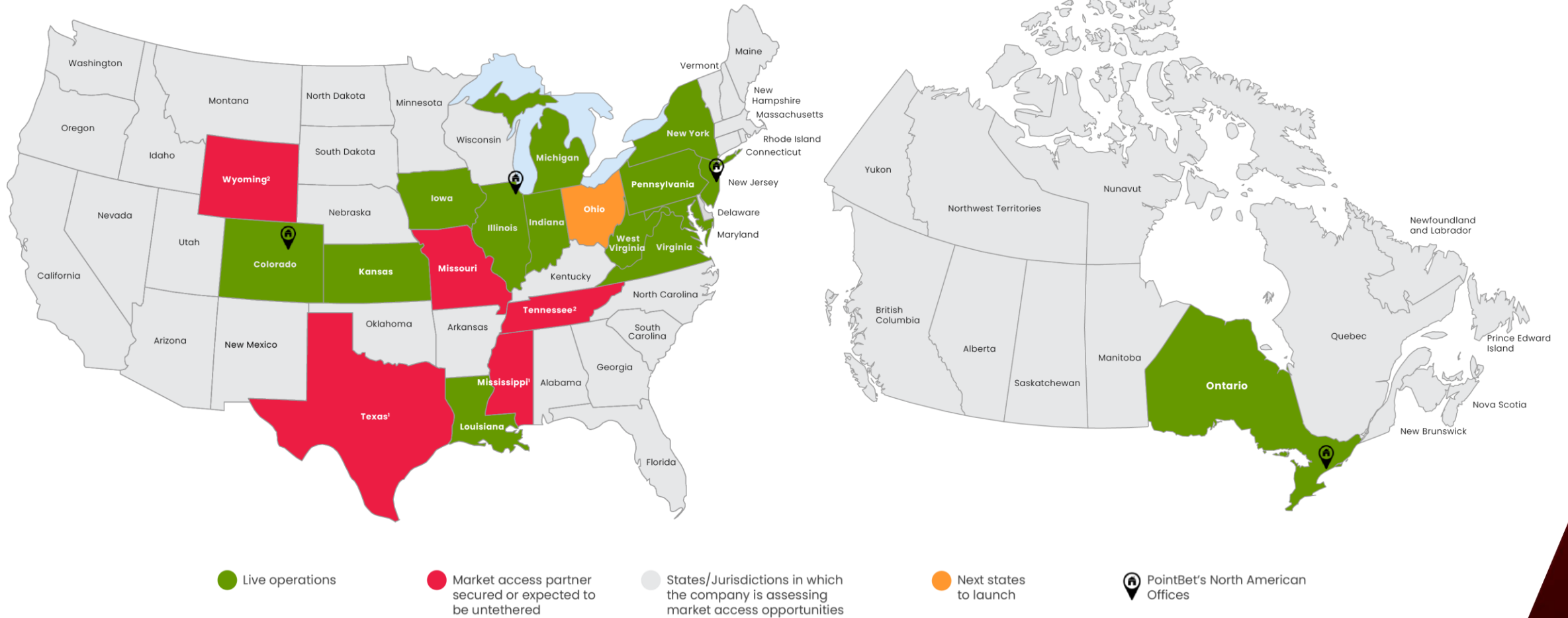
For the 6 months to 30 Sept 2022 Cash Active Clients² were 13,232
Marketing expense³ for Q1 FY23 was C\$5.5m

1. Average AUD / CAD rate was 0.8921 for Q1FY23.

2. Cash Active Clients are clients that have placed a cash bet in the 12 months preceding the relevant period end. Note Canada launched operations on 4th April 2022.

3. Marketing expense includes all direct and indirect marketing costs, including production, agency/placement fees and working media, expensed as incurred during the period including amounts unpaid at the end of the period.

POINTS BET'S CURRENT NORTH AMERICAN MARKET ACCESS⁽¹⁾



Notes: (1) Subject where relevant to legislation that approves the product and depth of licensing in each jurisdiction. Online sports betting is not currently legal in a number of states PointsBet has market access; (2) Untethered markets; (3) Subject to enabling legislation and licensure. It is expected to be an untethered licensing structure

Graincorp Limited / ASX: GNC

Robert Spurway
Chief Executive Officer &
Managing Director



GrainCorp

ASX CEO Connect

Robert Spurway
Managing Director and CEO



6 December 2022



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Agenda



Speaker

Robert Spurway

Managing Director and CEO



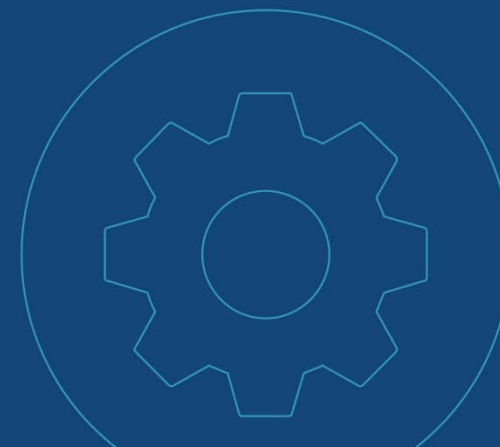
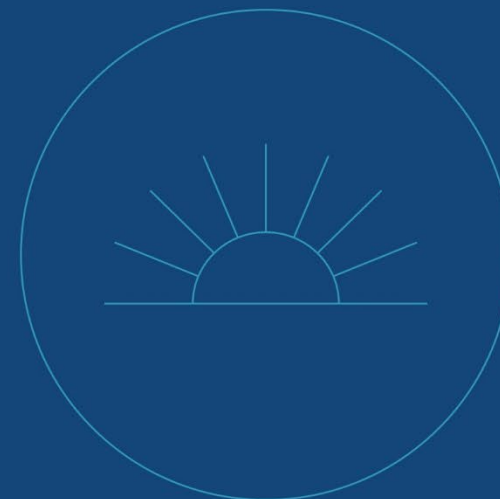
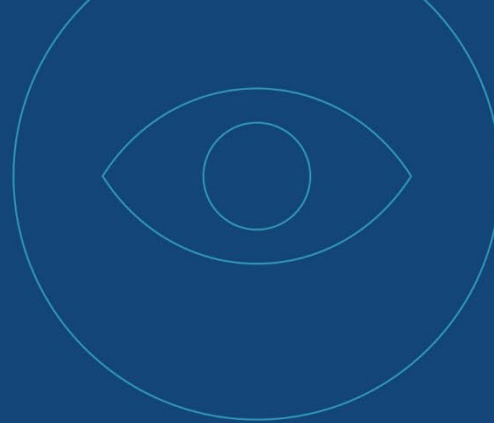
Contents


- 04 Who we are
- 08 FY22¹ performance
- 11 Strategy
- 17 Outlook and conclusion



GrainCorp acknowledges Aboriginal and Torres Strait Islander peoples as the First Peoples of Australia and embraces the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.


Who we are





Our Vision

Lead sustainable and innovative agriculture through another century of growth




Our Values

Lead the Way through inclusivity, integrity and innovation

Own the Result and be accountable for our actions

Deliver for our Customers by listening and coming through for them

Commit to Safety by taking responsibility for our employees, contractors, visitors and communities



Our Purpose

Proudly connect with customers and rural communities to deliver value through innovation and expertise

GrainCorp is a leading diversified Australian agribusiness, with an integrated operating model connecting growers to domestic and international consumers in over 50 countries.

Our purpose is to proudly connect with customers and rural communities to deliver value through innovation and expertise.

About GrainCorp



GrainCorp is a leading Australian agribusiness and processing company, with integrated operations across four continents and a proud history of delivering for customers for more than 100 years.

7

Ports across ECA

475kmt

Oilseed crush capacity

>160

Receival sites throughout ECA

290kmt

Oil refining, bleaching and deodorising (RBD) capacity

12

Marketing offices globally

4

Grain elevators and one port in western Canada*[^]



* Through GrainsConnect Canada, a 50-50 JV between GrainCorp and Zen-Noh.

[^] Fraser Grain Terminal owned through 50-50 JV between GrainsConnect Canada and Parish & Heimbecker

How we operate



We partner with growers to maximise the value of their crops, connecting them to domestic and global marketplaces through our end-to-end supply chain and infrastructure assets. We develop innovative solutions to create high quality and sustainable products across the food, feed and industrial sectors.



International

- Global network of offices, originating grain, pulses and oilseeds from different regions.
- Delivering to 350+ customers in 50+ countries.
- Includes GrainsConnect Canada joint venture and Saxon Agriculture



East Coast Australia (ECA)

- Largest grain storage and handling network on ECA.
- >160 regional receival sites and seven bulk ports, connected by road and rail infrastructure.
- Import/export of other bulk materials, e.g. cement, woodchips and fertiliser.

Oilseeds

- Leading oilseed crusher/refiner in Australia.
- Producing a range of canola oil and canola meal for domestic and international customers.

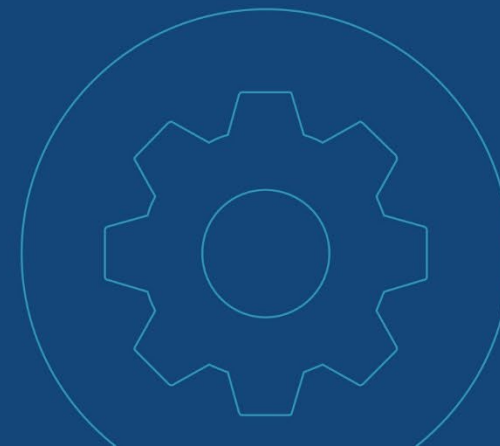
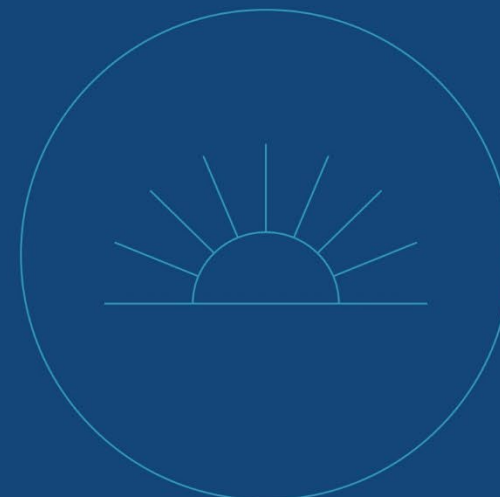
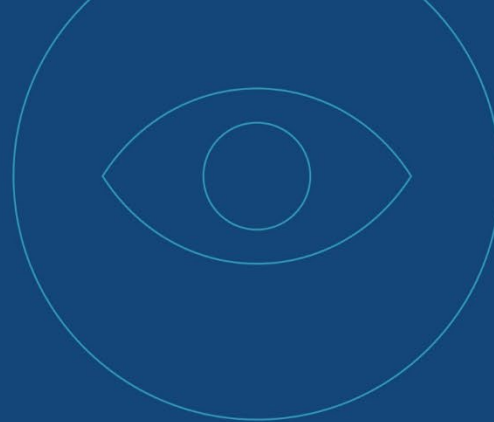
Foods

- Leading refiner of edible fats and oils in Australia.
- Supplier of ingredients for infant formula, bakery and large-scale food manufacturing industries.

Feeds, Fats & Oils

- Procurement, shipping, accreditation and value-added supply of tallow, vegetable oils and UCO, for delivery to food, feed, and renewable fuel customers.
- Manufacturer of feed solutions to meet nutritional needs and improve herd productivity.

FY22 performance



Record full year result in FY22

Strong operational execution; significant balance sheet flexibility



Outstanding performance

\$703m EBITDA¹

- Second consecutive bumper East Coast Australia (ECA) crop
- Strong delivery, demonstrating supply chain resilience
- Elevated global demand



Executing our strategy

27.9% ROIC²

- Strong payback on ECA investments
- Record oilseed and Foods volumes
- Agri-Energy growth opportunities



Delivering significant value

Dividends of \$121 million in FY22³

- Final dividend declared: 30cps, fully franked
- \$50 million share buy-back completed
- Strong balance sheet, \$177m core cash

GrainCorp strongly positioned to invest in growth and deliver shareholder returns

1. EBITDA is a non-IFRS measure representing earnings before interest, tax, depreciation and amortization

2. ROIC is a non-IFRS measure and is defined as Group Underlying Net Profit After Tax less interest expense (after tax) associated with core debt / average net debt (excluding commodity inventory) + average total equity. ROIC is inclusive of UMG Investment. ROIC exclusive of UMG investment was 31.3%

3. Comprises 24 cps FY22 interim dividend paid + 30 cps FY22 final dividend declared

FY22 highlights

An outstanding operational and financial result



EBITDA

\$703m

↑ from \$331m

NPAT¹

\$380m

↑ from \$139m

Return on invested capital (ROIC)

27.9%

↑ from 11.1%



Total grain handled^{2,3}

41.1mmt

↑ from 34.4mmt

Oilseed crush volumes³

471kmt

↑ from 459kmt

Core cash / (debt)

\$177m

↑ from (\$1m) core debt

1. NPAT = Net Profit After Tax.
2. Composition of 'total grain handled' shown on Slide 23.
3. mmt = million metric tonnes. kmt = thousand metric tonnes

Building on our sustainability commitment

ESG supporting sustainable growth into the future



Our environment

- Mapped scope 3 emissions and progressed roadmap to adopt TCFD recommendations
- ISCC Certification¹ for Numurkah crush facility
- Improvements in energy use, water use and tradewater discharge (per tonne)
- Developing emission reduction roadmaps for Scope 1,2 and 3 to support rapid decarbonisation by 2030

Our people

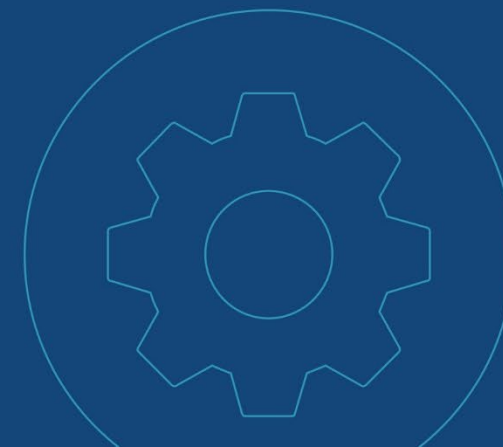
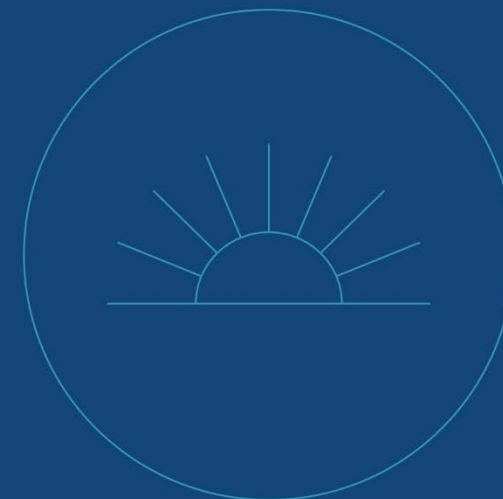
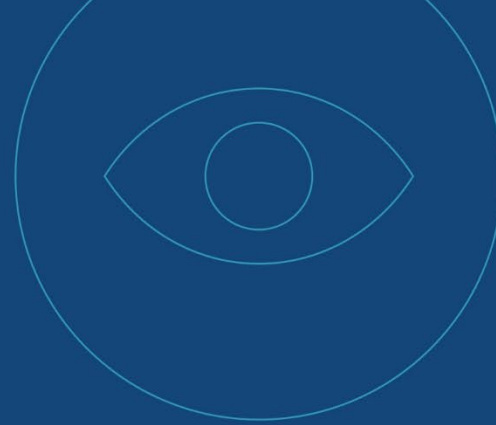
- Mental health and wellbeing programs
- Recognition of inclusion and diversity through:
 - Inclusion and Diversity Action Plan (iDAP)
 - New Reconciliation Action Plan (RAP)
- 87% satisfied working at GrainCorp (up from 85% in FY21)

Our integrity

- Established Board Sustainability Committee
- Appointed Head of Sustainability
- Introduced sustainability strategy, with eight working groups to address material topics
- Human rights position statement developed

1. International Sustainability and Carbon Certification

Strategy



Strategic priorities driving higher return on invested capital



Our vision

Our vision is to lead sustainable and innovative agriculture through another century of growth.



