

# THE LITHIUM CONVERSION GAP





arcadium  
lithium



Winsome Resources  
LIMITED



SAYONA

NEMASKA  
LITHIUM

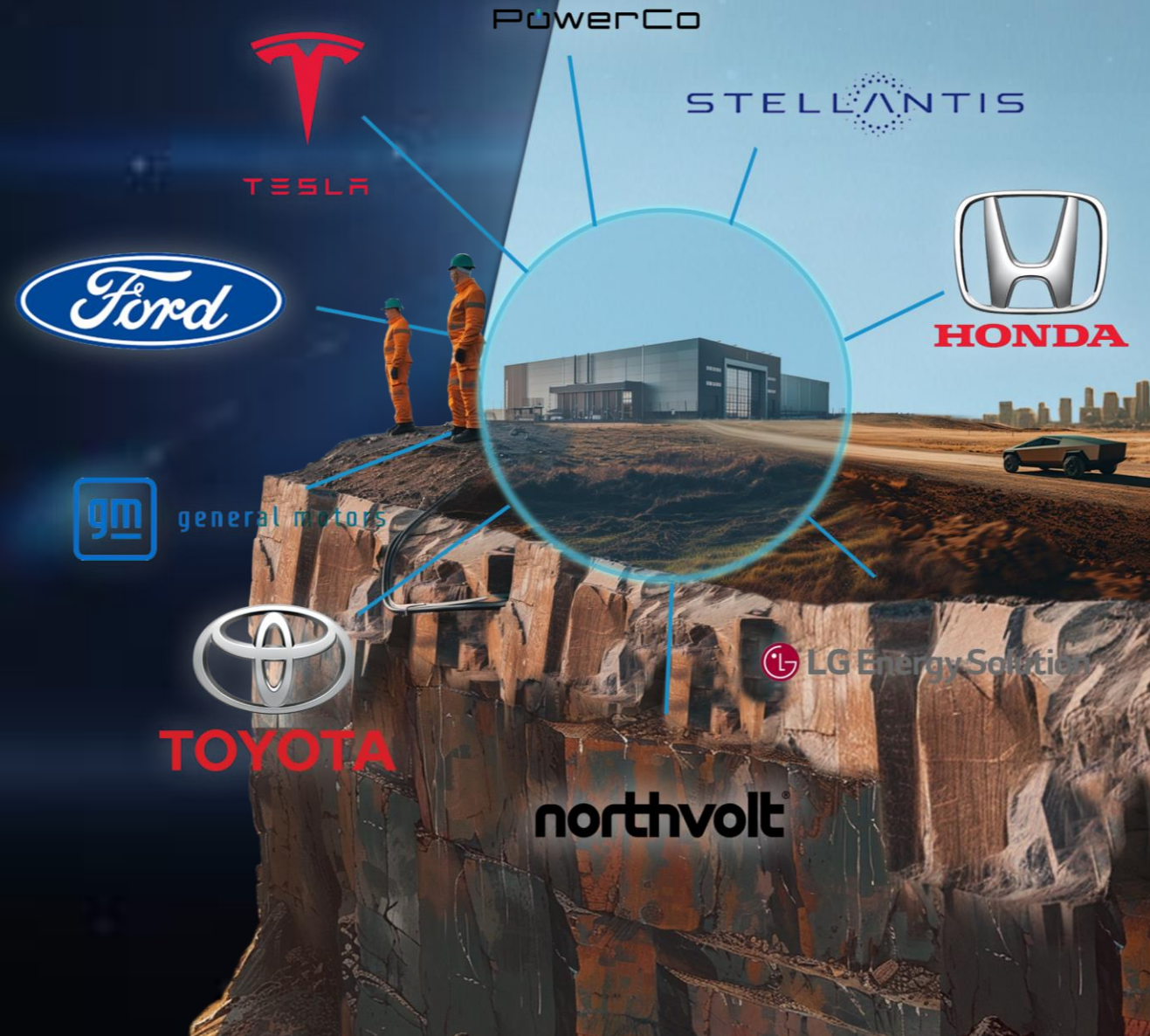
## UPSTREAM | MINE SUPPLY

- +40 companies Quebec lithium exploration
- Large +500Mt at +1%  $\text{Li}_2\text{O}$  resource
- Resource has doubled in the past year
- Transatlantic supply – Canada, Brazil, Africa



## DOWNSTREAM | DEMAND

- Nth America to surge in battery manufacturing
- +20 manufacturers to add 1,000GW by 2028
- Tenfold increase in current capacity
- Will need 850,000t LCE per year



THE LITHIUM GAP







# DOWNSTREAM | REGULATION

- US, Canada cut Chinese battery material reliance
- Chinese firms ordered to exit from Canadian companies
- Tariffs on Chinese processed LCE rise to 25%
- Canadian developers need downstream solutions

THE LITHIUM GAP







## MIDSTREAM | PROCESSING

- No current lithium converters in North America
- Only 100 Ktpa of converters planned
- No lithium refining experience or history
- Massive GAP between supply and demand

THE LITHIUM GAP





# CLOSING THE LITHIUM CONVERSION GAP

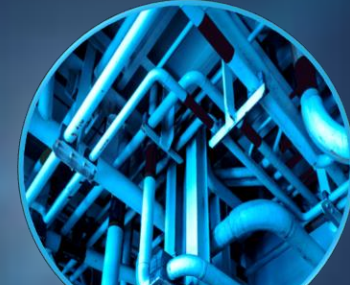






## PROBLEMS WITH FILLING THE GAP

- Complex chemical business
- Many failures, and technical difficulties
- Even with existing Lithium producers
- Years to establish and ramp up



