



# Sal de Vida

*Galaxy steadily advancing its tier 1 project*

Benchmark World Tour West – Lithium Brines in Argentina Special  
Simon Hay – Chief Executive Officer

July 2020

ASX : GXY

**GALAXY**

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Any information in this report that relates to Sal de Vida Project Mineral Resources is extracted from the report entitled "Sale of Northern Tenements at Sal de Vida to POSCO Completed" created on 26 November 2018 and the Sal de Vida Project Ore Reserves is extracted from the report entitled "Sal De Vida: Revised Definitive Feasibility Study Confirms Low Cost, Long Life and Economically Robust Operation" created on 22 August 2016 both of which are available to view on [www.gxy.com](http://www.gxy.com) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

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This release was authorised by Mr Simon Hay, Chief Executive Officer of Galaxy Resources Limited.

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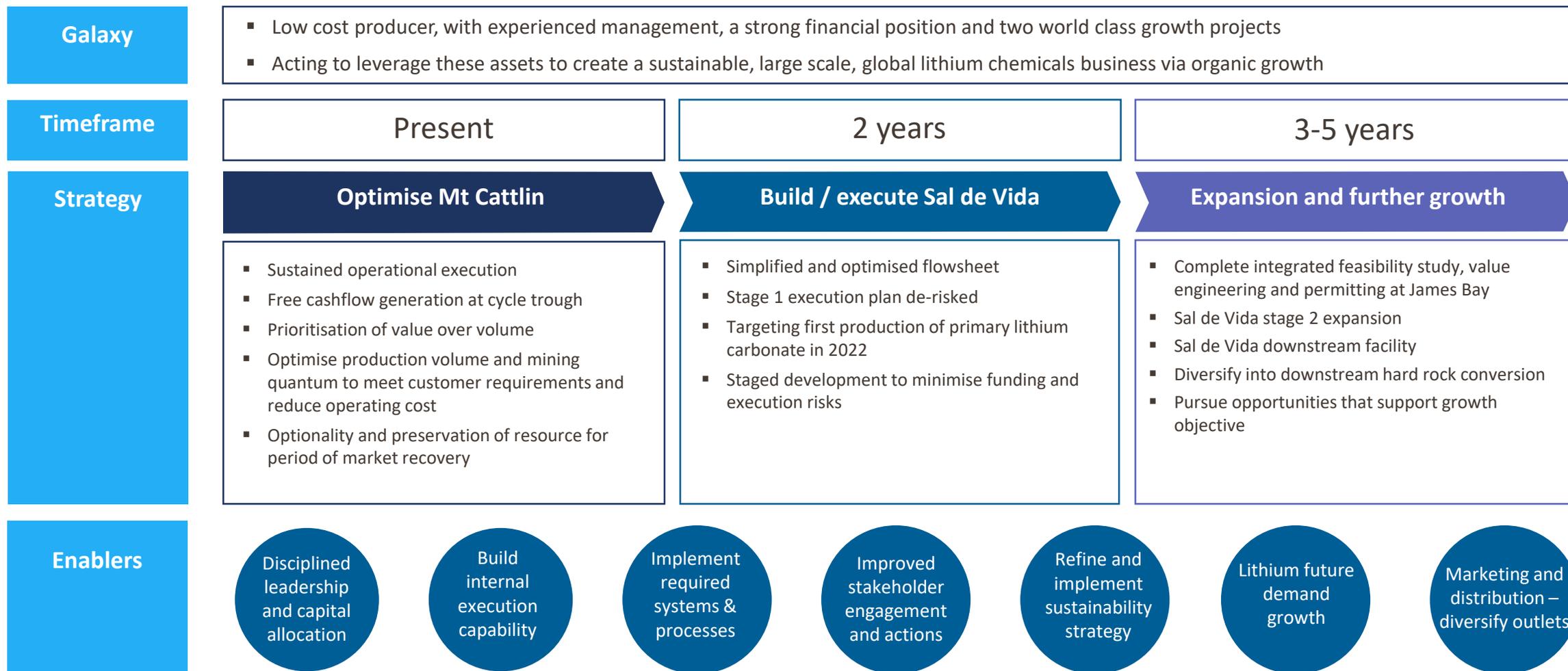
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# Galaxy's corporate strategy



