



# **INVESTOR PRESENTATION**

**NOVEMBER 2018**

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# DISCLAIMER (CONT.)

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# CAPITAL MARKETS SNAPSHOT

(ASX:ORE, TSX:ORL)

## CAPITAL STRUCTURE (AS AT 12 NOVEMBER 2018)

Shares outstanding 261.4M

Performance Rights and Options Outstanding 1.25M

Cash Balance (30/9/18) US\$308.7M

Share price ASX/TSX A\$4.52/C\$4.12

Market capitalisation A\$1,182 Million  
US\$850 Million

52 week share price range (close):

ASX A\$3.16–A\$7.44

TSX C\$3.06–C\$7.36

## SHARE PRICE



## SHAREHOLDERS

Toyota Tsusho 15.0%

Executives and Directors ~3.0%

Institutions, Banks and Brokers ~57%

# OROCOBRE IS AN ESTABLISHED, PROFITABLE & GROWING LITHIUM PRODUCER DELIVERING RECORD MARGINS TO SHAREHOLDERS

## Our profitability profile is growing

Record normalised full year NPAT in FY18 of US\$25.7M, up from US\$13.8M in FY17

## A key competitive advantage – and what differentiates us from our peers is our low-cost profile

FY18 gross operating margins of 67% (US\$8,384/tonne) with lithium production costs at US\$4,194/tonne

## Orocobre continues to learn and improve

e.g. the weather related experiences of FY18 have been taken into account with the design of Stage 2 (increased pond areas, potential use of crystallisers/evaporators)

## Our growth path is clear and fully funded

Multiple growth options with Olaroz Stage 2 and Naraha Lithium Hydroxide both approaching final investment decision (FID), and longer term potential development at Cauchari JV



# SOLID YEAR ON YEAR IMPROVEMENT

## Record prices and margins, strong cashflow

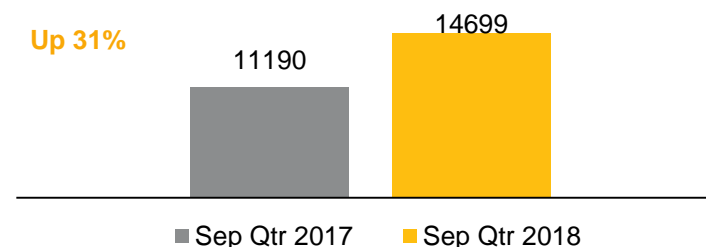
### Sales de Jujuy Joint Venture (Olaroz)

- Production of 2,293 tonnes during September quarter, up 7% on same period last year despite a two week maintenance shut
- September quarter revenue of US\$32 million on sales of 2,144 tonnes
- Record Olaroz sales price in September quarter of **US\$14,699 / tonne FOB<sup>1</sup>**
- September quarter cost of sales of US\$4,640 / tonne<sup>2</sup> and record gross cash margin of **US\$10,059 / tonne**
- Olaroz was again strongly cashflow positive internally funding early works on Stage 2 expansion
- FID for growth projects awaiting finalisation of EPC contract for the Naraha Lithium Hydroxide project

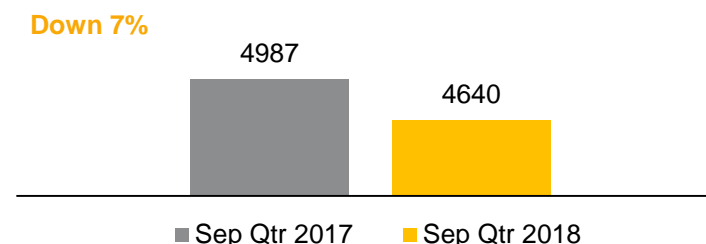
### Orocobre

- Orocobre corporate cash balance at 30 September 2018 of US\$308.7 million, and Orocobre Group net cash of US\$221.7 million

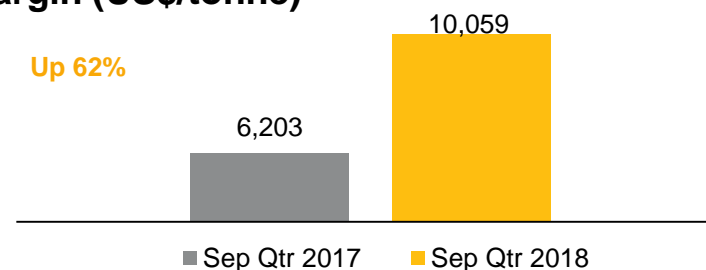
## Price (US\$/tonne)



