

# Orocobre – The Next Low Cost Lithium Producer

**Definitive Feasibility Study Results**  
**May 2011**



# Cautionary Notes

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*This presentation contains "forward-looking information" within the meaning of applicable securities legislation. Forward-looking information may include, but is not limited to, the results of the feasibility study, the estimation and realization of mineral resources, the economic viability of such mineral resources, costs and timing of development of the Olaroz project, the forecasts relating to the lithium and potash markets provided by Roskill, timing and receipt of approvals, consents and permits under applicable legislation, adequacy of financial resources, production and other milestones for the Olaroz project, the Olaroz project's future financial and operating performance including production, rates of return, operating costs, capital costs and cash flows, and other matters related to the development of the Olaroz project.*

*Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from those expressed or implied by such forward-looking information, including but not limited to the risk that further funding may be required, but unavailable, for the ongoing development of the Company's projects; changes in government regulations, policies or legislation; fluctuations or decreases in commodity prices; the possibility that required permits may not be obtained; uncertainty in the estimation or economic viability of mineral resources; general risks associated with the project's feasibility; risks associated with construction and development of the Olaroz project; unexpected capital or operating cost increases; the risk that a definitive joint venture agreement with Toyota Tsusho Corporation may not be completed; uncertainty of meeting anticipated program milestones; as well as those factors disclosed in the Company's Annual Information Form for the year ended June 30, 2010 filed at [www.sedar.com](http://www.sedar.com).*

*The Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable. Assumptions have been made regarding, among other things: the Company's ability to carry on its exploration and development activities, the timely receipt of required approvals, the prices of lithium and potash, the ability of the Company to operate in a safe, efficient and effective manner and the ability of the Company to obtain financing as and when required and on reasonable terms. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used..*

*There can be no assurance that forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities laws.*

## Overview

- Low cost, near-term production of lithium carbonate and potash
- Projects located in renowned “lithium triangle” in Argentina
- Toyota Tsusho strategic partnership for Salar de Olaroz project
- DFS for flagship Olaroz project highlights strong project fundamentals



## Focus on salar hosted minerals

- Lithium
- Potash
- Boron

## Develop flagship Lithium-Potash Project: Salar de Olaroz

- World class high grade resource underpins long mine life
- DFS highlights strong project fundamentals
- Negotiations for final project funding, JV , product off-take and provincial project approvals are underway

## Develop second Lithium-Potash Project: Salinas Grandes

- Drilling current
- Targeting inferred resource towards end of the 2<sup>nd</sup> quarter (subject to results)

## Expand Production at Olaroz by processing additional brine from Cauchari

- High quality exploration target in properties abutting high grade portion of another company's resource
- Complimentary chemistry although higher in sulphate.

## Industry leading processes

- Industry leading drilling and DFS techniques leads to high level of confidence in results
- Strong focus on high quality operations: will not sacrifice quality for speed

## Positively benefit the communities in which we operate

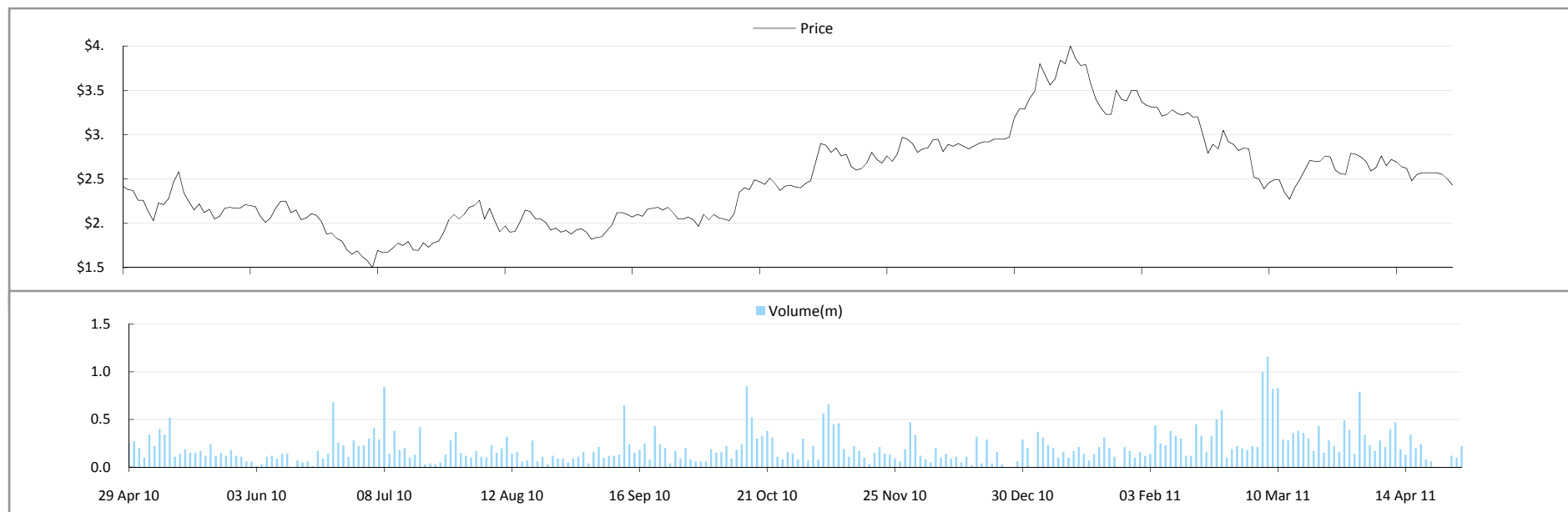
- Working with local communities for three years with programs aimed at increasing skills, capability, individual enterprise and micro-finance credit
- Significant numbers of local employees



