# GALAXY

# **Galaxy Resources Limited**

# ...meeting a lithium future

# LITHIUM PURE PLAY (ASX:GXY)





- Global Lithium Company
- Downstream Integration Value Add
- Operating mine in Australia
- Lithium carbonate chemical facility in China
- Development flagship lithium potash in Argentina

# **POWER OF LITHIUM**



Energy WHr /Kg	<section-header></section-header>	<ul> <li>a. a. b. a. b.</li></ul>
	Lead Acid Battery	Acceleration
	Powe	er /Kg

# **GLOBAL STRENGTH**





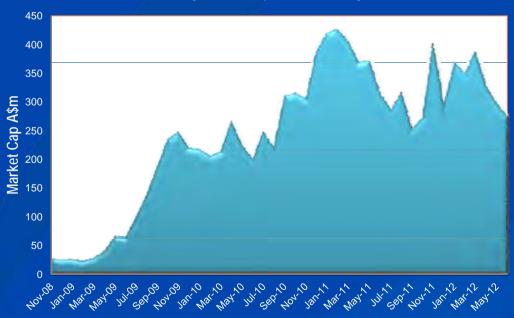
- Diversification strategy
- Lithium hard rock and lithium brine assets
- Four continents Australia, China, Canada and Argentina
- Global partners China, Japan and Korea
- Established customer base

# **CORPORATE STRUCTURE**



Registered in Australia and listed on ASX

Member of the S&P/ASX300 index



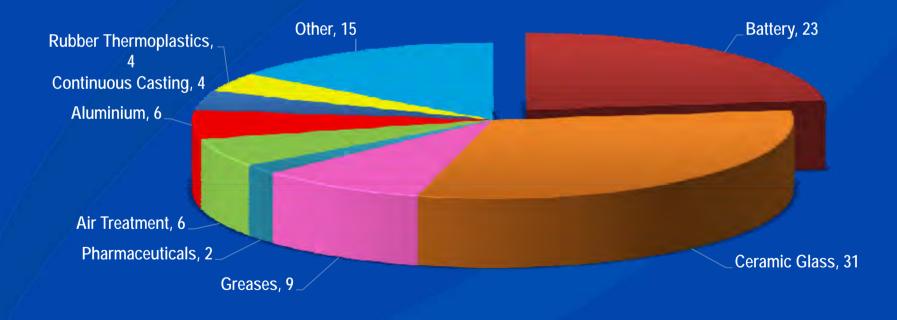
Galaxy Market Capitalisation (fully diluted)

CAPITAL STRUCTURE	
Shares on issue	507 m
Options on issue	60 m
Share price (as of 7 Sept 12)	A\$0.47
Undiluted market capitalization	A\$ 240m
SUBSTANTIAL SHAREHOLDERS	
M & G Group / Vanguard	14.1%
Creat Resources	7.5%
OTHER SUBSTANTIAL INVESTORS	
Fengli Group	A\$60m
Li Shu Fu (Geely Motors)	A\$25m

