

Galaxy Resources Limited

# ANNUAL GENERAL MEETING

ABN: 11 071 976 442

ASX:GXY





# Group Performance & Outlook

**GALAXY**

Operations at Mt Cattlin remain lost time incident ("LTI") free since the refurbishment and restart of production

## FY2018 Health and Safety Statistics

850,188

Hours worked by employees + contractors

247

Average daily number of personnel onsite

0

Fatalities

1

Lost Time Injuries

11

Total Recordable Injuries (LTI+RWI+MTI)

1.18

Lost Time Injury Frequency Rate (LTIFR) per million hours worked

12.94

Total Recordable Injury Frequency Rate (TRIFR) per million hours worked

### HSE Performance Comparison<sup>1,4</sup>

- The health and safety of our employees, contractors and any other key stakeholders remains the number one priority
- Increased focus on hazard reporting and early intervention during FY2018 leading to 49.2% reduction in TRIFR
- LTIFR (1.2) in FY2018 relates to a single incident encountered at Sal de Vida
- The total workforce size (internal and contractors) increased from 152 employees in 2017 to 247 in 2018

Measure	2017	2018
Exposure Hours	511,774	850,188
Lost Time Injury Frequency Rate (LTIFR) <sup>2</sup>	0.00	1.18
Total Recordable Injury Frequency Rate (TRIFR) <sup>3</sup>	25.40	12.94

#### Notes

1. Our safety performance includes both employees and contractors and covers Perth Head Office (Australia), Mt Cattlin (Australia), James Bay (Canada) and Sal de Vida (Argentina)
2. Total Recordable Injury Frequency Rate calculations measure the total number of injuries (excluding first aid) per million hours worked in a given financial year
3. Lost Time Injury Frequency Rate calculation measure the number of lost time injuries per million hours work in a given financial year
4. Injuries are classified in accordance with OSHA 3245-09R (2005) The Regulation and Related Interpretations for Recording and Reporting Occupational Injuries and Illnesses

## Revenue

# US\$153.9M

FY2017: US\$96.3M

↑ 60%<sup>1</sup>

EBITDA (ex. POSCO)<sup>3</sup>

## US\$58.1M<sup>2</sup>

FY2017: US\$30.6M

↑ 90%<sup>1</sup>

NPAT (inc. POSCO)

## US\$150.2M

FY2017: US\$0.1M

↑ 118,186%<sup>1</sup>

NPAT (ex. POSCO)<sup>3</sup>

## US\$3.5M

FY2017: US\$0.1M

↑ 2,662%<sup>1</sup>

Spodumene Sold

## 159.3k tonnes (c.19.9kt LCE)

FY2017: 153.5kt (c.19.2kt LCE)

↑ 4%<sup>1</sup>

Cash Margin<sup>2,4</sup>

## US\$424/dmt sold

FY2017: US\$346/dmt

↑ 23%<sup>1</sup>

Debt

## Nil

31-Dec-17: Nil

### Notes

1. Proceeds from the sale of spodumene and costs incurred before commercial production was called in May 2017 were not recognized in the Statement of Income for FY2017
2. Non-IFRS financial information that has not been subject to audit by Galaxy's external auditor
3. Exclusive of gain associated with sale of northern tenement package to POSCO
4. Cash margin per tonne sold is calculated as revenue from the sale of spodumene, minus cash costs of production (including selling and marketing costs), divided by tonnes of spodumene sold

Focused on the execution of operational optimization and a disciplined approach to project development