# Corporate Snapshot



## ASX – 12 Month Price/Volume Graph to 2 May 2011



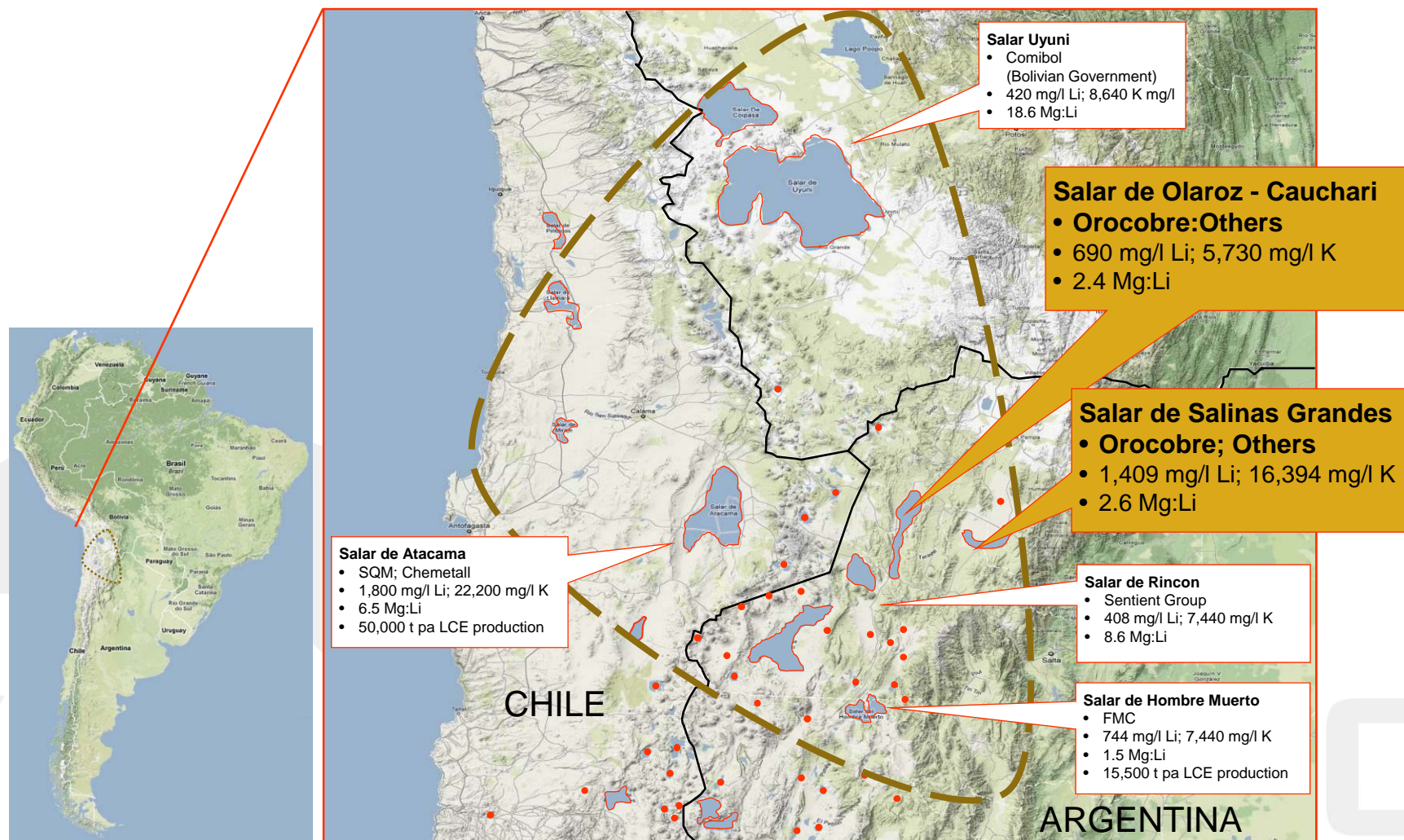
## Current Capitalization (ASX: ORE, TSX:ORL)