## Cost of sales (US\$/tonne)



## Margin (US\$/tonne)

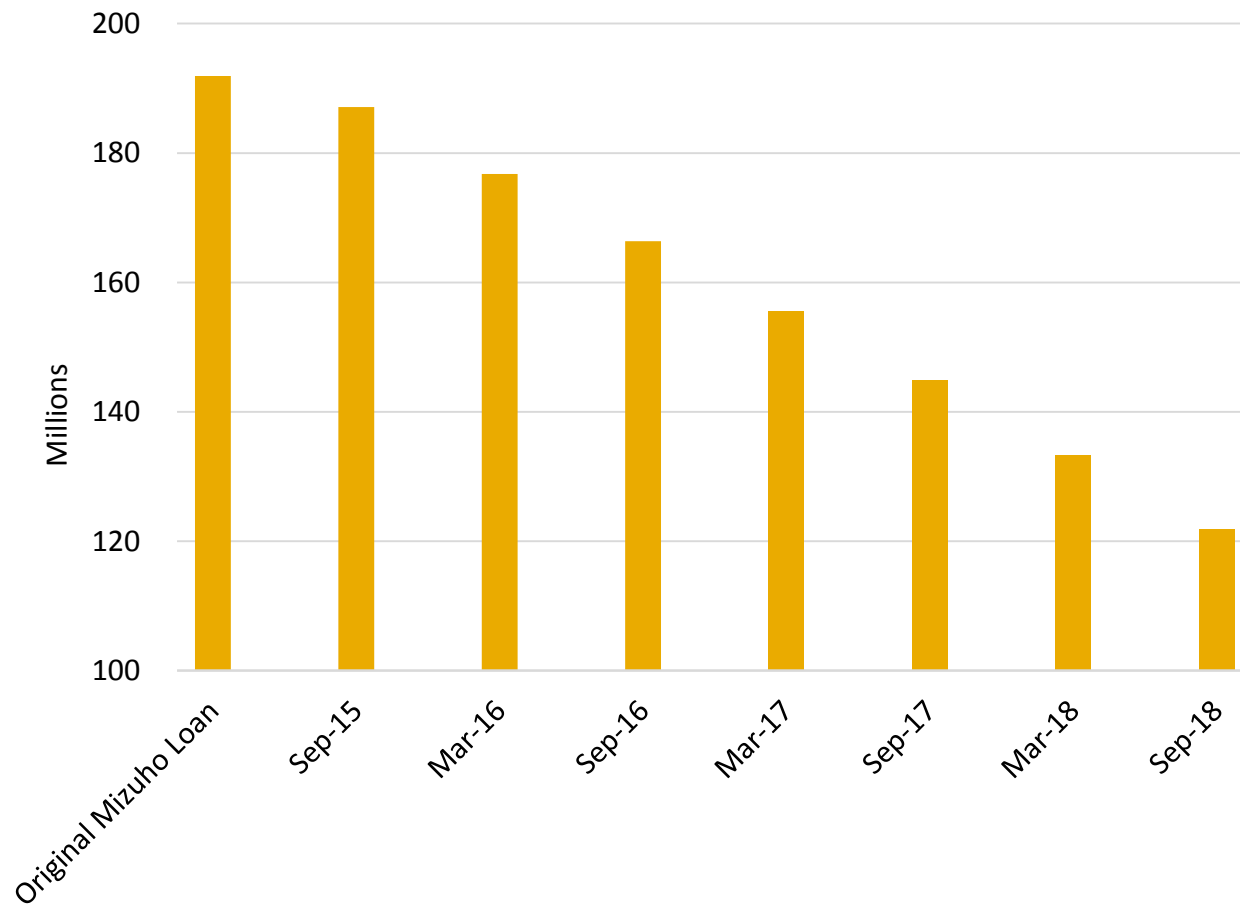


1. Orocobre reports price as "FOB" (Free On Board) which excludes additional insurance and freight charges included in "CIF" (Cost, Insurance and Freight or delivered to destination port) pricing. The key difference between an FOB and CIF agreement is the point at which responsibility and liability transfer from seller to buyer. With a FOB shipment, this typically occurs when the goods pass the ship's rail at the export port. With a CIF agreement, the seller pays costs and assumes liability until the goods reach the port of destination chosen by the buyer. The Company's pricing is also net of TTC commissions but excludes export taxes. FOB prices are used by the company to provide clarity on the sales revenue that flows back to SDJ, the joint venture company in Argentina

2. Excludes royalties, export taxes and head office costs

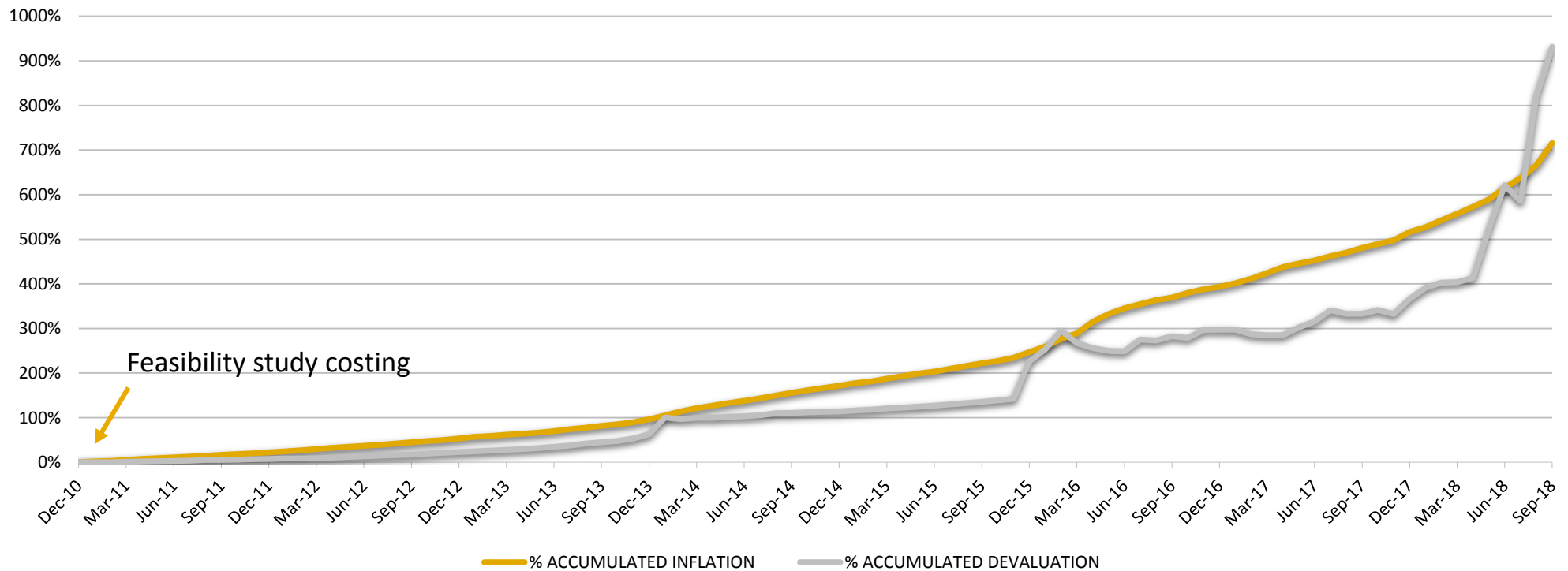
# STRONG CASHFLOW REDUCING PROJECT DEBT

## Olaroz Project Facility (100%)



- ~US\$70M principal of the Project Debt (~37% reduction) repaid by 10 September 2018 and US\$17.1M paid into DSRA
- Project Debt balance reduced to ~US\$122M during September 2018 (US\$105M net of DSRA)
- Project Debt repayments scheduled every six months to September 2024
- Project Debt incurs a low average interest rate of ~4.25%
- Orocobre group net cash was US\$221.7M at 30 September 2018

# ACCUMULATED INFLATION vs DEVALUATION



- The Argentine peso (ARS) has devalued approximately 920% from December 2010 through September 2018 and by 43% over the September quarter
- Over recent years devaluation being less than inflation has increased cost pressure on both Olaroz and Borax. The recent devaluation has brought the Peso back in line with long term inflation decreasing cost pressures
- Devaluation also reduces the amount of ARS based balances such as VAT, carry forward tax losses, prepayments and account payables which have an impact in FX
- US\$ versus ARS cash costs are approximately 55/45 at Sales de Jujuy and 40/60 to Borax Argentina

