



**ARGOSY MINERALS**  
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# Fast-track development in the world's most prolific lithium region

Asian Roadshow Presentation – September 2017

ASX Code: AGY



[www.argosyminerals.com.au](http://www.argosyminerals.com.au)

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The information in this report that relates to technical matters is based on information compiled by Jerko Zuvela who is the Managing Director of AGY. Mr Zuvela is a Member of the Australasian Institute of Mining and Metallurgy.

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All amounts in A\$ unless stated otherwise.



# Company Overview

*Lithium brine project in the 'Lithium Triangle' with development works commenced*



- Key Rincon Lithium Project located in the world-class "Lithium Triangle" – the world's dominant source of lithium production:
  - *located in Salar del Rincon, Salta Province, Argentina*
  - *flagship asset in Argosy's lithium fast-track development strategy, with a clear conceptual pathway to battery grade lithium carbonate (LCE) production*
  - *Stage 1 & 2 development works now in progress concurrently*
  - *Stage 1 to produce up to 500tpa LCE product – first product scheduled for March 2018 Quarter*
  - *Pre-eminent lithium processing expert Pablo Alurralde managing Rincon Project*
- Recently announced transformational deal with Qingdao Qianyun High-tech New Material Co. Ltd.
  - *US\$7.5 million upfront prepayment for Preliminary Off-take Agreement*
  - *A\$16.9 million equity investment for cornerstone 19.9% interest*
  - *Five-year Long-Term Off-Take Agreement for 1,000tpa of LCE product*
  - *A\$26.4 million upfront cash exceeds funding required for Stage 2 development (already underway)*
- Argentina – open for business
- Strong upcoming news flow on continued Rincon development



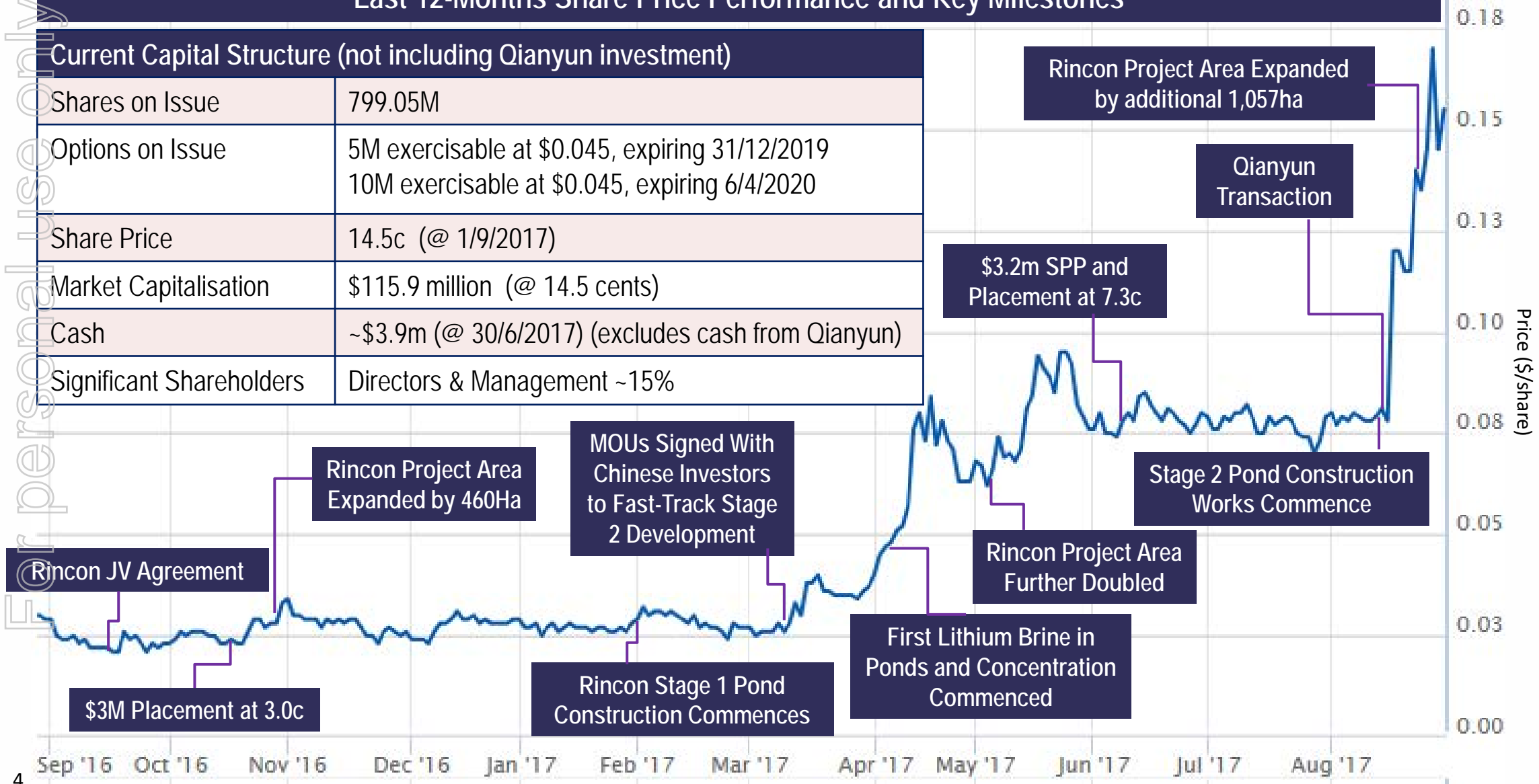
# Capital Structure, Share Price & Milestones



