



**ARGOSY MINERALS**  
LIMITED

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

Diggers & Dealers Presentation – August 2018

ASX Code: AGY



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

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# Company Overview

*Lithium brine project in the 'Lithium Triangle' with staged development works well underway*

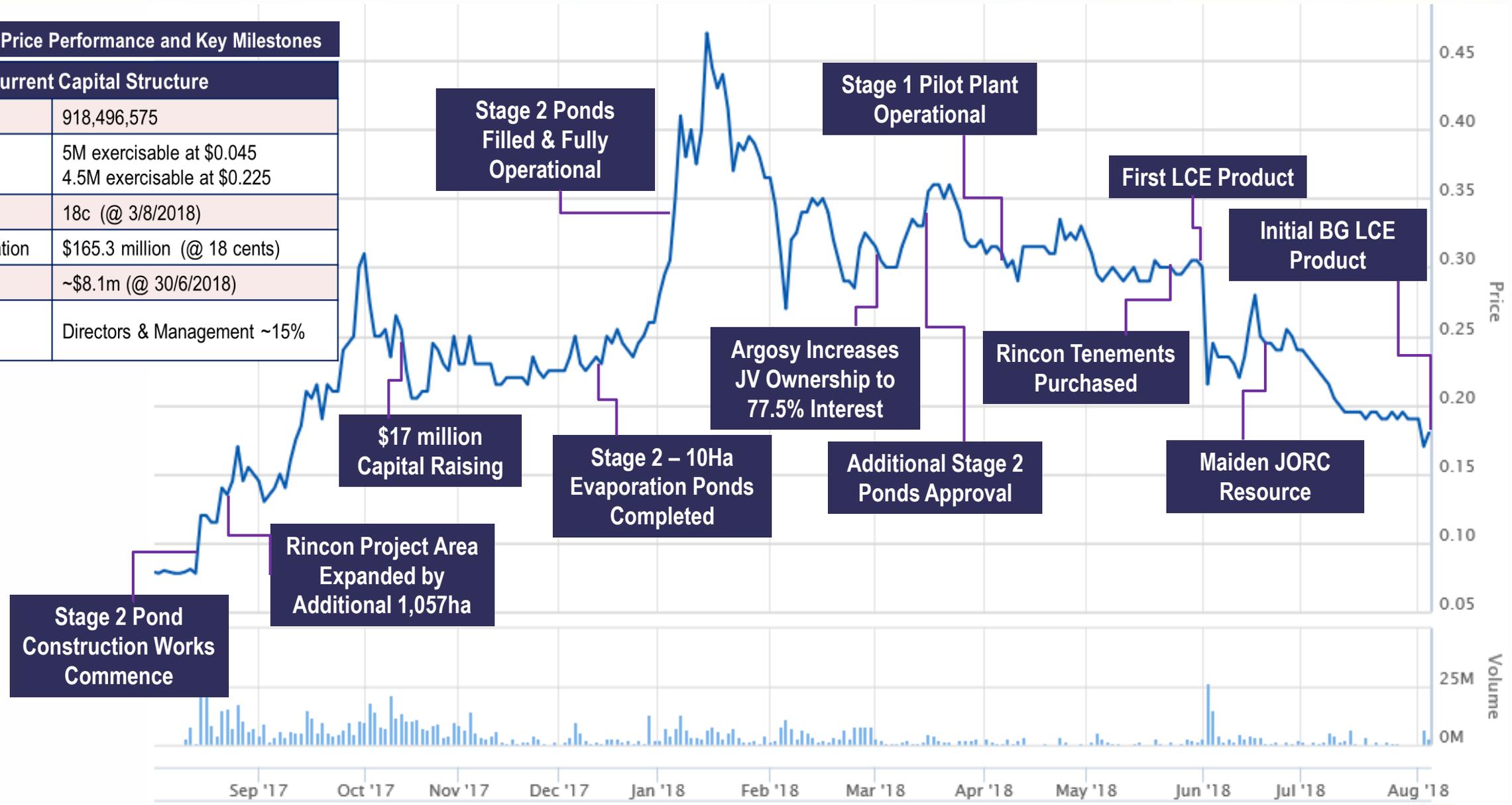


- Key Rincon Lithium Project located in the world-class “Lithium Triangle” – the world’s dominant source of lithium production:
  - *Located in Salar del Rincon, Salta Province, Argentina*
  - *Flagship asset in Argosy’s lithium fast-track development strategy, staged development commenced, and initial battery grade lithium carbonate (LCE) product achieved*
  - *Rincon is joint-venture with pre-eminent lithium processing expert, Pablo Alurralde*
  - *Stage 1 industrial scale pilot plant now operational, with capacity up to 500tpa LCE product*
  - *Stage 2 initial commercial development commenced – pond development ~60% complete and operational*
- \$17m capital raising completed in October 2017
  - *Funds being utilised for on-going Stage 2 development works*
- Argosy currently has 77.5% interest in the JV entity that owns Rincon Lithium Project – Puna Mining S.A., with the right to move to 90% ownership in consideration for funding Stage 3 development
- Continued engagement with customers in tightening lithium market to secure long-term off-take agreements and potentially strategic investment
- Argentina – open for business
- Strong upcoming news flow on continued Rincon Lithium Project development milestones

# Capital Structure, Share Price & Recent Milestones



12 Month Share Price Performance and Key Milestones	