Our purpose

Proudly connect with customers and rural communities to deliver value through innovation and expertise.



Strategic priorities

Strengthen the core

Targeted growth opportunities

Lift returns



Drive existing assets



Leverage capabilities



Alternative Protein



Digital and AgTech



Animal Nutrition



Grower services



Strategy aligned to macro trends



Population growth / changing demographics

- Multi-origin strategy
- Leading position in ECA
- Australian and west coast Canadian proximity to Asian markets a competitive advantage



Decarbonisation

- Sustainability and innovation embedded in our business and strategy
- Partnering with start-ups and growers, developing solutions to environmental challenges



Disrupted global supply chains

- Resilient, end-to-end supply chains
- Leading assets and capabilities
- Strong global customer network



Technology/digital acceleration

- Progressing digital capability through *CropConnect* platform, advanced analytics
- Supporting industry innovation and technology uptake through *GrainCorp Ventures*

GrainCorp
context



GrainCorp strongly positioned as Food and Agricultural industries evolve

Strengthening our core businesses

Core initiatives driving \$40m EBITDA uplift by 2023/24¹

ECA network investment



- Significant upgrade of **storage capacity**:
 - Additional ~1.5mmt for FY22 harvest
 - Further capacity increase for FY23
- Upgrade of **mobile fleet** to improve truck turnaround times

Asset utilisation



- **Diversification of port throughput** – sand export agreement in Queensland
- **Oilseed crush** volumes up 3% in FY22
- **Foods** volumes up 11% in FY22

International expansion



- **Fraser Grain Terminal** commissioned in 1H22; Canadian volumes expected to ramp up as drought recovery continues

Building capabilities



- **Advanced analytics** to improve supply chain processes, optimise decision-making, reduce inefficiencies, drive business uptake
- **Value chain optimisation** – improving end-to-end supply chain management

Customer experience



- **Data and insights** driving customer retention and cross-sell opportunities
- **Digitisation of processes** to create consistency, improve service levels

1. Announced March 2021. \$40m in operating initiatives supporting \$240m 'through-the-cycle' EBITDA by 2023/24

Pipeline of growth initiatives to support future earnings diversification



Animal nutrition



- Developing **sustainable feed solutions**
- Investment in **FutureFeed** – commercialising feed additive made from asparagopsis

Alternative protein



- Collaborating with CSIRO and v2food on the **separation of proteins** from canola, soy, chickpeas and fava beans

Agri-Energy



- GrainCorp already a leading supplier of **renewable fuel feedstocks**
- Exploring opportunities to expand offering and take advantage of growing global demand

Digital/AgTech



- **GrainCorp Ventures** launched May 2022
- Investing up to \$30m in AgTech over three years

Grower services



- **Loam Bio:**
 - Using Loam's seed inoculum to support grower productivity, soil health and drought resilience
 - Promising trials; working with growers across New South Wales and Victoria

Outlook and conclusion



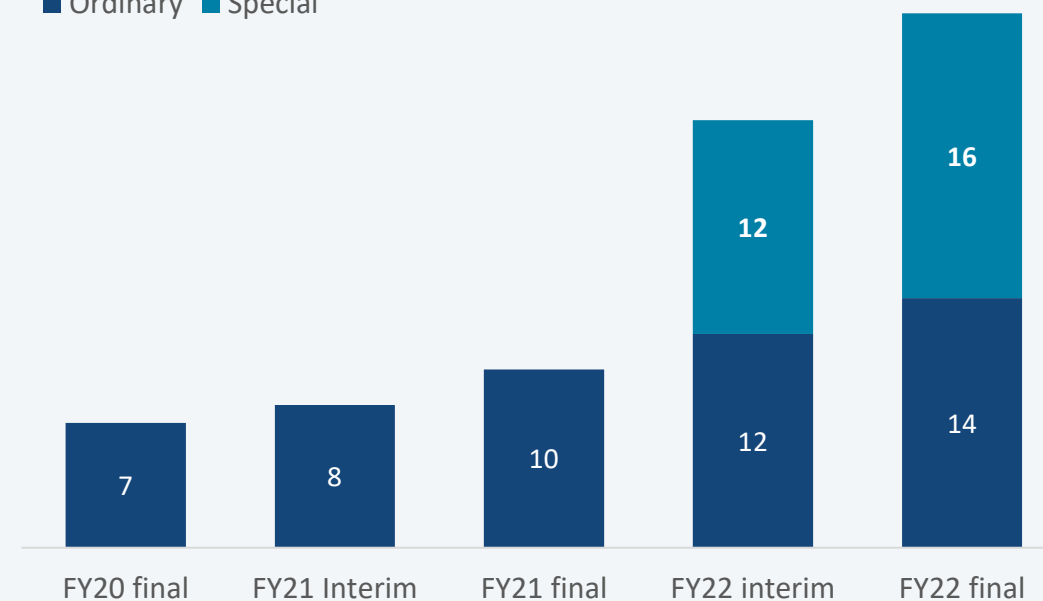
Delivering significant value to shareholders



- FY22 final dividend announced: total 30cps, fully franked, comprising 14cps ordinary and 16cps special
- Increase in ordinary dividend reflects Board confidence in average earnings being greater than stated TTC earnings, supported by operating leverage in large crop years
- \$50 million on-market share buy-back announced 11 November 2021, completed July 2022
- \$171 million in capital returned to shareholders through FY22 dividends¹ and on-market share buy-back
- Further capital management will continue to be assessed in FY23 against growth opportunities and as franking credits accumulate

Dividends (cents per share)

■ Ordinary ■ Special



1. Based on FY22 interim dividend paid (24cps) + FY22 final dividend declared (30cps)

FY23 outlook

- Conditions have supported an above-average ECA winter crop forecast for 2022/23. ABARES' September 2022 forecast **27mmt¹**
- ECA flooding has impacted a number of regions and delayed harvest by several weeks. We expect it to impact both yield and quality in parts of ECA, with a higher level of feed-grade receivals.
- GrainCorp is supporting growers with logistical challenges presented by flooding, and is focused on ensuring our sites are well prepared for the delayed harvest.
- The exceptional margins achieved in 1H22 moderated in 2H22, as supply from the northern hemisphere improved. We anticipate continued good demand for Australian grain and oilseeds in FY23, including feed grades.
- Guidance to be provided at AGM on 16 February 2023.



1. ABARES' next quarterly forecast due 6 December 2022

Conclusion

Record financial result in FY22

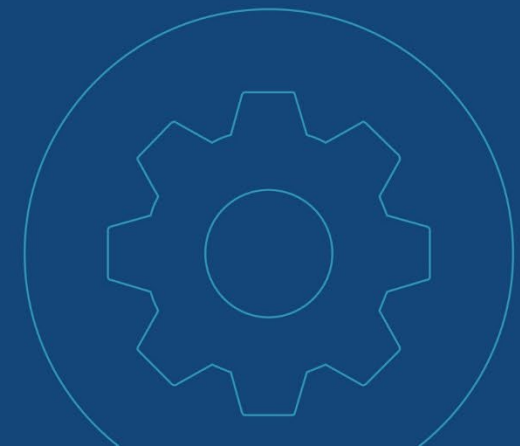
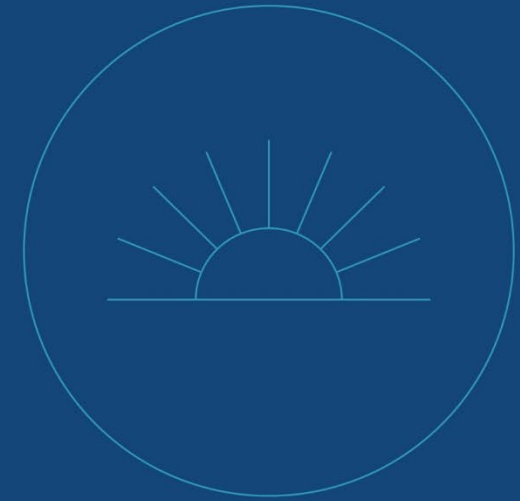
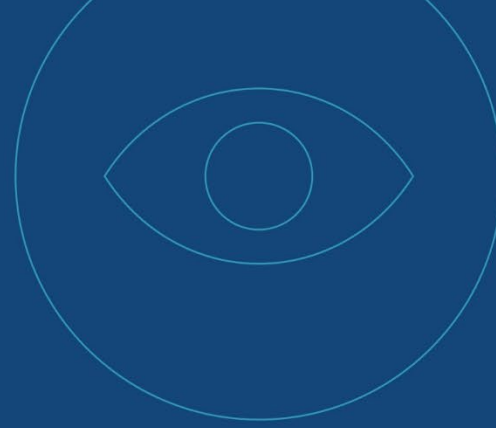
Delivering on our commitments

Executing our strategy

Generating significant value for shareholders



Q & A



Appendices



ECA tonnes handled

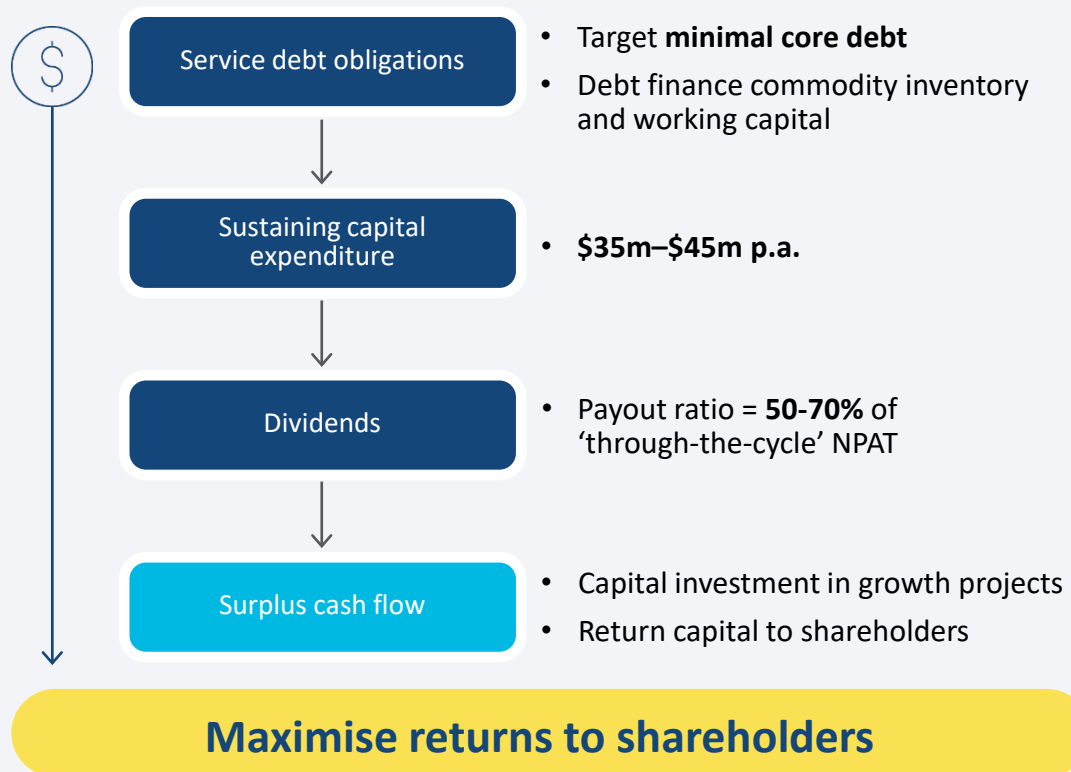


Total grain handled has a high correlation to ECA contribution margin

mmt	FY17	FY18	FY19	FY20	FY21	FY22
ABARES – total ECA winter + sorghum production¹	29.2	18.0	9.7	12.6	32.0	33.4
Carry-in	1.7	3.3	2.3	1.5	0.7	4.3
Receivals ²	15.0	6.8	3.1	4.2	16.5	16.3
Imports (trans-shipments)	0.0	0.5	2.3	1.4	0.0	0.0
Domestic outload	6.2	5.6	5.8	5.1	5.0	6.4
Exports ³	7.2	2.7	0.3	1.3	7.9	9.2
Carry-out	3.3	2.3	1.5	0.7	4.3	4.9
Total grain handled⁴	33.4	21.2	15.3	14.2	34.4	41.1
Bulk materials (non-grain) handled ⁵	2.8	2.9	2.9	2.1	2.7	2.5

1. 'ECA production' represents the total ECA winter + ECA sorghum production, per the definition from Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). FY22 production of 33.4mmt is based on ABARES' September 2022 estimate for ECA winter (30.8mmt) and ECA sorghum (2.6mmt) production for the 2021/22 season.
2. Receivals comprise total tonnes received up-country and direct-to-port.
3. Exports comprise bulk and container exports of grain and oilseeds.
4. 'Total grain handled' comprises GrainCorp carry-in + receivals + imports + domestic outload + exports + GrainCorp carry-out.
5. Bulk materials (non-grain) comprises inbound receivals of sand, cement, sugar, woodchips, fertiliser and other materials