## Last 12-Months Share Price Performance and Key Milestones

### Current Capital Structure (not including Qianyun investment)

Shares on Issue	799.05M
Options on Issue	5M exercisable at \$0.045, expiring 31/12/2019 10M exercisable at \$0.045, expiring 6/4/2020
Share Price	14.5c (@ 1/9/2017)
Market Capitalisation	\$115.9 million (@ 14.5 cents)
Cash	~\$3.9m (@ 30/6/2017) (excludes cash from Qianyun)
Significant Shareholders	Directors & Management ~15%



# Directors & Management

## Alex Molyneux – Non-Executive Chairman

Mr. Molyneux is an experienced resources industry executive. Mr. Molyneux currently serves as CEO of uranium producer, Paladin Energy Limited. He is a Co-Founder of Azarga Resources Group and Non-Executive Chairman of Azarga Metals Corp. Mr. Molyneux was previously President, CEO and Director of SouthGobi Resources, an Ivanhoe Mines Group company, and a Non-Executive Director of Goldrock Mines Corp. Prior to joining SouthGobi, Mr. Molyneux had a 10-year career as a natural resources investment banker, including as Managing Director, Head of Metals and Mining Investment Banking, Asia for Citigroup.

## Jerko Zuvela – Managing Director

Mr Zuvela is a Chartered Professional Geologist having spent over 20 years in the mining and resources industry. Mr. Zuvela has held executive management roles for private and public resources companies, with operational and corporate experience in various commodities covering exploration, project development, business development, finance, commercial and corporate activities involved with projects in Australia, South America, Asia and Africa. Mr. Zuvela has considerable experience in building junior resources companies and understands the requirements working within this sector, including fundamental parameters, strategic drivers and market requirements.

## Ranko Matic – Non-Executive Director

Mr Matic is a Chartered Accountant with over 25 year experience in the areas of financial and executive management, accounting, audit, business and corporate advisory. Mr Matic is a director of a chartered accounting firm and a corporate advisory company based in Perth, and has specialist expertise and exposure in areas of audit, corporate services, due diligence, mergers and acquisitions, and valuations.

## Mal Randall – Non-Executive Director

Mr Randall (Dip Applied Chem, FAICD) holds a Bachelor of Applied Chemistry degree and has more than 45 years' of extensive experience in corporate, management and marketing in the resources sector, including more than 25 years with the Rio Tinto group of companies.

## Pablo Alurralde – President Rincon JV Project *(Mr Alurralde's experience described in detail in following pages)*

# More on Recently Announced Transformational Transaction

*Investment & Off-take Agreements executed with Qingdao Qianyun*



- Qianyun is a fast-growing Chinese battery materials company based in Qingdao
- Transaction includes A\$26.4M to be received upfront through an equity placement and prepayment for battery grade LCE under a 1-year Preliminary Off-Take Agreement
  - *US\$7.5 million upfront prepayment for Preliminary Off-Take Agreement*
  - *A\$16.9 million equity investment for cornerstone 19.9% interest*
- Cornerstone shareholding at a premium combined with long-term off-take validates Argosy's strategy for fast-tracked development of Rincon into a commercial lithium project
  - *Five-year Long-Term Off-Take Agreement for 1,000tpa of LCE product from Stage 2 operations at Rincon*
- Upfront A\$26.4M exceeds Stage 2 development expenditure budget for the Rincon Lithium Project and secures Argosy's foreseeable future as a commercial lithium producer
- Argosy to consider additional cooperation with Qianyun for funding proposed Stage 3 development of Rincon Lithium Project
- Joint Venture Agreement to be established for Argosy and Qianyun to collaboratively consider acquisition and development of lithium project opportunities in China during the next two years
- Argosy will appoint Qianyun's Chairman - Mr Sun Qi - as a non-executive director