Current Capital Structure	
Shares on Issue	918,496,575
Options on Issue	5M exercisable at \$0.045 4.5M exercisable at \$0.225
Share Price	18c (@ 3/8/2018)
Market Capitalisation	\$165.3 million (@ 18 cents)
Cash	~\$8.1m (@ 30/6/2018)
Significant Shareholders	Directors & Management ~15%



# Production of Battery Grade End-Use LCE Product

*Lithium brine projects produce end-use LCE Product for direct use in battery manufacturing*



- High value LCE Product produced directly for end-use by international cathode and battery manufacturers
  - *Derive high quality lithium carbonate and hydroxide chemicals for both the battery and industrial markets*
  - *Battery Grade  $\text{Li}_2\text{CO}_3$  FOB South America average price is currently +US\$15,000 per tonne (source: Benchmark Mineral Intelligence)*
  - *Cathode customers suggesting a shortfall of battery grade lithium chemical products in both carbonate and hydroxide form*
  - *Market was expecting increasing supply during 2018 from Chinese lithium chemical conversion plants processing spodumene concentrate from Australian hard rock projects → **did not happen***
  - *Overall supply/demand balance for lithium chemicals continues to be tight as conversion plants have reported significant technical difficulties commissioning new capacity and converting new supply*
  - *increasingly tight lithium market for late-2018 and the next few years ahead*
    - ▶ *Argosy targeting to enter full commercial production during this period*
- Only new supplier able to currently offer high value, premium quality battery quality LCE end-use product



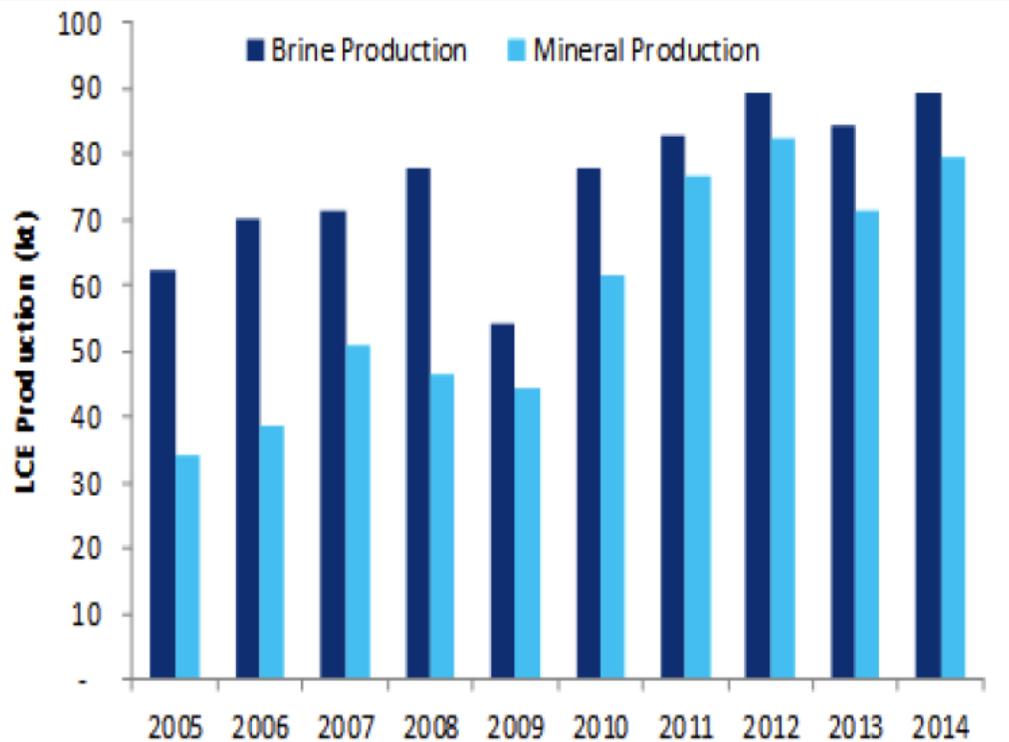
# Lithium 101: Brine vs. Hard-Rock Production