Trading Range:	A\$1.50 – A\$4.05 (12 Months to 2 May 2011)
Shares O/S	102.8 million
Options O/S	1.3 million
Market Cap	~A\$242million
Cash	~A\$42.6 million (31 March 2011)
Share price	A\$2.36 (ASX, 2 May 2011)



# Projects located in The “Lithium Triangle”

Orocobre has 300,000 hectares located in the ‘sweet spot’ of Argentina’s Lithium-Potash Triangle



Sources: Company presentations, Roskill and independent consultants (to Orocobre) estimates

Note: stated resources are not NI 43-101 compliant

● Represents smaller brines

## Strategic Partner

- Toyota Tsusho and Orocobre entered into a agreement in January 2010
- Toyota Tsusho can become a 25% equity participate in the Olaroz Project by:
  - Provision of US\$4.5m of funding for the DFS
  - Purchasing the 25% interest based on the NPV from the DFS
  - Securing a low-interest debt facility guaranteed by JOGMEC (Japanese Government) for at least 60% of project capex
- Toyota Tsusho leading marketing effort of Olaroz lithium carbonate
- Orocobre continues to receive enquires from potential partners regarding its other projects (Salinas Grandes and Cauchari) and will continue to explore these opportunities





# Projects overview

## Salar de Olaroz

- Flagship lithium – potash project
- EIS approval received, secondary approval process underway
- Major Resource upgrade announced
- DFS highlights strong project fundamentals
- Located in Jujuy Province

## Salinas Grandes / Cangrejillo

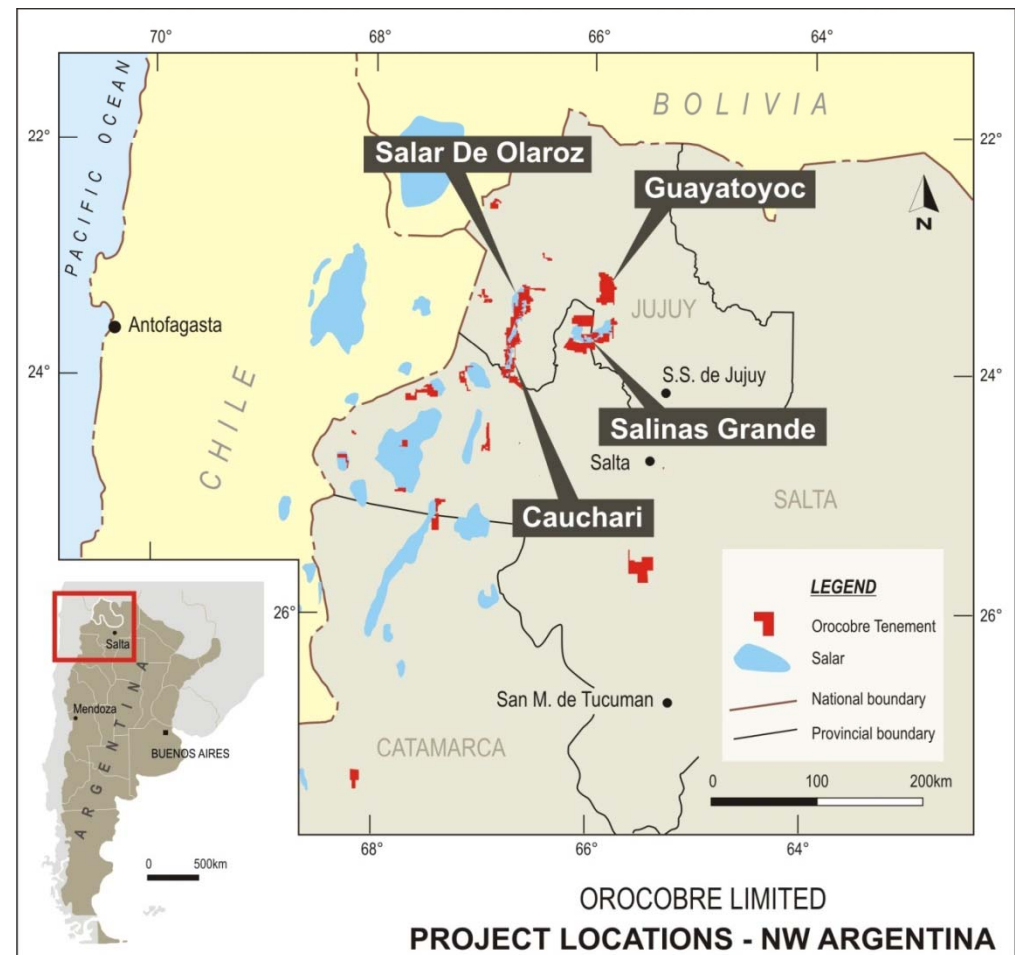
- Lithium-Potash
- Drilling current
- Resource estimate expected in CY11
- Located in Salta Province