**Proven Technology**



**Experienced Operators**





## EXPERIENCED LITHIUM OPERATORS

- Ran Greenbushes Li in 1995, commissioned Li Carb Plant
- First mining executive - lithium-ion battery future
- First large scale integrated mine to refinery project
- Built Mt Cattlin Spodumene Mine (137 ktpa)
- Built Jiangsu Lithium Carbonate Plant (17 ktpa)
- GXY MCap <\$10 m (left 2013) - \$2.5b at merger



**Iggy Tan**

Chairman

THE **DREAM** TEAM





## GREENBUSHES LITHIUM VETERAN



**Patrick Scallan OAM**  
Non-Executive Director

- Ran Greenbushes Mine for 25 years
- Oversaw expansion from 200 Ktpa to 1.4 Mtpa
- Largest spodumene & highest grade operating mine in the world

## INTERNATIONAL DOWNSTREAM EXPERT



**Dr Jingyuan Liu PhD**  
Non-Executive Director

- Ex-Galaxy GM Technology
- Leading technical expert in the Lithium Industry
- Designed & Operated world-class Jiangsu Lithium Carbonate Refinery

THE **DREAM** TEAM



# THE LITHIUM DREAM TEAM



**Terry Stark**  
Head of Mining  
Ex Galaxy GM Operations



**Roger Pover**  
Head of Processing  
Ex Galaxy Plant Manager



**John Loxton**  
Head of Li Refinery  
Ex Hatch Li Carb Plant



**John Sobolewski**  
Chief Financial Officer  
Ex Galaxy CFO & Co Sec

# HATCH







# FAILED CANADIAN Li PROJECTS



## North American Lithium

- Started 2014 – Shutdown 2015
- Spent circa CAD 250m
- Produced 109 t LC



## Nemaska Lithium

- DFS completed 2018
- Spent CAD 411 m
- Failed to start up 2019

THE COMPETITION





# TROUBLED LiOH PLANTS



## Tianqi Kwinana LiOH

- 8 Years so far
- Capital Cost Blowout
- > A\$1 billion
- FY 23 - 8% of design



## Albemarle Kemerton LiOH

- 5 years so far
- Still <20% of design rate
- Shut trains 2,3,4
- Write down US\$1 billion



## Alkaline Pressure Leach

- New Technology
- Unproven
- 1995 Greenbushes 5Ktpa
- Failed due to scaling

## THE COMPETITION





# WHY HAVE THESE PROJECTS FAILED?

- Lack of operating direction at design
- Limited commissioning experience
- Use of unproven technology



Our Lithium Dream Team are Operators

**DESIGN**







# DREAM TEAM TRACK RECORD

## Jiangsu Li Carbonate Plant

2 Years to Commercial Production

Ground  
Breaking

21 Feb 2010

Start of  
Construction

1 May 2010

Project  
Completion

6 Dec 2011  
(19 months)



6 May 2012  
(6 months Commissioning)

- Capital Cost – US\$120 m
- At design rate 20,000 tpa
- Highest quality LC worldwide





**Jiangsu Lithium Carbonate Plant**







CLOSING THE LITHIUM GAP

# THE BÉCANCOUR REFINERY

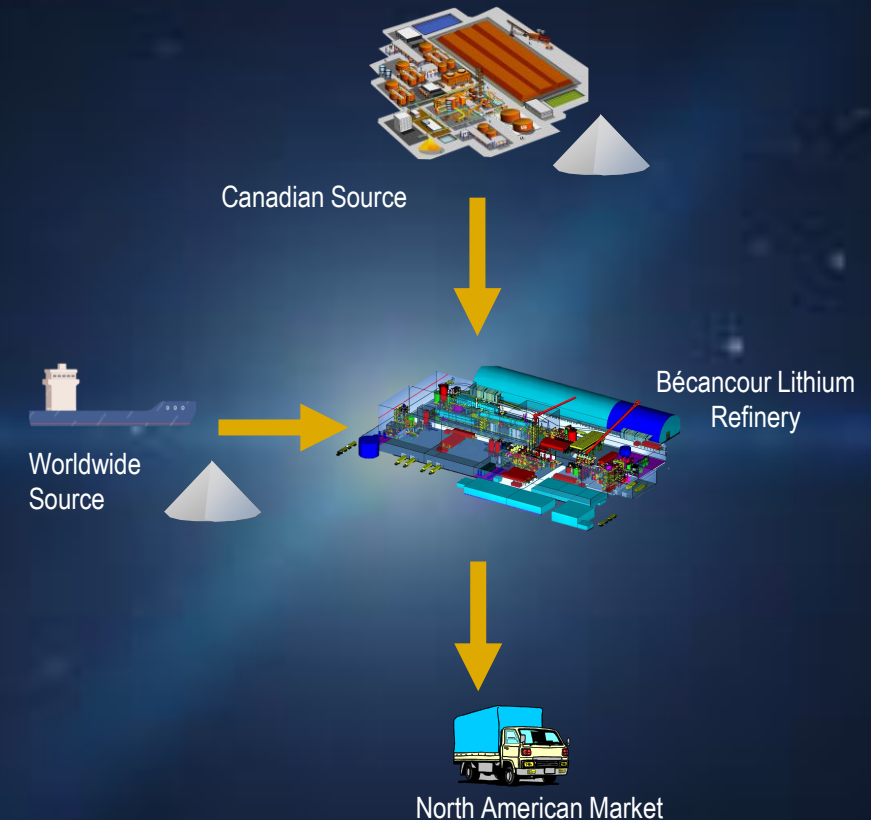






# BÉCANCOUR LITHIUM REFINERY

- 18,270 tpa green battery-grade lithium carbonate plant
- Located in Bécancour, Quebec's Battery Hub
- Based on proven Jiangsu design
- Company has start-up experience of Jiangsu
- Same flow sheet, same equipment, same suppliers
- Can handle all Spodumene types