<p>Operational Performance: <b>Mt Cattlin</b></p> 	<p><b>Spodumene Sold</b></p> <p><b>159.3k dmt</b> (c. 19.9kt LCE)</p> <p>FY2017: <b>153.5k dmt</b> (c. 19.2kt LCE) <b>↑ 4%</b></p> <p>Average product grade: <b>5.76% Li<sub>2</sub>O</b></p> <p>FY2017: <b>5.69%</b> (c. 19.2kt LCE) <b>↑ 0.07</b></p>	<p><b>Mt Cattlin EBITDA</b></p> <p><b>US\$70.5M<sup>1,2</sup></b></p> <p>FY2017: <b>US\$46.3M</b> <b>↑ 52%</b></p> <p>Average realized price: <b>US\$927/dmt</b></p> <p>Average cash cost per tonne sold: <b>US\$411/dmt</b></p>	<p><b>Reserve Increased</b></p> <p>↑ 40% compared to 31-December-17</p> <p><b>10.7Mt@1.15% Li<sub>2</sub>O</b></p> <p><b>Resource Increased</b></p> <p>↑ 42% compared to 1-June-18</p> <p><b>16.7Mt@1.28% Li<sub>2</sub>O</b></p>
<p>Project Development: <b>Sal de Vida</b></p> 	<p><b>Northern Tenement Package Sold to POSCO</b></p> <p><b>US\$280mm</b> (Total consideration pre-tax)</p> <p>44 tenements within the package</p>	<p><b>Resource Increase</b></p> <p><b>4.92Mt LCE</b></p> <p>Avg. Li grade = <b>732mg/L</b>            K/Li ratio = <b>10.9</b>            Reserve = <b>1.14Mt LCE</b>            (Total reserve unimpacted by the POSCO transaction)</p>	<p><b>Pilot Operations</b></p> <p><b>Pilot Plant Operational</b></p> <p>Test ponds totalling 1.5Ha in construction;            Earthworks now complete with lining to follow</p>
<p>Project Development: <b>James Bay</b></p> 	<p><b>Permitting</b></p> <p><b>Evaluation Stage</b></p> <p>Environmental and Social Impact Assessment submitted for review;            Expect final recommendations within 12-18 months</p>	<p><b>Pre-Development Agreement</b></p> <p><b>Signed</b></p> <p>Negotiations with local Cree community progressing towards a definitive Impact &amp; Benefits Agreement</p>	<p><b>Test Work Program</b></p> <p><b>Phase II 80% (upstream) complete</b></p> <p>Test work will be followed by finalizing of flow sheet design to optimize upstream operations</p>

## Notes

1. Proceeds from the sale of spodumene and costs incurred before commercial production was called in May 2017 were not recognized in the Statement of Income for FY2017
2. Non-IFRS financial information that has not been subject to audit by Galaxy's external auditors

Operations:

# Mt Cattlin

Project flyover video is available at the below web address:

<https://galaxylithium.businesscatalyst.com/media/downloads/AGM%20-%20Mt%20Cattlin.mp4>

## Operational Focuses

## Production Output:

45,000 – 50,000dmt in Q2 2019

## Plant Recovery:

Continuous improvement with a target of 65-70%<sup>1</sup>

Reduced Cash Costs:<sup>2</sup>

Disciplined focus on cost rationalization

## Product Quality:

5.8 – 6.0% Li<sub>2</sub>O

## Operational Execution

2019 Production Output:<sup>3</sup>

63,775dmt (Jan-Apr 2019);  
>190k dmt annualized

## Plant Recovery:

61% in April; 51% in Q1 2019

Reduced Cash Costs:<sup>2</sup>

US\$329/dmt in April;  
US\$453/dmt in Q1 2019

Product Quality:<sup>4</sup>

5.92% Li<sub>2</sub>O in April; 5.75% Li<sub>2</sub>O  
in Q1 2019

## Notes:

1. Assumed product quality range of 6.0-5.8% 2. FOB Esperance cash costs 3. Year-to-date from 1 January 2019 to 30 April 2019 4. Average final product grade