## Cauchari

- 30,000 ha lithium-potash property immediately south of Olaroz
- Key properties about the high grade part of another company's resource
- Located in Jujuy Province

## Guayatoyoc

- Potassium discovery





# Salar de Olaroz – Flagship Project

## Significant high grade resource

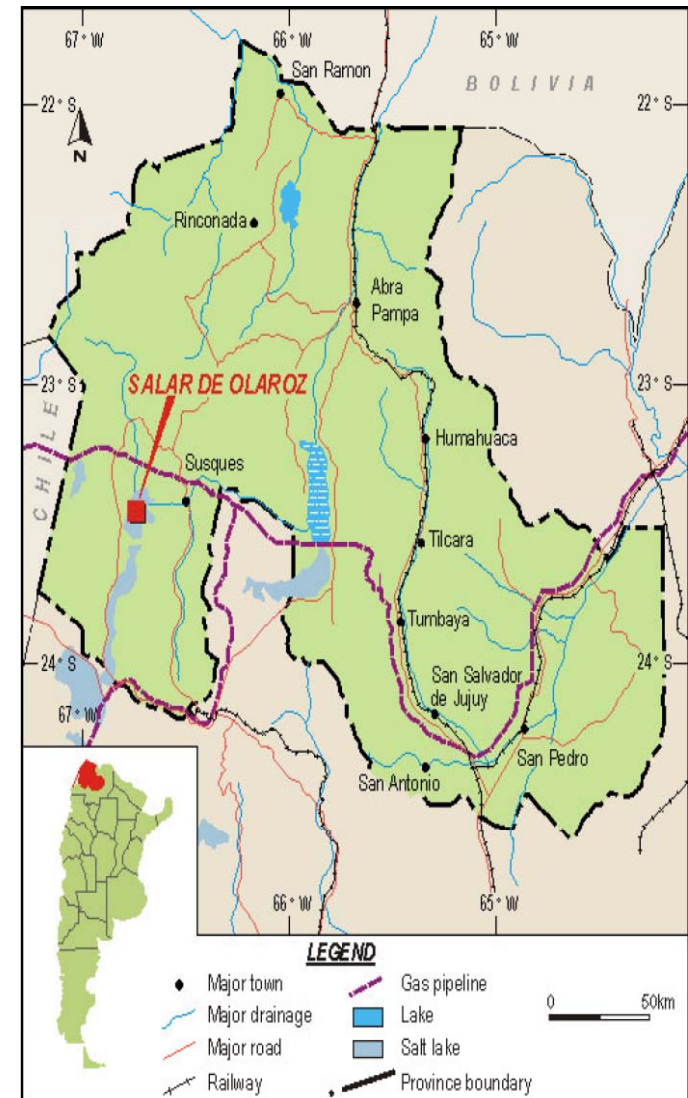
- Resource base of 6.4 million tonnes of Lithium Carbonate equivalent and 19.3 million tonnes of potash
- High lithium concentration of 690 mg/L
- Low magnesium: lithium ratio of 2.4

## Attractive logistics and infrastructure

- Sealed road to port of Antofagasta, Chile (500 km)
- Railway to Antofagasta and to inland Argentina 70km to the south
- Gas pipeline 15 km to the north of salar
- Good communications
- Local workforce and support from San Salvador de Jujuy and Salta City

## Major project milestones already achieved

- Agreement with Toyota Tsusho
- Fourfold resource upgrade announced
- Battery grade lithium carbonate produced
- EIS approval received
- Positive DFS successfully completed



# Definitive Feasibility Study – Flagship Olaroz Project

- DFS highlights strong project fundamentals for flagship Salar de Olaroz lithium potash project
- Very large resource base with long project life
- Very low operating costs for battery grade lithium carbonate
- High quality DFS results – both technically and commercially sound – sets high standard for the industry
- Successful development of process route to produce battery grade lithium carbonate
- Lithium demand forecast to increase by 6.4% pa from 2010 with strong growth in lithium-ion batteries (Roskill)
- Potash demand forecast to rise to 54MT KCl in 2011 (Roskill)



## DFS – Key Economic Findings

<b>Economic Modeling - Olaroz Project</b>			
		Lithium Carbonate Only	Potash By Product Added
Production Rate	TPA	16400	10000
Capital Cost	US\$million	207	221
Payback	Years	3	3
Cash Operating Cost	US\$/t Li C	1512	1230
After Tax Net Present value (7.5%)	US\$million	415	449
After Tax Internal Rate of Return	%	26%	27%
After Tax Net Present value (7.5%) - 60% debt	US\$million	449	489
After Tax Internal Rate of Return - 60% debt	%	52%	56%
Modeled Project Life	Years	40	40