# LITHIUM CONSUMPTION

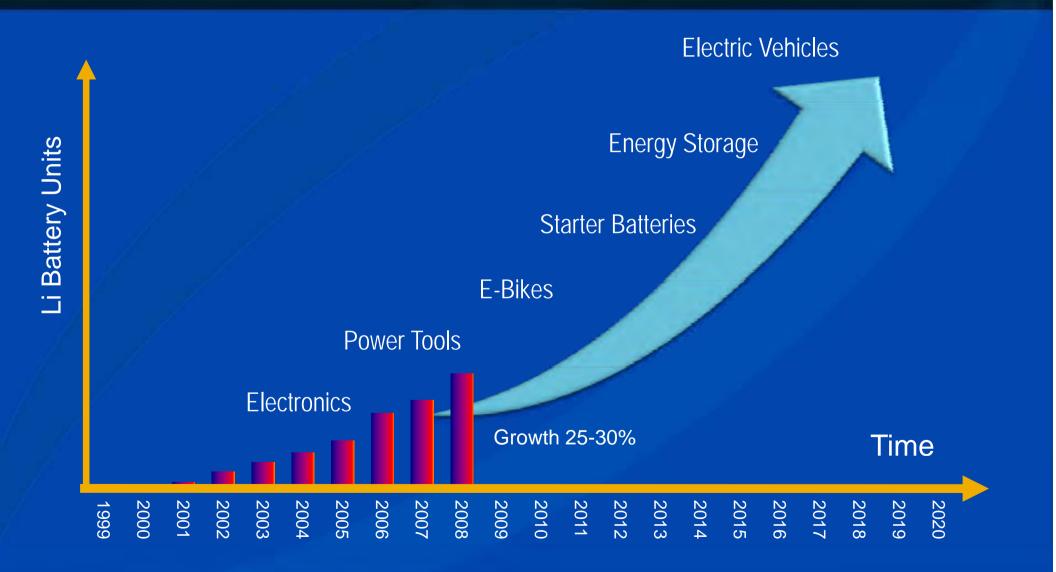


# Estimated Consumption of Lithium by end use 2011 (est. 140,000 tons LCE) up 10%



# **HOCKEY STICK GROWTH**





www.galaxylithium.com

# FOCUS ON THE E-BIKE MARKET



40.5 China produces 27 m E-Bikes pa 38 35.5 ✤ 97% - heavy lead acid batteries 33 30 PRC weight restrictions ✤ 1,500 lead plants shutdown Mass conversion to Li Batteries 0.2 0.2 0.3 2014 2013 2012 2010 2009 2008 2007 2005 2005 2001 2000 1999 2003 2002 2015 2016

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# **PRESSURE ON LEAD BATTERIES**



Ed



### Testa - Society

### Guangdong locals suffer lead poisoning from battery plant

Staff Reporter | 2011-00-22 | 10-25 (Chil7+8)



# News Economy

China's lead-acid battery makers face pollution crackdown

# CHINADAILY

Lead-acid battery targeted in clean-up campaign (Xinhua) Updated: 2011-02-18 22:03

# The Economic Observer

IOME NEWS OPINION CHINABUZZ MULTIMEDIA DIGEST 00

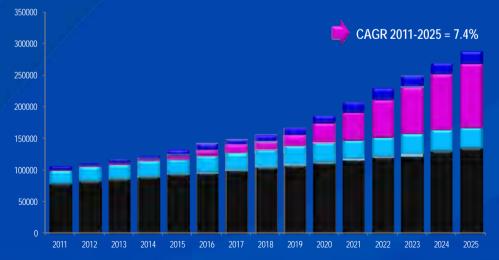
ither HOADE - + Barminia - perci - Briefs

China Shuts Down 583 Lead-acid Battery Plants

# **GLOBAL LITHIUM FORECAST**







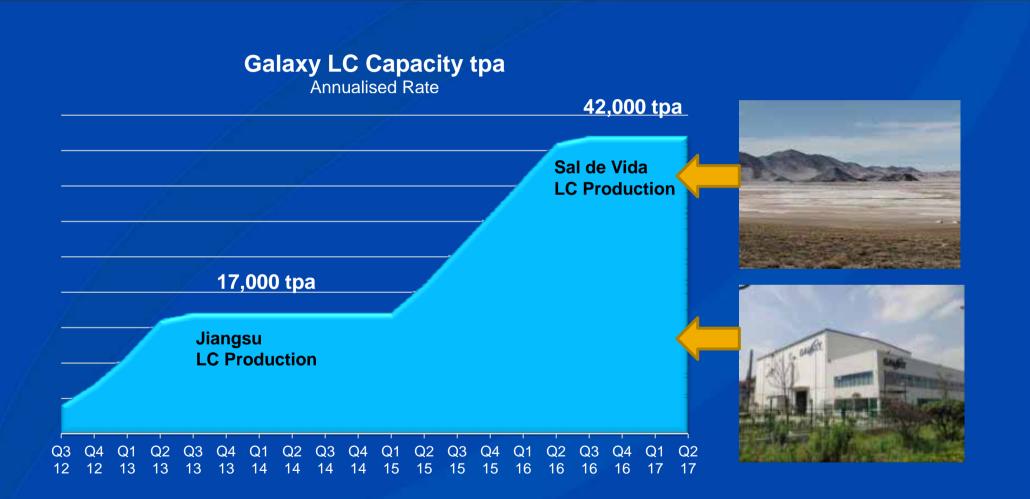
FMC Corp Forecast World Lithium Supply Conference 2011 Toronto

> 2-3 times Demand Increase by 2020

### Signom Box Forecast World Lithium Supply Conference 2011 Toronto

# **PRODUCTION PROFILE**





# **PRICE GROWTH**



### O6/16/2011 ... the Lithium company Chemetall lithium division announces global price increases

Chemetall lithium division is announcing price increases of up to 20 percent for its lithium salts, including lithium carbonate, lithium hydroxide, lithium chloride, and increases on lithium metal battery grade, effective July 1.