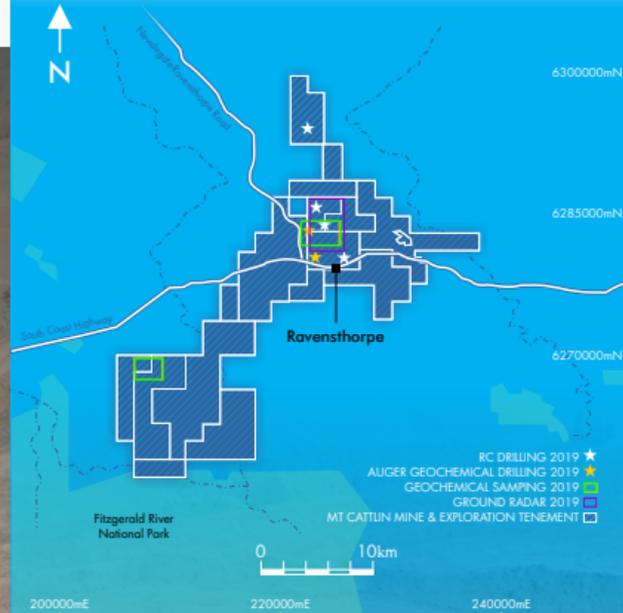
Mineral Resource & Ore Reserve estimations increased 42% and 40%, respectively as at 31 December 2018

## Exploration

- Substantial brownfields and greenfields drilling to continue throughout 2019
- Ground penetrating radar program completed to define targets in early 2019
- Regional geochemical sampling program to define new targets ongoing
- Auger geochemical program on surrounding farmland imminent



## Mt Cattlin Tenements and Exploration Targets



### Sources

- Galaxy announcements titled, "42% Increase in Mt Cattlin Resource to 16.7Mt," dated 23 January 2019, "Mt Cattlin Mineral Resource & Ore Reserve And Exploration Update," dated 23 March 2018, and "Independent Review Supports Near Term Production At Mt Cattlin," released by General Mining Ltd. (formerly ASX:GMM) on 12 October 2015

Project Development:

# Sal de Vida



Project flyover video is available at the below web address:

<https://galaxylithium.businesscatalyst.com/media/downloads/AGM%20-%20Sal%20de%20Vida.mp4>

Key focus of development work is on value engineering studies and process optimization, with activities led by recently appointed Project Director

Well Drilling



## Test Work Program

- Construction of 15Ha evaporation ponds – pond lining to commence upon contract award
- Optimization test work on existing process flowsheet ongoing
- Early laboratory results from alternative processing technology program have been encouraging regarding lithium extraction

Project Development

Value Engineering

Government and Community Relations

Financing

Construction of pilot ponds



Key focus of development work is on value engineering studies and process optimization, with activities led by recently appointed Project Director

## Project Development

- Detailed engineering bid package being prepared for wellfield design
- Drilling of planned production wells in eastern wellfield expected to begin in Q2 2019
- Detailed geotechnical survey of operational site nearing completion, which will input into detailed design of project civil works
- Engineering and estimation of key onsite and offsite non-process infrastructure

Value Engineering

Government and Community Relations

Financing



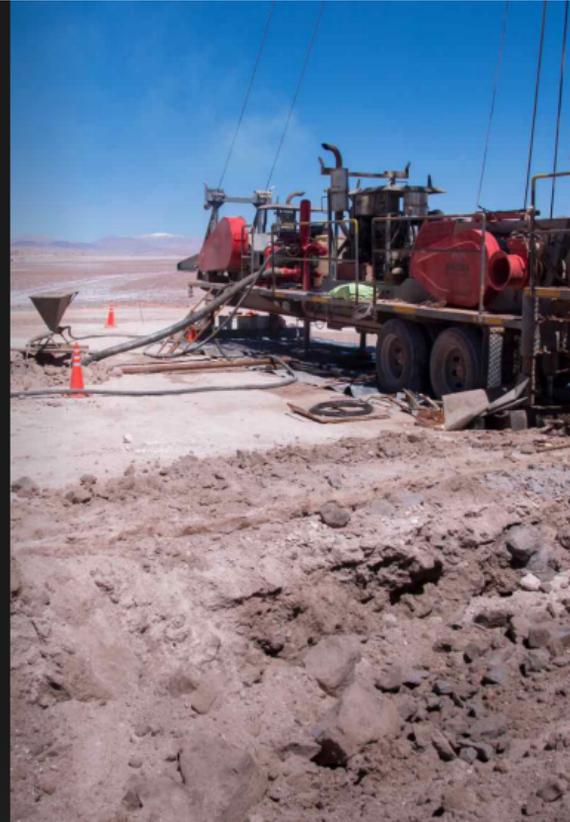
Key focus of development work is on value engineering studies and process optimization, with activities led by recently appointed Project Director

