



**BUILDING EUROPE'S LARGEST LITHIUM REFINERY  
TO SUPPLY GIGAFACTORY DEMAND**

**TEES  
VALLEY  
LITHIUM**

**ALKEMY CAPITAL INVESTMENTS PLC  
(ALK.LSE) (JV2.FRA)**

December 2022

# ALKEMY CAPITAL INVESTMENTS PLC

Listed on the London Stock Exchange (ALK.LSE)  
and Frankfurt Stock Exchange (JV2.FRA).

Tees Valley Lithium Ltd, a wholly-owned  
subsidiary of ALK, is establishing Europe's  
largest low-carbon lithium mid-stream refining  
solution for the burgeoning electric vehicle  
market.

## CORPORATE PROFILE

LSE standard listing (LSE: ALK)

FRA standard listing (FRA: JV2)

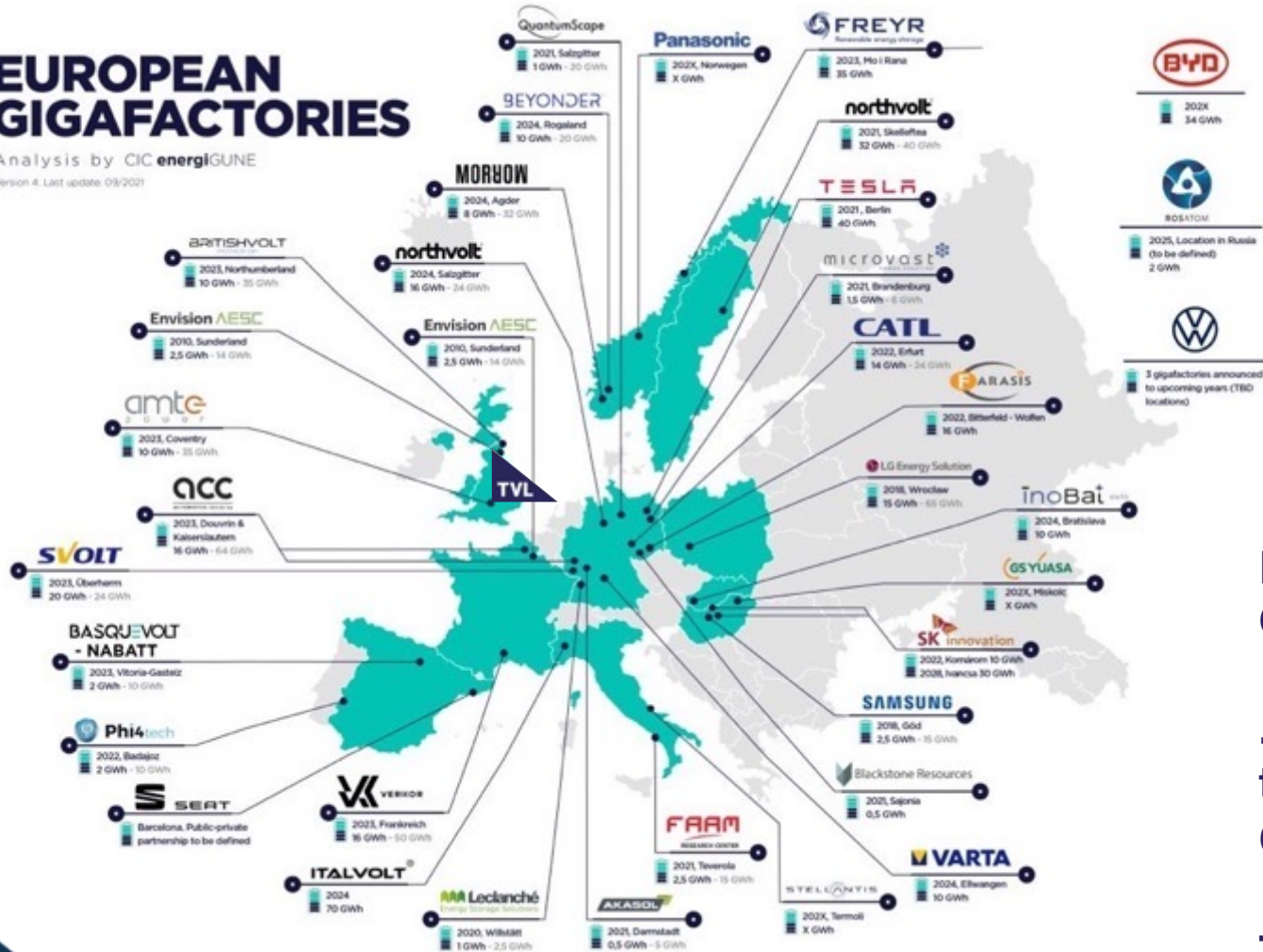
7.2M shares on issue

Market cap ~£20 million



# EUROPEAN GIGAFACTORIES

Analysis by CIC energigUNE  
Version 4. Last update: 09/2021

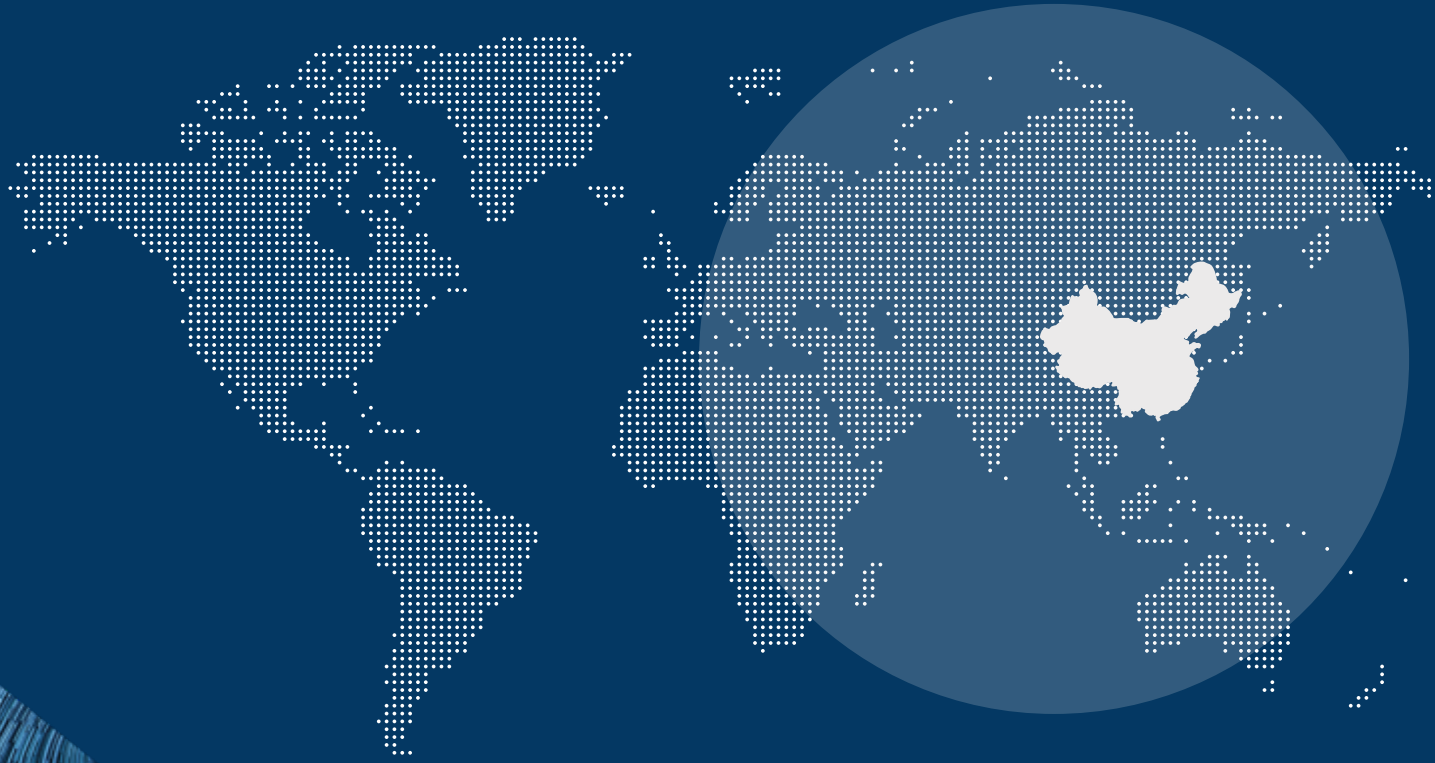


Europe will have 700 GW of Gigafactories by 2025.