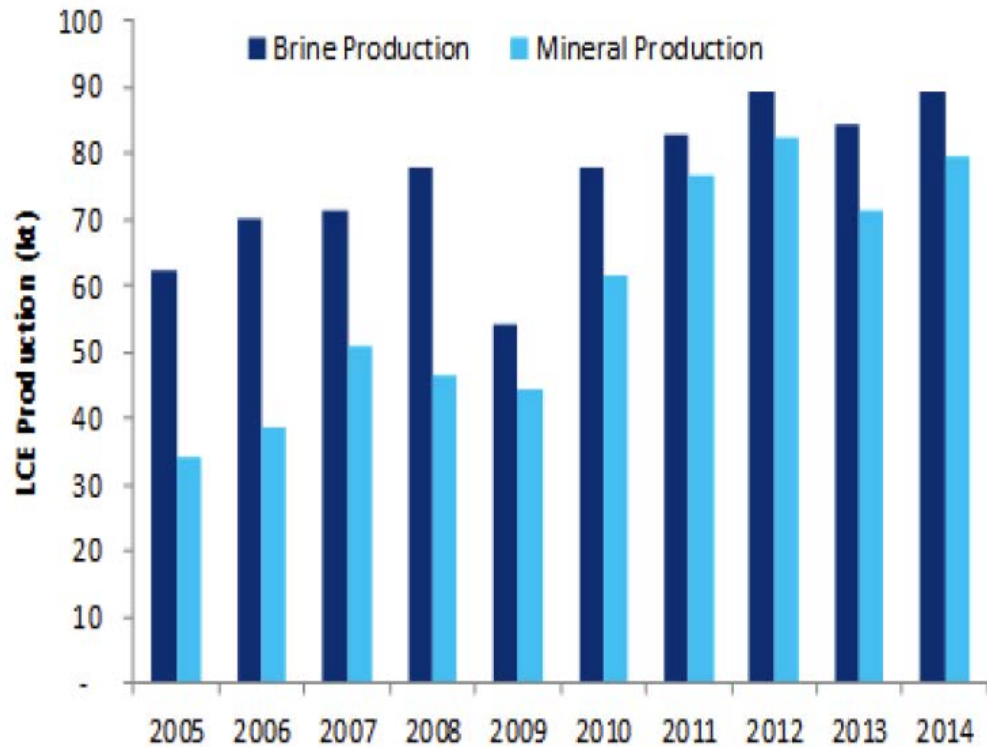
# Lithium 101: Brine vs. Hard-Rock Production

*Most lithium production comes from lower cost brine production*



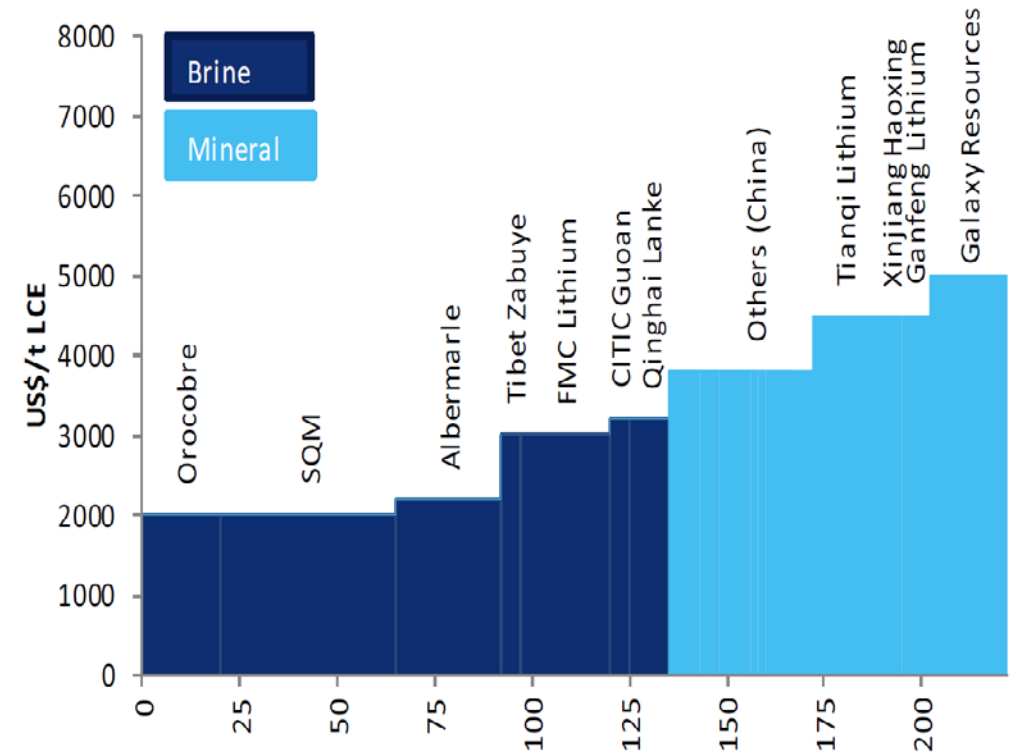
- Lithium production is predominantly delivered from brines
- Brines have significantly lower extraction costs compared to hard rock deposits

## Lithium Production by Deposit Style



Source: Citi Research

## Lithium Cost Curve (by Capacity)



Source: Citi Research

Argosy is focused on developing brine projects with the potential to have low capital and operating costs



# Argosy in the “Lithium Triangle”

World’s most prolific lithium producing region



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49% of  
Global Lithium  
Production from the  
“Lithium Triangle”  
which holds  
approximately  
70% of World’s  
Lithium Reserves

AGY Rincon JV Lithium Project

Salars (salt flats)