THE LITHIUM REFINERY





**BECANCOUR LITHIUM REFINERY**

# **STRONG POSITIVE ROBUST PFS**



1. LU7 ASX Announcement 30 Sept 24 – “Strong Preliminary Feasibility for Becancour Lithium Refinery”





## THE BIG WHY's

- Why build a plant in a depressed price environment?
- Why build a plant when others are closing theirs?
- Why build a plant when others have failed?
- Why can you compete with China?
- Why lithium carbonate not hydroxide?







## COUNTER CYCLICAL STRATEGY

Why build a plant in a depressed-price environment?

- Been through 3-4 lithium cycles
- Prices have and will always recover
- Lithium demand from EVs and BESS growth strong
- Cleaned out all the debris in the lithium supply
- Develop a project ready for price recovery



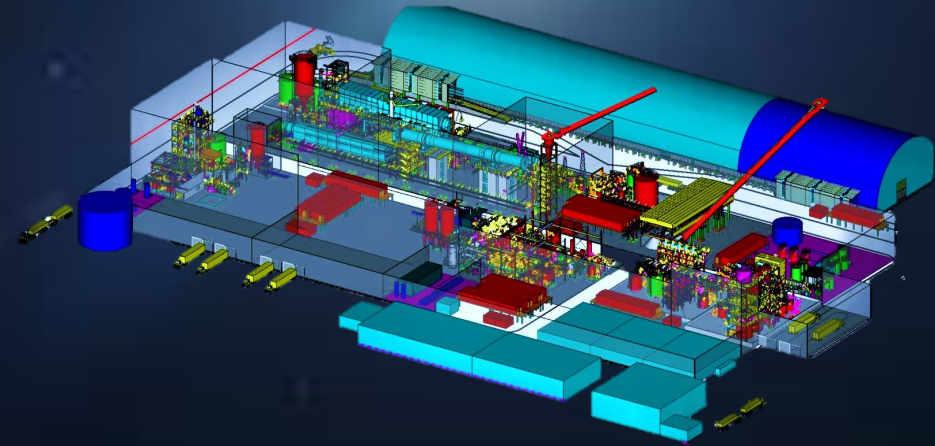




## NEW CAPACITY IS REQUIRED

Why build a plant when others are closing theirs?

- Over supply correction – higher costs closed
- Operations not performing, shutting down
- New efficient capacity is required for the growth
- World requires non-Chinese conversion capacity
- Location is the key







## PROVEN TECHNOLOGY & TEAM

Why build a plant when others have failed?

- Market has cleared out competition
- Those that are shutdown – difficult to re-start
- When price recovers – there will be shortage again
- Companies with established technology will benefit
- Companies with experienced team will benefit







# TRANSATLANTIC LITHIUM CONVERSION CENTRE

Why can you compete with China?

- Access to Cheap Green Power
- Nearby feedstock - Canada, Brazil and Africa
- Decrease in transport costs of spodumene
- End market North America
- Eliminate 25% tariff on Chinese Li chemicals
- End user qualifies for significant IRA funding