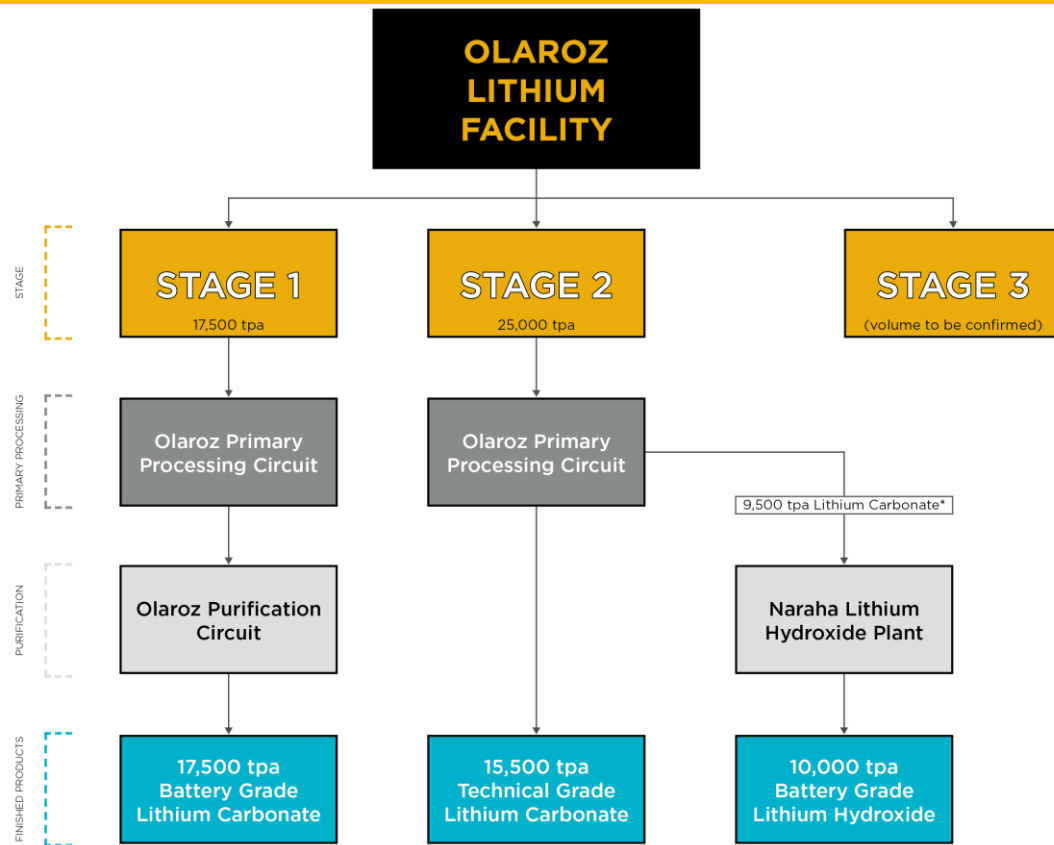


# OROCOBRE GROWTH PROJECTS





# STAGE 2 DIVERSIFIES PRODUCTION STRATEGY



\* 9,500 tpa of Lithium Carbonate will convert to 10,000 tpa Lithium Hydroxide

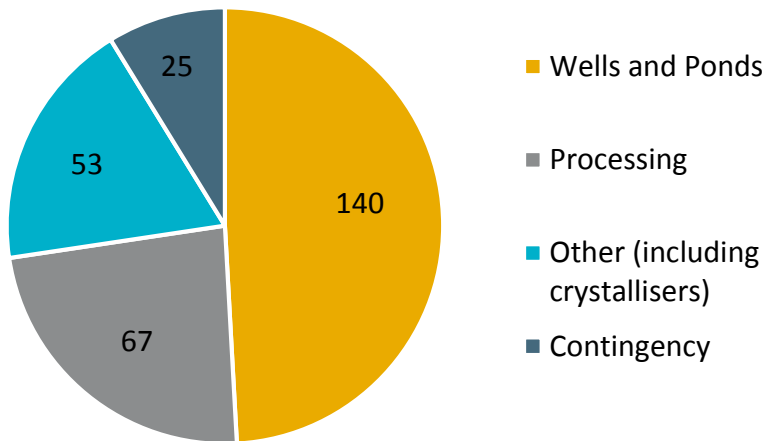
- Stage 2 (25,000t LCE\*) early works include construction of new roads, new evaporation and harvest ponds, a secondary liming plant, drilling of new bores, and the expansion of existing site infrastructure/camp accommodation
- US\$40 million has been committed prior to FID (total capex remains US\$285 million excluding VAT), as of 30 September 2018 US\$10 million has been spent
- FID expected this quarter subject to TTC completing an EPC contract for the Naraha lithium hydroxide plant allowing for the integrated and concurrent development of both projects, commissioning in 2H CY2020