*Most lithium production comes from lower cost brine production*



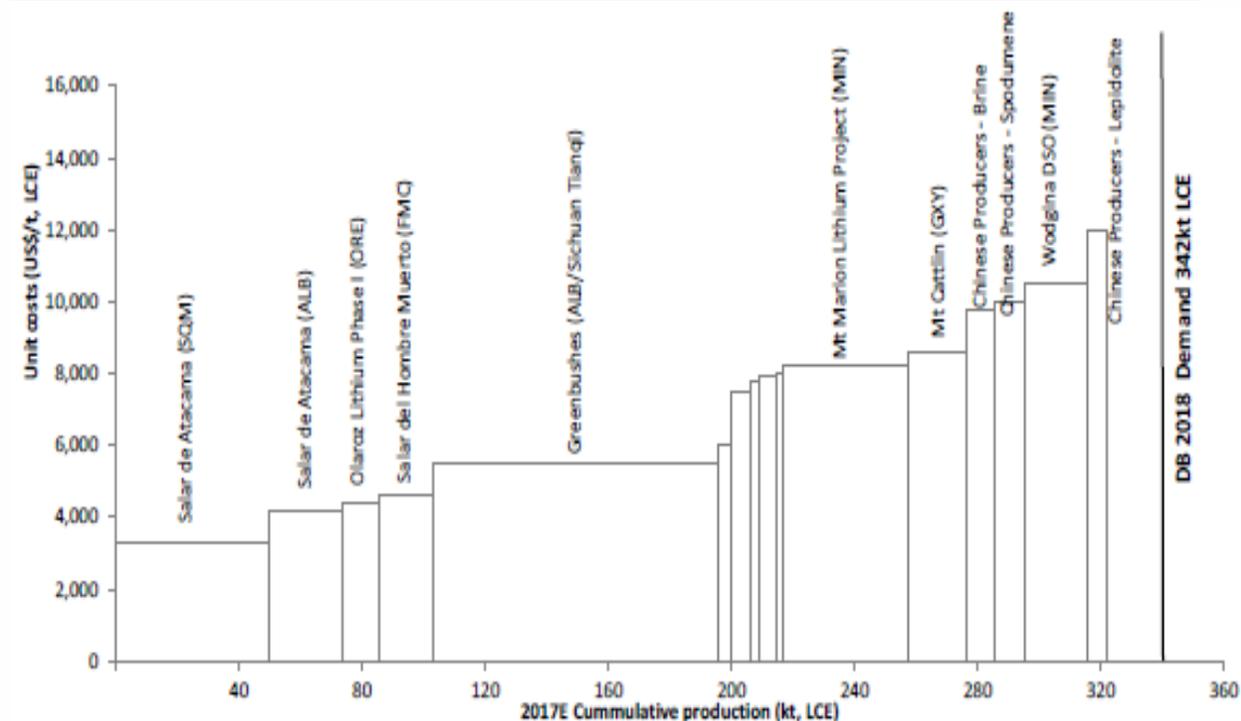
- Lithium production is predominantly delivered from brines
- Brines have significantly lower extraction costs compared to hard rock deposits