LU7 LITHIUM STRATEGY

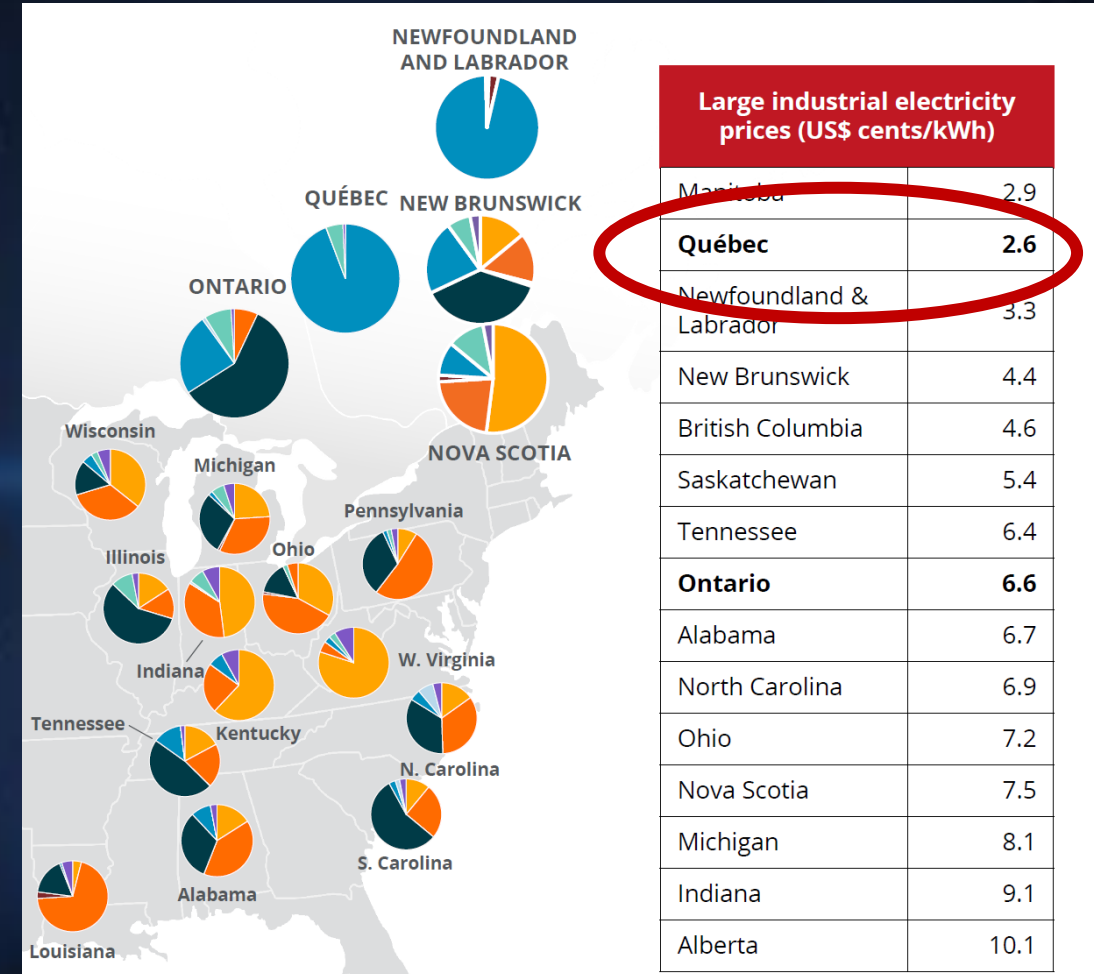




# QUÉBEC GREEN ADVANTAGE

Why can you compete with China?

- Cheap Green Power at 2.6c / kWh
- Hydro Québec's green energy reduces GHG by 95%
- Energy costs are 5 times less than other jurisdictions
- Strong operational cost advantage

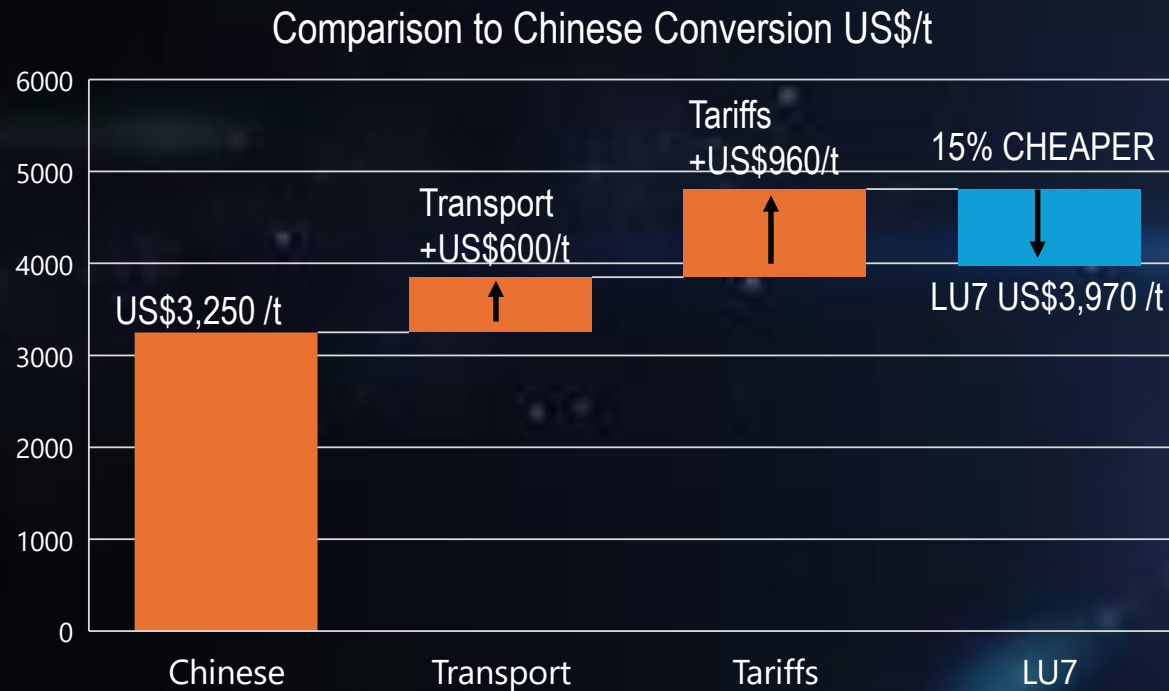






# BÉCANCOUR COST ADVANTAGE

Why can you compete with China?



LU7 LITHIUM STRATEGY



# Li CARBONATE WILL DOMINATE

Why Lithium carbonate not hydroxide?

- Proven track record in Li Carbonate
- Li Carbonate feed for LFP lithium batteries
- LFP battery demand growth due to safety and costs
- LFP 67% of China EV installations in 2023
- LFP forecast 87% of ESS market in 2024
- Chinese Li producers switching to Carbonate