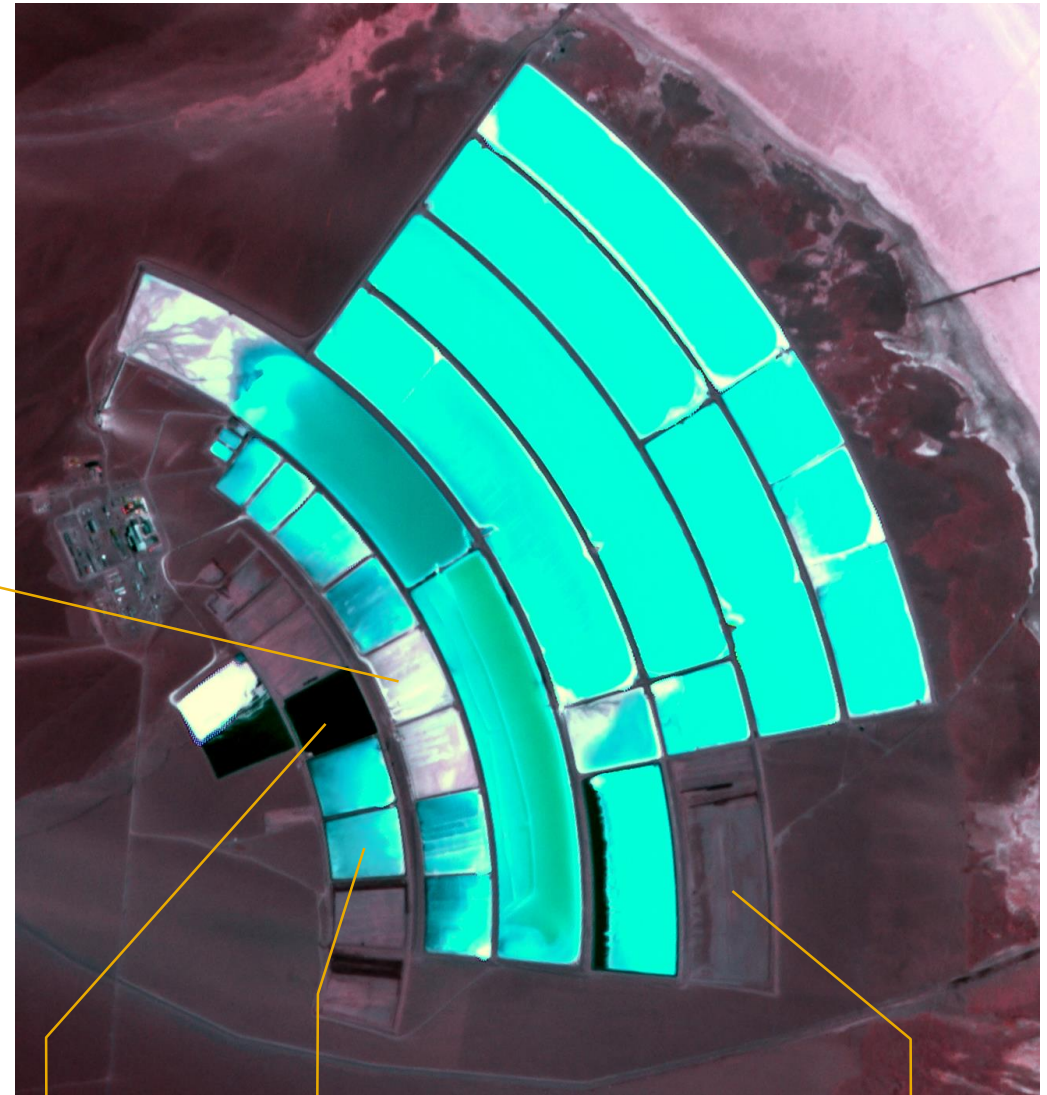
# POND CAPACITY GROWING AHEAD OF PRODUCTION

- Total new pond areas of approximately 9km<sup>2</sup>, increasing pond system to >13km<sup>2</sup>
- Two new harvest ponds (17A, 17B) & one new evaporation pond (15B) have been completed as of 30 September
- A further five ponds are currently under construction

Stage 2 capex (US\$285M)



Ponds undergoing salt harvesting



New ponds under construction

New ponds already filled

New ponds under construction

# LITHIUM HYDROXIDE PLANT

## LITHIUM HYDROXIDE MARKET

- Long-term battery grade hydroxide prices (2017-2030) are forecast to maintain a ~US\$2,500 per tonne premium to battery grade carbonate
- Nickel based cathodes (NMC and NCA formats) are forecast to account for ~80% of the total cathodes market by 2025 up from ~33% in 2017
- Naraha will gain first-mover advantage in Japan with no current or announced hydroxide capacity in the country to date
- A shortfall of approximately 80ktpa LCE in hydroxide capacity is currently forecast for 2025
- The size of the nickel-based cathode market is forecast to grow from ~80Gwh in 2017 to 816Gwh by 2025



## NARAHHA

- The LiOH Plant will process  $\text{Li}_2\text{CO}_3$  from Olaroz and deliver value-added LiOH to customers agreed between Orocobre and Toyota Tsusho
- Estimated capital cost of US\$60-70 million (100% basis, pre-subsidies) for a 10,000 tpa LiOH plant which will deliver premium product at premium pricing
  - Provides product diversification suitable for different battery technologies
  - Ownership to match current Olaroz ownership proportions (excluding JEMSE)
  - Potential for significant margin growth on primary  $\text{Li}_2\text{CO}_3$  converted to LiOH
- Operating costs estimated to be approximately US\$1,500/tonne, down from initial estimate of US\$2,500/tonne
- Subsidies of approximately US\$27 million have been secured from the Japanese government
- Orocobre and Toyota Tsusho are targeting completion of an EPC contract with Veolia during the December quarter with subsequent FID and commissioning during 2H CY2020