Capital management framework



Glossary



Term	Definition
AASB	Australian Accounting Standards Board
ABARES	Australian Bureau of Agricultural and Resource Economics
CAGR	Compound Annual Growth Rate
Carry-in	Grain inventory at beginning of period (1 October)
Carry-out	Grain inventory at end of period (30 September)
Core debt	Net debt less commodity inventory
CPC	Crop Production Contract
CSIRO	The Commonwealth Scientific and Industrial Research Organisation
Demerger	The demerger of the Malt business effective 23 March 2020
EBIT	Earnings Before Interest and Tax
EBITDA	Earnings Before Interest, Tax, Depreciation & Amortisation
ECA	East Coast Australia (NSW, QLD and VIC)
EPS	Earnings per Share
ESG	Environment, Social and Governance
Executive KMP	Executives who are also Key Management Personnel
FFO	Feeds, Fats & Oils
FGT	Fraser Grain Terminal
GCC	GrainsConnect Canada JV
iDAP	GrainCorp's Inclusion & Diversity Action Plan

Term	Definition
IFRS	International Financial Reporting Standards
JV	Joint Venture
KMP	Key Management Personnel
LTI	Long-term incentive
LTIFR	Lost Time Injury Frequency Rate
MD and CEO	Managing Director & Chief Executive Officer
mmt	Million metric tonnes
Net debt	Total debt less cash
NPAT	Net Profit After Tax
RBD	Refine, Bleach & Deodorise
RIFR	Recordable Injury Frequency Rate
ROE	Return on Equity
ROIC	Return on Invested Capital
SHE	Safety, Health & Environment
STI	Short-term incentive
TSR	Total Shareholder Return
TTC	Through-the-cycle
UCO	Used Cooking Oil
UMG	United Malt Group Limited (ASX: UMG)

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Vulcan Energy Resources Limited / ASX: VUL

Dr. Francis Wedin
Chief Executive Officer &
Managing Director



VULCAN ENERGY
ZERO CARBON LITHIUM™



VULCAN ENERGY
ZERO CARBON LITHIUM™

ASX CEO Connect

Tuesday, 06 December 2022

Dr Francis Wedin, Managing Director and CEO



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This Presentation may contain certain forward-looking statements. Often, but not always, forward-looking statements can be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "target", "propose", "anticipate", "continue", "outlook" and "guidance", or other similar words. Such forward-looking statements may include, but are not limited to, statements regarding: the proposed use of funds; estimated mineral resources and ore reserves; expected future demand for lithium products; planned production and operating costs; planned capital requirements; planned strategies and corporate objectives; and expected construction and production commencement dates.

By their nature, forward-looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause actual results, performance and achievements to be materially greater or less than estimated, including those generally associated with the lithium industry and/or resources exploration companies such as those in the "Risk factors" section of the September Equity Raise Presentation, the risks contained in the Prospectus dated 11 February 2022, ASX Announcement "Positive Pre-Feasibility Study" released to ASX on 15 January 2021 and the "Risk factors" section of the Equity Raising Presentation released to ASX on 2 February 2021 (together the "Previous Disclosures").

These factors may include, but are not limited to, changes in commodity and renewable energy prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs lithium, the speculative nature of exploration and project development (including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves), political and social risks, changes to the regulatory framework within which Vulcan operates or may in the future operate, environmental conditions including climate change and extreme weather conditions, geological and geotechnical events, environmental issues, the recruitment and retention of key personnel, industrial relations issues and litigation.

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Ore Reserves and Mineral Resources Reporting

It is a requirement of the ASX Listing Rules that the reporting of ore reserves and mineral resources in Australia comply with the Joint Ore Reserves Committee's Australasian Code for Reporting of Mineral Resources and Ore Reserves ("JORC Code"). Investors outside Australia should note that while ore reserve and mineral resource estimates of the Company in this document comply with the JORC Code (such JORC Code-compliant ore reserves and mineral resources being "Ore Reserves" and "Mineral Resources" respectively), they may not comply with the relevant guidelines in other countries and, in particular, do not comply with (i) National Instrument 43-101 (Standards of Disclosure for Mineral Projects) of the Canadian Securities Administrators (the "Canadian NI 43-101 Standards"); or (ii) Industry Guide 7, which governs disclosures of mineral reserves in registration statements filed with the US Securities and Exchange Commission ("SEC").

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Acknowledgement and agreement

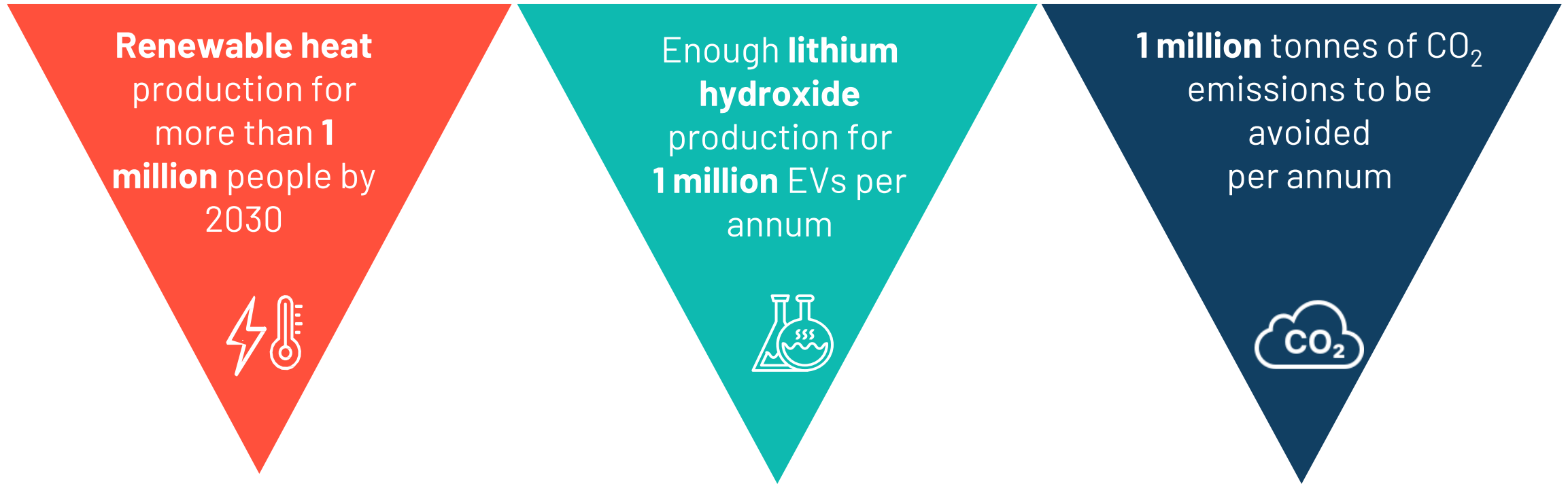
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OUR TARGET : 1 MILLION

We are aiming to become the world's first integrated lithium chemicals and renewable energy producer with net zero greenhouse gas emissions.

Vulcan's unique **Zero Carbon Lithium™** Project aims to produce both renewable geothermal energy, and lithium hydroxide for Electric Vehicle (EV) batteries, from the same deep brine source in the Upper Rhine Valley, Germany.



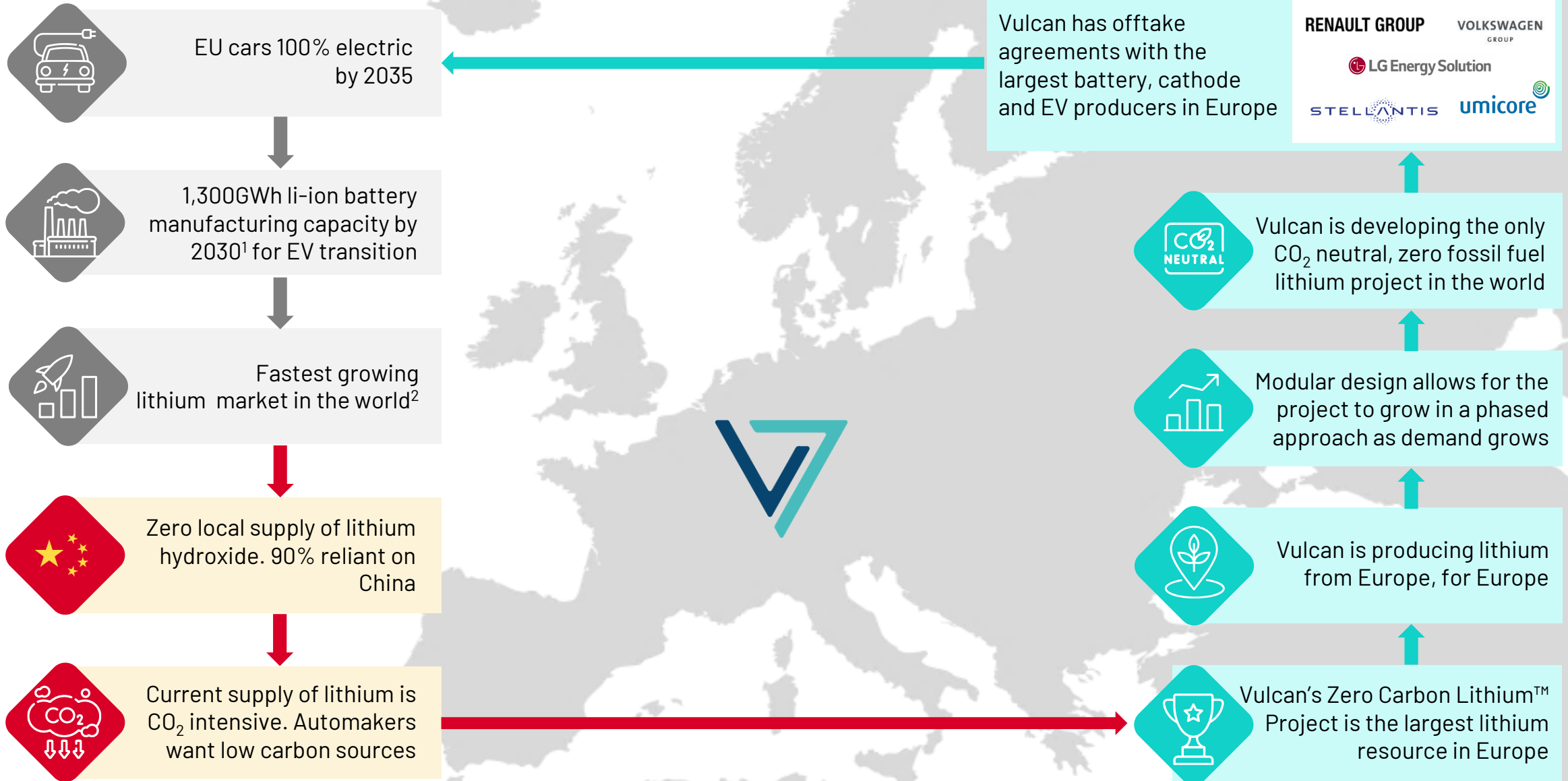
RIGHT PLACE, RIGHT TIME

Rapidly advancing the Zero Carbon Lithium™ Project to ensure timely market entry

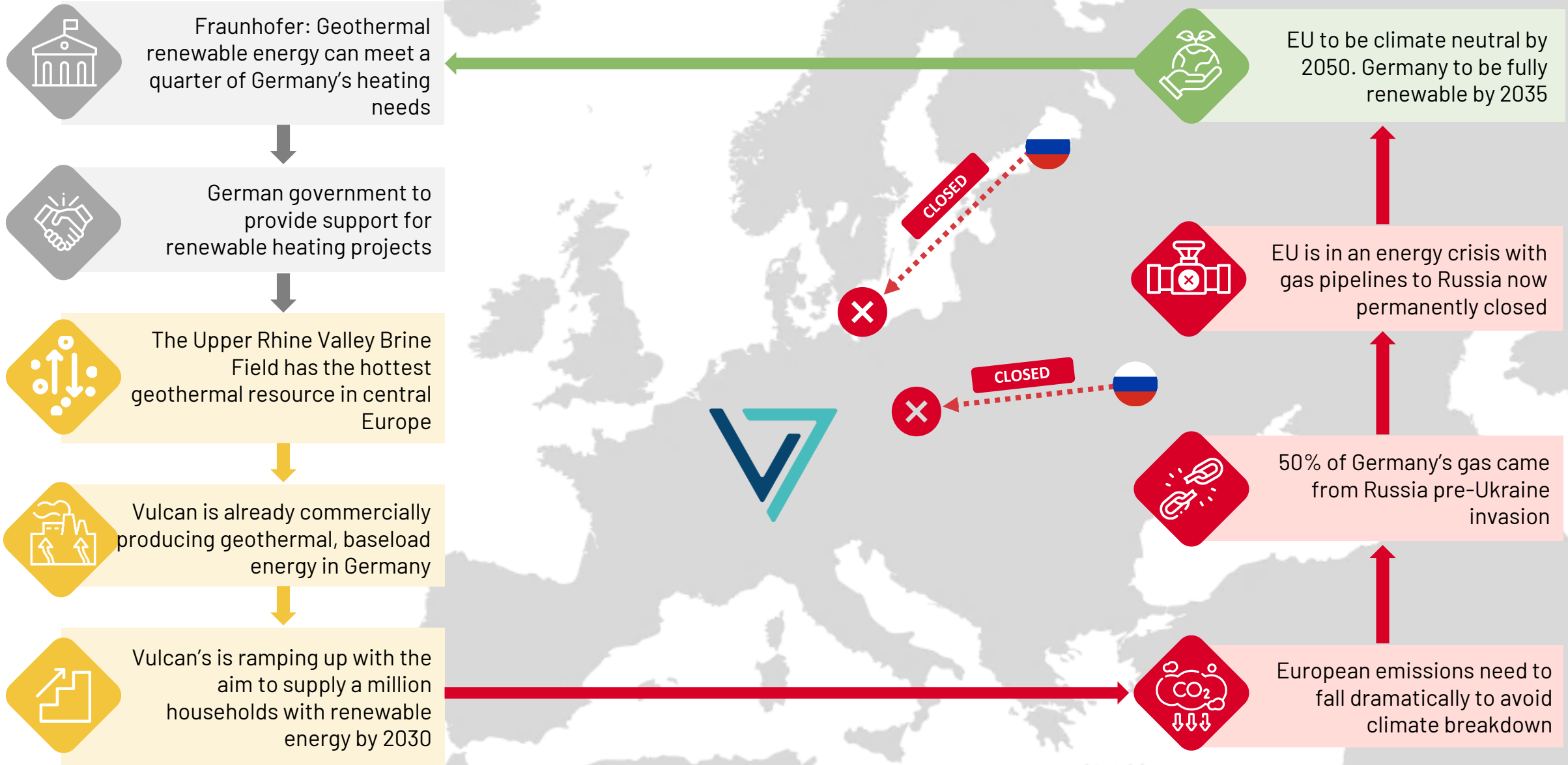
Strategically placed in the heart of the European EV market to decarbonise the supply chain