LU7 LITHIUM STRATEGY







GOOD LOCATION



LITHIUM REFINERY

BÉCANCOUR

THE LITHIUM REFINERY



RAILWAY

BECANCOUR  
LITHIUM  
REFINERY

ASX:LD7

PORT FACILITIES

HIGHWAY

**GOOD  
LOCATION**

CLOSE TO  
INFRASTRUCTURE





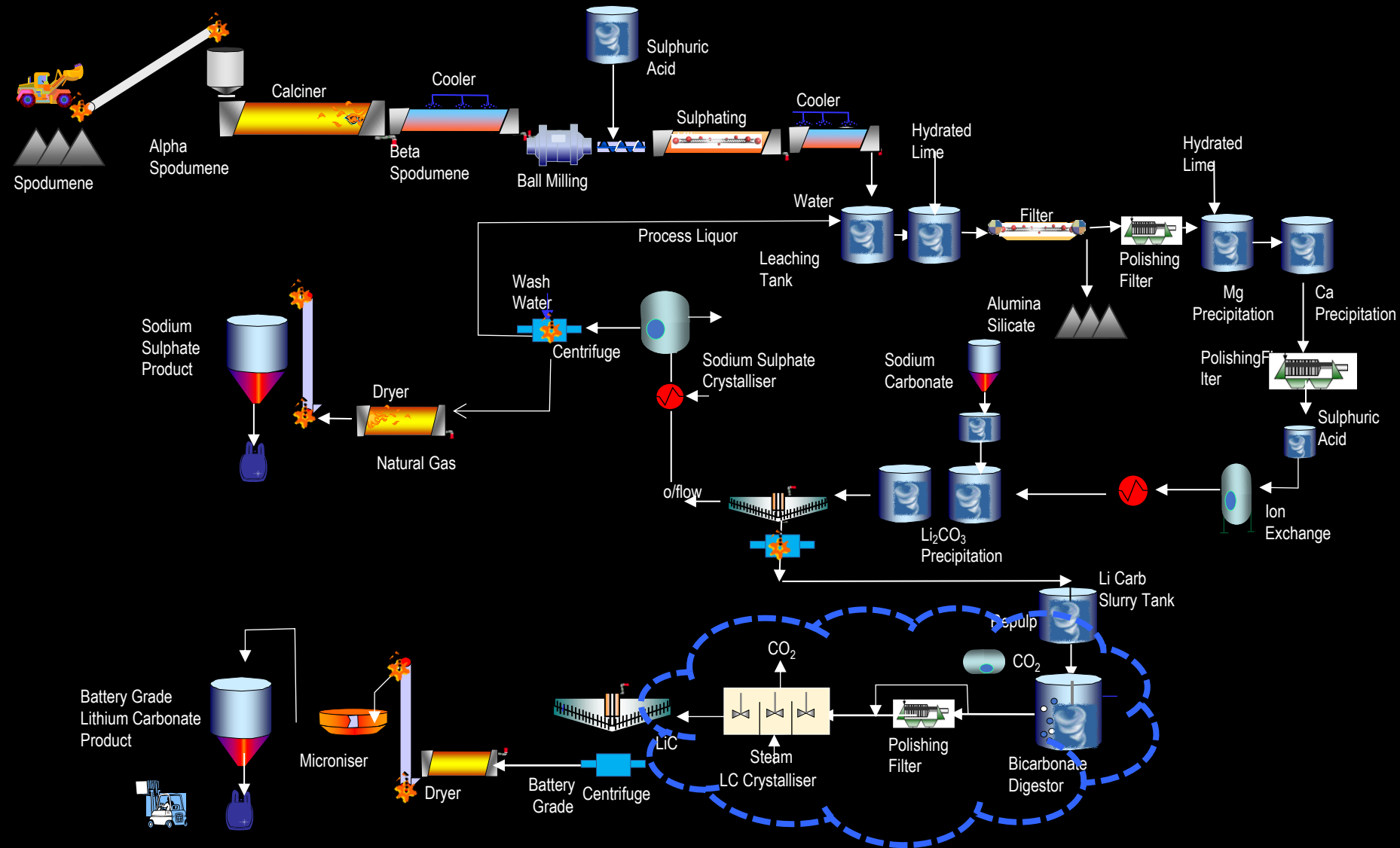
GOOD LOCATION



THE LITHIUM REFINERY

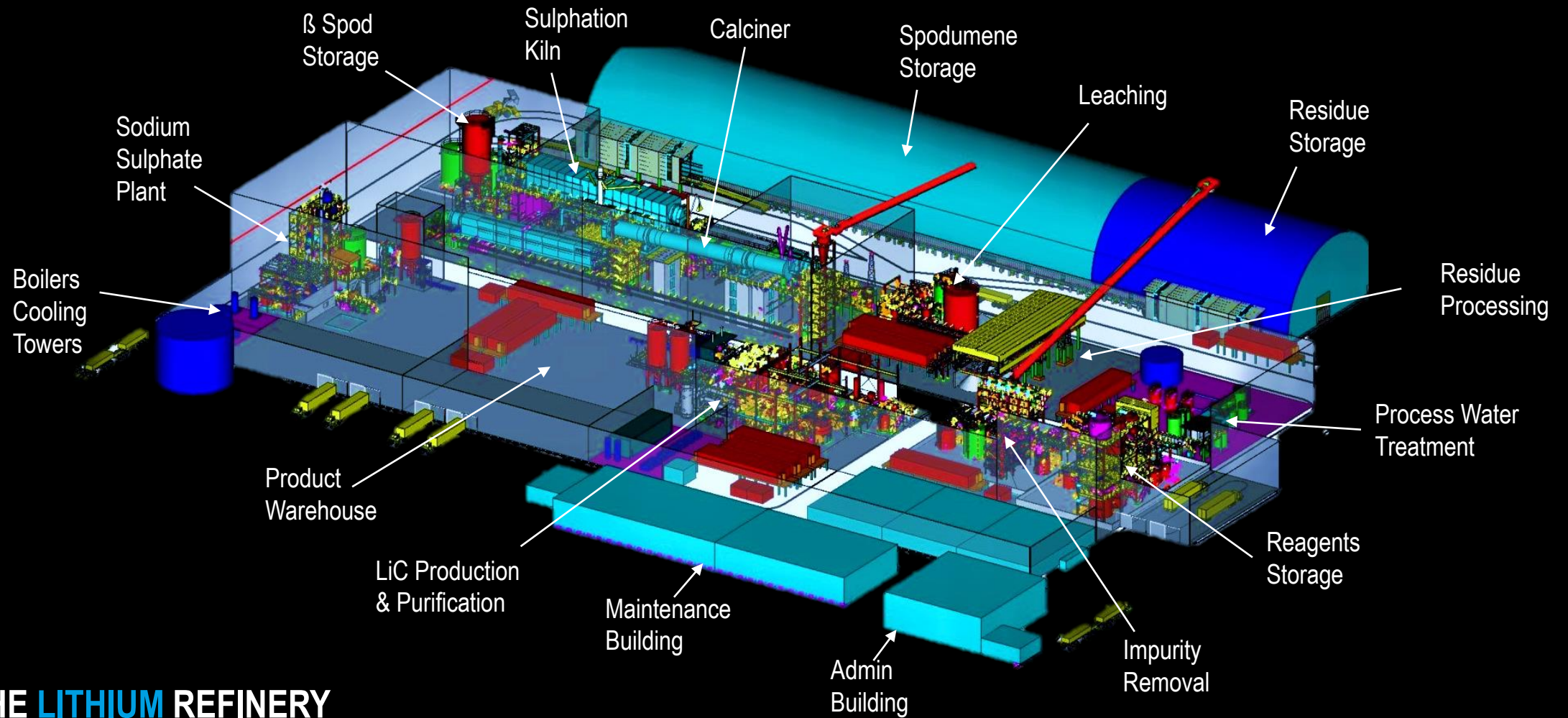


# LITHIUM REFINERY FLOW SHEET





# LITHIUM REFINERY DESIGN



THE LITHIUM REFINERY





## PROCESSES ALL SPODUMENE TYPES

- Lithium Refinery to have robust capability
- Samples - international sources of spodumene
- Imports while Canadian Li industry develops
- All programs achieve battery grade specs 99.5%  $\text{Li}_2\text{CO}_3$