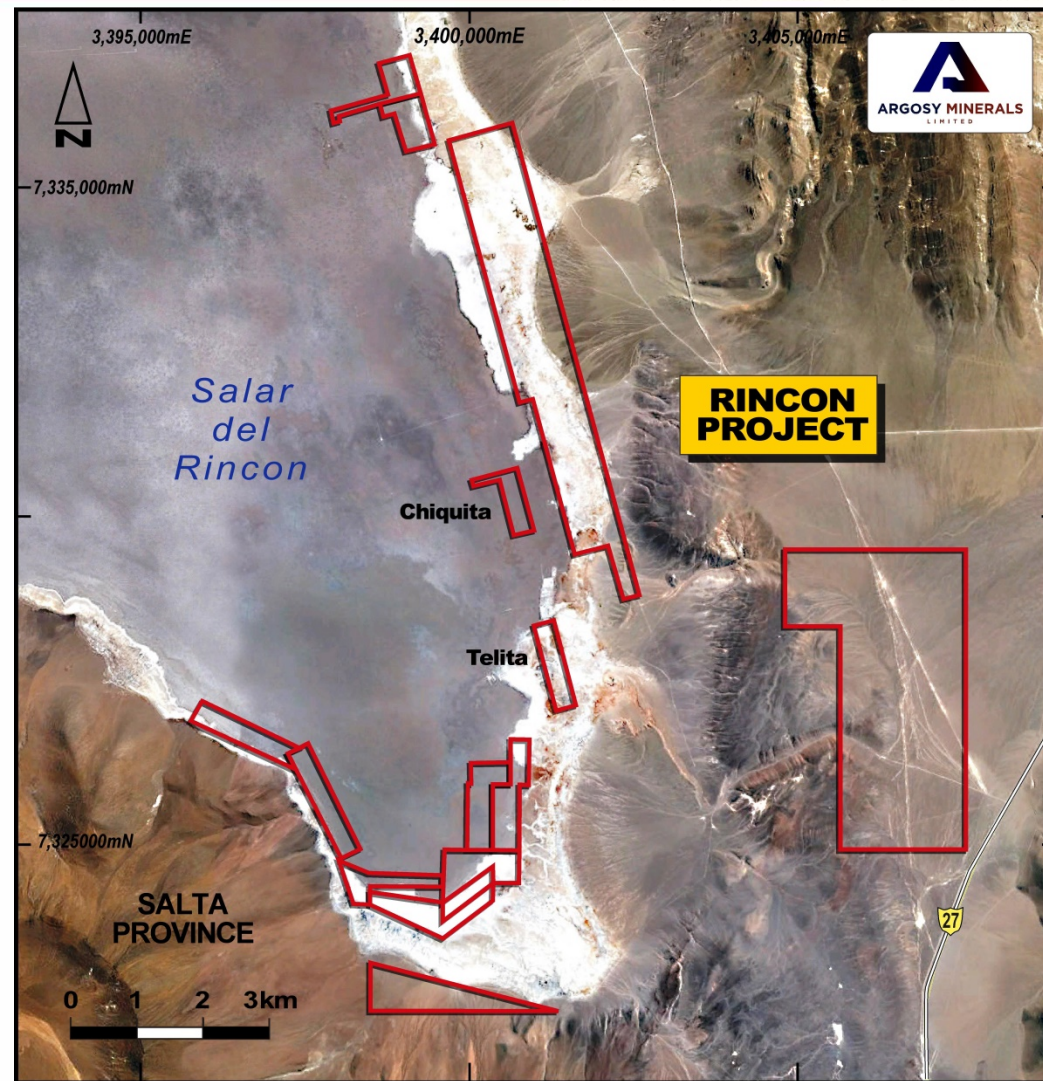
# Rincon Project: Recent History and Overview

*A significant opportunity to achieve near-term lithium production*

- Binding JV Agreement executed September 2016
  - *Argosy to earn up to a 90% interest in the Project*
  - *Partnership with Argentinian lithium processing expert Pablo Alurralde*
- Project currently comprises up to 2,346ha of mining concessions at Salar del Rincon
- Extensive historical works conducted within Salar del Rincon
  - *Average lithium brine content of 300-400ppm (Ferretti,1989)*
  - *Historical drilling & associated works indicate average lithium content of 397ppm (Ovejero Toledo, 2007)*

(Piezometer well)	(Sample depth (m))				
	10	20	30	40	50
Pozo piezométrico	Profundidad de muestra (m)				
	Li <sup>+</sup> (mg/l)				
FPR 1001	456	397	409		
FPR 1002	401	400	392	334	
FPR 2001	385	369	345	337	
FPR 2002	393	395	379	338	
FPR 3001	388	361	369	380	
FPR 3002	417	418	415	383	376
FPR 4001	394	426	390	427	370
FPR 4002	427	438	389	401	
FPR 5001	383	405	393	390	384
FPR 5002	444	456	449	408	453
FPR 6001	410	414	446	435	
FPR 6002	436	423	390	372	
FPR 7001	370	364	369	349	
FPR 7002	434	407	388	372	
(Average) Media aritmética	397 mg/l				

\* Según Ovejero Toledo 2007.  
(According to Ovejero Toledo 2007)



Rincon Project Location Map



# Rincon Project: Location and Infrastructure

*A significant opportunity to achieve near-term lithium production*

- The Project lies within Salta Province, ~3,700m ASL, serviced by city of Salta with population of 600,000
- The region is known for its evaporation rates, given UV is very high, with ~90% of all the days of the year being cloud free and an minimal rainfall.
- High quality regional and site infrastructure, including the Pocitos industrial site, will facilitate project development, with road, rail, port facilities and power generation services such as electrical and natural gas.