## Growth centered around the development of Sal de Vida



# Sal de Vida



A tier 1 asset with one of the highest-quality grade brines in Argentina

Long project life



Superior  
brine chemistry



Low Cost

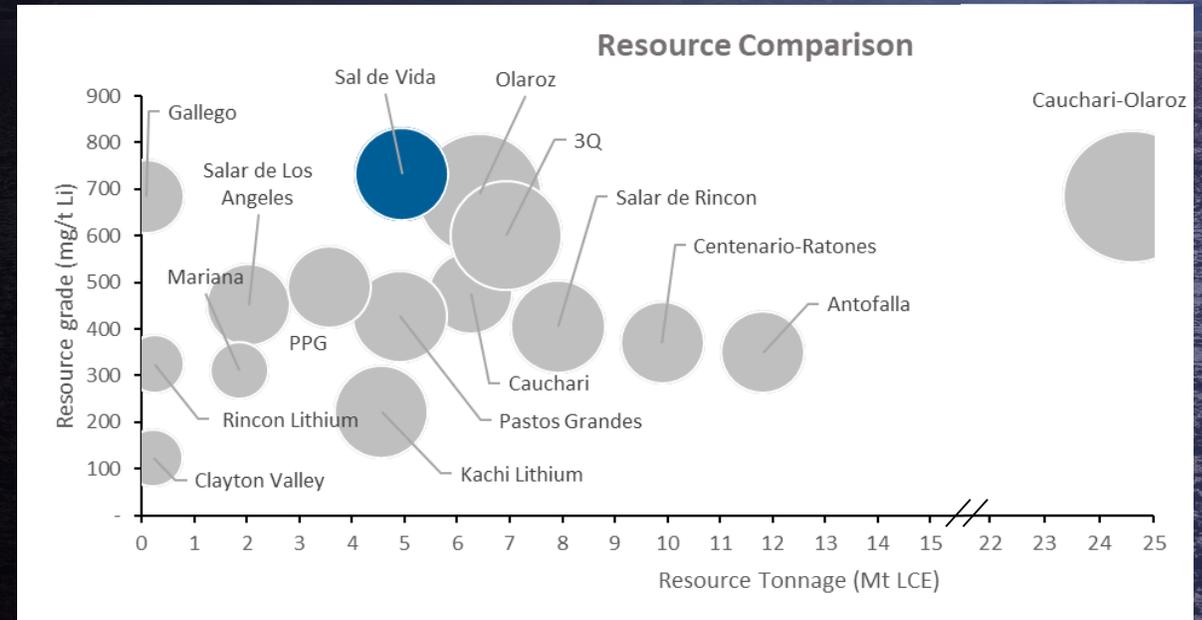


Simple flowsheet



- ✓ Located within the lithium triangle
- ✓ Proven mining jurisdiction of Catamarca
- ✓ Majority of permits in place

- ✓ One of the highest-quality grade brines in Argentina
- ✓ Purifies readily to battery grade due to low Mg, B & Ca in brine
- ✓ Long project life of 40+ years (1.1Mt LCE Reserve<sup>1</sup>)
- ✓ Substantial resource (4.9 Mt LCE Resource<sup>1</sup>)



# De-risked development approach



Staged, scalable approach to smooth capital expenditure and accelerate earnings realisation

## Stage One

### Production of primary lithium carbonate

Development and technical risk further reduced:

- Simplified & optimised process flow sheet
- Superior brine chemistry enables adoption of mature technology
- Targeting initial commercialisation of primary lithium carbonate

## Stage Two

### Direct expansion of Stage 1

Duplication of Stage 1 after:

- Demonstrating successful production
- Product is accepted into the market
- Cashflow generation

## Stage Three

### Purification into battery grade

Attractive margins of battery grade

- Purification to take place at an offsite location to reduce technical risk
- Can overlap with Stage 2 expansion
- Targeted capacity to match full scale output from all evaporation stages

# Promoting a sustainable future



A sustainable approach throughout all stages of project development, aligning with international standards

## Health & Safety

- Immediate focus on preventing spread of COVID-19
- Strict protocols in place & working closely with authorities
- Provision of medical supplies to Antofagasta de la Sierra hospital
- Ongoing investment in programs for both employees and community

## Environmental Stewardship

- Committed to responsible use of water resources; lower water usage intensity with flowsheet selected
- Groundwater permit granted by the Catamarca provincial water authority
- Targeting clean energy with solar power envisaged for Stage 2
- Environmental baseline study completed