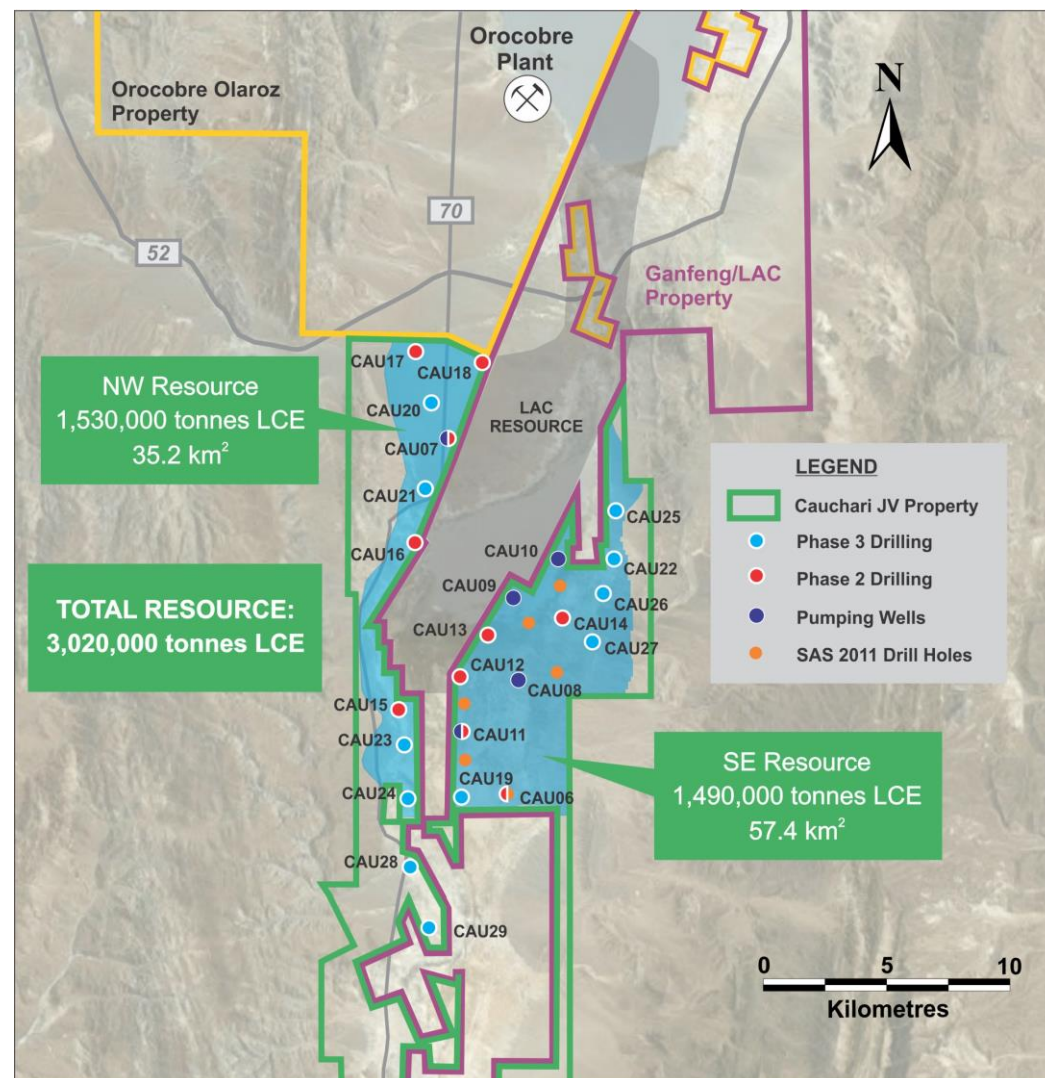
# ADVANTAGE LITHIUM / CAUCHARI JV

## Advantage Lithium (AAL)

- Orocobre hold ~33.5% of AAL issued shares
- With the ~33.5% shareholding and 25% ownership in the Cauchari project, Orocobre have ~46% interest in AAL

## Cauchari Project (25% ORE, 75% AAL)

- AAL has released a NI43-101 compliant Preliminary Economic Assessment for the Cauchari JV project in accordance with Canadian standards\*
- **Inferred resource of 3.02 Mt LCE** at Cauchari at 450 mg/l Lithium
- Orocobre supported AAL's recent private placement taking C\$5 million of shares at C\$0.77 per share. Orocobre now holds 33.5% of Advantage Common Shares
- Phase 3 resource definition drilling program is currently underway at the Cauchari project site to upgrade the resource classification by Q2 2019 to support the project's Definitive Feasibility Study (DFS)
- AAL has completed a detailed project development schedule and budget and is fully funded beyond the completion of the DFS, targeted for completion in 1H 2019



\* As Inferred resources were the basis of the subject study there is a low level of geological confidence and no certainty that production targets stated in the study will be realised