# FMC Lithium Announces Global Price

CHARLOTTE, N.C., June 23, 2011 – FMC Lithium announced today that effective July 1, 2011, or as contracts permit, it will increase prices 20 percent for lithium carbonate and between 15 and 25 percent, depending on product grade,

### TALISON LITHIUM CONCLUDES FIRST SALES CONTRACTS FOR 2012 WITH 15% PRICE INCREASE

**Rockwood Lithium Announces Global Price Increases for Lithium Salts** 

# **PRICE GROWTH**





www.galaxylithium.com

# CHINA MACRO STRATEGY



- China Less reliance on oil based transport system
- Twelve 5 Year Plan Low Carbon Economy
- 5m EVs by 2020 (13.6 mil vehicles pa)
- China targeting 20% from renewable source by 2020
- "Mass energy storage" key to China's strategy

# LITHIUM ASSETS ARE RARE



# LITHIUM HARD ROCK ASSETS Australia GALAXY Canada GALAXY USA Used deposits Scrbia Grade China Remote, sparse Sth Africa Sovereign Risk

# Chile Prod Restrictions Argentina Bolivia China China Quality Poor USA Evaporation, grade

# TALISON ACQUISITION BY ROCKWOOD



- Cash acquisition of C\$724m
- ✤ 53% premium

**Global Lithium Rankings** 

1. Talison (ore only)

2. SQM

- 3. Rockwood Lithium
- 4. FMC Lithium
- 5. Galaxy

**Global Lithium Rankings** 

1. Rockwood Lithium
2. SQM
3. FMC Lithium
4. Galaxy

# MT CATTLIN MINE



- Mt Cattlin commenced late 2010
- Record construction of <11 months</p>
- On time and on budget (A\$80m)
- Record production in May 12 (design)
- Temporary halt due to 12 months inventory







# HIGH TECH PROCESSING





- Focus lithium-ion battery industry
- Capability 99.5% purity and above
- Highly process controlled
- Capital cost of US\$100 m
- Ramp up in progress 12 month

# **PRODUCT GRADES**





www.galaxylithium.com



# STRATEGICALLY LOCATED





- Galaxy owns 100%
- 120 top foreign companies
- Adjacent to a wharf
- Supply of sulfuric acid and soda ash
- Close to markets

# World's largest battery grade lithium carbonate at 17,000 tpa



www.galaxylithium.com













Victoria de la grilter building















# China's largest and most sophisticated lithium carbonate producer

# **BATTERY GRADE PRODUCTION**



		ppm													
Batch ID	LC %	Na	K	Са	Mg	Si	Fe	Cu	Pb	Ni	Mn	Zn	Al	CI	SO <sub>4</sub>
27 July Announcement	99.55	117	5	24	4	10	8	1	1	1	1	1	5	10	790
6120805005	<del>99</del> .51	20	5	28	5	10	6	1	1	1	1	2	5	10	480
6120806001	99.52	20	5	22	5	10	7	2	1	1	1	2	5	10	350
6120807001	99.58	20	5	35	5	20	6	1	1	1	1	2	10	13	520
6120807002	99.64	20	5	31	5	15	6	1	1	1	1	1	8	10	580
6120807003	99.68	20	5	29	5	20	6	1	1	1	1	1	9	10	420
6120807009	99.50	20	5	25	5	10	5	1	1	1	1	1	5	10	640
6120808001	99.53	26	5	25	5	10	8	1	1	1	1	1	5	10	710
6120808002	99.70	25	5	27	5	10	10	1	1	1	1	1	5	10	580
6120808003	99.70	32	5	26	5	10	7	1	1	1	1	1	5	10	590
6120808004	99.70	20	5	33	5	10	8	1	1	1	1	1	5	10	500
Battery Grade Specs	≥99.5	<250	<10	<50	<100	<50	<20	<10	<10	<30	<10	<10	<50	<50	<800