### Lithium Production by Deposit Style



Source: Citi Research

### Lithium Cost Curve (by Capacity)



Source: Deutsche Bank, company data

**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



ARGOSY MINERALS LIMITED



49% of Global Lithium Production from the "Lithium Triangle" which holds approximately 70% of World's Lithium Reserves



 AGY Rincon JV Lithium Project

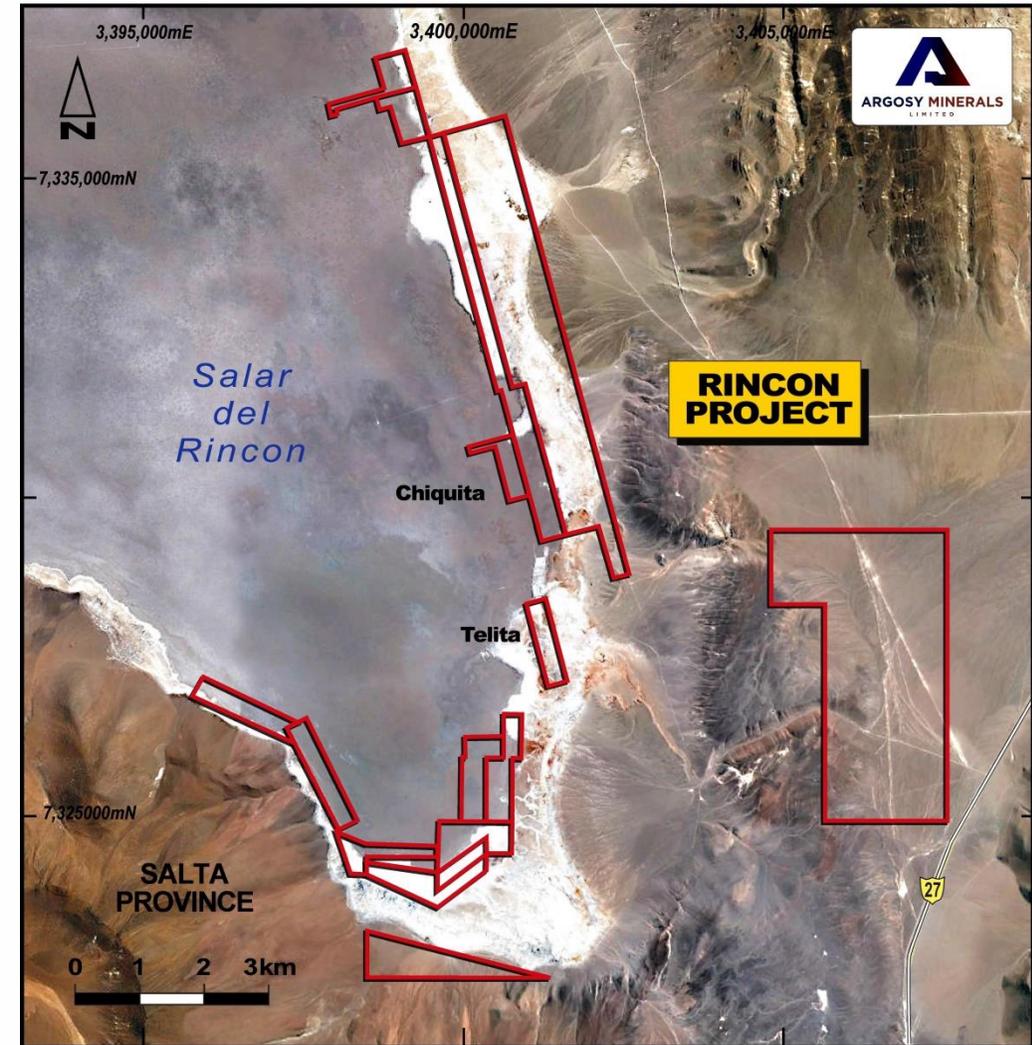
 Salars (salt flats)