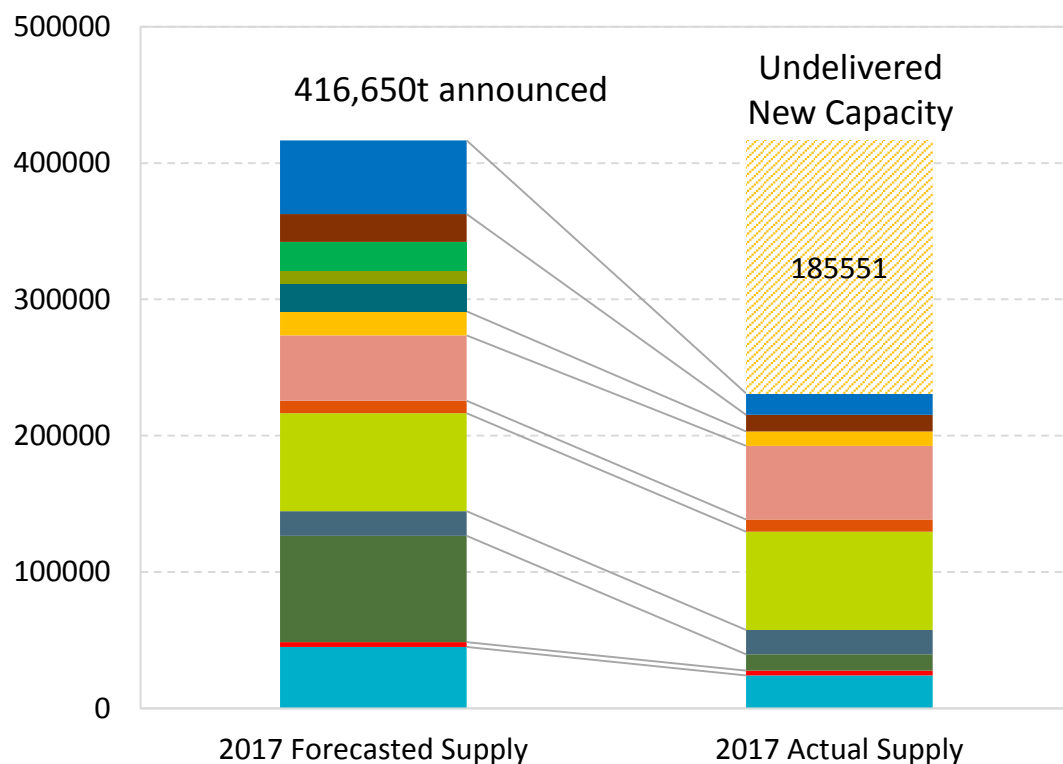
# MARKETS



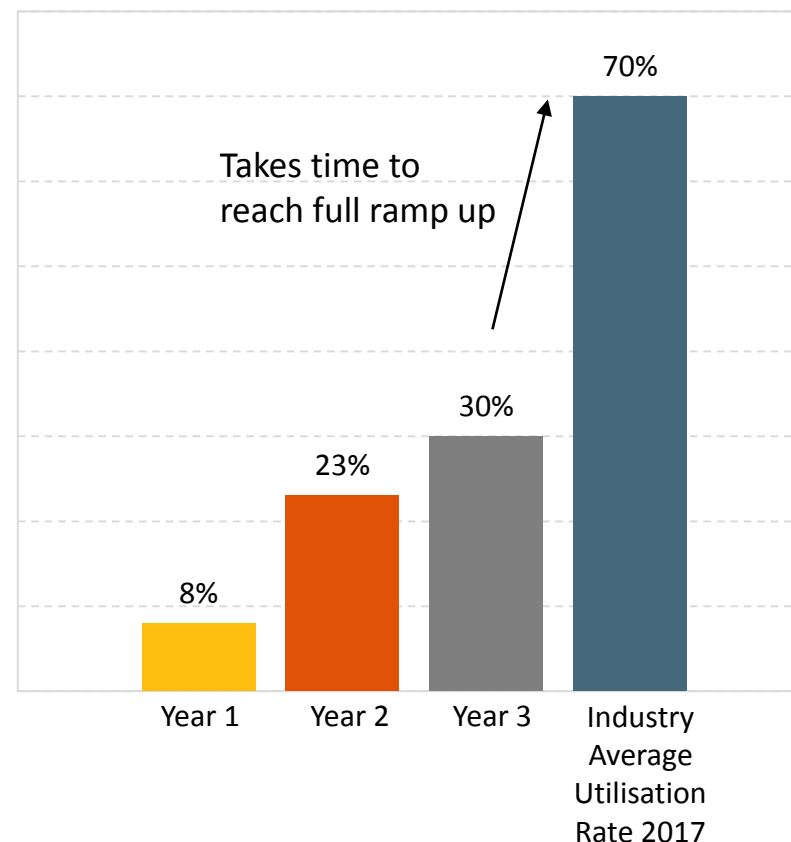


# WIDESPREAD HISTORICAL UNDER-PERFORMANCE OF RAW MATERIAL SUPPLY & RAMP UP



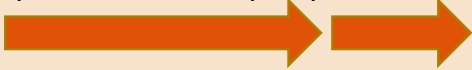



Expected Capacity (forecast in 2012) of Brine & Hard Rock versus Actual 2017 (LCE tpa)



Historical Industry Average Utilisation Rates for Greenfield projects (production/nameplate capacity)



# SUPPLY IMPACTS OF VARYING SCALE, COST & TERM

	Supply Impact	Cost Impact	Longevity of market impact
1 a) Increased Royalties & Taxes in Chile	↓ Discourages new Chilean entry	↑ Increases costs by ~50%	Indefinite 
1 b) Chilean regulators – Chilean supplier contract risks	↓ Risk to Chilean supplier's freedom to operate due to extensive approvals process for environmental permits, sales & production quotas	↑ Preferential pricing and supply allocation to Chilean customers unsustainable	Indefinite 
2. Under-delivery in conversion plant capacity expansions	↓ New hard rock supply has not been met by sufficient conversion capacity reducing the impact of new projects		Converter project timeline guidance 1-2 years versus reality >4 years 
3. Under-delivery of brownfield brine expansions continues	↓ Carbonate expansion delays experienced by all key existing brine suppliers SQM, Albemarle, FMC, Orocobre & future projects	↑ Higher cost per unit due to delayed scaling	Varying delays from >2 years are expected in reaching initial guidance 
4. New hard rock supply at grades below feasibility study	↓ Delays to product optimisation projects & slower ramp up to meet grade requirements, lower recoveries	↑ Higher cost of production for converters using lower grade feedstock	Delays of ~2 years in reaching nameplate for new producers (2017 new hard rock supply) 
5. Implementation of new Argentinian export tax	↓ Discourages new entry for Argentinian projects while tax is in place (2018 to 2020)	↑ Increases costs by ~25% for existing Argentinian producers	Argentina's Government advise the tax will be in place until 2020 (2 years) 



# THE CASE FOR A SPECIALISED COST CURVE

## Standard Cost Curve Methodology

**Exclude Taxes & Royalties:** Doesn't account for growing impact of government royalties and taxes on lithium industry

**Consolidated Carbonate & Hydroxide:** No distinction between Carbonate & Hydroxide costs

**Hard Rock costs represented:** Concentrate costs calculated from hard rock mine's production costs using a standardised conversion formula

**Capacity plotted on horizontal axis:** Capacity claims of brine and hard rock producers used.

**Source Data:** borrowed from 3<sup>rd</sup> party sources without testing feasibility of data

## Orocobre Cost Curve Methodology

**Includes Taxes & Royalties:** Accounts for Chilean royalties (by product), Argentina export taxes & royalties

**Product Specific:** Split between Carbonate & Hydroxide accounting for differing processing routes of feed i.e. hard rock or brine, grade of feedstock.

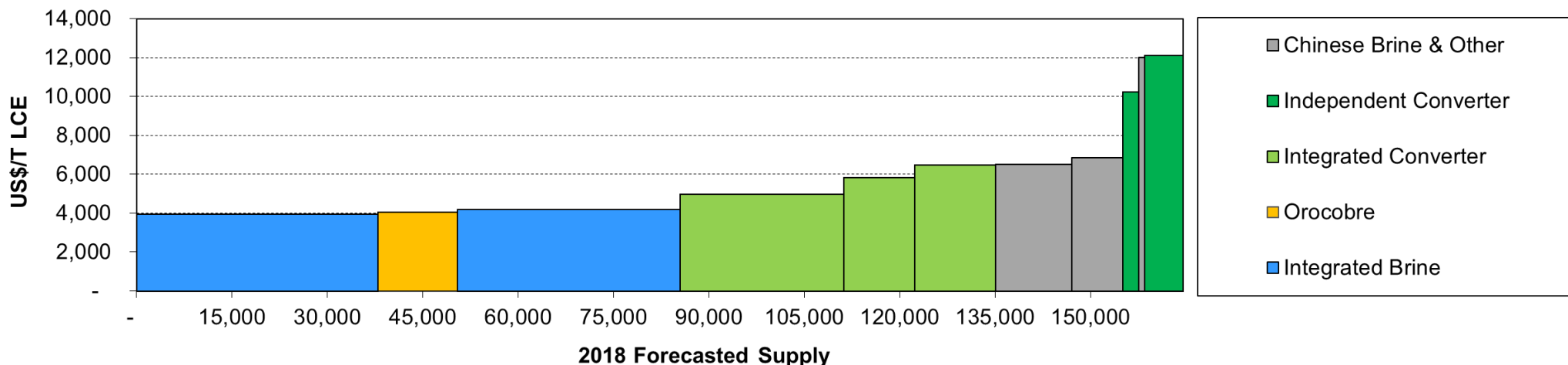
**Converted Costs represented:** Hard Rock costs calculated using selling price of concentrate for independent players while integrated converters use feedstock cost of production. Considers reported concentrate grades & capabilities of converters

**Supply plotted on horizontal axis:** Orocobre's 2018 supply forecast integrated into the cost curve, reflecting actual supply & feasible utilisation rates rather than producer capacity claims