## Social Responsibility

- US\$850k social investment commitment in the region for three active projects
- Social baseline study complete: positive feedback received
- Community office opened in Antofagasta de la Sierra
- Aim to maximise procurement of local goods and service

## Education & Employment

- Current Sal de Vida workforce; 70% local, 100% Argentinian, nil expats
- Committed to upskilling and providing future employment opportunities
- Capacity building - lithium seminars at the University of Catamarca



*Employment upskilling*



*Construction of primary school*

# COVID-19



## Health & safety of workers and communities remains the priority

### Current status

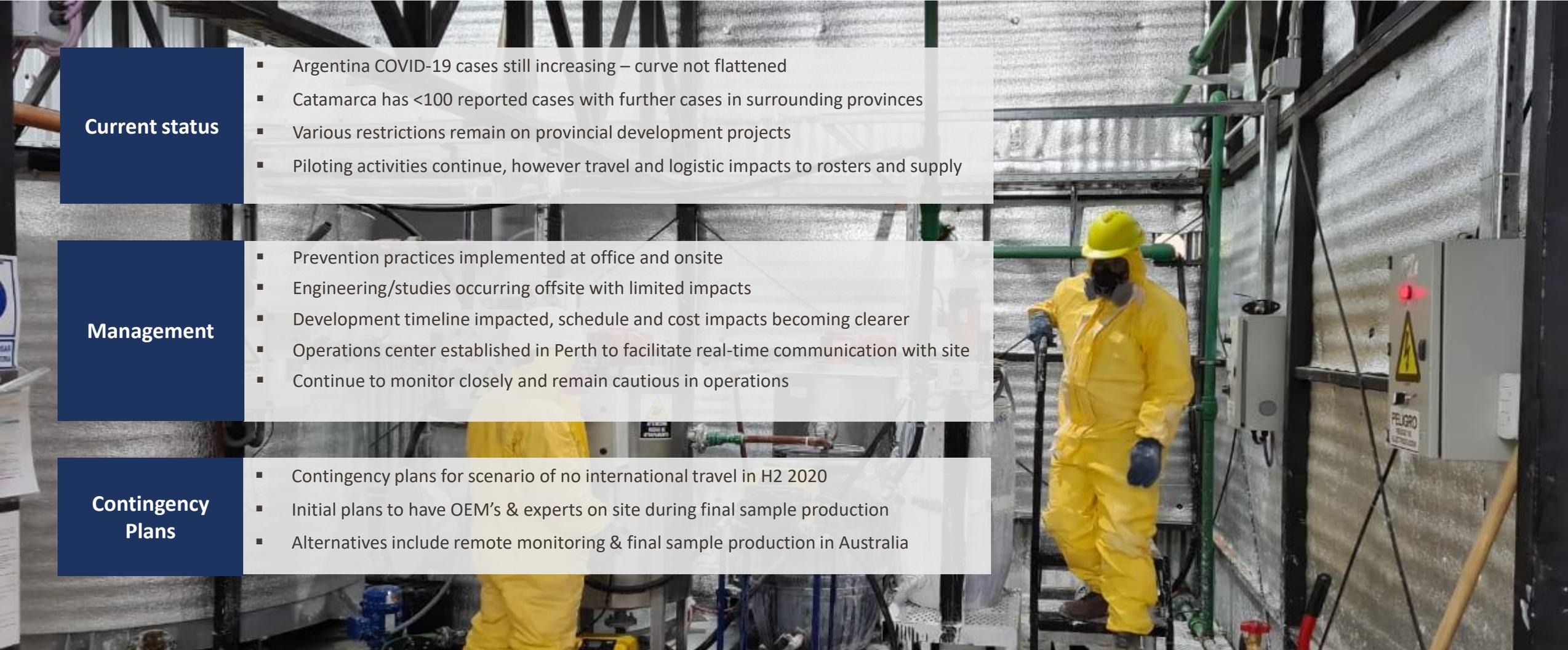
- Argentina COVID-19 cases still increasing – curve not flattened
- Catamarca has <100 reported cases with further cases in surrounding provinces
- Various restrictions remain on provincial development projects
- Piloting activities continue, however travel and logistic impacts to rosters and supply