\* Modeling does not consider cost inflation and assumes constant exchange rate of US\$1 – ARG\$4



## DFS - Resource Estimate Summary

- Olaroz Project has very large resource base which has potential to support long project life
- Combined Measured and Indicated Resource of:
  - ✓ 6.4 million tonnes of lithium carbonate
  - ✓ 19.3 million tonnes of potash (potassium chloride)

Resource Category	Area	Thickness	Mean specific yield	Brine volume	Concentration			Tonnes of Contained Metal		
					Lithium	Potassium	Boron	Lithium	Potassium	Boron
	sq. kms	metres	%	cubic kms	mg/L	mg/L	mg/L	Million Tonnes	Million Tonnes	Million Tonnes
Measured Resource	93	54	8.4%	0.42	632	4930	927	0.27	2.08	0.39
Indicated Resource	93	143	10.0%	1.33	708	6030	1100	0.94	8.02	1.46
<b>Measured and Indicated Resource</b>	<b>93</b>	<b>197</b>	<b>9.6%</b>	<b>1.75</b>	<b>690</b>	<b>5730</b>	<b>1050</b>	<b>1.21</b>	<b>10.10</b>	<b>1.85</b>

Measured and Indicated Resources of 1.75 cubic kilometres at 690mg/l lithium, 5,730 mg/l potassium and 1050mg/l boron from surface to 197m depth estimated by John Houston, Consulting Hydrogeologist. The information in this report that relates to Exploration Results or Mineral Resources is based on information prepared by, or under the supervision of Mr Richard Seville who is a member of the Australasian Institute of Mining and Metallurgy. Mr Seville is a Director of Orocobre Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves,' and as a "qualified person" under NI 43-101. Mr Seville consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The conversion rate used is 1 tonne of lithium metal produces 5.32 tonnes of lithium carbonate and 1 tonne of potassium produces 1.91 tonnes of muriate of potash

## DFS - Capital Costs Estimates

Capital Cost Estimate - 16,400 tpa Lithium Carbonate		
Direct Costs		US\$million
	Brine Production Wells and Pipelines	7.1
	Evaporation Ponds	38.0
	Processing Plant	26.5
	Utilities (Power Station, Gas, Water, Communication)	27.3
	Infrastructure	11.9
	Contrators Distributables	15.0
	<b>Sub-Total Indirect Costs</b>	<b>125.7</b>
Indirect Costs		
	EPCM	22.6
	Third Party Services including freight, construction camp, catering etc	18.3
	Owners Costs to Production	17.9
	<b>Sub-Total Direct Costs</b>	<b>58.8</b>
<b>Total Capital</b>		<b>184.5</b>
Contingency		22.1
<b>Total Capital including Contingency</b>		<b>206.7</b>
Potash Plant Option		14.5



- ✓ Capital cost estimate allows for production of battery grade product
- ✓ Allows for detailed engineering design, EPCM and working capital
- ✓ Capital costs may be reduced by optimisation in design and alternative methodology
- ✓ Estimated by Sinclair Knight Merz

## DFS – Very low Operating Cost Estimates

Operating Cost Estimate (16.400tpa production)		
	US\$million per annum	US\$/t Lithium Carbonate
<b>Fixed Costs</b>		
Personnel Charges	5.5	335
Other	2.4	147
<b>Variable Costs</b>		
Supplies and Reagents	15.6	951
Energy	1.3	78
Materials Handling	0.0	0
<b>Total Operating Costs</b>	<b>24.8</b>	<b>1,512</b>
Incremental cost for Potash Option	1.3	79
Incremental benefit for Potash Option	5.9	361
<b>Total Net Operating Cost</b>	<b>20.2</b>	<b>1,230</b>



Lithium only

Includes potash option

- ✓ **Materially less than hard rock mineral projects**
- ✓ **Competitive with existing brine producers**



## DFS - Commodity Assumptions

Roskill Consulting Group Ltd provided the following DFS inputs on lithium and potash pricing

### Lithium

- Lithium demand to grow at 5.8% annual growth rate between 2000 and 2010
- Lithium ion battery demand to grow at 21.6%, a key driver of overall demand
- Forecast to grow at 6.3%
- Average price forecast for battery grade lithium carbonate is US\$6160 per tonne 2011-2025