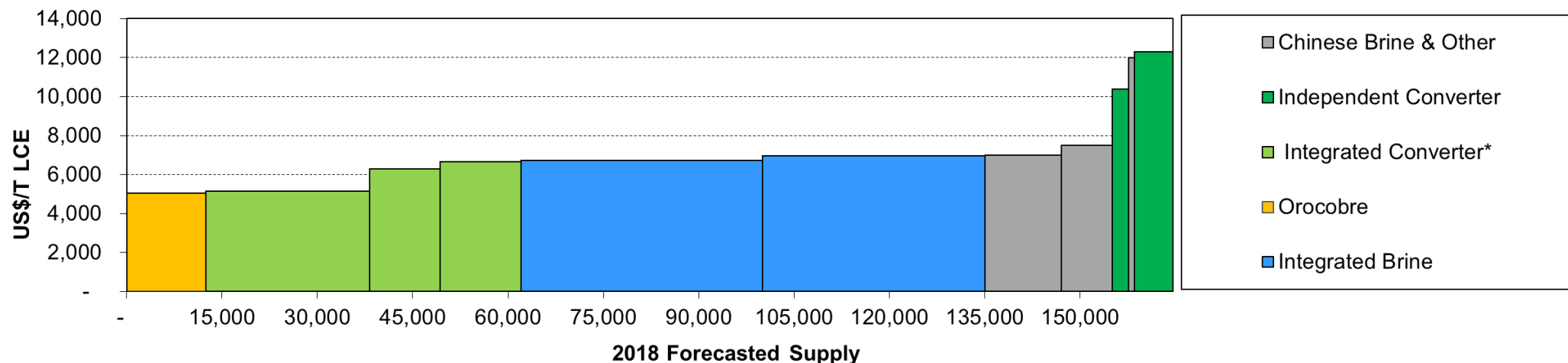
**Source Data:** a range of data points consulted including reported financials, prospectus', export/import data & independent research to form a balanced, accurate view with consistent methodology

# CARBONATE COST CURVES PRE / POST TAXES & ROYALTIES

## Carbonate Cost Curve, Pre-Taxes & Royalties (USD/t)



## Carbonate Cost Curve, Post-Taxes & Royalties (USD/t)



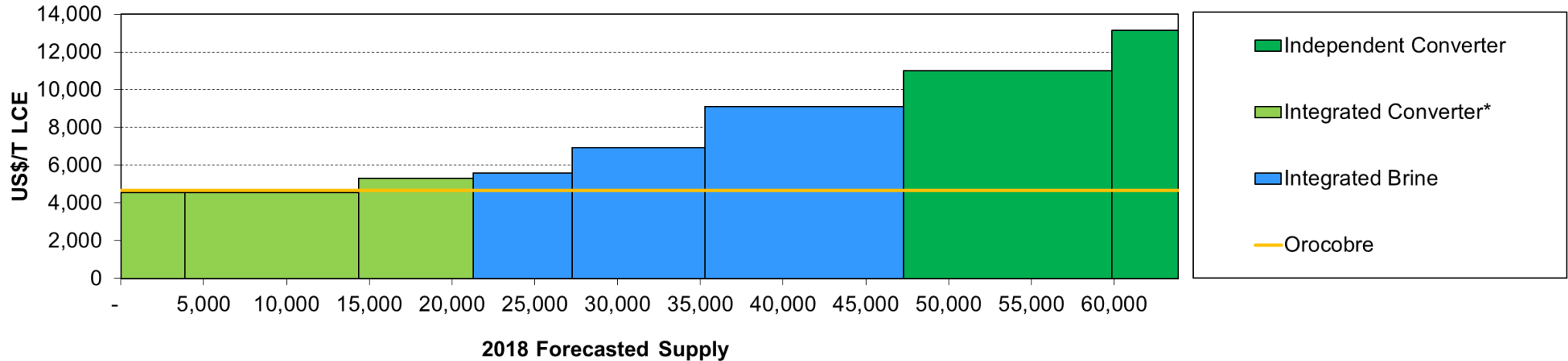
**Sources & Methodology Notes:** Company financial statements & results H1 CY 2018, Company Prospectus, Independent research, Export/Import Data

**Converters:** \* Includes ALB tolling business, excludes 10-15ktpa LCE supply of technical product from Greenbushes. ALB tolling includes a US\$1500/t tolling fee. Integrated Conversion Plant operators' costs calculated on the basis of cost of production of feedstock. Freight & Port Charges standardized across all hard rock producers and converters. Independent converters calculated using CIF selling price of concentrate in CY2018 & H2 guidance. Processing & Feedstock Conversion costs based upon grade/tonnes of concentrate required per tonne of LCE & LiOH. 1t of LCE = 1.1t of LiOH. 10% mineral losses during conversion. WA royalties included.

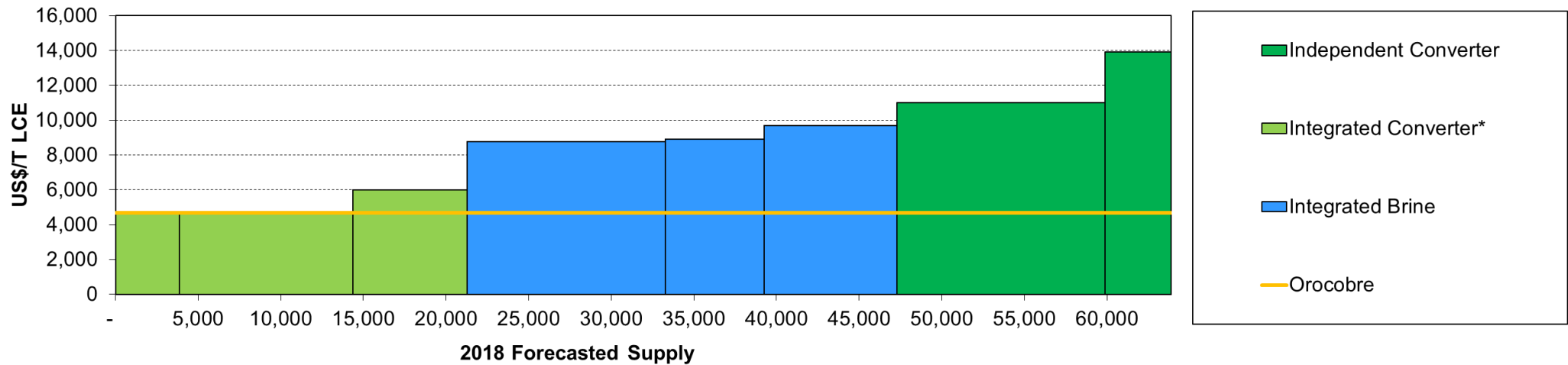
**Brine:** Scaling royalties for Chilean producers use a normalized price of US\$13,500/t LCE to reduce impact of transfer pricing. Orocobre cost of production based upon FY18 H2. FMC volume excluded as marginal tonnes of carbonate are sold; assume majority used for feedstock to hydroxide, butyl lithium and other specialty products. Argentine royalties & export tax included in Orocobre post-tax. Chinese brine costs have been marginally costed across other products e.g. potash. SQM COP calculated using Y2018 H1'18 COGS with assumption of carbonate % of COGS.