..which will need over 325,000 tonnes of Lithium Hydroxide and Carbonate per year.

There is currently zero Lithium production capacity in Europe.

# CHINA CONTROLS 90% OF THE WORLD'S LITHIUM HYDROXIDE AND CARBONATE



*“China will need all of its Lithium production for its US\$11 trillion Carbon Neutral 2060 plan.”*

# APPROVAL GRANTED TO BUILD EUROPE'S LARGEST AND THE UK'S FIRST LITHIUM REFINERY

TVL has received full planning permission from Redcar & Cleveland Borough Council to build the UK's first – and the Europe's largest – Lithium Hydroxide refinery.

Following an 18-month consultation period, TVL is now shovel-ready and will generate over 1,000 local jobs.



# A NEW LITHIUM HUB FOR EUROPE

Producing up to 96,000 tpa of battery grade Lithium Hydroxide.

Equivalent to 15% of European demand by 2030.



# WILTON INTERNATIONAL PLUG & PLAY CHEMICALS PARK

Tees Valley Lithium will be the first major ultra-low carbon Lithium Hydroxide plant to be established in Europe.

Being established in world-class Chemicals park on a *plug & play* basis with ultra-low capital cost.

Major power, reagents and utilities provided by owner Sembcorp Energy UK and port logistics provided by PD Ports.



## Sembcorp Energy welcomes Tees Valley Lithium, UK's first Lithium Hydroxide Facility to Wilton International

*"I'm delighted that Tees Valley Lithium has chosen Wilton International for their new plant, having been attracted by the benefits of the Teesside freeport and the readily-available connectivity of our site."*

*"We welcome new customers and new low-carbon jobs that are supporting the UK's transition to net zero, similar to Sembcorp's strategic goals."*