LITHIUM IN EUROPE: AVERTING A CRISIS FOR THE AUTO INDUSTRY

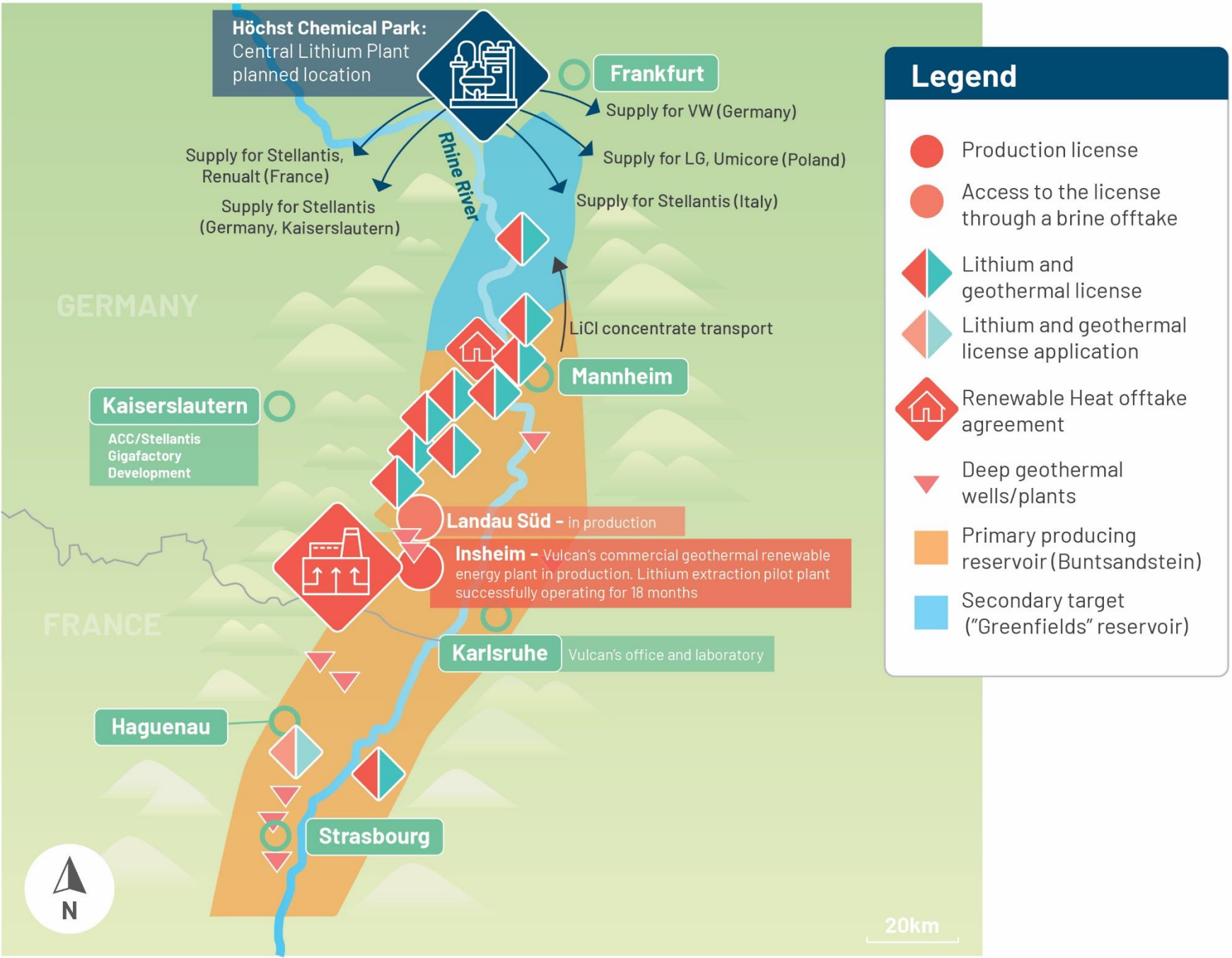


ENERGY IN EUROPE: AVERTING A CRISIS FOR ALL



THE SOLUTION: ZERO CARBON LITHIUM™ PROJECT

- Large, **300km-long** graben system containing very consistent geothermal-lithium reservoir, average lithium grade 181 mg/l Li, **Europe's largest lithium resource.**
- Vulcan's Zero Carbon Lithium™ Project contains **multiple project areas**, which can grow in a modular fashion as the market grows.
- **Strategically located** in the middle of the European battery industry.
- **Phased growth approach**, starting from core of field where Vulcan already owns production/re-injection geothermal wells in operation.



THE PROCESS

Delivering a fully integrated renewable energy and sustainable lithium chemicals business in Europe





THE ZERO CARBON LITHIUM PROJECT™: A WORLD FIRST

Lithium Offtakers

Renault Group STELLANTIS umicore
 LG Energy Solution VOLKSWAGEN GROUP

Höchst Chemical Park:
 Central Lithium Plant
 planned location

Local Stakeholders

- Electric Vehicle Transition
- Renewable Power
- Human Capital
- Local Supply Chain
- Training & Employment

Sustainable Environment

- Rewilding Initiatives
- Better Air Quality
- Improved Biodiversity
- Sequestered & Avoided CO₂
- Ecosystem Services

Central Lithium Plant

Sorption Plant

Geothermal plant

Wells

Geothermal and lithium brine field resource

- Electric Vehicle Transition
- Renewable Power
- Human Capital
- Local Supply Chain
- Training & Employment

Kaiserslautern

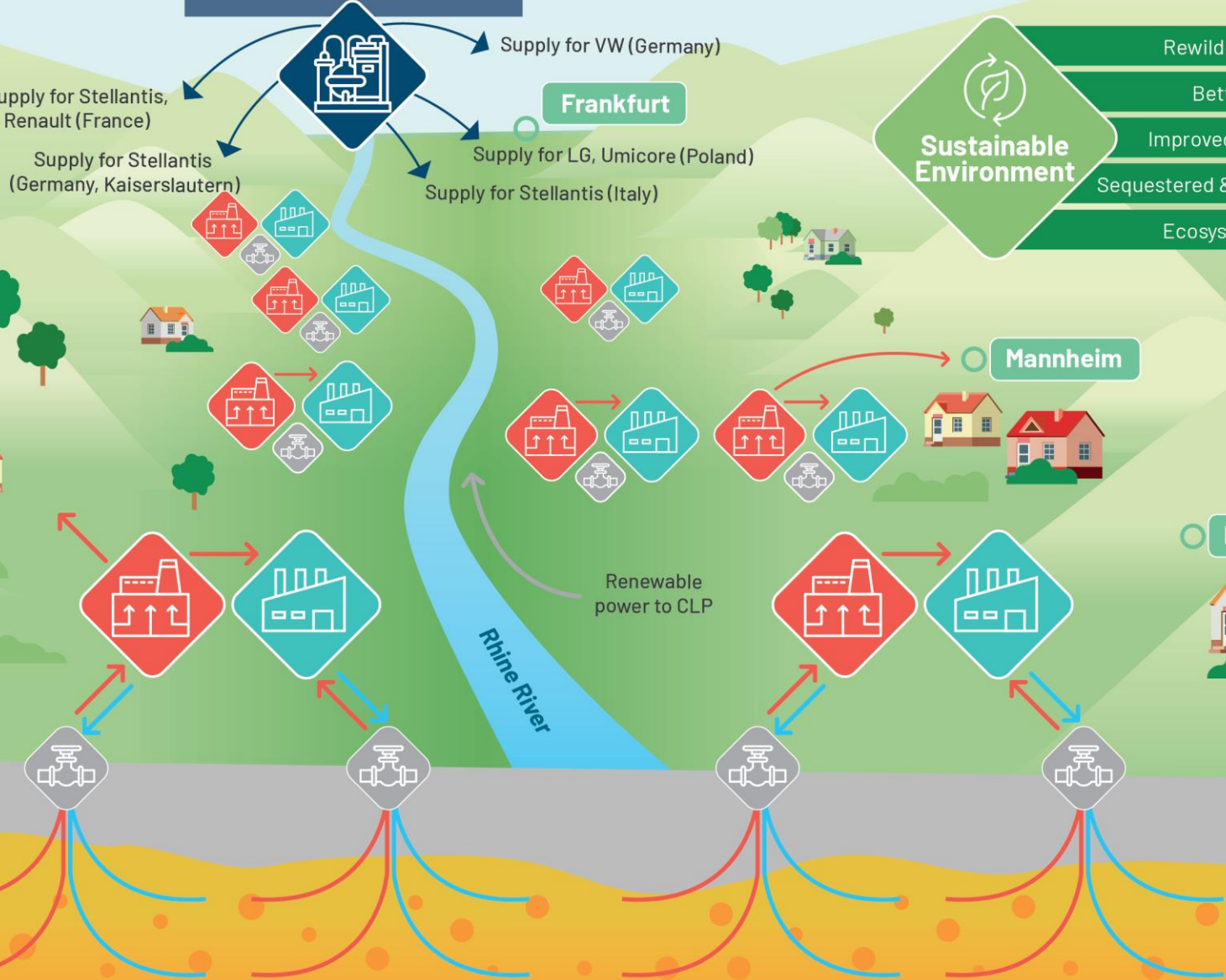
Frankfurt

Mannheim

Karlsruhe

Rhine River

Renewable power to CLP



VULCAN'S RENEWABLE ENERGY AND LITHIUM CHEMICALS PROJECT

Electric Mobility

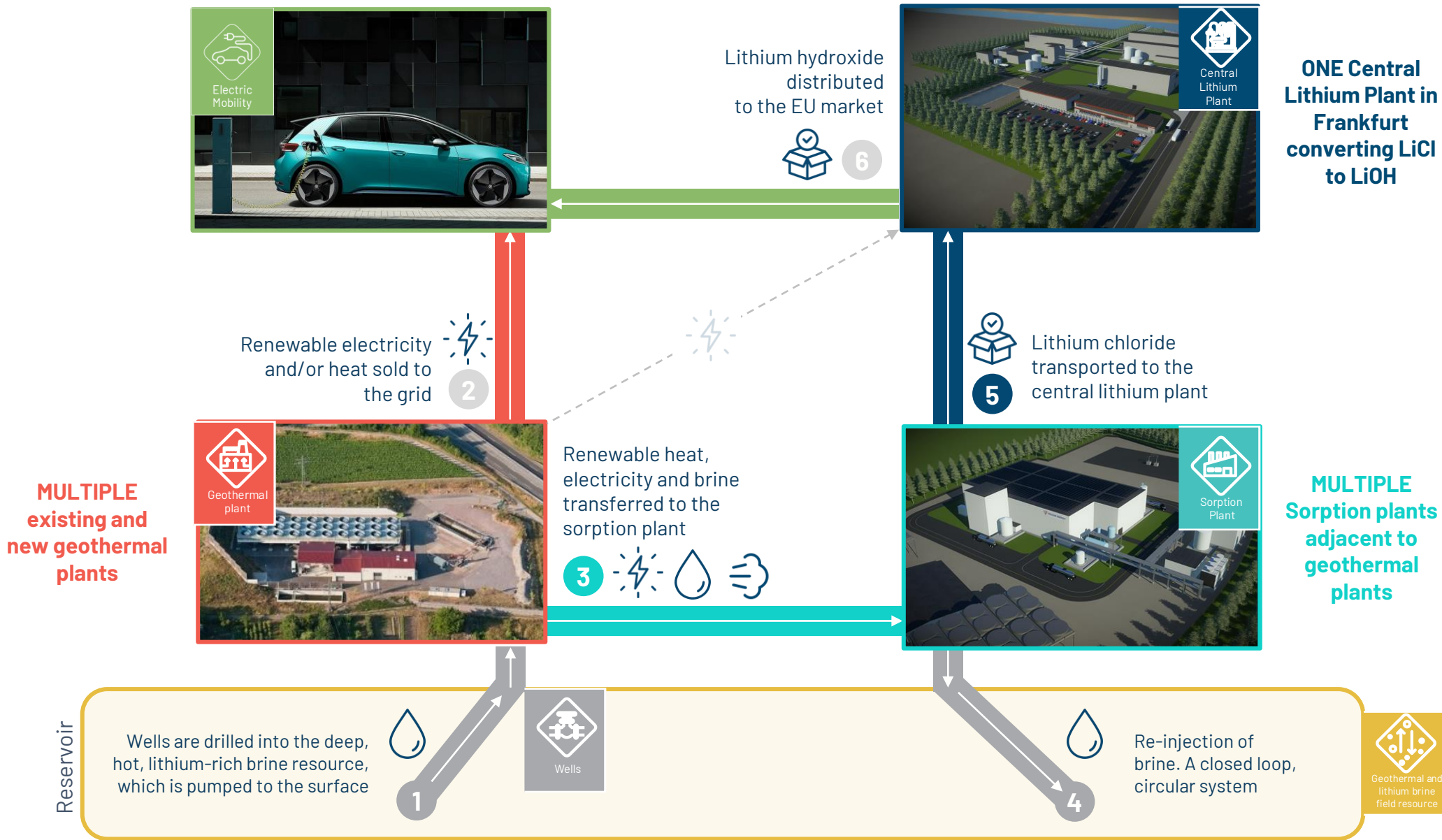
Central Lithium Plant

Sorption Plant

Geothermal plant

Wells

Geothermal and lithium brine field resource



UPPER RHINE VALLEY BRINE FIELD GEOTHERMAL-LITHIUM RESOURCE

Sub-surface reservoir in Vulcan’s URVBF includes **Europe’s largest lithium resource** (15.85Mt LCE¹), and the highest geothermal renewable energy potential in central Europe.

ACHIEVED:

- **12 exploration and production licenses** secured covering >1,400km²
- **Extensive existing data acquired** from one of the most well-explored graben systems in the world
- New data acquisition from recent surveys successfully conducted over the year, including **3D seismic surveys** and extensive analysis of brine over time, from producing geothermal wells.
- **Lithium grades and heat highly consistent** over space and time within reservoir.

NEXT STEPS:

- **Field development planning** and simulation of lithium production wells from reservoir is advancing for Phase 1 DFS.
- **3D seismic** surveys commencing in **Phase 2** areas, including Mannheim, for further well planning.