# SETTING THE BENCHMARK



		Impurity levels (ppm)												
Competitor	Na	K	Са	Mg	Fe	AI	Cu	Mn	Ni	Zn	Pb	Si	SO <sub>4</sub>	CI
PRC 1	200	5	10	30	2	16	1	1	1	1	1	28	800	10
PRC 2	180	10	25	35	8	1	1	1	1	3	1	8	830	12
Sth Am 1	570	29	94	83	5	9	1	1	1	1	1	110	240	92
Sth Am 2	260	10	70	50	2	7	1	1	1	1	1		800	60
Galaxy	20	5	28	5	6	5	1	1	1	2	1	10	480	10
Battery Grade Specs	≤250	≤10	≤50	≤100	≤20	≤50	≤10	≤10	≤30	≤10	≤10	≤50	≤800	≤50

# OFFTAKE FRAMEWORK AGREEMENTS

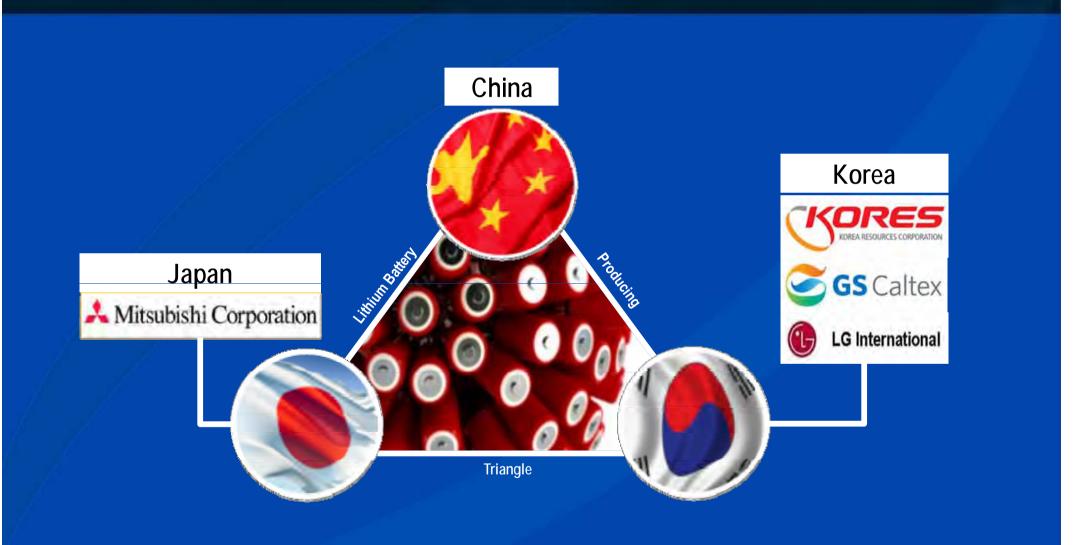


- Offtake framework agreements for 17,000 tpa
- Mitsubishi exclusive distributor in Japan (5,000 tpa)
- 13 major lithium cathode producers in China (12,000 tpa)
- Fixed annual volumes
- Price agreed on a quarterly basis



# **GLOBAL PARTNERS**









# FLAGSHIP DEVELOPMENT

Sal de Vida "Salt of Life"

GXY 70% Korean Consortium 30%

# SAL DE VIDA – LOCATION







www.galaxylithium.com



# LOW COST PRODUCER





- 7 million tonnes of LCE
- Mine life beyond 50 years
- High grade and excellent chemistry
- Good Infrastructure, close to Salta city
- Pro mining province

### **BEST BRINE CHEMISTRY**





# **US\$1 BILLION NPV PROJECT**



Lithium carbonate production (tpa)	25,000
Potash production (tpa)	107,000
Estimated mine life (years)	40+
Estimated capital costs (US\$m)	356
Estimated operating costs (US\$/t Li <sub>2</sub> CO <sub>3</sub> )	1,537
Average 2011 to 2025 Li <sub>2</sub> CO <sub>3</sub> price (US\$/t)	5,490
Ave cash flow pa (US\$m, pre-tax)	139
Net Present Value (8% pre-tax real discount rate (US\$m)	1,066
Internal rate of return (%)	28%
Project payback period (years)	<4





# **PROJECT DEVELOPMENT**





- PFS completed in Oct 2011
- Taging and Hatch Engineering appointed
- Production wells & modelling
- DFS to be completed in Q1 2013
- Investment decision when Jiangsu cash flow positive

### STRATEGIC PARTNERSHIP



- KORES, GS Caltex and LG International (together "KC")
- KC earning 30% interest in Sal de Vida
- Spent US\$15m on feasibility work
- KC to purchase 30-50% of lithium products at market prices
- Galaxy has right to be sole sales agent for potash and boron products