# Rincon Project: Recent History and Overview

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

- Binding JV Agreement executed September 2016
  - *Argosy currently has 77.5% interest in Puna Mining S.A. – the JV entity that owns the Rincon Lithium Project*
  - *Argosy will earn 90% of Puna Mining S.A. via the completion of Stage 3 development*
  - *Partnership with world-renowned lithium processing expert Pablo Alurralde*
- Project currently comprises 2,572 ha of mining concessions and easement rights landholdings
  - *Concessions 100% owned by Puna Mining S.A.*
- Extensive historical works conducted within Salar del Rincon
  - *Historical drilling & associated works indicate average lithium content of 397ppm (Ovejero Toledo, 2007)*
- Exploration works conducted by Argosy confirmed historical data
  - *JORC resource estimate prepared based on new drilling and independent hydrogeological expert modelling*
- Independent consultants verifying data for feasibility works and preparation of a Preliminary Economic Assessment (PEA)



Rincon Project Tenement Location Map



# Rincon Project: Location and Infrastructure

*Rincon lies close to infrastructure in Salta Province, a prolific mining jurisdiction*



- 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 high evaporation rates, given UV is very high, predominant clear skies and minimal rainfall.
- High quality regional and site infrastructure will facilitate project development, with road, rail, port facilities and power generation services such as electrical and natural gas all available at close distance.



Regional gas pipeline available at plant locations for all stages



Olacapato – Site for the Stage 2 Process Plant

# Rincon Project: Development Milestones

Unique development strategy targeting near-term battery grade lithium carbonate production



## Stage 1 Pilot Plant Stage

Industrial scale pilot plant to demonstrate effectiveness of Alurralde process for BG LCE production from Rincon Salar brines

~500tpa (LCE) plant capacity

**OPERATIONAL**

First LCE Product achieved May 2018

**First BG LCE Product achieved August 2018**

## Stage 2 Initial Commercial Stage

Initial commercial scale plant (with matching scale brine capacity from ponds) to demonstrate scalability of operations

Targeting ~1,500-2,000tpa (LCE) plant capacity

**Pond development works ~60% complete  
~10ha of ponds currently in operation**

Plant construction targeted to commence late-2018

## Stage 3 Commercial Stage

Large scale commercial production

To be confirmed by PEA

Target to commence development 2H, 2019

Description

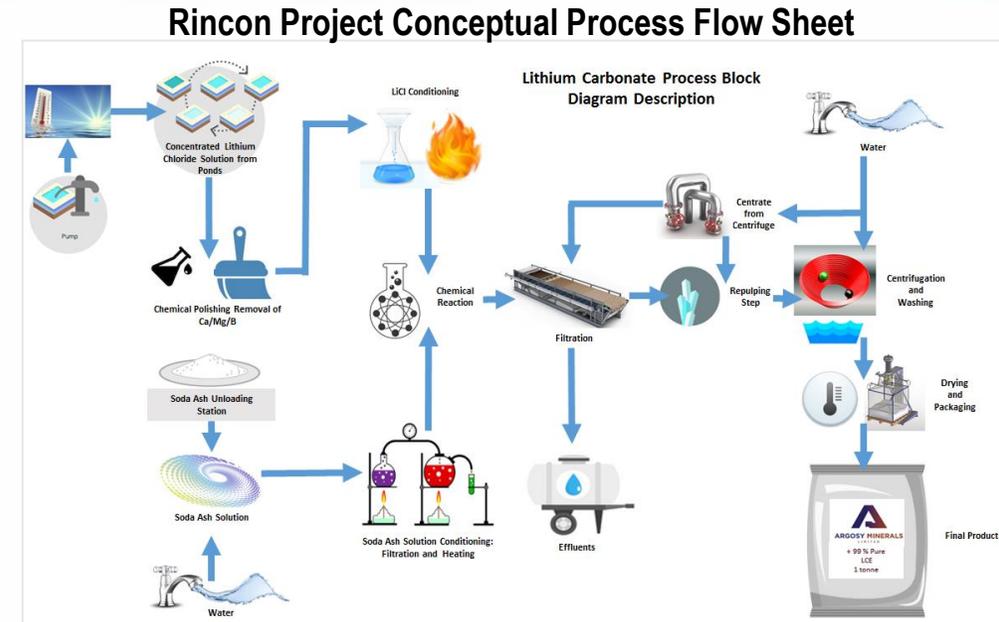
Capacity

Status

# Rincon Project: Current Status

Development works ahead of schedule with the 'pull forward' of Stage 2 commencement