Electric Mobility



Central Lithium Plant



Sorption Plant



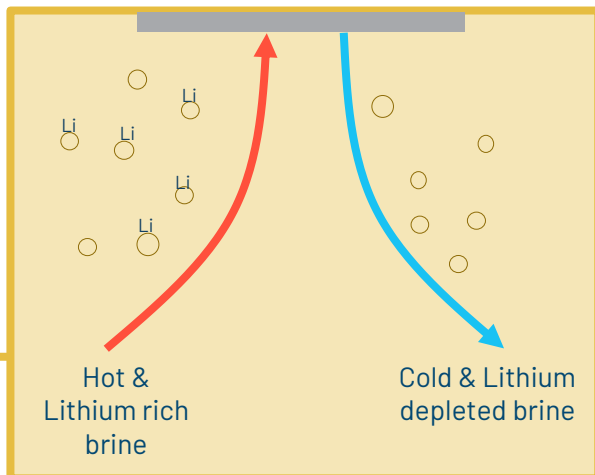
Geothermal plant



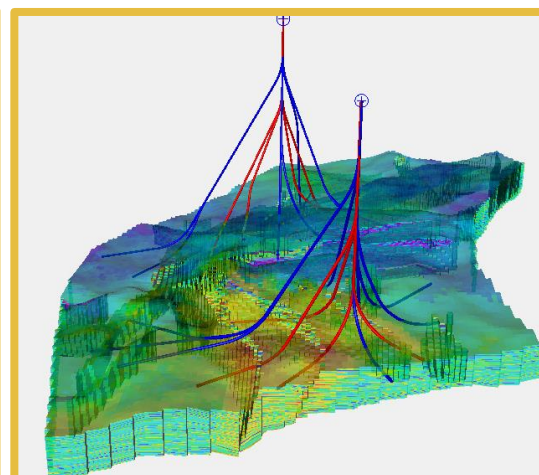
Wells



Geothermal and lithium brine field resource



Tobias Hochschild
CEO VES



DEVELOPMENT DRILLING

Vulcan has **established its own in-house geothermal drilling company**, Vercana, due to a high demand for geothermal drilling for renewable energy projects and tightness of rig supply.

Vercana is a highly strategic asset for Vulcan as Germany calls for **100 new geothermal projects by 2030**.

ACHIEVED:

- Vulcan has acquired **two electric drill rigs**.

NEXT STEPS

- Extensive development **drilling campaign planned to expand current brine production rates** for Phase 1 areas.
- Refurbishment for first rig due to be completed end Q1 '23, **ready to start drilling in Q2 '23**.
- **Growing drilling team** to carry projects out at multiple locations and in parallel.



Electric
Mobility



Central
Lithium
Plant



Sorption
Plant



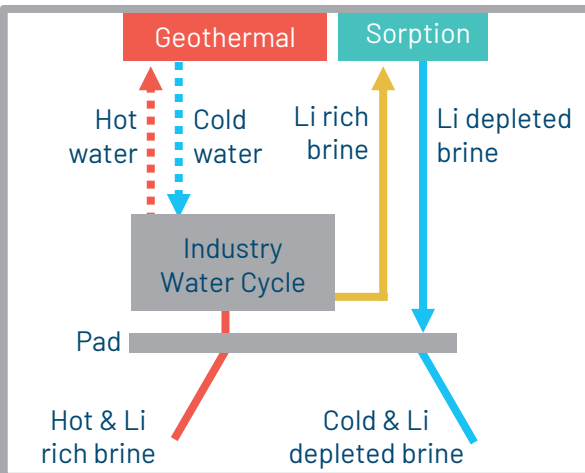
Geothermal
plant



Wells



Geothermal and
lithium brine
field resource



VERCANA

**Thorsten
Weimann**
COO
Vulcan



GEOTHERMAL RENEWABLE ENERGY: CURRENT PRODUCTION



Electric
Mobility



Central
Lithium
Plant



Sorption
Plant



Geothermal
plant



Wells



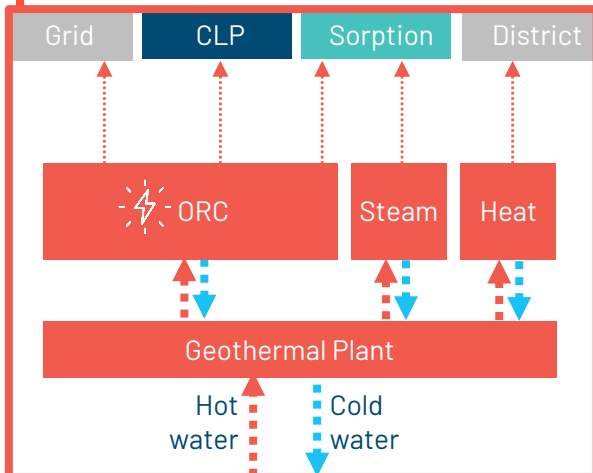
Geothermal and
lithium brine
field resource

ACHIEVED:

- During the year, **Vulcan acquired an existing geothermal renewable energy plant** with proven lithium-in-brine grades over 10 years of successful production.
- The plant, named Natür³Lich Insheim, generated €4.5m in YTD revenue by the September Quarter, **supplying ~6,500 households with renewable power.**
- The plant currently has the technical ability to produce a maximum of 4.8MW renewable power, equivalent to the power usage of approximately 8,000 households, with an additional ability to produce heating.

NEXT STEPS:

- Natür³Lich Insheim's producing wells have been **integrated into Vulcan's DFS** to form part of Vulcan's planned Phase 1 geothermal-lithium development.
- Development also plans to **supply renewable heat to local communities.**



Natür³Lich Insheim

**Markus
Cechovsky**
R&D
Manager
Insheim Plant



Between January and June 2022, 5kT CO₂ was avoided from renewable energy generated at Natür³Lich Insheim



DEVELOPING RENEWABLE ENERGY INFRASTRUCTURE ON A MASS SCALE

As well as running an existing geothermal plant, Vulcan is aiming to build and operate multiple geothermal assets across its licenses and produce both electricity and heat.

ACHIEVED:

- During the year, Vulcan and **MVV Energie AG (MVV)** executed a 20-year, binding purchase agreement for minimum 240 GWh per year of renewable heat from 2025, a first for Germany
- The heat will be supplied from Vulcan’s planned geothermal wells in the area surrounding the **City of Mannheim**, as part of Vulcan’s Phase 2 (PFS under way).

NEXT STEPS:

- Vulcan’s expert surface geothermal engineering team, VEE, acquired in 2021, is **designing two phases of expansion** for geothermal brine production, for dual heat and lithium extraction use.
- Phase 1 DFS studies well advanced**, centred on producing core of the Zero Carbon Lithium™ Project development.
- Heat will be transferred via heating grids and a series of underground pipes that deliver hot water or steam to the local community



Electric Mobility



Central Lithium Plant



Sorption Plant



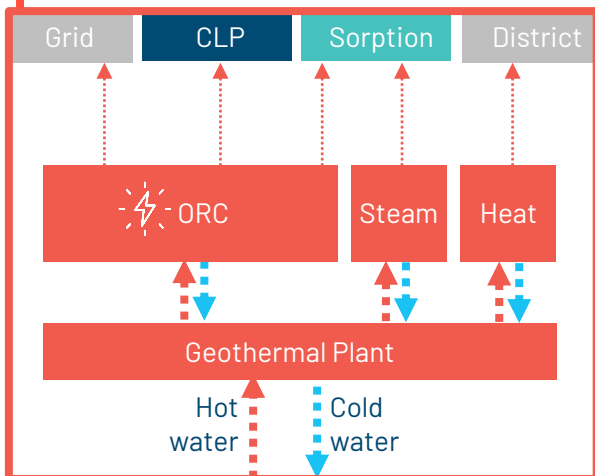
Geothermal plant



Wells

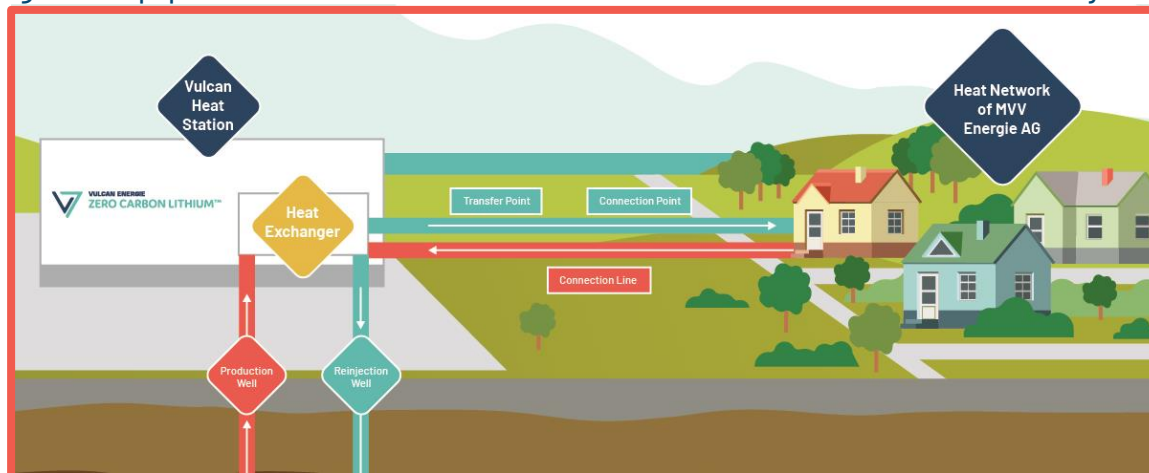


Geothermal and lithium brine field resource



VULCAN ENERGY ENGINEERING

Markus Ruff
CEO
Vulcan Energy Engineering



LITHIUM CHLORIDE EXTRACTION: SORPTION PLANT

Lithium sorption used commercially for 26 years. Currently used by 5 commercial projects in China and South America, with many more being built.

Lithium adsorbs onto an aluminate-based resin, desorbed using water, then concentrated with geothermal steam to produce very pure LiCl.

Key advantages compared to legacy brine evaporation:

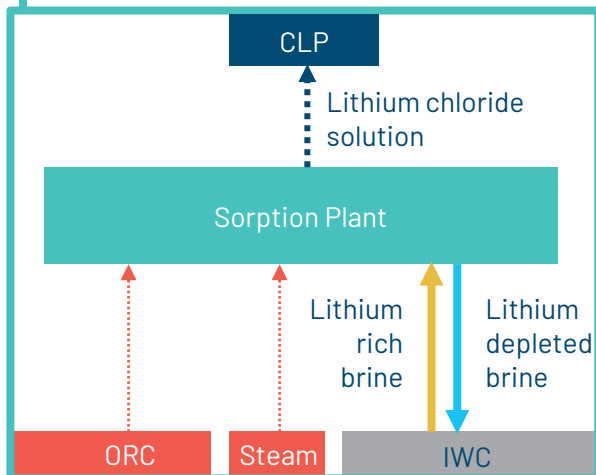
1. Higher lithium recovery;
2. Lower water and chemicals consumption;
3. Shorter lead time to production;
4. Minimal footprint

Sorption associated with geothermal brine advantages:

1. No need to heat the brine with natural gas.
2. Potential for no carbon emissions.
3. Additional revenue stream from energy

ACHIEVED:

- Vulcan has developed its **own high-performing sorbent, VULSORB™**. Significant in-house expertise at Vulcan.
- **19-month pilot plant operation** has successfully produced data for DFS, using live geothermal brine from Vulcan's wells.
- Second pilot built and testing high pressure option for potential CAPEX/OPEX savings.



LITHIUM CHLORIDE EXTRACTION: SORPTION PLANT

NEXT STEPS:

- **Second pilot plant** started operating **under pressure** (20 bar) – potentially a significant upside for CAPEX/OPEX savings.
- **Demonstration Plant to operate in 2023** to train operations team in pre-commercial environment
 - Commissioning H1 2023
 - All process steps of Vulcan’s sorption process with option to run at atmospheric pressure and under pressure
 - Production of high purity LiCl solution (several tonnes per month)
 - Provide engineering data for commercial plants
- Commercial Sorption Plant **long lead item ordering** to commence in H1 2023 after DFS published.
- Bridging and **detailed engineering**.



Electric
Mobility



Central
Lithium
Plant



Sorption
Plant



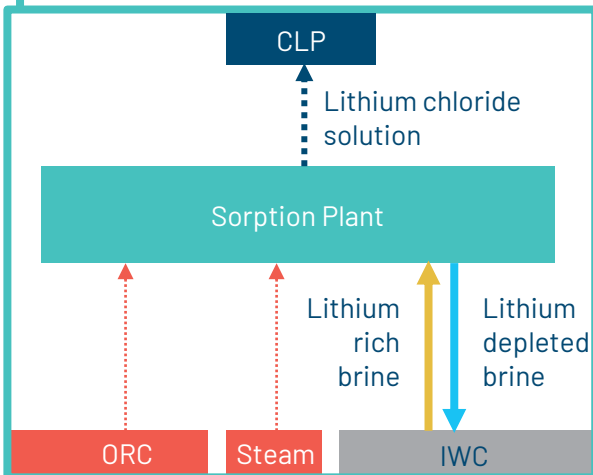
Geothermal
plant



Wells



Geothermal and
lithium brine
field resource



**Benoit
Girard
Plant
Manager**



NEW LITHIUM BRINE PROJECTS CHOOSING SORPTION



Company	Livent	Lanke Lithium	Zangge Lithium	Jintai Lithium	Eramet/ Tsingshan	Vulcan Energy	Rio Tinto	Compass Minerals	Berkshire Hathaway	Energy Source Minerals	CTR	Standard Lithium	Lake Resources/ Lilac	E3 Metals
Asset name	Hombre Muerto	Qinghai	Qinghai	Qinghai	Centenario-Ratonos	Zero Carbon Lithium™	Rincon	Great Salt Lake	Salton Sea	ATLiS	Hell's Kitchen	Smackover	Kachi	Clearwater Lithium
Jurisdiction														
Lithium extraction technology	Sorption	Sorption	Sorption	Sorption	Sorption	Sorption	Sorption	Sorption	Sorption	Sorption	IX	IX	IX	IX
Technology provider	Proprietary	Undisclosed	Undisclosed	Undisclosed	Proprietary	Proprietary: VULSORB	Axion	ILiAD	Proprietary	Proprietary ILiAD	Lilac	Proprietary LiSTR	Lilac	Proprietary
Tech origin														
Resource (Mt LCE)	Undisclosed	Undisclosed	Undisclosed	Undisclosed	10	16	12	2	Undisclosed	Undisclosed	3	3	4	7
Geothermal	✗	✗	✗	✗	✗	✓	✗	✗	✓	✓	✓	✗	✗	✗
Start date	1998	2017	2018	2019	Construction	Development	Development	Feasibility	Feasibility	Feasibility	Development	Development	Development	Feasibility
Capacity (ktpa LCE)	20	20	20	7	24	40	50	20-25	90	20	20	21	25	20
Zero fossil fuels in flow sheet	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗
Institutional Investments					Tsingshan \$375M 11/2021	Institutional Investors \$320M 2021 Stellantis A\$76m	Rio Tinto \$825M 12/2021				GM \$?M 07/2021	Koch \$100M 11/2021	Lilac Up to \$50M 09/2021	
Offtakes (announced publicly)	 	✗	✗	✗	✗	 	✗	✗	✗	✗	 	✗	✗	✗

Note 1: Resources are rounded to 0p. Refer to Appendix 4: Lithium Brine Projects and Assets - References

LITHIUM HYDROXIDE PRODUCTION: CENTRAL LITHIUM PLANT

Conversion of lithium chloride to battery grade lithium hydroxide using **electrolysis, powered by green electricity**. Process uses same technology used in the **chlor-alkali industry**, which has been producing for over a century. Significant in-house expertise at Vulcan.