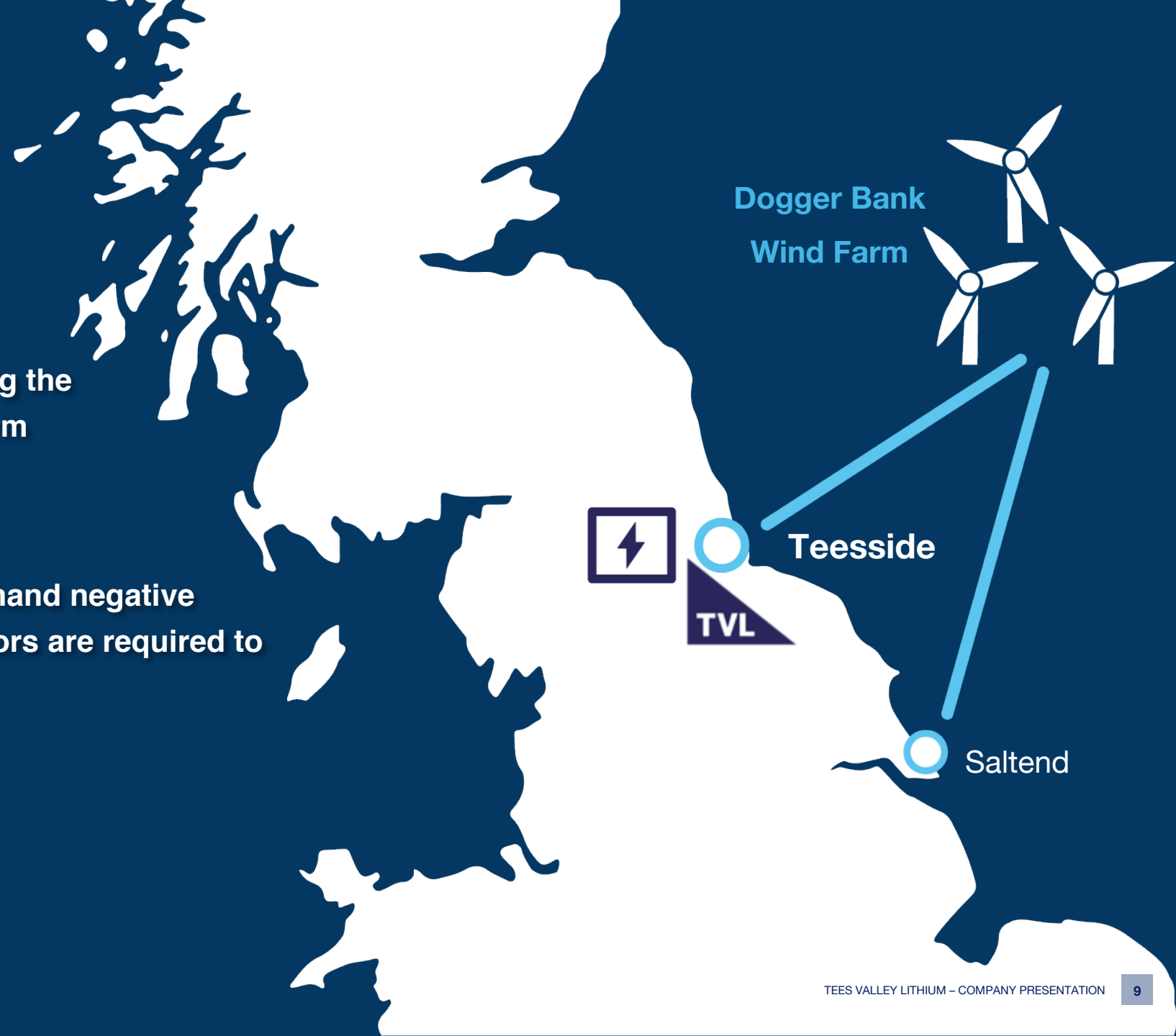
**Andy Koss, CEO, UK & Middle East, Sembcorp Industries.**



# TO BE POWERED BY LOW-COST RENEWABLE ENERGY

Hitachi is laying a HVDC cable connecting the 2.45 GW Dogger Bank Offshore Wind Farm with a 360 MW battery storage facility at Teesside.

During periods of high wind and low demand negative electricity costs are generated as operators are required to pay consumers to take power.



Dogger Bank  
Wind Farm

Teesside

TVL

Saltend

# MULTIPLE FEEDSTOCKS PRODUCING *HYDROXIDE AND CARBONATE* FOR *NMC* AND *LFP* BATTERIES

Primary Lithium Sulphate

Crude Carbonate (Brine)

Crude Carbonate (Mica)

Recycled Material (EU 2027)