### Management

- Prevention practices implemented at office and onsite
- Engineering/studies occurring offsite with limited impacts
- Development timeline impacted, schedule and cost impacts becoming clearer
- Operations center established in Perth to facilitate real-time communication with site
- Continue to monitor closely and remain cautious in operations

### Contingency Plans

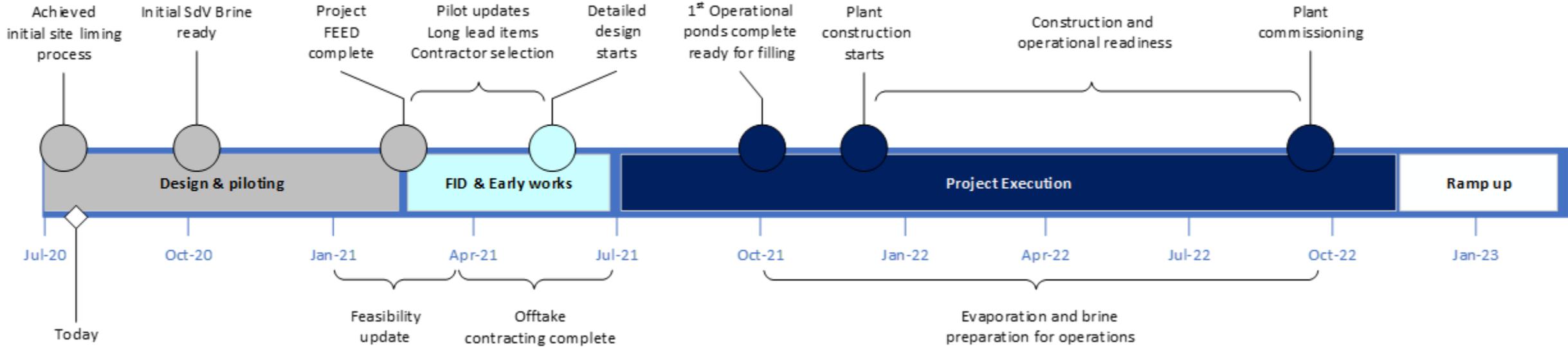
- Contingency plans for scenario of no international travel in H2 2020
- Initial plans to have OEM's & experts on site during final sample production
- Alternatives include remote monitoring & final sample production in Australia



# Execution planning



## Sal de Vida has advanced to design phase and piloting is underway



### FEED and piloting

- FEED underway on wellfield & ponds
- 2<sup>nd</sup> package for plant and infrastructure in Q3
- Samples from pilot support offtake discussions
- Concludes with updated cost estimate and financials

### Early works phase

- Early works enables 2022 production schedule
- Definition of this phase in Q1 2021
- Construction of first pond string
- Long leads, detail design and early site works
- Binding agreements with offtakers

### Execution

- Critical activity evaporation in 1<sup>st</sup> string
- Construction / commissioning
- Operational readiness

# Engineering & process development



Sal de Vida has advanced to the design phase and product specification test work is largely complete

## Design phase

- **Wellfield and ponds (FEED 1)** awarded and underway with tier 1 engineering company
  - Wellfield & pond locations selected for 1<sup>st</sup> stage
  - Ponds to be built in 2 strings to fit construction within seasonal windows
  - Process design work complete
- **Process plant and infrastructure (FEED 2)** tenders under review
  - To be awarded in August, 7-month schedule

## Process development

- Process flowsheet confirmed through multi-staged test work program at independent metallurgical test facility
- Test work is yielding high quality primary lithium carbonate with grade at the upper end of range
- Positive results on purity with ARG reagents
- Final work to size & select process equipment including crystallisers

# Process flowsheet optimised and locked



## Lower technical complexity and environmental impact compared to alternative process techniques

Process Flowsheet	Water Requirement	Energy Requirement	Technical Complexity	Recovery	Capital intensity	Waste
<b>Optimised Sal de Vida flowsheet</b> Evaporation ponds → Liming → First carbonation → Second carbonation → Purification	Green	Green	Green	Yellow	Green	Green
<b>Original Sal de Vida flowsheet</b> Liming → Evaporation ponds → Boron SX → First carbonation → Ca / Mg IX → Boron IX → Second carbonation → Purification	Green	Yellow	Yellow	Red	Yellow	Yellow
<b>Typical solvent extraction ("SX") flowsheet</b> Proprietary SX → RO water recovery → Concentration ponds <sup>1</sup> → Ca / Mg / B IX <sup>2</sup> → Purification	Yellow <i>More than double</i>	Red <i>c. Triple</i>	Red	Green	Red <i>Large first fill requirement</i>	Red
<b>Typical direct extraction flowsheet</b> Proprietary extraction → RO water recovery → Concentration ponds <sup>1</sup> → Ca / Mg / B IX <sup>2</sup> → Purification	Yellow <i>More than double</i>	Red <i>c. Triple</i>	Red	Green	Yellow <i>Greater equipment requirement</i>	Yellow