- Stage 1 plant operational & achieved initial battery grade LCE product
  - Ponds completed April 2017 and plant commenced operations end-March 2018
  - First battery grade LCE product achieved August 2018
  - LCE steady-state production following full process testing works
- Stage 2 works progressing ahead of schedule
  - Initial 10Ha evaporation ponds completed
  - Construction progressing on additional ~24Ha of Stage 2 ponds
  - Production wells completed and brine pumping on-going
  - Drilling progressing, targeting delineation of JORC-compliant Resource estimate and working towards Preliminary Economic Assessment (PEA)
  - Stage 2 commercial plant designed, development to start in 2H, 2018

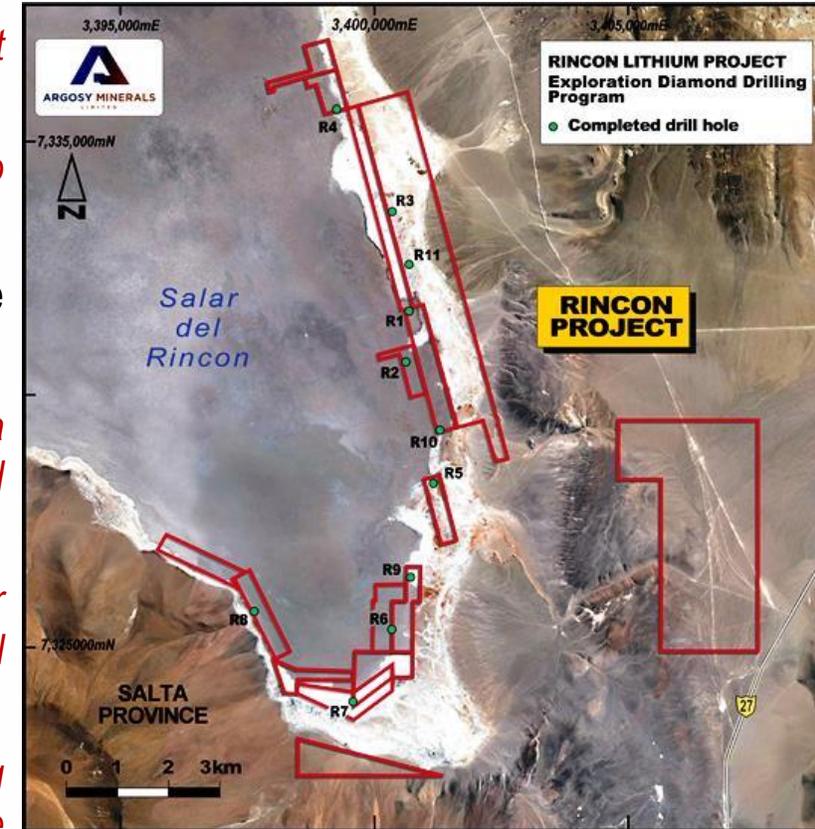


# Rincon Project: JORC Mineral Resource

*Drilling works include holes for resource data as well as production wells*



- Two concurrent phases of drilling operations conducted:
  - *Resource exploration drilling to prepare JORC Resource estimate, utilised a diamond drill rig to collect drill cores for porosity assessment and to obtain brine samples for resource estimation*
  - *Production well drilling using a rotary drill rig for construction of wells for pumping of lithium brine into the Stage 2 evaporation ponds.*
- Maiden Inferred Mineral Resource of 207,957 tonnes of contained lithium carbonate equivalent (LCE) product calculated from results of initial eight drill-holes
  - *Weighted mean average lithium concentrations range between 324 mg/L and 369 mg/L, with a maximum recorded concentration of 490 mg/L, and estimated specific yield varying between 1% and 13%*
  - *Resource estimate exceeds the Company's expectation and forms a solid basis to advance the PEA for the Rincon Lithium Project – and to highlight the mine-life estimates, for which key works are well progressed*
  - *Extensive fractured halite aquifer over the surface of the salar Project area, with depths ranging between 1.5m to 36.6m and very positive hydrogeological potential, essential for favourable mine-life estimation works as part of PEA*
- Two primary production wells completed to date, drilling results indicate:
  - *Initial pump flow rates estimated at >20 l/s*
  - *Preliminary hydrogeological workings estimate abundant brine and flow rates*



Drilling Program Drill-hole Location Map

# Rincon Project: Preliminary Economic Assessment

*Works commenced by independent hydrogeological consultants*



- The Company has engaged independent consultants to prepare a PEA for the Rincon Lithium Project
- The main items of the PEA will comprise:
  - *Hydrogeological data, with life of mine modelling, production and brine pumping parameters, mineral resources, borefield details;*
  - *Capital and operating costs;*
  - *Processing and engineering works;*
  - *Marketing analysis; and*
  - *Financial analysis.*
- Hydrogeological works comprise:
  - *Hydrogeological model, targeting long-term sustainable operation*
  - *Numerical model – objective to look at recovery potential*
  - *Brine recovery potential – recovery rates, scale of borefield configurations, etc*
  - *Preliminary results to date indicate:*
    - ▶ **Fractured halite supports very high rates of abstraction**
    - ▶ **Black Sand supports high volumes of abstraction**
    - ▶ **Relatively high recovery factors could be applied**



Rincon Project – Stage 2 Evaporation Ponds

# Rincon Project: Key Partner & Expertise

*Pablo Alurralde, a 'world renowned' expert and patent developer for unique lithium process routes*

- 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*



**Stage 1 Industrial Scale Pilot Plant with initial 'Battery Quality' LCE product**

# Rincon Project: Executive Management

## Management team

- ✓ Argosy has executed a Definitive Farm-In Joint Venture Agreement for the Rincon Lithium Project and currently has a 77.5% interest in the Argentinian joint venture company – Puna Mining S.A., and can earn an ultimate 90% interest.

**Argosy Minerals**

**Jerko Zuvela**  
(Managing Director)

**Lithium Marketing**

**Puna Mining S.A.**

**Pablo Alurralde**  
(President & Principal  
Chemical Engineer)

**Francisco Alurralde**  
(Engineering  
Manager)

**Francisco Menendez**  
(Admin and Business  
Manager)

**Hector Saravia**  
(Geology Manager)



# Investment Summary

## *New standard for development of lithium brine projects worldwide*

- ✓ *Key focus is on Rincon Lithium Project located in the world-class “Lithium Triangle” – the world’s dominant source of lithium production*
- ✓ *Fast-track development at Rincon Project progressing – Stage 1 pilot plant operational for lithium concentrate test-works, battery grade LCE product achieved*
- ✓ *Stage 2 development works commenced and on-going*
- ✓ *Argosy currently has 77.5% interest in Puna Mining S.A. – the JV entity that owns the Rincon Lithium Project*
- ✓ *Pre-eminent lithium processing expert Pablo Alurralde managing Rincon Project*
- ✓ *Argentina – open for business*

### **NEAR-TERM KEY MILESTONES**

- ✓ *Execute purchase agreements for Rincon Project tenements under option*
- ✓ *JORC Resource estimate*
- ✓ *Initial Battery Grade LCE product achieved*
  - *Stage 1 off-take agreement*
  - *PEA report*
  - *Consistent battery grade LCE product for on-going operations*
  - *Progress construction of additional ~24Ha of Stage 2 evaporation ponds*





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## Contact Us

To discuss how Argosy could benefit you, please contact:

**Jerko Zuvela - Managing Director**

**T +61 8 6188 8181**

**Level 3, 216 St Georges Terrace PERTH WA 6000 Australia**

**Email: [admin@argosyminerals.com.au](mailto:admin@argosyminerals.com.au)**

**ASX Code: AGY**



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