Pocitos industrial site



Salar del Rincon (looking southwards)

# Rincon Project: Development Milestones

*A significant opportunity for near-term battery grade lithium carbonate production*



## Stage 1 - AGY to earn 50% interest

Lab-scale pilot plant to produce up to 100-150t of commercial grade clean LCE

**Updated increased production capacity up to 500tpa LCE**

## Stage 2 - AGY to earn 77.5% interest

Complete development works to expand production up to ~1,000 - 1,500 tpa LCE

**Funded with Qianyun deal & works already commenced**

## Stage 3 - AGY to earn 90% interest

Expanded commercial LCE production

**Stage 1 Works Schedule (by Quarter end)**

	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18
Environmental studies and regulatory approvals/permits						
Pond construction and associated works, including contractor tendering						
Pond lining and associated works						
Brine extraction, pumping, storage and transportation works						
Pilot plant construction and test-works, including brine processing, analysis and laboratory treatment of the lithium concentrate						
Produce first LCE product						

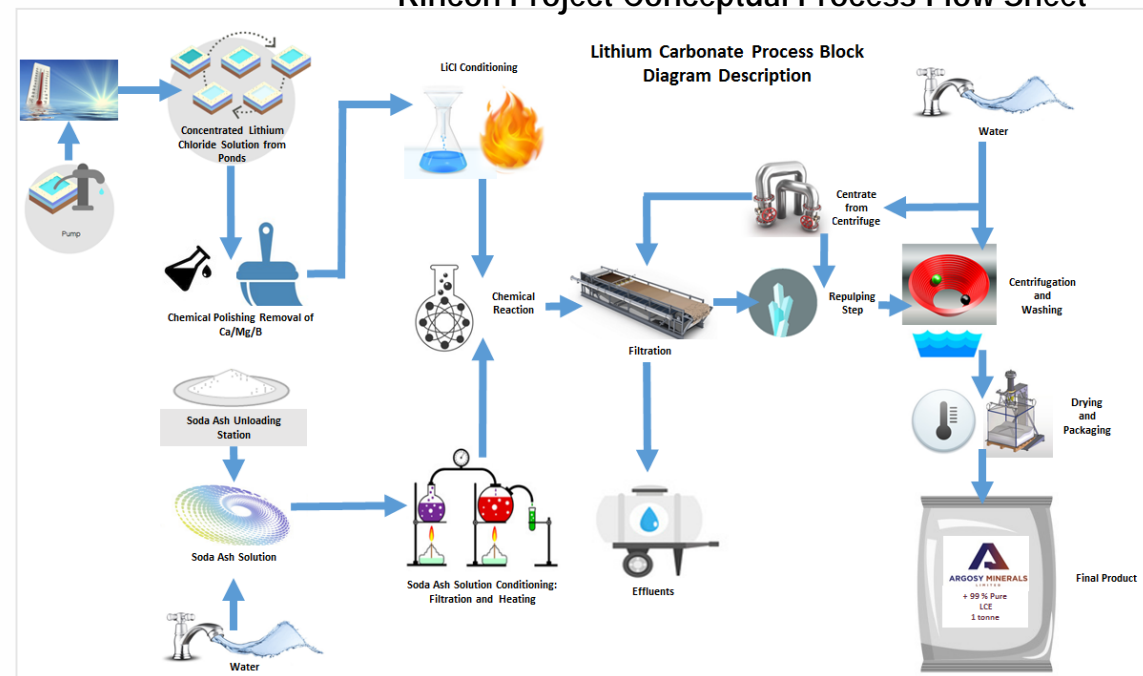


# Rincon Project: Stage 2 Development Works Commenced

*Development works ahead of schedule*

- Stage 1 works progressing – on schedule to produce first battery grade LCE product during March 2018 Quarter
  - Targeting up to 500tpa LCE product via lab pilot plant
  - Lab pilot plant design completed and site acquired
- Stage 2 works commenced
  - Evaporation pond construction works progressing
  - Drilling planned, targeting delineation of JORC-compliant Resource in Q4, 2017
  - Stage 2 larger scale pilot plant designed, construction to commence in Q1, 2018

Rincon Project Conceptual Process Flow Sheet



Rincon Project – Stage 1 Evaporation Ponds



Rincon Project – Stage 2 Pond Construction Works



# Rincon Project: Key Partner & Expertise

## Pablo Alurralde & Lithium Processing Patents



### Partnership with Argentinian lithium expert Pablo Alurralde

- Chemical Engineer and Master of Philosophy, former director of FMC Argentina operations
- 15 years' experience producing lithium carbonate and 30 years' experience designing chemical processes
- With chemical solution to extract lithium from brines at Rincon
- Successfully produced lab-scale LCE product from Salar del Rincon historically
- Patent presented at US Patents Offices as first inventor for "Production of Lithium Carbonate from concentrated brines on sodium chloride" granted to FMC
- Technical reports on benefit of Rincon and other salars
- Experience in the optimisation of industrial plants, international commerce and logistics
- In-depth knowledge of international lithium market