# HYDROXIDE COST CURVES PRE / POST TAXES & ROYALTIES

## Hydroxide Cost Curve, Pre-Taxes & Royalties



## Hydroxide Cost Curve, Post-Taxes & Royalties



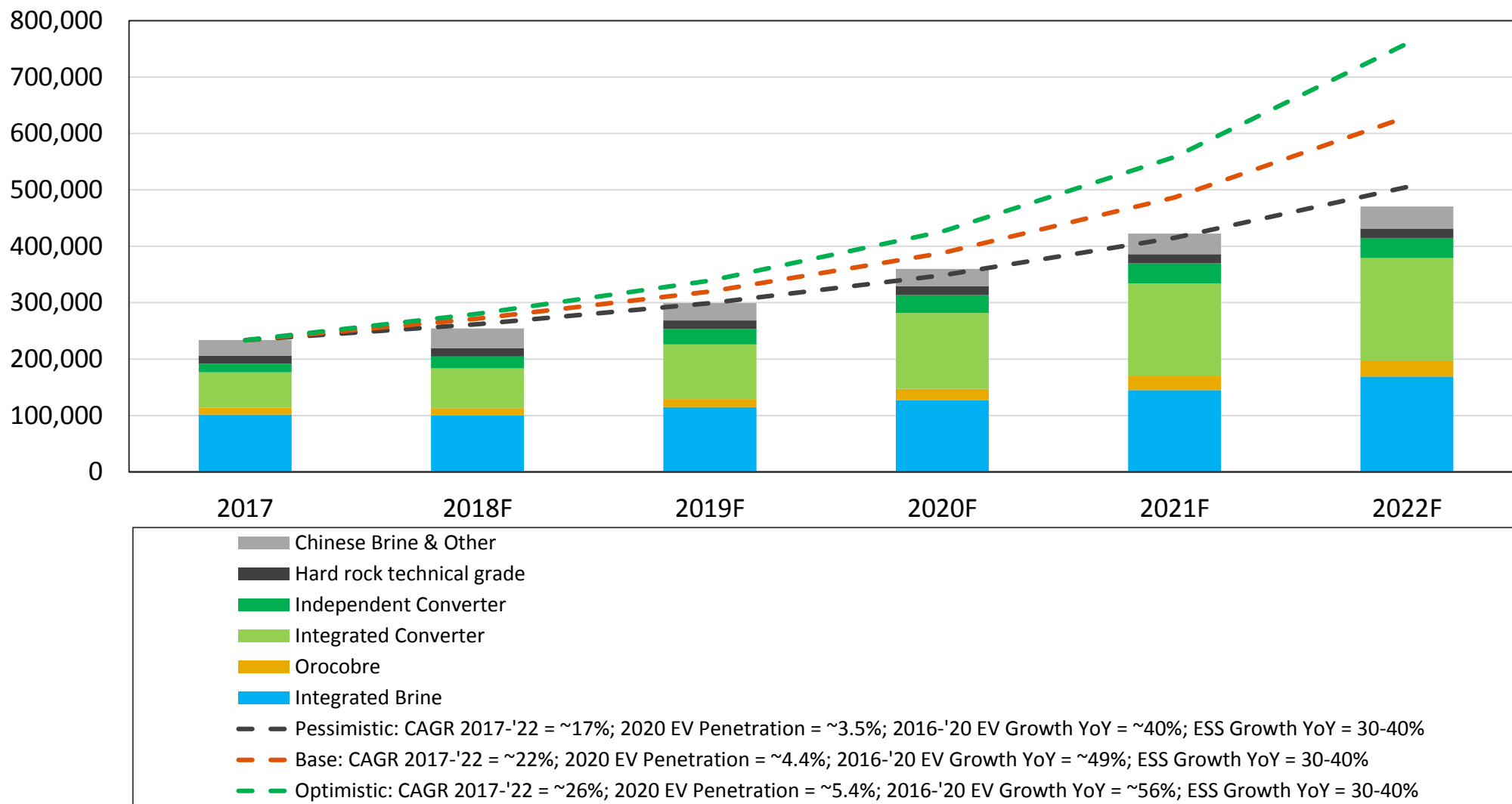
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**Brine:** FMC royalties & export tax calculated based on transfer pricing of carbonate as hydroxide facilities are located outside Argentina. ALB, FMC & ORE COP calculated using carbonate feedstock COP plus processing cost. Orocobre COP uses stage 2 carbonate COP plus conversion cost and excluding Argentine export tax as operation commences when export tax has been removed. ALB royalties accounted for by carbonate feedstock as no hydroxide facility in Chile. SQM royalties based upon the average selling price of hydroxide during CY2018 H1. SQM COGS calculated using CY2018 H1 results with assumption regarding % contribution to COGS. Chinese brine producers have no hydroxide processing facilities.

# PERSISTING BOTTLENECKS, SLOWER RAMP-UPS & HIGHER COSTS UNDERPINS CONTINUED TIGHT MARKET CONDITIONS

Orocobre Forecasted Lithium Market Supply & Demand (LCE t)





# SUMMARY

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Strong position as a low cost, high margin producer with Olaroz EBITDAIX US\$94.6M in FY18

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FY19 production to be higher than FY18

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Growth projects fully funded:

- Olaroz expanding to 42,500tpa, work underway
  - 10,000 tpa lithium hydroxide plant to be built in Japan
  - FIDs expected this quarter with finalization of EPC contract for the Naraha lithium hydroxide plant
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Both projects to be commissioning in 2H CY2020

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Long term lithium market fundamentals remain strong

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Further staged expansions to grow Olaroz production into the future – Stage 3 and beyond

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Borax showing improved results

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