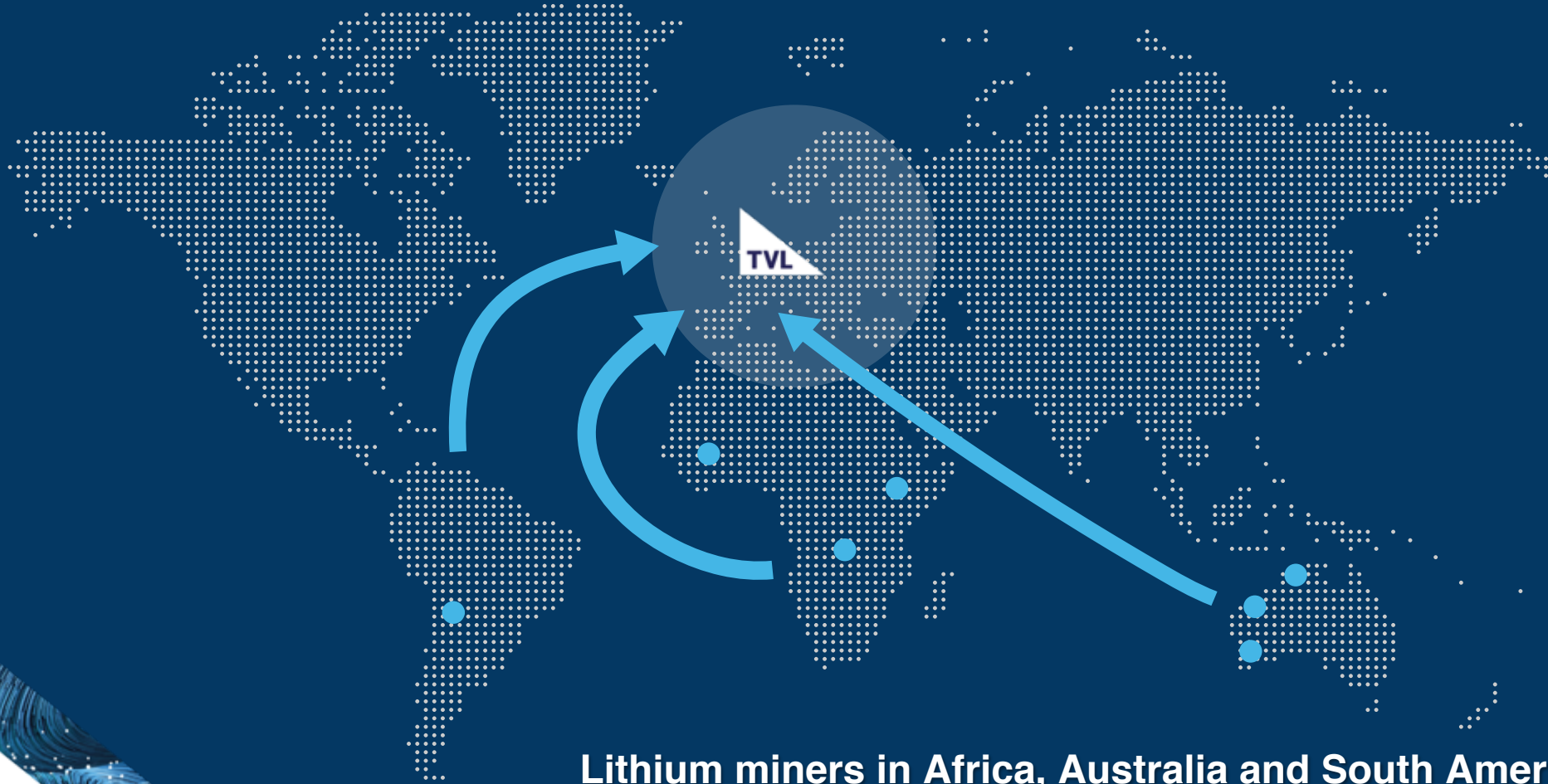
Lithium Hydroxide (NMC)

Lithium Carbonate (LFP)

Nickel Sulphate

TVL's unique chemical processing allows for flexibility in feedstock profiles and the ability to produce multiple end-products.