US008309043B2

(12) <b>United States Patent</b> <b>Alurralde et al.</b>	(10) <b>Patent No.:</b> <b>US 8,309,043 B2</b>
	(45) <b>Date of Patent:</b> <b>Nov. 13, 2012</b>
(54) <b>RECOVERY OF LI VALUES FROM SODIUM SATURATE BRINE</b>	4,347,327 A 8 1982 Lee et al.
	4,348,295 A 9 1982 Barba
	4,348,296 A 9 1982 Bauman et al.
	3,348,497 A 9 1987 Hanuman et al.
(75) Inventors: <b>Pablo Alurralde</b> , Salta (AR); <b>Vijay Mehra</b> , Gastonia, NC (US)	4,378,100 A 3 1983 Lee et al.
	4,783,109 A 4 1983 Lee et al.
	4,430,311 A 2 1984 Lee et al.
(7A) Assignee: <b>FMC Corporation</b> , Philadelphia, PA (US)	4,461,714 A 7 1984 Barba
	4,472,362 A 9 1984 Barba
	4,473,962 A 9 1984 MacIntyre
	4,477,307 A 10 1984 Barba
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	5,380,249 A * 2 1995 Bauman et al. 423 179.5
	5,609,516 A * 2 1997 Bauman et al.
	6,017,500 A * 1 2000 Mehra 433 179.5
	6,555,678 B1 * 4 2003 Mehra 423 179.5
	2011 0300641 A1 * 12 2011 Gell et al. 433 179.5
(21) Appl. No.: <b>13/288,389</b>	FOREIGN PATENT DOCUMENTS
(22) Filed: <b>Nov. 3, 2011</b>	JP 6117316 A1 9 1984
(65) <b>Prior Publication Data</b>	OTHER PUBLICATIONS
US 2012/0141342 A1 Jan. 7, 2012	Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, or the Declaration corresponding to International Application No. PCT/US2011/059673 mailed Jan. 23, 2012.
<b>Related U.S. Application Data</b>	* cited by examiner
(60) Provisional application No. 61/420,042, filed on Dec. 6, 2010.	Primary Examiner: Steven Bos
(51) <b>Int. Cl.</b> <b>C01D 15/09</b> (2006.01)	(74) <b>Attorney, Agent, or Firm</b> Myers Bigel Sibley & Seavey, PA
(52) <b>U.S. Cl.</b> <b>423/179.5; 252/184; 23/295 S; 23/306</b>	(57) <b>ABSTRACT</b>
(58) <b>Field of Classification Search</b> <b>423/179.5; 423/181; 23/295 S; 306; 252/184</b> See application file for complete search history.	The present invention provides a process for recovering Li values from a sodium saturated brine. The process includes recovering Li values from a sodium saturated brine which contains LiX. The process includes concentrating the sodium saturated brine to at least 9000 mg/L LiX, passing the concentrated brine through a bed of polycrystalline hydrated alumina pellets until the pellets are loaded with LiX from the concentrated brine, displacing brine held-up in the bed by using concentrated NaX, unloading LiX from the pellets by flowing through the bed an aqueous solution of LiX which is not saturated, displacing the LiX from the bed using concentrated NaX, and repeating the steps at least one additional time to provide the Li values.
(56) <b>References Cited</b>	<b>6 Claims, No Drawings</b>
U.S. PATENT DOCUMENTS	
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Patent for "Recovery of Li values from sodium saturate brine"  
**US 8309043 B2**