- Low critical impurities Na <100 ppm vs. <250 ppm (STD)
- Hard rock LiC benefit Cl <2 ppm vs. 200 ppm (brine LiC)

1. LU7 ASX Announcement 30 Sept 24 – “Strong Preliminary Feasibility for Becancour Lithium Refinery”

THE **LITHIUM** REFINERY







## PROJECT ADVANCEMENTS

- Application to Hydro Quebec for 22.5 MW electricity
- Completed environmental survey – no issues
- Surface water hydrology study completed
- Soil contamination desk top study completed
- Co-operation with W8banaki First Nation commenced

THE LITHIUM REFINERY



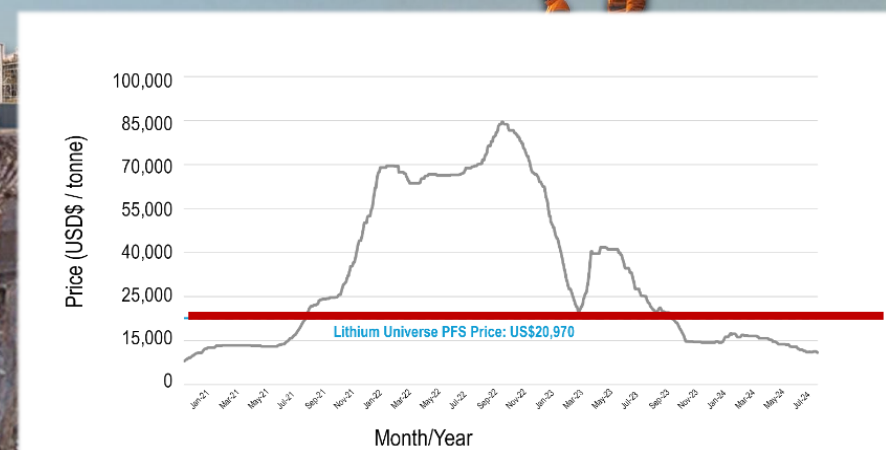
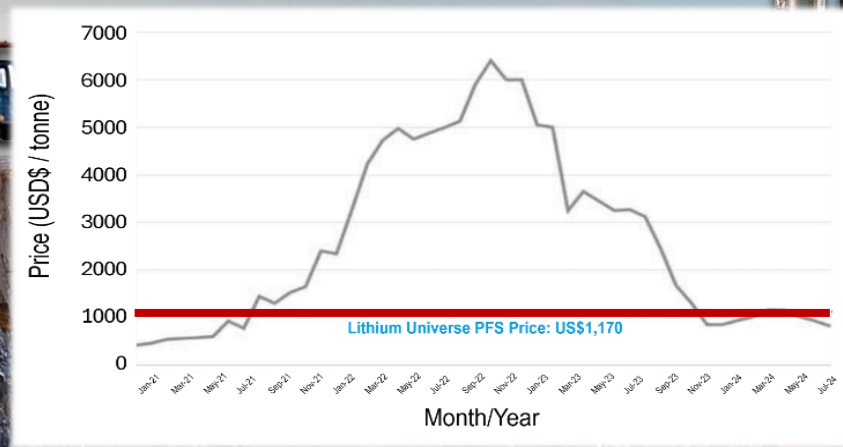