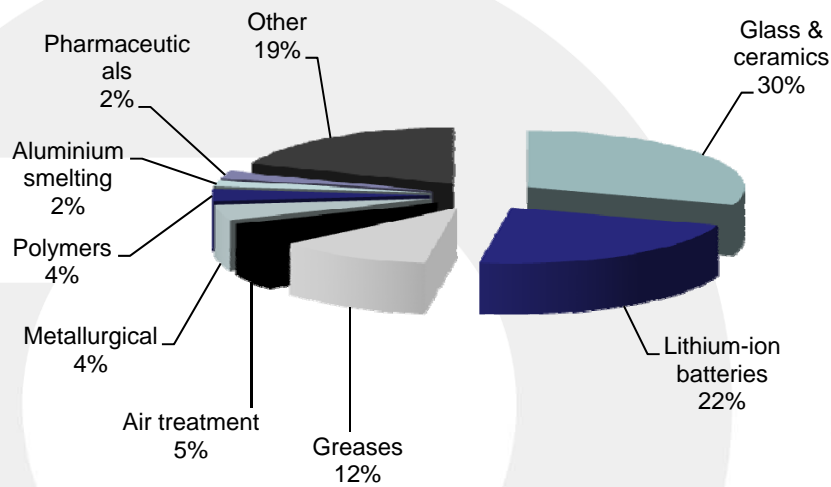
### Potash

- Demand expected to rise to 54 Mt KCl in 2011
- Average price forecast for potash is US\$592 per tonne 2011-2025
- Strong growth expected with agricultural production

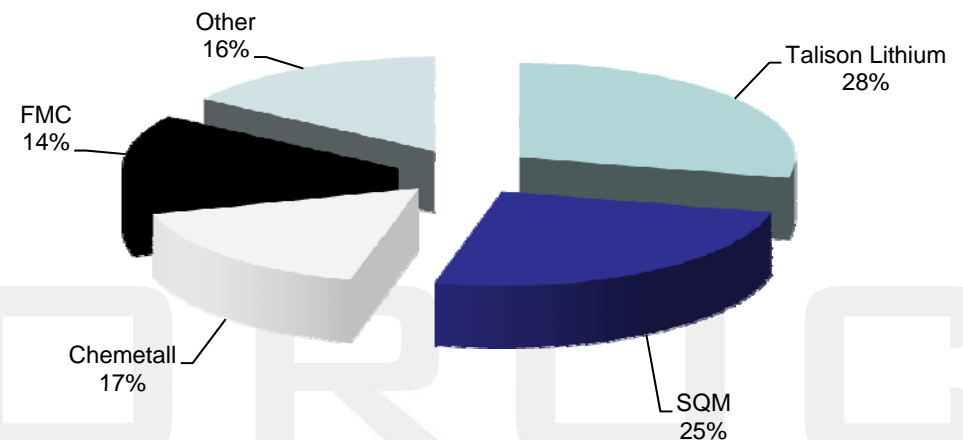
# Lithium Market Dynamics – Don't forget supply

- Lithium demand fundamentals are relatively well understood with demand forecast to rise strongly to between 300,000 tpa and 500,000tpa by 2025 (Chemetal, Jan 2011)
- Driven by growth in lithium batteries demand for consumer products, electrification of transport and electrical storage
- The supply side of the story is less understood, Orocobre believes:
  - Supply response from spodumene producers is mainly relevant to China demand
  - Japanese and Korean consumers will look to brine suppliers for new supply
  - Some market forecasters are overestimating the brine supply response as existing producers have more limited and slower expansion capacity as brine grades are reducing .

## Current Lithium Demand by Industry



## Current Lithium Supply by Company



## Second project - Salinas Grandes (Cangrejillo)

### Strong landholding located in renowned “Lithium Triangle”

- 85% interest via South American Salars, a JV with local interests
- Orocobre holds largest land position including +13,500 hectares in the salar nucleus
- Located in Salta Province

### Possibly one of the lowest operating cost brines in the world

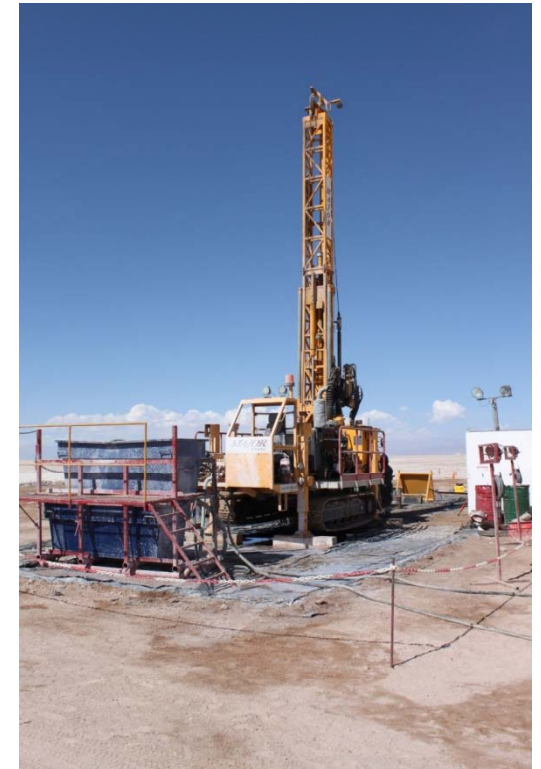
- Pit sampling reveals very high lithium grades and attractive chemistry
- High grade lithium more than 2,000 mg/l Li over approx 60 km<sup>2</sup> of nucleus reaching a maximum of 3117 mg/l (western end)
- >20,000 mg/l K over an area of approx 40 km<sup>2</sup>, and boron values >500 mg l<sup>-1</sup> occur over more than 50 km<sup>2</sup>
- Low sulphate content and low Mg:Li of 2.6 (positive)
- If these metrics proven correct, this project will be poised to become one of the lowest operating cost brines in the world