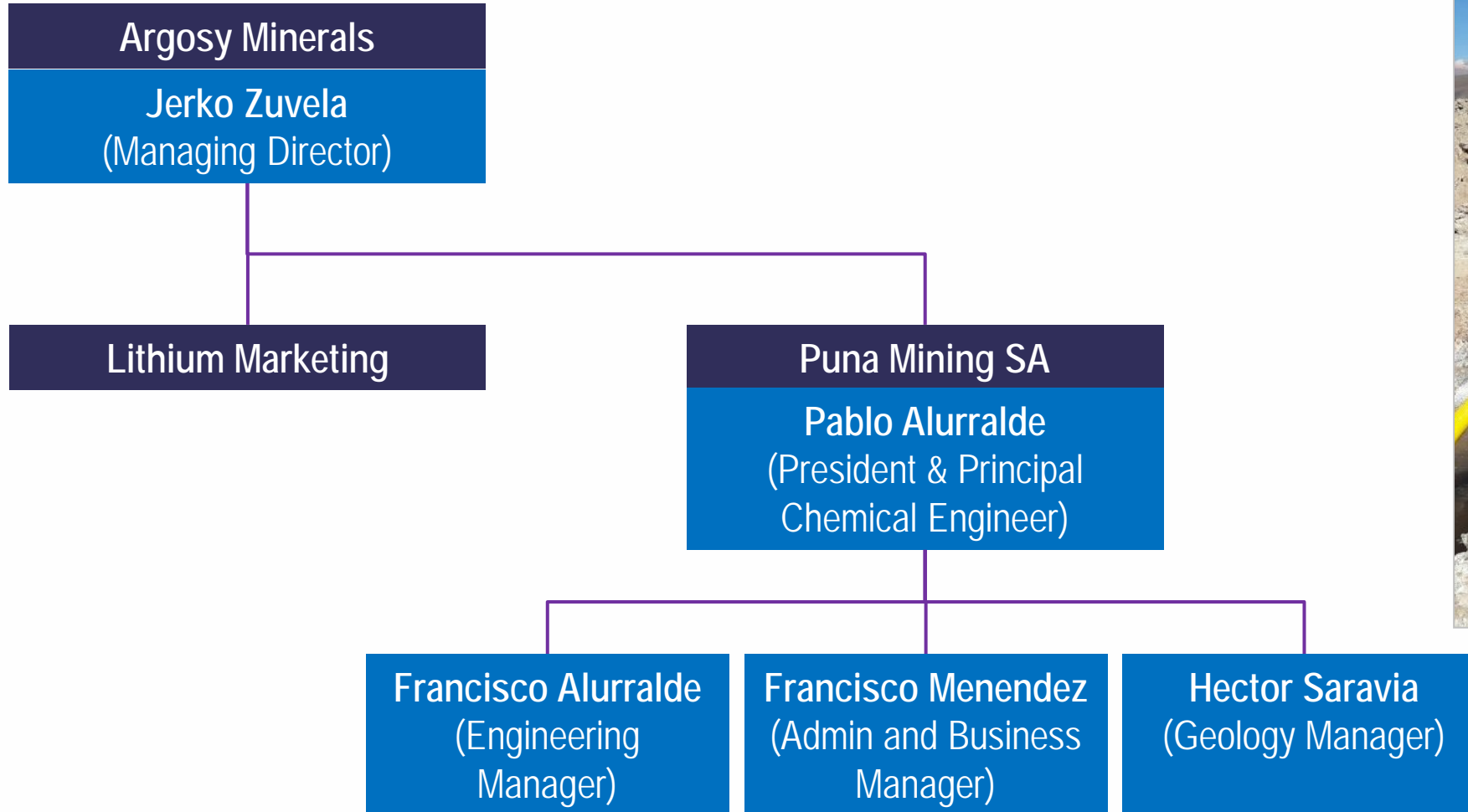
# Rincon Project: Executive Management

## Management team



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✓ Argosy has executed a Definitive Farm-In Joint Venture Agreement for the Rincon Lithium Project and will earn up to a 90% interest in the Argentinian joint venture company – Puna Mining S.A.





# Investment Summary

- ✓ Key focus is on Rincon Lithium Project located in the world-class "Lithium Triangle" – the world's dominant source of lithium production
- ✓ Company transforming transaction with Qianyun
- ✓ Upfront A\$26.4M exceeds Stage 2 development expenditure budget for the Rincon Lithium Project and secures Argosy's foreseeable future as a commercial lithium producer
- ✓ Binding 1-year and 5-year off-take agreements executed
- ✓ Fast-track development at Rincon Project progressing – first battery grade LCE product scheduled for March 2018 Quarter
- ✓ Pre-eminent lithium processing expert Pablo Alurralde managing Rincon Project
- ✓ Argentina – open for business







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# Appendix

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# Argentina: Re-connecting with the Global Economy

*Positive macro-economic developments underpin strong growth outlook*

- New President (Mauricio Macri) and new Government elected in December 2015
- Most export duties and trade controls abolished:
  - *Removal of 5% duty on high grade lithium and refined boron products*
  - *Removal of 10% duty on boron mineral concentrates*
- Exchange rate and capital controls eliminated
- Recently settled outstanding claims from 2003 default and returned to global capital markets
- American Chamber of Commerce in Argentina said US firms would invest US\$2.3 billion in Argentina over the next 18 months