# **COMBINED LITHIUM ASSETS**



### James Bay (100%)

- Lithium hard rock asset
- ✤ 23.2 mt at 1.2% Li2O
- ✤ Low strip ratio
- Best in Canada

### Jiangsu Plant (100%)

- Down stream LC plant
- Capacity 17,000 tpa high purity LC
- ✤ Largest in Asia Pacific
- Best grade in market

### Sal de Vida (70%)

- ✤ 30% Korean Consortium
- ✤ > 100 year mine life
- Low cost operation
- Production by 2015

#### Mt Cattlin (100%)

- Lithium hard rock mine
- ✤ In production
- ✤ 137,000 tpa spodumene for 18 yrs

# GALAXY

# BUILDING A GLOBAL LITHIUM COMPANY

### ...meeting a lithium future



### Competent Persons & Qualified Persons *Mt Cattlin*

The information in this report that relates to Mineral Resources and Exploration Results is based on information compiled by Mr Robert Spiers who is a full time employee of Hellman and Schofield Pty Ltd and Dr Mike Grigson who is a full time employee of Arc Minerals. Mr Spiers and Dr Grigson have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Spiers and Dr Grigson consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this report that relates to Mineral Ore Resources is based on information compiled by Mr Roselt Croeser who is a full time employee of Croeser Pty Ltd. Mr Croeser has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Croeser consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

#### James Bay

#### Competent Person

The information in this report that relates to Mineral Resources for the James Bay project is based on work completed by Mr. Sébastien Bernier, who is a Member of a Recognised Overseas Professional Organisation. Mr Bernier is a full time employee of SRK Consulting (Canada) Inc. and has sufficient experience which is relevant to the style of minerlisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Bernier consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

#### National Instrument 43-101 - Qualified Person

The mineral resources for the James Bay project are reported in accordance with National Instrument 43-101 and have been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Resource evaluation work was completed by Mr. Sébastien Bernier, P.Geo (OGQ#1034, APGO#1847) an independent Qualified Person as defined by NI 43-101. Mr. Bernier has read and approved the content of this news release. A Technical Report compliant with NI 43-101 standards describing the resource estimation was filed on SEDAR within 45 days of its release.



#### Competent Persons & Qualified Persons (continued)

Sal de Vida

**Competent Persons** 

The information in this report that relates to Mineral Resources for the Sal de Vida lithium project is based on work completed by Mr. Michael Rosko, who is a Member of a Recognised Overseas Professional Organisation. Mr. Rosko is a full time employee of E. L. Montgomery and Associates and has sufficient experience which is relevant to the style of minerlisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Rosko consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

#### National Instrument 43-101 - Qualified Person

The mineral resources for the Sal de Vida lithium project project are reported in accordance with National Instrument 43-101 and have been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Resource evaluation work was completed by Mr. Michael Rosko, P.Geo (Arizona 25065, Texas 6359, California 5236) an independent Qualified Person as defined by NI 43-101. Mr. Rosko has read and approved the content of this news release. A Technical Report compliant with NI 43-101 standards describing the resource estimation was filed on SEDAR within 45 days of its release.



#### Caution Regarding Forward Looking Information

This document contains forward looking statements concerning the projects owned by Galaxy and Lithium One. Statements concerning mining reserves and resources may also be deemed to be forward looking statements in that they involve estimates based on specific assumptions.

Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based on Galaxy's beliefs, opinions and estimates of Galaxy (and Lithium One) as of the dates the forward looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

There can be no assurance that Galaxy's plans for development of its mineral properties (and those of Lithium One, assuming successful completion of the merger with Lithium One) will proceed as currently expected. There can also be no assurance that Galaxy (or Lithium One) will be able to confirm the presence of additional mineral deposits, that any mineralization will prove to be economic or that a mine will successfully be developed on any of Galaxy's (or Lithium One's) mineral properties. Circumstances or management's estimates or opinions could change. The reader is cautioned not to place undue reliance on forward-looking statements.

Data and amounts shown in this document relating to capital costs, operating costs and project timelines are internally generated best estimates only. All such information and data is currently under review as part of Galaxy's ongoing development and feasibility studies. Accordingly, Galaxy makes no representation as to the accuracy and/or completeness of the figures or data included in the document until the feasibility studies are completed.

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