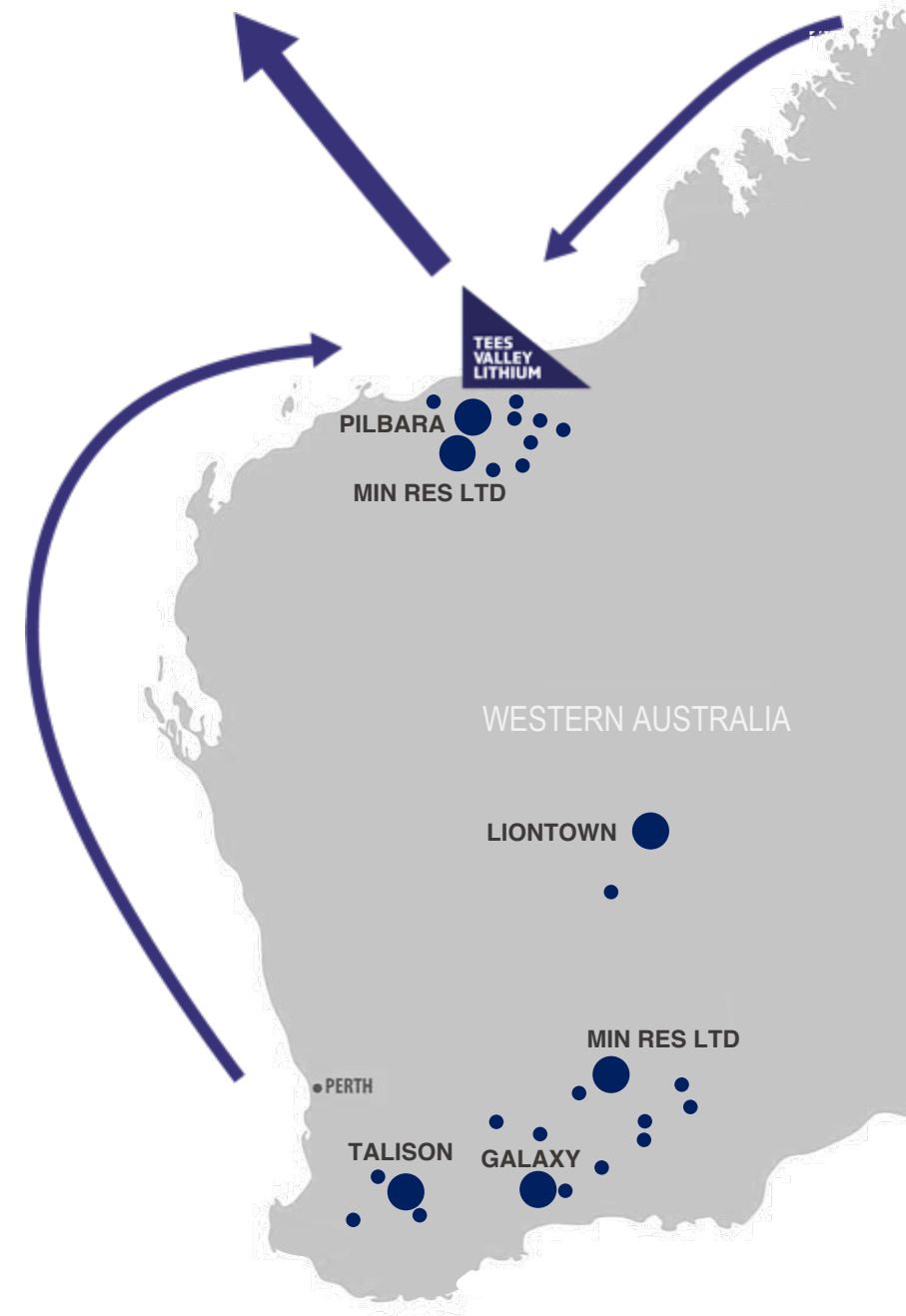
# GIVES MINERS ACCESS TO THE PREMIUM-PRICE EUROPEAN LITHIUM MARKET



Lithium miners in Africa, Australia and South America can gain access to the burgeoning European market by exporting a high-value, low-carbon intermediate product.

# A PRIMARY LITHIUM SULPHATE PLANT LOCATED IN THE HEART OF THE WORLD'S LARGEST SPODUMENE PRODUCING REGION

TVL contracting with WA mining companies to convert Spodumene (SC6%) to Primary Lithium Sulphate (~50%) for shipping to TVL's Wilton Refinery in Europe (*rather than shipping spodumene to China*)



# KEY PROJECT ECONOMICS (4 TRAINS 96,000 tpa LHM)

	Unit	Train 1	TOTAL (4 Trains)
Life of Project	Years	30	30
LHM Sold	Tonnes	24 kt pa	96 kt pa
Gross Revenue	USD	600M pa	2,400M pa
Operating Costs Total	USD/t	18,292	18,513
Capital Cost (incl 17.5% contingency)	USD	290M	1.4bn
Free Cashflow	USD	120M pa	460M pa
Post-Tax NPV	USD	930M	2.7bn
Post-Tax IRR	%	41%	34%
EBITDA	USD	160M pa	620M pa
EBITDA Margin	%	27%	26%
Payback Period	Years	2.6	NM

**TOTAL LIFE OF PROJECT = 2.84Mt LHM, \$71bn Rev**

*Assumes a long term LSM price of US\$10,000/t and LiOH price of US\$25,000/t  
The initial 24,000 tpa will process via causticisation and thereafter via electrochemical*

# EXPERIENCED BOARD AND MANAGEMENT TEAM



**PAUL ATHERLEY**

NON-EXECUTIVE  
CHAIRMAN

Paul has extensive capital markets and industry experience.