ACHIEVED:

- **Site secured at Hoechst Chemical Park** for Central Lithium Plant (CLP) in 2021.
- **Extensive test-work** successfully completed during 2021-22 to inform DFS, which is approaching completion.
- **Collaboration partnership with major chlor-alkali producer Nobian**, formerly Akzo-Nobel, also located at Hoechst – multiple operational synergies.

NEXT STEPS:

- **Demonstration Plant “LiLy” under development**, to operate in 2023 to train operations team in pre-commercial environment.
- Bridging phase and ordering long lead items for commercial plant in 2023.



Electric Mobility



Central Lithium Plant



Sorption Plant



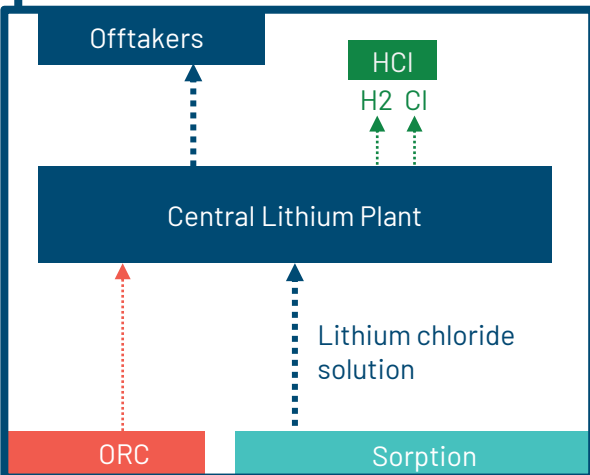
Geothermal plant



Wells



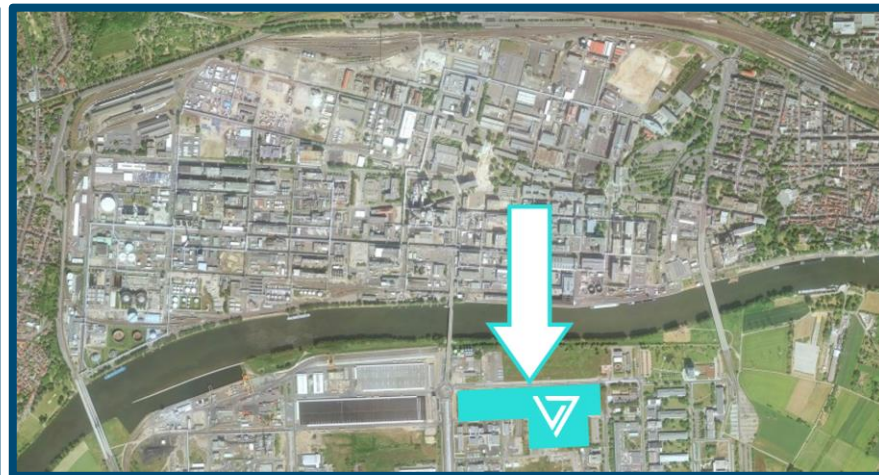
Geothermal and lithium brine field resource



VULCAN ENERGY
ZERO CARBON LITHIUM™

Dr. Stephen Harrison
CTO

NOBIAN



LONG TERM LITHIUM SUPPLY CONTRACTS SECURED

ACHIEVED:



Binding lithium hydroxide offtake agreement, 10-year term.

A\$76M (€50M) equity investment from Stellantis. This represents the **world's first upstream investment in a listed lithium company by a top tier automaker.** Stellantis is now Vulcan's second largest shareholder with 8% shareholding.

VOLKSWAGEN



Binding lithium hydroxide offtake agreement, initial 5-year term.

RENAULT GROUP



Binding lithium hydroxide offtake agreement, initial 6-year term.

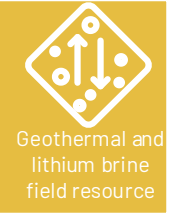
 **LG Energy Solution**



Binding lithium hydroxide offtake agreement, initial 5-year term.



Binding lithium hydroxide offtake agreement, initial 5-year term.



OUR EXPANSION PLAN - THE UPPER RHINE VALLEY BRINE FIELD

Electric Mobility

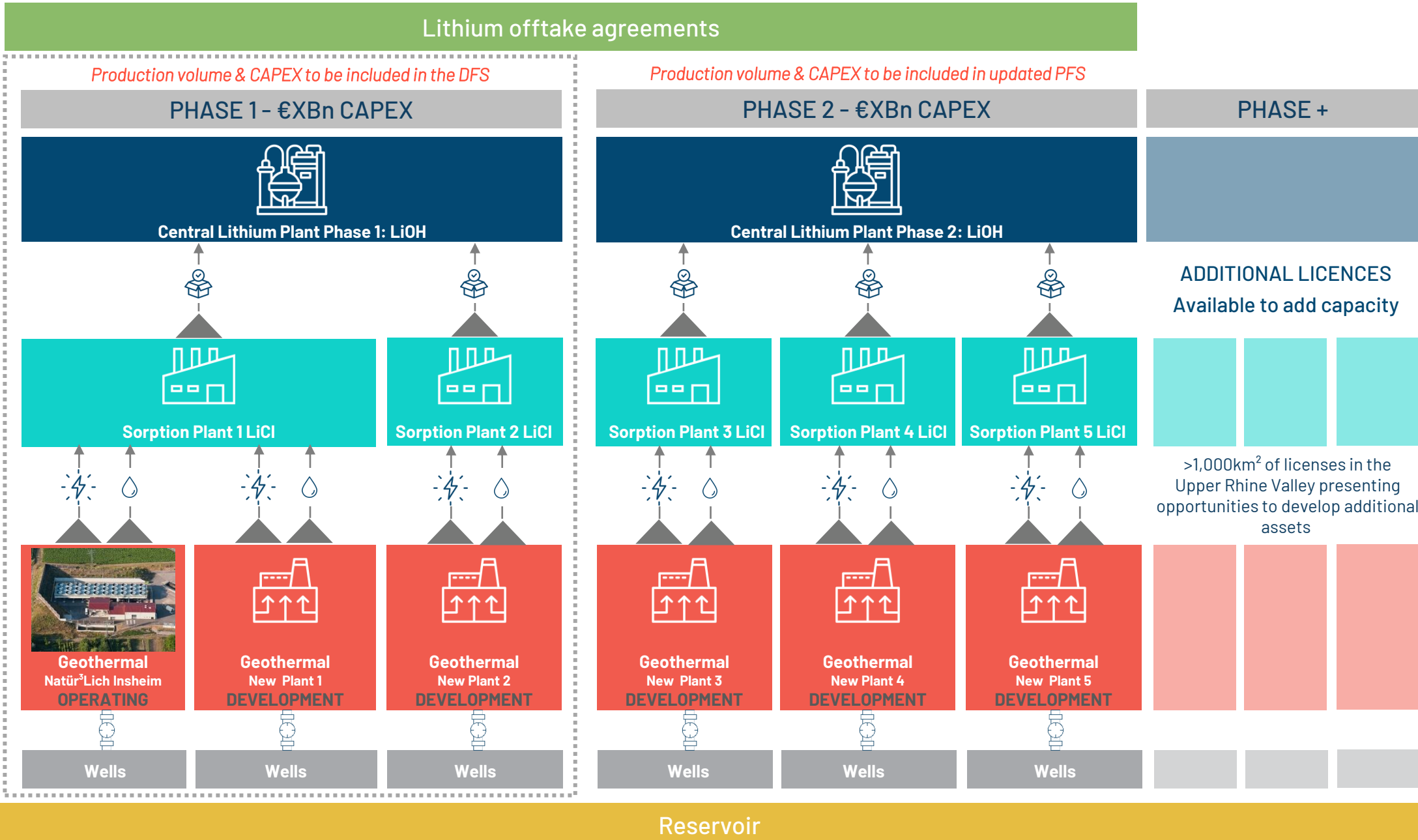
Central Lithium Plant

Sorption Plant

Geothermal plant

Wells

Geothermal and lithium brine field resource



ATTRACTIVE MARKET AND FINANCIAL METRICS

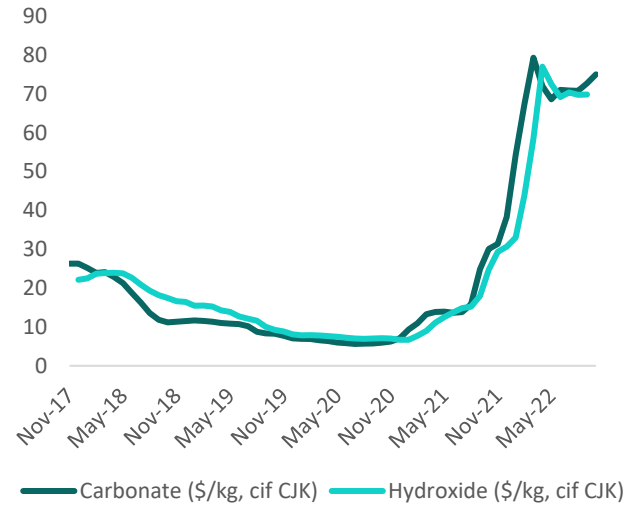
It doesn't need to cost more to be "green"



LITHIUM PRICE ENVIRONMENT

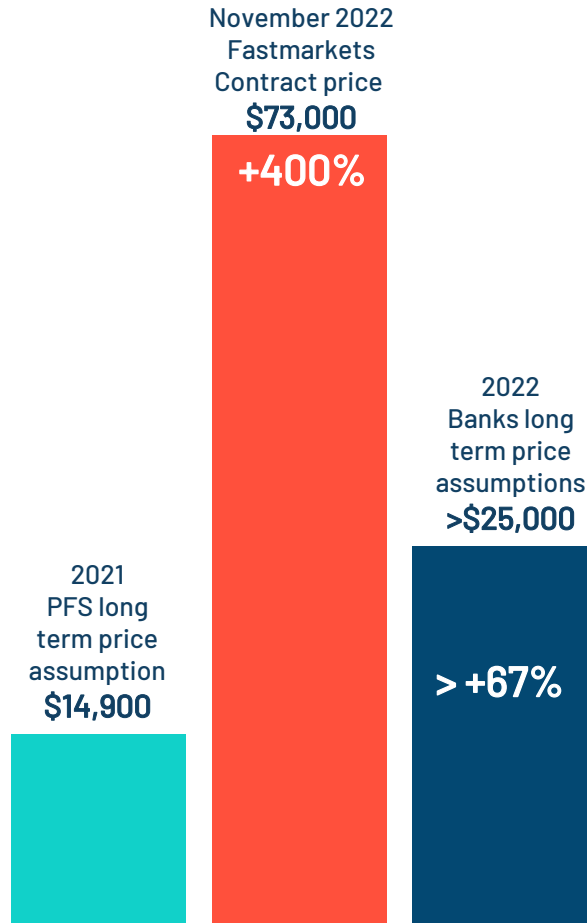
Historical lithium prices

January 2018-August 2022 (\$/tonne, monthly average)

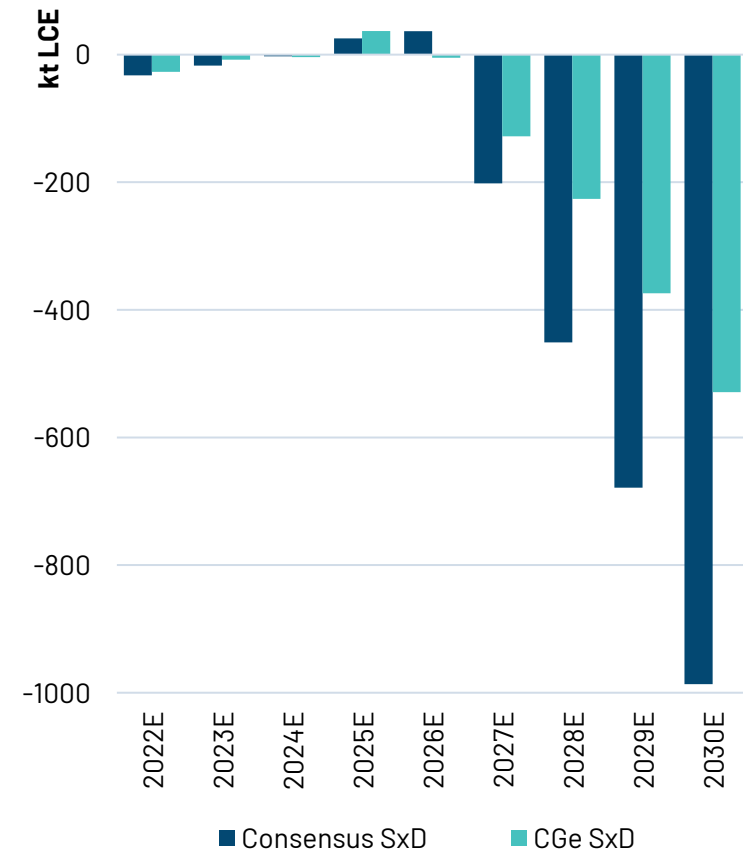


Source: Fastmarkets

Long-term price outlook



Market balance outlook -> Deficit



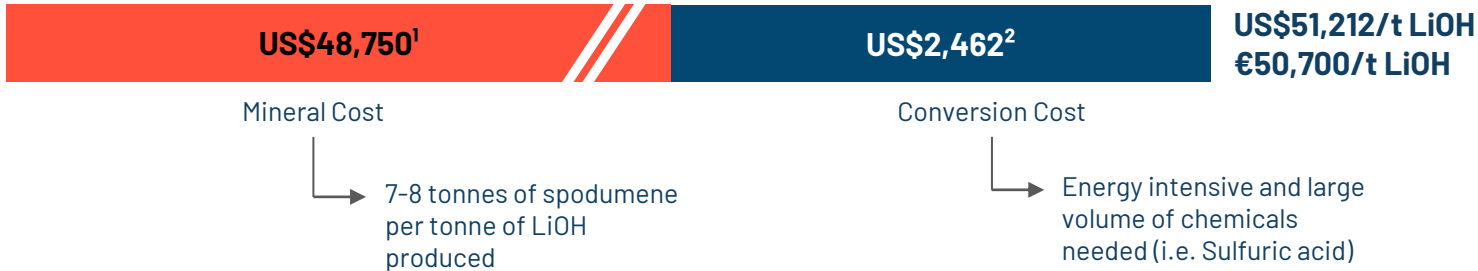
Source: Canaccord Genuity, Lithium Recharge 2022



POTENTIAL FOR VERY LOW OPEX OPERATION

Select South American brine and Australian/Chinese mineral conversion vs Vulcan's process

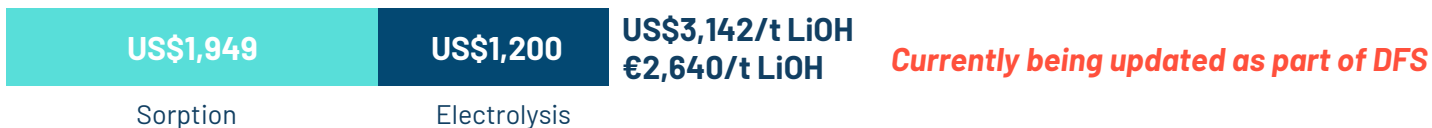
LiOH VIA HARD-ROCK PROCESSING



LiOH VIA BRINE PROCESSING



VULCAN'S PROCESS⁵



Feedstock

Vulcan's "feedstock" is expected to be low cost and have a dual purpose: lithium extraction and energy production in the form of renewable electricity.