### Synergies with flagship Olaroz Project

- Salinas Grandes is 70 km south-east of Olaroz and has potential to be partly integrated into the Olaroz Project
- Good access to key infrastructure including port, rail and road

### Actively progressing towards resource estimate Q2 2011

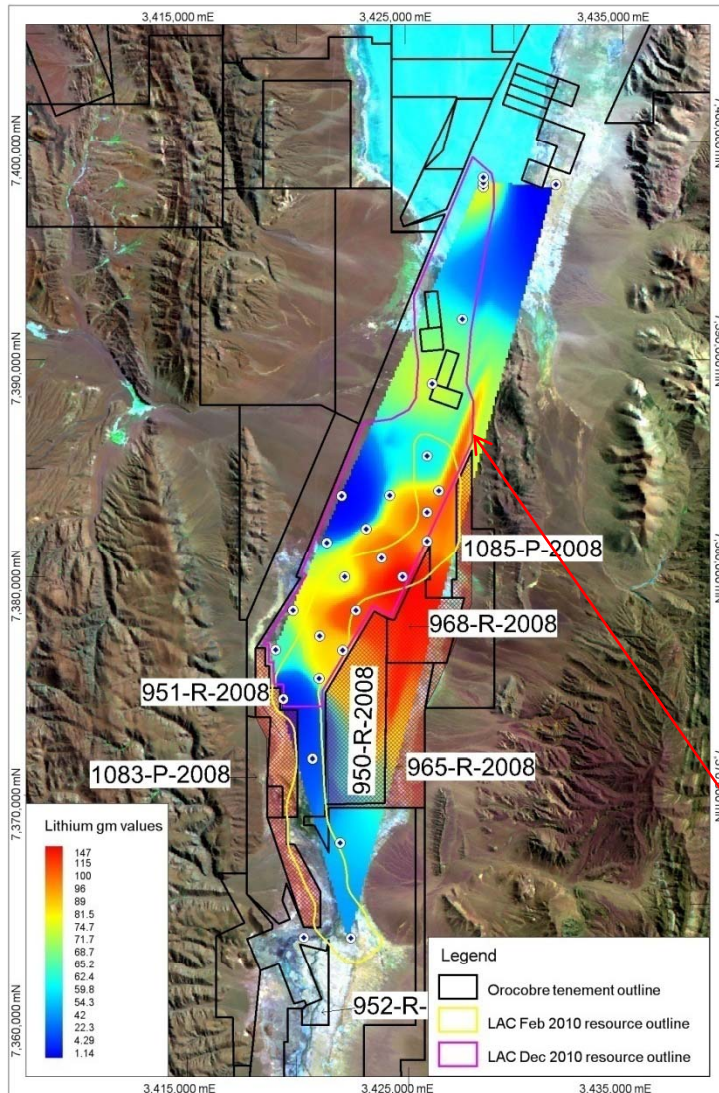
- Camp and access roads established
- Test evaporation ponds constructed
- Drilling current using conventional coring techniques with casing advance to allow isolated brine sampling.



Drill rig at Salinas Grandes, Salta Province



# Salar de Cauchari – additional brine source for Olaroz?



## Promising project located immediately south of Orocobre's flagship Olaroz project

- Over 30,000 hectares of properties immediately south of Salar de Olaroz held by 85% South America Salars
- Li/K grades lower than Olaroz and narrower geometry

## Significant potential for synergies with Olaroz

- Potential for brines to be pumped to future Olaroz processing facilities
- Similar chemistry but with higher sulphate
- Should be amendable for treatment concurrently with Olaroz brine

## Comprehensive drilling project planned

- Richest part of resource interpreted to extend south-east onto Orocobre properties

*Purple boundary –  
LAC resource 11/10  
Yellow Boundary LAC  
resource area 3/10*

# Orocobre – What comes next?

## Finalise funding at Olaroz

- Orocobre has started discussions with partner Toyota Tsusho and Japanese banking and government departments to finalise project funding (expected to take 9 months)

## Finalise JV agreement with Toyota Tsusho

- Orocobre is now working with Toyota Tsusho to finalise details of JV agreement including offtake arrangements