Legend: ● Most favorable ● Intermediate ● Least favorable

Notes:

- Theoretical lower limit of no pond area required
- Depends on the brine source

# Hydrogeology

## Long term pump test successfully completed in Q2



- Test conducted under operating conditions
- 30-day test using a production well
- Brine used to fill pilot ponds
- Brine & aquifer characteristics met expectations
- Recovery phase concluded showing rapid recharge
- FEED is finalising wellfield layout and specifics of well parameters/specification
- Plan to commence initial well drilling H2 2020 for operational brine production H2 2021

30 days  
continuous flow

Design production  
rates achieved

Excellent  
aquifer recharge

Evaporation in line  
with modelling

# Other work programs



A number of studies have advanced to determine solutions and strategies for the project

- **Energy strategy**
  - likely to adopt LPG in Stage 1 and both LPG and photovoltaic in Stage 2
  - Assessment of trial photovoltaic arrangement prior to initial production
  - Natural gas remains an option
- **Logistics and transport solution**
  - Transport modes for incoming reagents, supplies and outgoing product largely defined
- **Quarry studies** – completed
- **Airborne detailed topography** – final stages
- **Environmental baseline** – completed and updated for permitting requirements



# Pilot plant commissioned, first run successful

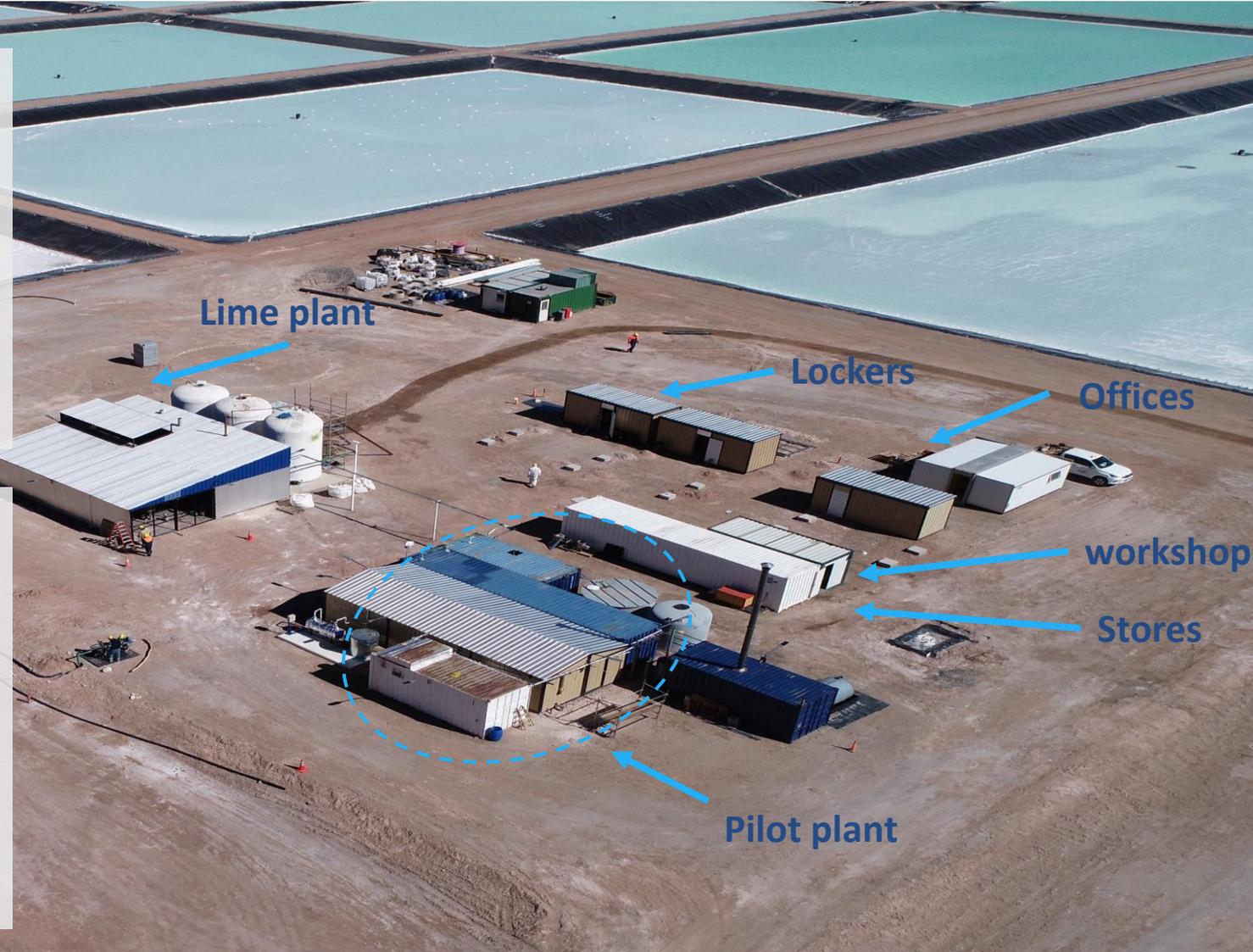


## Piloting objectives

- Validate the flowsheet and key operating assumptions under real operating conditions
- Produce representative samples of primary grade lithium carbonate
- Enable vendors of process equipment to confirm performance and operating design criteria

## Solid progress made, future plans:

- 2 multi-week runs scheduled for H2
- Remote monitoring centre established in Perth – crucial with travel restrictions in place
- First run proved the liming operation on evaporated brine
- Operational readiness for softening and carbonation steps
- Contingency plans in case of travel restrictions