Processing

Vulcan plans to use sorption to isolate lithium as opposed to using large volumes of chemicals such as sulfuric acid to dissolve a rock feedstock or soda ash for brine. Vulcan intends to use low-cost energy coming from its geothermal operation.

Upgrading

Vulcan plans to use electrolysis to upgrade chloride into a high purity hydroxide using renewable energy. No heavy reagent usage such as sodium hydroxide or lime.



Note 1: Fastmarkets Spodumene min 6% Li₂O, spot price, cif China, \$/tonne 11 July 2022

Note 2: Kidman Resources PFS announcement, October 2018, contingency on Refinery OPEX of 15%. Cash operating cost including royalties.

Note 3: Cash operating costs lithium carbonate, Orocobre 2021 Annual report

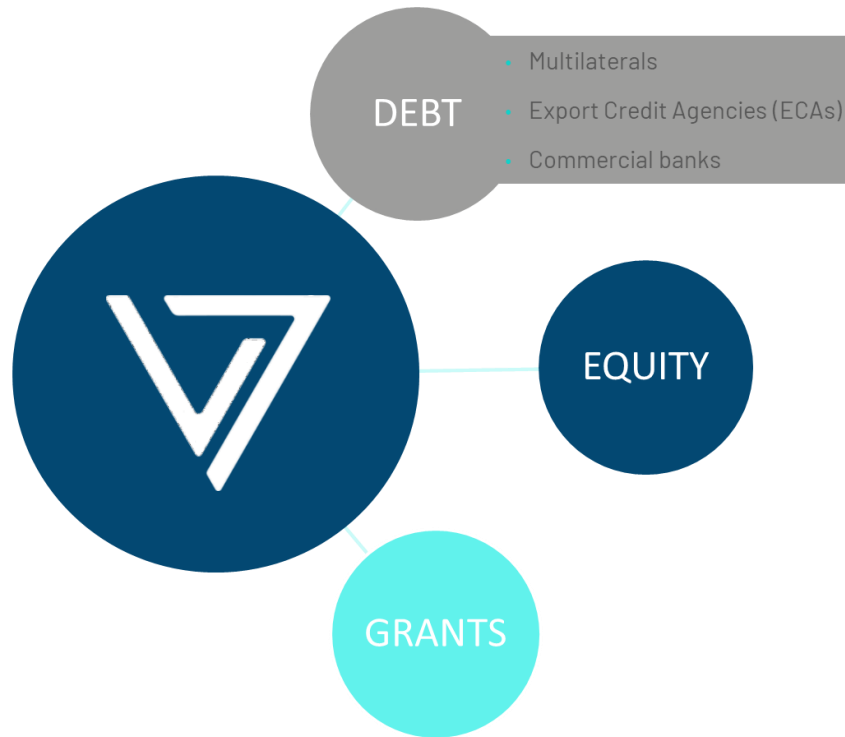
Note 4: Orocobre 2020 Corporate Presentation - Naraha Lithium Hydroxide plant, Japan

Note 5: Figures in this slide assume an exchange rate of €0.84/US\$1.00

Note 6: Vulcan notes that the comparison operating cost figures above are actual results from lithium hydroxide projects that are currently in production, whereas the above data for Vulcan's process is based on estimates in the PFS. As the Project is still at an early exploration and development stage, there is a high level of inherent uncertainty associated with the Project. A comprehensive list of risks is flagged in the PFS under "Project Risks and Opportunities"

ROBUST TARGET PROJECT FINANCIALS AND PRODUCTION METRICS FROM PFS – UPDATE IN DFS UNDERWAY

FUNDING TO COME FROM A MIX OF EQUITY, DEBT AND GRANTS



€2.8Bn NPV Pre-tax

€1.9Bn NPV Post-tax

31% IRR Pre-tax

26% IRR Post-tax

€2,681/t LiOH OPEX

€474M CAPEX Phase I

Payback: 4 years

Based on 2021 PFS long term price assumption \$14,900

Numbers are based on the PFS published in 2021 and are subject to change in DFS



BNP PARIBAS appointed as Financial Advisor toward financing the Zero Carbon Lithium™ Project

SUSTAINABILITY





OUR APPROACH TO SUSTAINABILITY

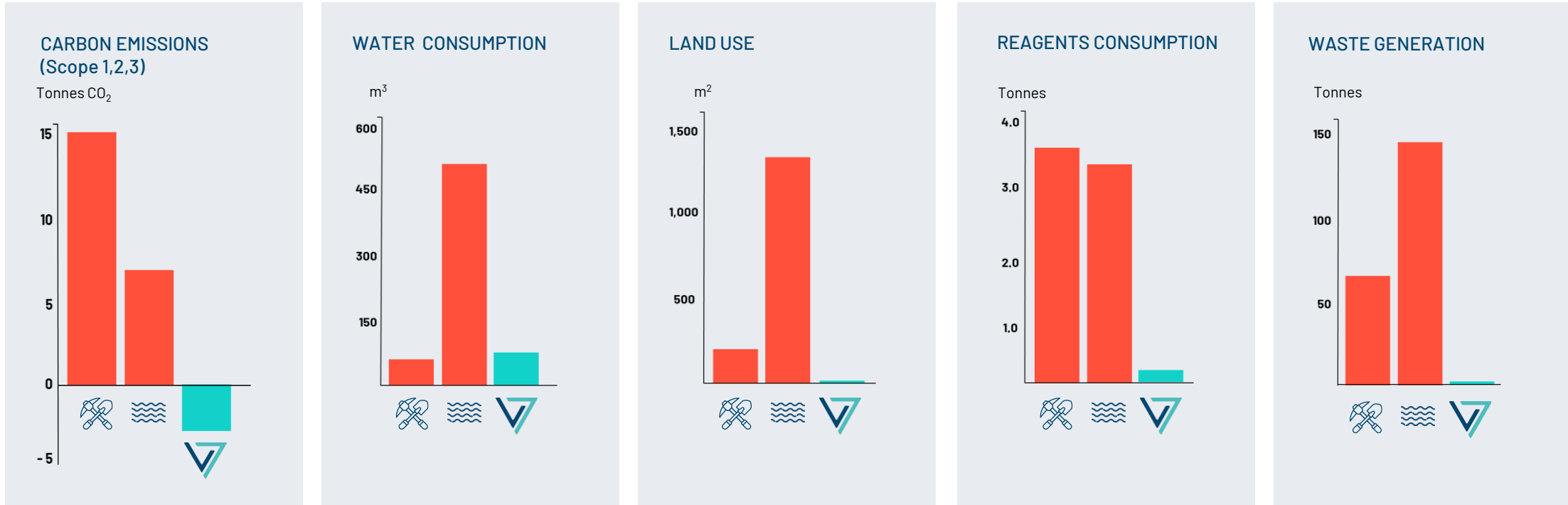


LEADING ENVIRONMENTAL CREDENTIALS



Storm Taylor
ESG Lead

Per tonne of lithium hydroxide produced



- Hard rock mining**
60% of world lithium production
- Evaporation ponds**
40% of world lithium production



Source: Minviro Life Cycle Analysis 2021 & Vulcan Energy's Pre-Feasibility Study
 Note 1: The Company's environmental credentials set out in this slide (and elsewhere in this Presentation) are based on the Company's Pre-Feasibility Study.
 There is no guarantee that the Company will be able to achieve the targeted metrics.

21 roadshows and 2 information events for local community engagement and education completed during the year

TNFD Forum Member assisting with framework development. Funds allocated for a biodiversity project

UNGC member (since February 2022)

Certified Carbon Neutral International Organisation from 2021

GOVERNMENT RELATIONS

MACRO POLICY SETTINGS IN OUR FAVOUR

"Geothermal energy is reliably available to us year-round: it is weather-independent, crisis-secure, and nearly inexhaustible. That is why it is right to continue to advance the use of geothermal energy in Germany."

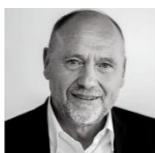
Robert Habeck, Vice Chancellor of Germany & Federal Minister for Economic Affairs & Climate Action

"Geothermal can be a relevant contribution towards climate protection and heat system transition in this country. In ten to twelve years, we therefore have to ensure that many projects are rolled out and fully realized in the Upper Rhine region of Baden."

Andre Baumann, Baden-Württemberg State Secretary in the Ministry of the Environment, Climate Protection, & the Energy Sector

We need to get our act together in terms of Geothermal in the Upper Rhine, the potential is huge! Geothermal, energy, and Lithium for battery manufacturing in one process. The task now is to quickly draw up a roadmap in order to harness the opportunities here in our country.

Manuel Hagel, Chairman of the CDU Parliamentary Group in the State Parliament of Baden-Württemberg.



Dr. Horst Kreuter
Executive Director Germany



COMMUNITY AT THE HEART OF EVERYTHING WE DO

Vulcan Energie @VulcanEnergie · 2. Aug.
Hoher Besuch in #Insheim: Transformations- und Arbeitsminister @Soziales_RLP, Herr @Alex_Schweitzer, war gestern bei uns zu Besuch. Unser CEO @HorstKreuter erklärte unser Gewinnungsverfahren für regenerativen Strom 🌱 sowie unsere Anlage für die #Lithiumgewinnung. @spdrp



Vulcan Energie @VulcanEnergie · 26. Apr.
Strahlende Gesichter beim gestrigen Besuch des Landtagsabgeordneten @andrebaumann. Wir danken für den regen und offenen Austausch! @GrueneBW @gjbw @FraktionGruenBW @LVBWBerlin @HorstKreuter #ZeroCarbonLithium #ZeroCarbonFuture #Wärmewende



Vulcan Energie @VulcanEnergie · 1. Sep.
Politische Sommertour bei unserer #Lithium-Anlage in Insheim. Die rheinland-pfälzische Wirtschaftsministerin @Schmitt_FDP des @MWVLW_RLP war bei uns zu Besuch. Begleitet wurde sie dabei von Medienvertretern von @SWRpresse, @AntenneLandau und @rheinpf.



Vulcan Energie @VulcanEnergie · 10. Juli
Ente gut, alles gut: Letzte Woche fand zum 7. Mal das #Entenrennen mit 1400 Gummienten 🦆 in #Haßloch statt. Die @spdde-Fraktion aus Haßloch war Veranstalter und @IsabelMackensen eröffnete das Rennen. Wir unterstützten das tolle #Event und sponserten das Zielbanner 🏁.



Vulcan Energie @VulcanEnergie · 20. Mai
🇪🇺 und 🇩🇪 stehen vor einer Jahrhundertaufgabe: Beschleunigung der #Energiewende und massive Reduzierung der Abhängigkeit fossiler Energieimporte. Hierzu sind pol. Entscheider gefragt: @DanielKarrais von der @fdpdpvfraktion in einem eindrucksvollen Video 📺



youtube.com
"Geothermie- Was hat es damit auf sich?" mit Daniel Karrais
Was hat es mit Geothermie auf sich? Und welchen Standortvorteil haben wir hier in Baden-Württemberg? Unser klimapolitischer Sprech...

THE RIGHT TEAM FOR THE JOB



OUR MAIN STRENGTH: OUR PEOPLE

- 180 FTE within the Vulcan Group
- Top scientists, engineers and professionals within the fields of lithium chemistry, chemical engineering, geothermal energy, drilling, reservoir engineering and geology.
- Highly motivated team dedicated to creating shareholder value through decarbonising energy and lithium.



89% of employees like the working culture in their team following first satisfaction survey



Supporting the Just Transition by employing a number of ex-oil and gas industry experts



ESG linked KPIs for Executive team



180 FTE equivalent Vulcan team members, up from 9 in 2021



BOARD OF DIRECTORS



Dr. Francis Wedin
Managing Director & CEO

Founder of Vulcan Zero Carbon Lithium™ Project. Lithium industry executive since 2014. Previously Executive Director of ASX-listed Exore Resources Ltd. Track record of success in lithium industry as an executive since 2014, including the discovery of three resources on two continents. PhD in Geology, MBA in Renewable Energy, global experience in battery metals sector.



Annie Liu
Non-Executive Director

Former Tesla Head of Battery and Energy Supply Chain. Led and managed Tesla's multi-billion-dollar strategic partnerships and sourcing portfolios that support Tesla's Energy and Battery business units including Battery, Battery Raw Material, Energy Storage, Solar and Solar Glass, including raw materials sourcing efforts such as lithium for battery cells. 20 years' experience with Tesla and Microsoft.



Gavin Rezos
Chair

Executive Chair/CEO positions of three companies that grew from start-ups to the ASX 300. Extensive international investment banking experience. Investment banking Director of HSBC with senior multi-regional roles in investment banking, legal and compliance functions. Currently Chair of Resource and Energy Group, principal of Viaticus Capital, Non-Executive Director of Kuniko Limited and Non-Executive Chair Resources & Energy Group Limited.



Dr. Heidi Grön
Non-Executive Director

Dr. Grön is a chemical engineer by background with 20 years' experience in the chemicals industry. Since 2007, Dr. Grön has been a senior executive with Evonik, one of the largest specialty chemicals companies in the world, with a market capitalization of €14B and 32,000 employees.



Dr. Günter Hilken
Non-Executive Director

Dr Hilken has over 35 years' experience in and a deep understanding of the German chemicals, renewables and infrastructure investment sectors and, through leading industry advocacy associations, the German Government at the State and Federal level. Dr Hilken is a Senior Advisor to Macquarie Asset Management, Director of Currenta and President and Chairman of the Board of the German Federation of Industrial Energy Consumers (VIK).