## Engineering work for Olaroz

- Detailed engineering will be undertaken and engineering design/ construction contractors will be selected
- Order long-lead time items and undertake early site activities
- Construction period for project expected to be 15 months

## Obtain final approvals for Olaroz

- EIS approval received
- Orocobre will work with Jujuy Provincial Government to achieve final approval

## Progress other projects

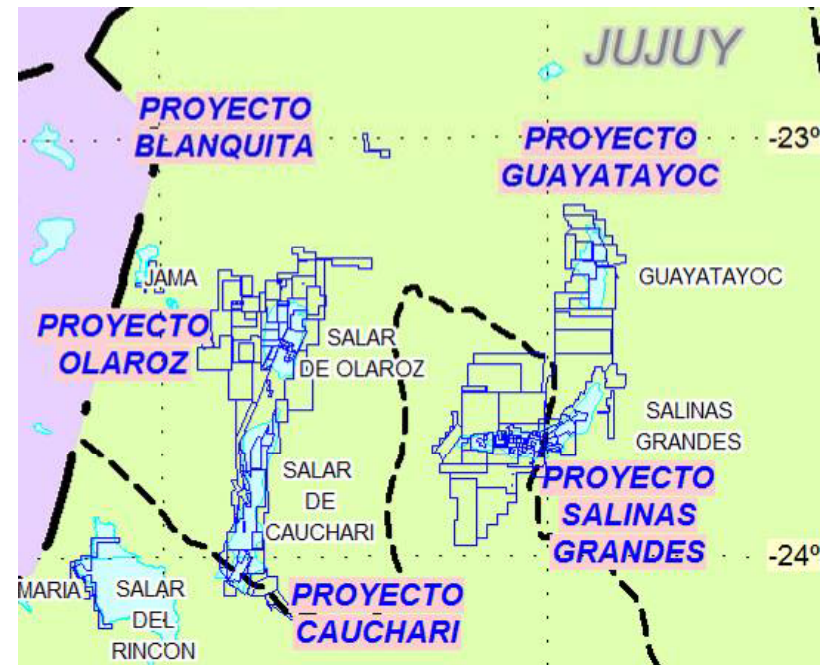
- Salinas Grandes –targeting initial resource estimate in 2<sup>nd</sup> Quarter 2011
- Cauchari - 2H 2011 commence drilling program (subject to Jujuy provincial government approvals)



## Summary

- DFS confirms the low-cost, near-term production potential at Olaroz
- Toyota Tsusho partnership provides strong strategic and financial support
- Production of battery grade lithium carbonate from process development facilities achieved
- Significant pipeline of other projects including Salinas Grandes and Cauchari
- Lithium and potash market and pricing outlook remains positive

### Orocobre Core Property Area



Note: Orocobre tenements outlined in blue

OROC



# Orocobre – The Next Low Cost Lithium Producer

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**May 2011**





## Competent Person's and Qualified Person's Statement and Technical Information

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*The information in this report that relates to Exploration Results and Mineral Resources is based on information prepared by or under the supervision of Mr Richard Seville who is a member of the Australian Institute of Mining and Metallurgy. Mr Seville is a Director of Orocobre Ltd and has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which 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', and as a "qualified person" under National Instrument 43-101 – Standards of Disclosure for Mineral Projects. Mr Seville consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The Feasibility Study on the Olaroz project was prepared by industry consultants and Qualified Persons John Houston (Consulting Hydrogeologist), Michael Gunn (Consulting Processing Engineer) and Peter Ehren (Consulting Processing Engineer), together with Sinclair Knight Merz and the Orocobre technical group. Mr. Houston and Mr. Gunn are independent of the Company and are preparing the Technical Report under NI 43-101 in respect of the Feasibility Study.*

*Additional information relating to the Company's Olaroz project is available in the previous technical report entitled "Technical Report – Salar de Olaroz Project, Argentina" dated April 30, 2010, which was prepared by John Houston, Consulting Hydrogeologist, together with Peter Ehren, Consulting Processing Engineer, in accordance with NI 43-101, as well as in the Company's news release dated March 6, 2011 relating to the approvals process at the Salar de Olaroz project, and in the Company's news release dated April 1, 2011 relating to its updated resource estimate for the Salar de Olaroz project.*

*The Technical Reports use the definitions, classifications system and guidelines of the Australasian Code for Reporting of Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (the "JORC Code"). The resource and reserve classification system of the JORC Code is directly comparable to the resource and reserve classification system of the CIM Standards on Mineral Resources and Mineral Reserves of the Canadian Institute of Mining, Metallurgy and Petroleum.*

*Reference should be made to the full text of the Technical Reports, which have been filed with certain Canadian securities regulatory authorities pursuant to NI 43-101 and are available for review under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com)*