He is Founding Director of **PENSANA PLC** and has completed numerous successful acquisitions and financings of resource projects in Europe, China, Australia and Asia.



**JOHN WALKER**

CHIEF EXECUTIVE  
OFFICER - TVL

John has over 30 years of leadership experience in the mining and advanced materials processing industries with **IMERYS**. Most recently he has been providing strategic advice to lithium projects such as **PIEDMONT LITHIUM**.



**TONY VEITCH**

CHIEF EXECUTIVE  
OFFICER  
INTERNATIONAL

Tony has over 20 years' experience in senior corporate leadership roles in Western Australia and the UK. Recently, he was founding director of MACH Energy Australia and Atlantic Vanadium.



**SAM QUINN**

NON-EXECUTIVE  
DIRECTOR

Sam is a corporate lawyer with over 20 years' worth of experience in the natural resources sector, in both legal counsel, finance and management positions.



**VIKKI ROBERTS**

LITHIUM SUPPLY  
CHAIN ADVISOR

Vikki has extensive experience in the battery supply chain industry. Recently led the supply chain strategy, development and control at **JOHNSON MATTHEY PLC**. Vikki has expertise in innovative industries related to sustainable technologies.



**RYAN HANRAHAN**

PROJECT  
DIRECTOR

Ryan has been involved in the lithium industry for 20 years. Qualified as a Mechanical Engineer Ryan's key experience is in the development of projects from concept to financing, and through to implementation. Ryan has played a key role in multiple major Lithium Hydroxide developments in Australia, Asia and Europe.



**DR JINGYUAN LIU, PHD**

PRINCIPAL PROCESS  
SPECIALIST

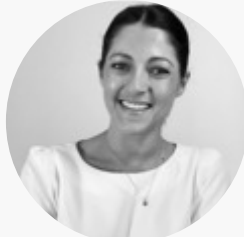
Dr Liu is a globally recognised leader in the processing of Lithium Chemicals, with 5 years of operational experience at the world's first continuous lithium chemical plant. Jingyuan has delivered process design, on site commissioning and due diligence to multiple significant Lithium Hydroxide developments in Australia, Europe and Asia.

PROJECT DELIVERY LEADERSHIP TEAM



**FUAD SILLEM**

BUSINESS  
DEVELOPMENT  
MANAGER



**ALEX DELLA BOSCA**

COMMERCIAL  
MANAGER



**MOLLY ELDRIDGE**

HEAD OF INVESTOR  
RELATIONS

# MARKET AND TECHNICAL ADVISORS

## MARKET INTELLIGENCE

### **Benchmark Minerals Intelligence**

*Market forecasts*

### **Conrad Partners**

*Feedstock pricing*

### **Exa-watt**

*Strategic consulting*

### **NOF & NEPIC**

*Supply chain*

## WILTON TECHNICAL

### **DWD**

*Planning application*

### **Sembcorp**

*Wilton International plug and play services*

### **PD Ports**

*Transport logistics and port services*

### **ITP Energised**

*Environmental Impact Assessment*

### **Minviro**

*Life-cycle assessment*

## PROCESSING TECHNICAL

### **WAVE International**

*Processing facility design*

### **ANZAPLAN**

*Benchscale electrochemical testwork*

### **JordProxa**

*Crystallising testwork & design*

### **NAGROM**

*Benchscale metallurgical testwork*

# RESEARCH INITIATED BY LONDON BROKERS SHARD AND VSA

(Current share price circa £2.80/share)

## SHARD CAPITAL

- Firmly at the front of the pack
- Fast-track credentials, envied low capital intensity and a superlative site location
- Major de-risking event box ticked
- Upgraded target price

**£12.28/share**

target price

## VSA CAPITAL

- Fast-tracked, scalable and green
- Differentiated by processing lithium sulphate and electrochemical process
- Only pure play listed conversion exposure
- Upgraded target price

**£10/share**

target price



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