## BECANCOUR LITHIUM REFINERY

# CONSERVATIVE PRICE FORECAST

SC6 US\$1,170/t LC \$20,970/t







## BECANCOUR LITHIUM REFINERY

**% NET PRESENT VALUE**  
**US\$ 779 MILLION**







## BECAINCOUR LITHIUM REFINERY

# IRR PAYBACK 23.5% 3.5 YEARS

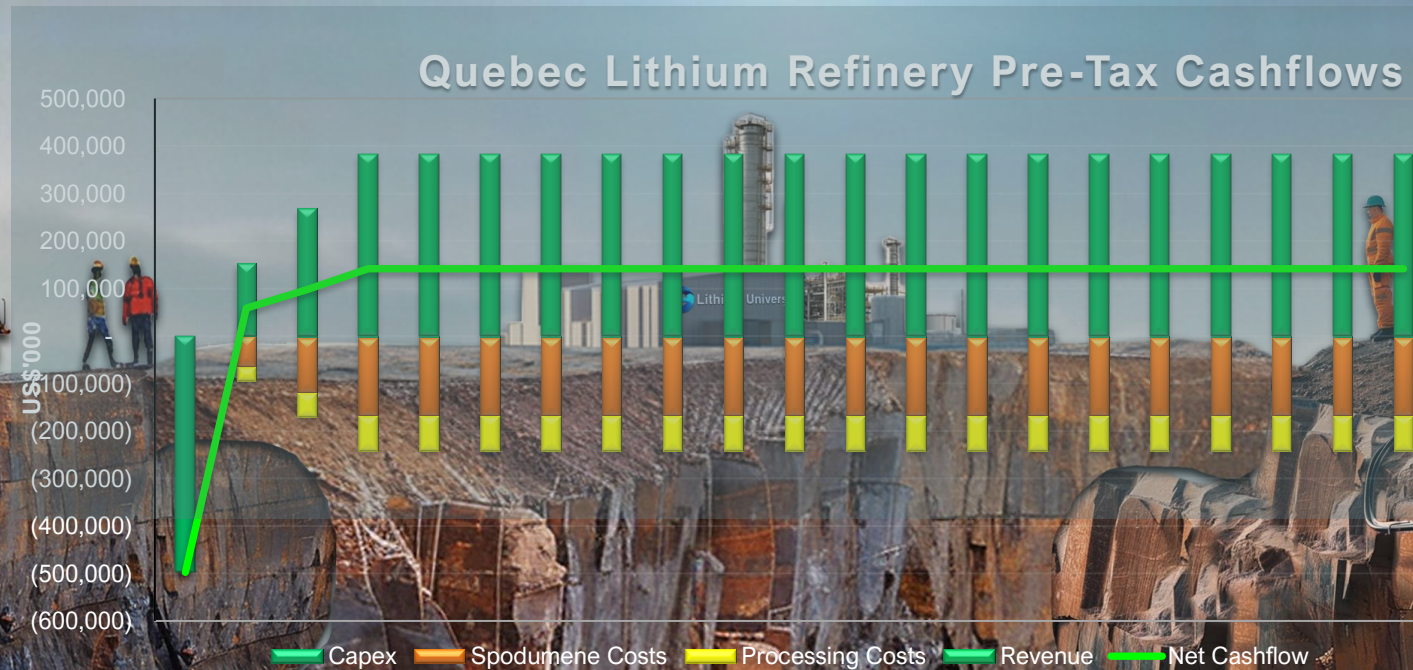






## BECANCOUR LITHIUM REFINERY

**EBITDA** **CAPEX**  
**US\$ 147M** **US\$ 494M**

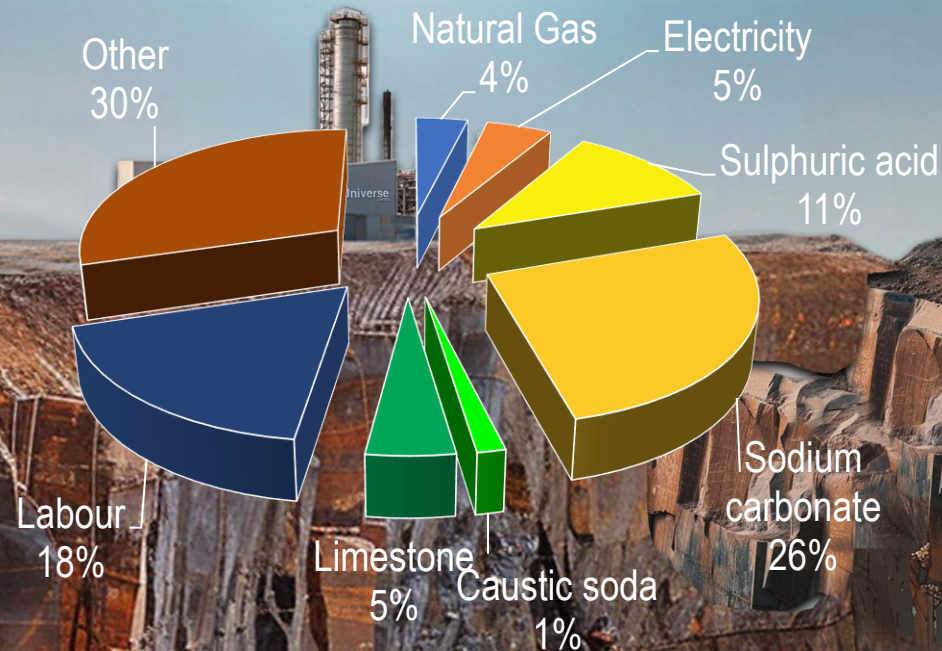






## BECAINCOUR LITHIUM REFINERY

# CONVERSION COST US\$ 3,976 /t LC



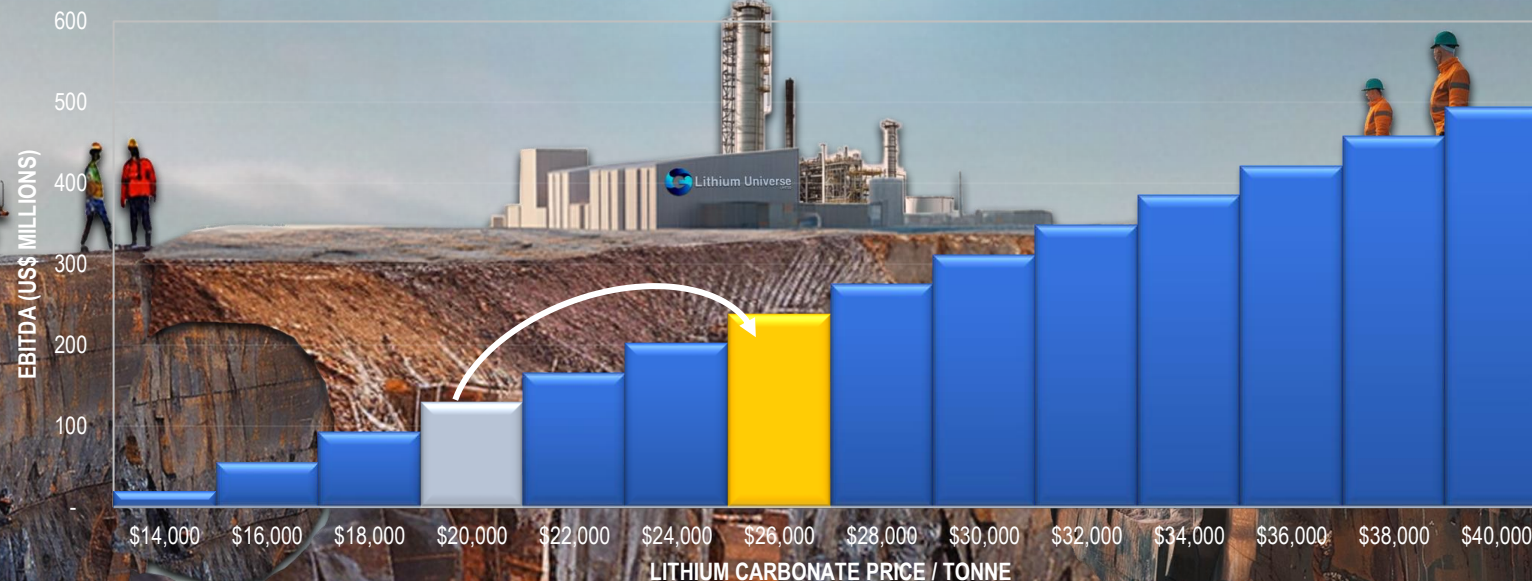




## BECANCOUR LITHIUM REFINERY

# ALL UPSIDE – 25% PRICE INC NPV US\$1.24 Billion

EBITDA Sensitivity to Lithium Carbonate Price







## DFS AND OFFTAKE DISCUSSIONS

- Offtake Discussions with OEMs
- Complete full Definitive Feasibility Study
- Project Permitting
- Funding Plan
- Strategic Investors at Project Level



THE LITHIUM REFINERY





## **LITHIUM DREAM TEAM**

Proven Lithium Track Record

## **PROVEN TECHNOLOGY**

Derisking Lithium Conversion Technology

## **BÉCANCOUR LITHIUM REFINERY**

Closing the North American Conversion Gap

## **INVESTOR HIGHLIGHTS**





## CAUTIONARY STATEMENTS

### Information Required by Listing Rules

The Becancour Lithium Refinery Preliminary Feasibility Study (PFS) does not rely upon estimated ore reserves / and or mineral resources. The spodumene concentrate feedstock for the proposed refinery has been assumed to have been purchased directly from spodumene miners currently producing spodumene concentrates or marketing agents or traders currently purchasing spodumene concentrate and selling to the downstream processors. Accordingly, the JORC Code is not relevant to this study nor are Listing Rules 5.16 and 5.17 to the extent to which they relate to matters concerning JORC.

### Forward Looking Statements

This release contains "forward-looking information" that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to studies, the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations. Generally, this forward looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information. Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current development activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of metals; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the chemical industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information. Neither the Company, nor any other person, gives any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. Except as required by law, and only to the extent so required, none of the Company, its subsidiaries or its or their directors, officers, employees, advisors or agents or any other person shall in any way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatever nature arising in any way out of, or in connection with, the information contained in this document. The Company disclaims any intent or obligations to or revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law.

### Cautionary Statement

The PFS is based on the material assumptions outlined including that it has been completed in accordance with AACE Principles to a Class 5 level with a nominal level of accuracy of  $\pm 35\%$ , that the financial forecasts rely upon the purchase of third party spodumene concentrate as the feedstock for the plant. The PFS referred to in this announcement has been undertaken to assess the potential technical feasibility and economic viability of constructing and operating facilities capable of producing battery grade lithium carbonate for use in lithium-ion batteries from those units of operations and provide baseline financial metrics to consider future investment decisions.

The Preliminary Feasibility Study (PFS) is based on the material assumptions. These include assumptions about the availability of funding. While Lithium Universe considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the PFS will be achieved. To achieve the range of outcomes indicated in the PFS, funding of in the order of US\$500 million will likely be required. Investors should note that there is no certainty that Lithium Universe will be able to raise that amount of funding when needed. It is also likely that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Lithium Universe's existing shares. It is also possible that Lithium Universe could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce the Company's proportionate ownership of the project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS.

**Authorised for release by the Board of Lithium Universe Limited.**