# Lithium – The Perfect Storm of Demand and Supply

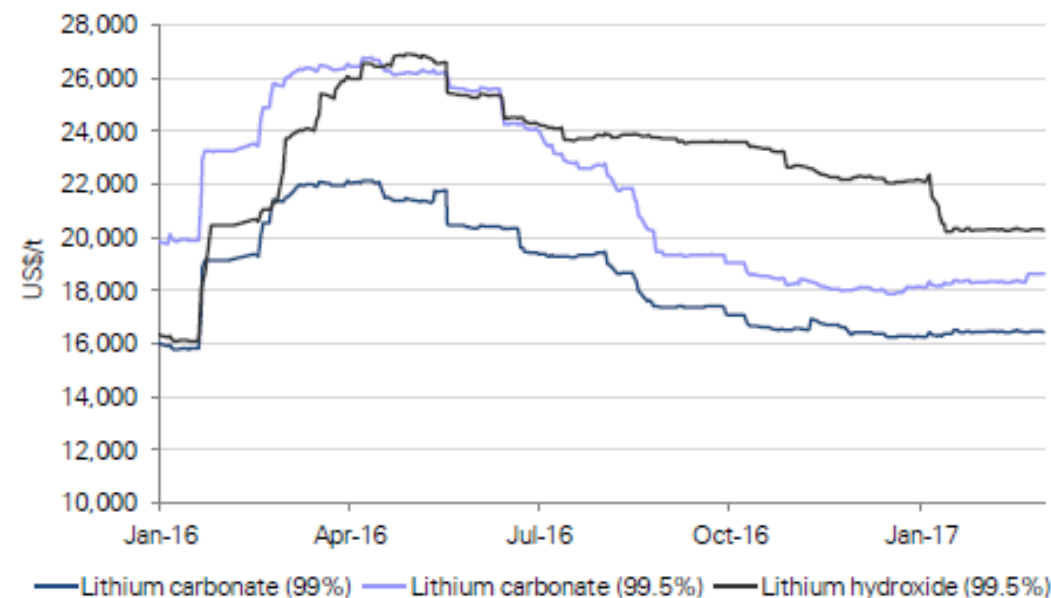
*"Lithium is the new gasoline"*



## The Keys to Lithium Growth

- Lower lithium-ion battery costs (now down to around US\$200-kWhr) set to make electric vehicles (EVs) more affordable
- Several experts such as Tony Seba (in his video on "clean energy disruption") expect EVs to be cheaper than Internal Combustion Energy (ICE) cars by 2020
- Adoption of EV technology set to increase for cars, buses and bikes – aided by falling unit costs, improving technologies, longer range and more charging networks
- Energy storage using lithium batteries becoming more popular

Figure 16: Spot lithium carbonate and hydroxide pricing



Source: Asian Metals, Factset

## Goldman Sachs December 2015 report: "...lithium is the new gasoline"

- Total lithium demand today is 160,000mT of lithium carbonate equivalent (LCE) per year
- For every 1% increase in battery electric vehicle (BEV) penetration, there is an increase in lithium demand by around 70,000mT of LCE/year

# Lithium...Why?

Ask the Experts

## *Tesla Shakes Up Market for Lithium*

- 'In order to produce half a million cars a year...we would basically need to absorb the entire world's lithium-ion production,' Elon Musk said in March.

## *Lithium-Ion Will Be Tough To Beat, Says Argonne Battery Whiz*

- Put four years into a five-year effort to develop a better battery at Argonne National Laboratory, one Argonne engineer concedes Li-ion will be tough to beat in the marketplace. "It's just going to be incredibly difficult for other battery technologies to catch up with it," said Kevin Gallagher, an electrochemical engineer, in an appearance at the University of Chicago in May 2016. "I think that's the lesson that a lot of new battery technologies are learning—definitely."

## *Rio Tinto sees a battery-powered future*

- Rio Tinto believes Powerwall batteries also loom as another shape-shifter for new energy materials markets, according to the Australian Financial Review.

## *"India Wants To Become First Country With 100 Percent Electric Vehicles by 2030"*

- Tech Times, 28/3/2016

## *Battery-hungry World Turns to South America's 'Lithium Triangle'*

- In addition to Tesla, traditional car companies including Nissan and BMW operate in the burgeoning electric vehicle industry. Germany's Daimler recently announced it would build a new lithium-ion battery factory, while technology firms like Samsung and Foxconn are also key users. As prices rise, they are keen to lock in deals.



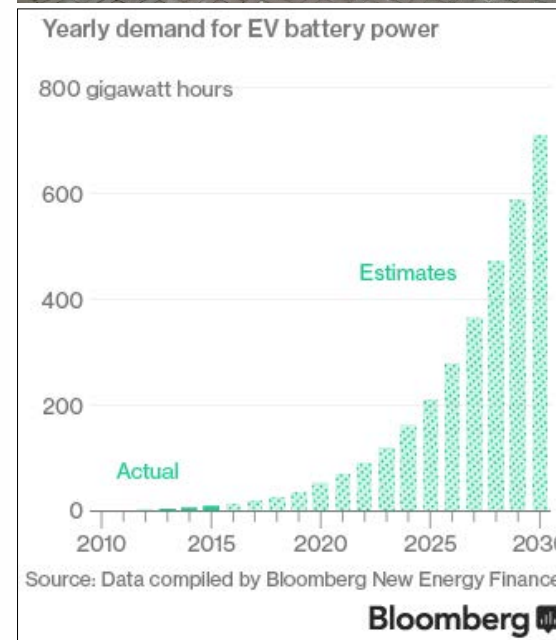
# Lithium – The Perfect Storm of Demand and Supply

*"Lithium is the new gasoline"*

## Lithium Demand Forecasts to 2025

- Goldman Sachs – "Growth in EV applications alone could triple the size of the entire lithium market from 160,000 mt today to 470,000 mt by 2025. That is based on 22% EV penetration (BEV, PHEV and HEV combined) in 2025 from under 3% today."
- Deutsche Bank in its "Lithium-ion age" stated, "Global battery consumption is set to increase 5x over the next 10 years, placing pressure on the battery supply chain and lithium market. We expect global lithium demand will increase from 181kt Lithium Carbonate Equivalent (LCE) in 2015 to 535kt LCE by 2025."
- Summary of expected lithium carbonate demand to 2025:

	2015 LCE demand (tonnes)	2025 LCE demand (tonnes)	LCE increase (tonnes)	% increase
Goldman Sachs	160,000	470,000	310,000	194%
Deutsche Bank	181,000	535,000	354,000	195%







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