Ranya Alkadamani
Non-Executive Director

Founder of Impact Group International. A communications strategist, focused on amplifying the work of companies that have a positive social or environmental impact. Experience in working across media markets and for high profile people, including one of Australia's leading philanthropists, Andrew Forrest and Australia's former Foreign Minister and former Prime Minister, Kevin Rudd.



Josephine Bush
Non-Executive Director

Member of the EY Power and Utilities Board. Led and delivered the EY Global Renewables and Sustainable Business Plan and spearheaded a series of major Renewable Market Transactions. Successfully advised on the first environmental yieldco London Stock Exchange listing, Greencoat UK Wind PLC. Ms. Bush is a Chartered Tax Advisor, holds an MA Law degree from St Catharine's College, Cambridge, and brings a wealth of experience in ESG strategic advisory.



Mark Skelton
Non-Executive Director

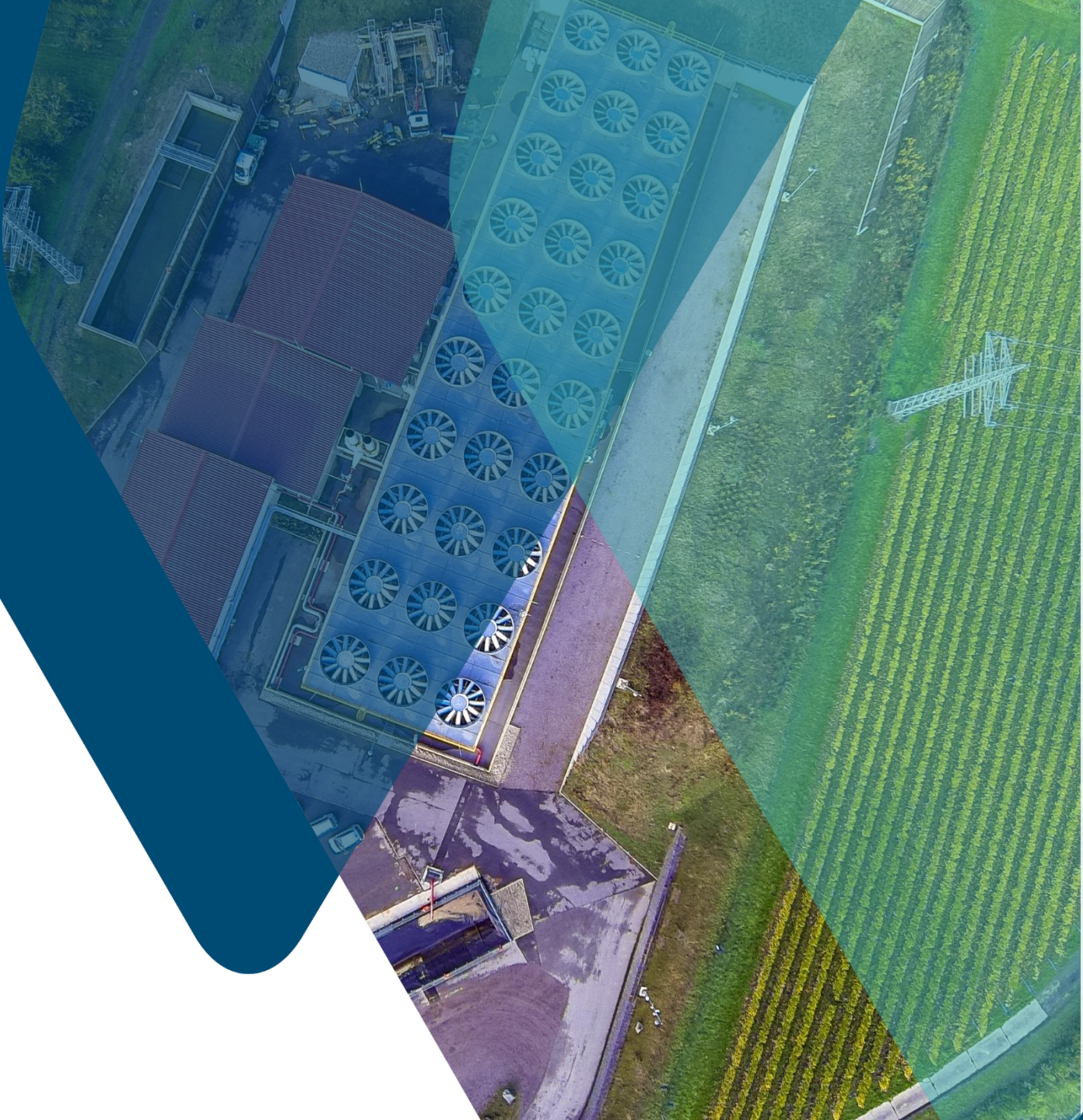
Mr Skelton has more than 35 years' experience including a 29-year tenure at BP and then at Fortescue Metals Group (Fortescue) as Project Director, and Director of Projects. A senior leader and advisor with a proven record in delivering major projects, business transformation and developing organisational capability within the mining, energy and oil and gas industries, Mr Skelton has extensive project experience in Australia and internationally.

A wealth of multi-disciplinary experience across the span of industries that we cover



Gender-balanced, majority-independent Board of Directors

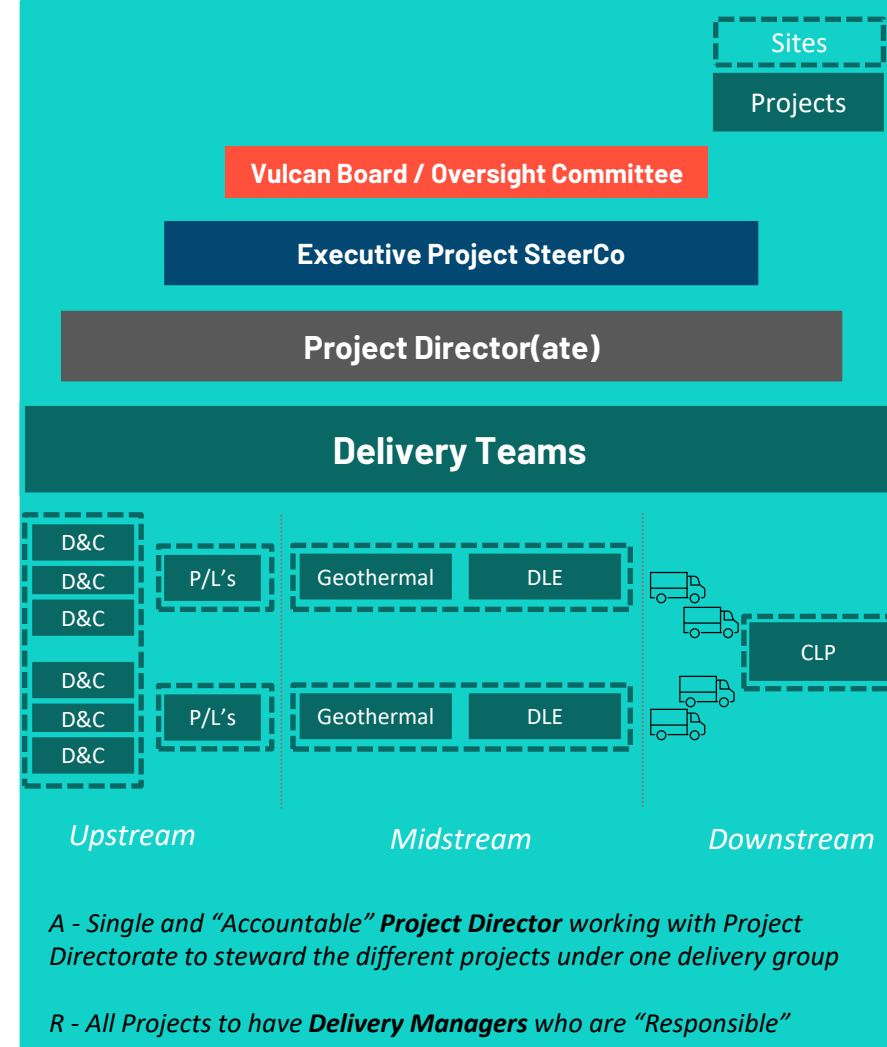
PROJECT EXECUTION



PROJECT EXECUTION & DELIVERY CAPABILITY

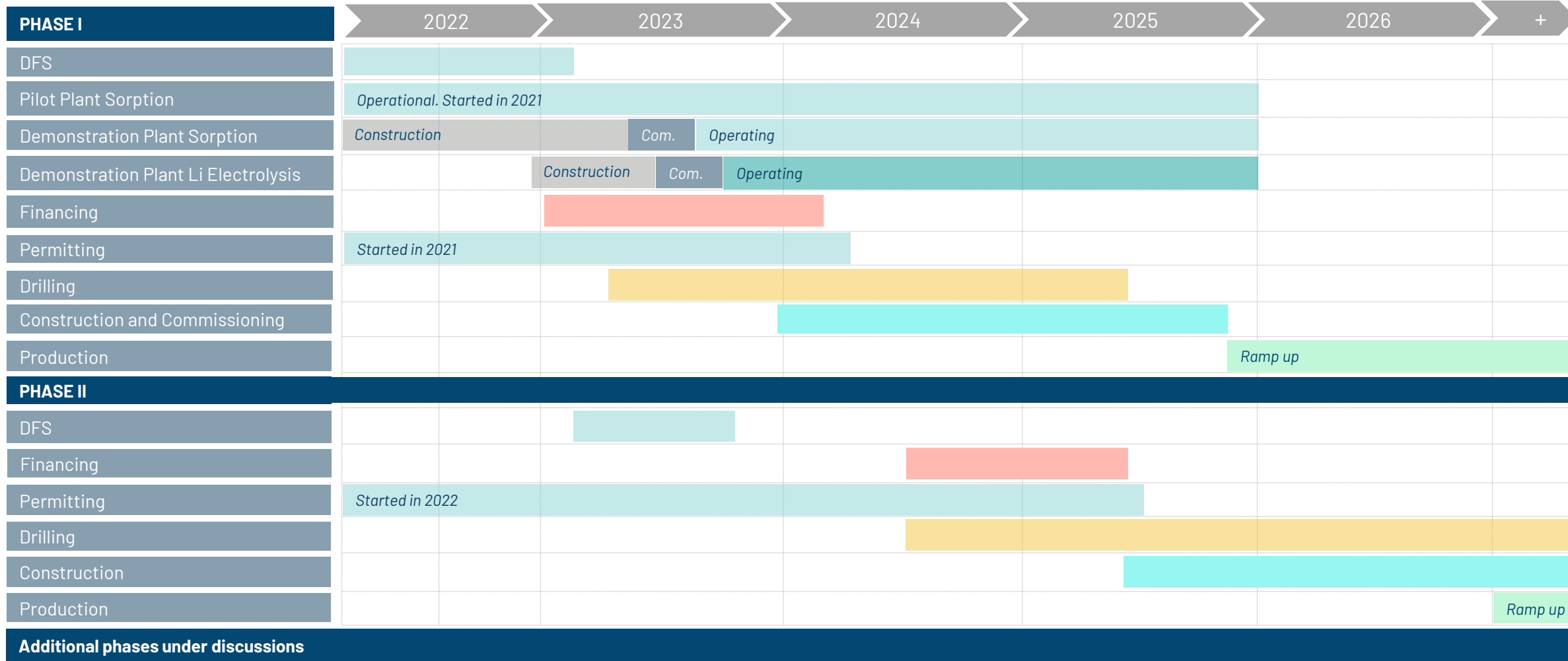
Portfolio Approach - Executing different projects to achieve one goal

- Vulcan Energy is transitioning from a Development Company to an Integrated Project Execution & Production Company.
- Projects to be delivered under single integrated projects group, providing a consistent approach to:
 - **Delivery** (Project Execution, Contract Strategy, Engineering Standards, Strategic Sourcing)
 - **Integrating** schedules and visibility of critical path.
 - **Interfaces** being managed.
 - **Risks** managed and opportunities.
 - **Controlling** of projects giving early warning and insights into decision makers.
- Building a German centric delivery team, on the ground leadership and managing of all delivery scopes.
- Strong Project Governance applied via Executive Project SteerCo to support and steer Project Directorate.



Cris Moreno
Deputy CEO

TARGET PROJECT TIMELINE



Phase 1 DFS approaching completion. 2023 to be focused on bridging phase, ordering commercial long lead items, and developing project execution and delivery capability.



SHARE PRICE AND CAPITAL STRUCTURE

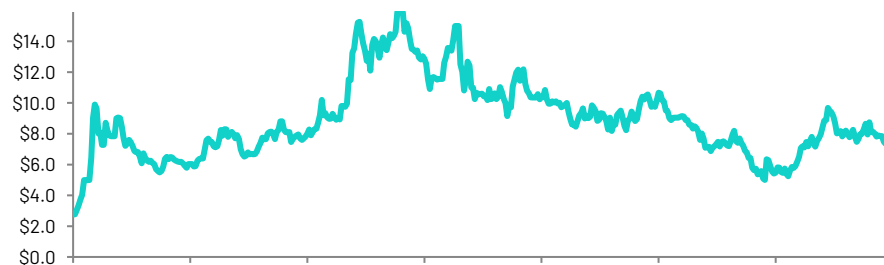
ASX : VUL

Shares on Issue	143,335,301
Performance Shares	91,174
Performance Rights	8,627,427
Market Capitalisation at \$7.05 (undiluted)	~\$1.01B
Cash Position (as at 30 Sep 2022)	€158M
Top 20 Stakeholders	~60%
Management (undiluted)	~17%
Frankfurt: VUL	

KEY SHAREHOLDERS

Dr. Francis Wedin and related parties	11.50%
Stellantis Group (PSA Automobiles)	8.00%
Vivien Enterprises Pte Ltd	5.77%
Hancock Prospecting Pty Ltd	5.64%

VUL SHARE PRICE (AUD) (1 JANUARY 2021 - 26 SEPTEMBER 2022)



Markus Ritzauer
Chief Financial Officer
(Germany)



Rob Ierace
Chief Financial Officer
(Australia)

Thank you

Media and Investor Relations

Annabel Roedhammer
aroedhammer@v-er.eu

@VulcanEnergyRes | www.v-er.eu | info@v-er.eu
ASX:VUL
FSE:VUL



Annabel Roedhammer
Head of Investor Relations
(Global) (PR and Comms
APAC)



Daniel Tydde
Company Secretary
& In-House Legal
Counsel (Australia)



Dr. Meinhard Grodde
Justiziar, In-House Legal
Counsel (Germany)





ASX CEO Connect

In partnership with  nabtrade

EquityMates

Join us next time

Tuesday 7th March 2023

Companies to be confirmed

Register your interest to hear more about
the next CEO Connect event
www2.asx.com.au/ceo-connect



Thank you.