## **Galaxy is on track to deliver Sal de Vida to the market in time for a forecast lithium demand surge**

- ✓ Tier 1 asset with superior brine chemistry & extractability
- ✓ Long project life of 40+ years
- ✓ De-risked development strategy
- ✓ Mature technology & competitive cost position
- ✓ Strong community support & government relations
- ✓ Experienced management & localised workforce
- ✓ Robust balance sheet

# Appendix: Sal de Vida Resource & Reserve



**Table 1: Sal de Vida Mineral Resource**

Category	Brine Volume (m <sup>3</sup> )	Avg. Li (mg/L)	In-situ Li (Tonnes)	Li <sub>2</sub> CO <sub>3</sub> Equivalent (Tonnes)	Avg. K (mg/L)	In-situ K (Tonnes)	KCl Equivalent (Tonnes)
Measured	490,000,000	759	369,000	1,964,000	8,126	3,952,000	7,536,000
Indicated	680,000,000	717	485,000	2,583,000	8,051	5,446,000	10,385,000
Inferred	100,000,000	706	71,000	376,000	6,747	676,000	1,289,000
<b>Total</b>	<b>1,300,000,000</b>	<b>732</b>	<b>925,000</b>	<b>4,923,000</b>	<b>7,976</b>	<b>10,073,000</b>	<b>19,210,000</b>

Note: Assumes 500 mg/L Li cut off.

**Table 2: Sal de Vida Ore Reserve**

Category	Time Period	Li Total Mass (Tonnes)	Equivalent Li <sub>2</sub> CO <sub>3</sub> (Tonnes)	K Total Mass (Tonnes)	Equivalent KCl (Tonnes)
Proven	1 - 6	34,000	181,000	332,000	633,000
Probable	7 - 40	180,000	958,000	1,869,000	3,564,000
<b>Total</b>	<b>40 years total</b>	<b>214,000</b>	<b>1,139,000</b>	<b>2,201,000</b>	<b>4,197,000</b>

Note: Assumes 500 mg/L Li cut off. Total tonnages for the economic Ore Reserve values above account for anticipated leakage and process losses of lithium and potassium. The results above are Proven and Probable Reserves from the Southwest and East well-fields when these percent estimated processing losses are factored in, assuming a continuous average brine extraction rate of 30,000 m<sup>3</sup>/d. The conversion factor for Lithium to Lithium Carbonate is: x 5.3228. The conversion factor for Potassium to Potassium Chloride is: x 1.907. Minor discrepancies may occur due to rounding to appropriate significant figures.