## Value Engineering

- Energy generation options – mix of energy sources and capital efficiencies in required infrastructure
- Other trade-off studies including water and offsite fabrication
- Potential for shared infrastructure being explored with regional developers

Government and Community Relations

Financing



Key focus of development work is on value engineering studies and process optimization, with activities led by recently appointed Project Director

## Government and Community Relations

- Training and upskilling of local workforce initiatives
- Laboratory operations training established with the University of Catamarca
- New headquarters for Sal de Vida Project now opened in Catamarca City by Government officials.

Financing



Key focus of development work is on value engineering studies and process optimization, with activities led by recently appointed Project Director



## Financing

- Final settlement of POSCO transaction (US\$271.6 million in net funds received)
- Strategic discussions remain ongoing with a selected group of prospective partners for Sal de Vida





Project Development:

# James Bay

Project flyover video is available at the below web address:

<https://galaxylithium.businesscatalyst.com/media/downloads/AGM%20-%20James%20Bay.mp4>

Provides additional expansion capacity to capitalise on future lithium demand growth, with the potential to supply the North American and European markets



## Feasibility Study

- Feasibility work continues, and encompasses an integrated upstream (mining and concentrating) and downstream (chemical conversion) operation
- Feasibility work to draw synergies from Mt Cattlin and Jianga<sup>1</sup> for engineering and process flow sheet design
- Upstream operation considers a 2.0Mt p.a. throughout capacity
- Estimated annual production of c.300kt of lithium concentrate, or up to 40kt LCE of chemical production



**Note:**

1. Previously owned 17ktpa lithium carbonate processing plant in China, sold to Tianqi in 2015

Provides additional expansion capacity to capitalise on future lithium demand growth, with the potential to supply the North American and European markets

Aerial View of Outcropping  
Pegmatite Dykes / Long Section



## Permitting & Approvals

- Environmental and Social Impact Assessment ("ESIA") submitted in October 2018
- Engagement with key project stakeholders and government departments begun upon submission (typical timeline of 2 years)
- Final recommendations expected within 12-18 months
- Pre-Development Agreement ("PDA") has been agreed and signed with the Cree First Nations
- Negotiations now advancing to a binding Impact & Benefits Agreement

James Bay Pegmatite Swarm





## Outlook & Growth Catalysts

Operational optimization at Mt Cattlin and a strong balance sheet underpin Galaxy's continued commitment to the development of Sal de Vida and James Bay

### Mt Cattlin

Production & optimization

- Targeting 45-50kt of spodumene production in Q2 2019
- 180-210kt spodumene production for CY2019
- Dedicated focus on optimizing final product quality
- Exploring potential downstream opportunities with existing customers
- Exploration work to facilitate further extension and maximization of mine life

### Sal de Vida

Project development

- POSCO transaction complete releasing significant capital and de-risking project advancement
- Optimisation and early development works, including demonstration pond construction
- Establishing base of operations in Catamarca City



## Outlook & Growth Catalysts

Operational optimization at Mt Cattlin and a strong balance sheet underpin Galaxy's continued commitment to the development of Sal de Vida and James Bay

### James Bay Project development

- Feasibility study work for integrated upstream and downstream operation
- Comprehensive test work programs underway, leveraging Mt Cattlin and Jianguo experiences for upstream and downstream respectively
- ESIA submitted and PDA agreed – continued engagement with key project stakeholders

### Macro Robust lithium demand

- China targeting 1.7 million NEVs in 2019 continuing strong growth trajectory
- Rest of the world will begin to see the launch of mainstream EV models from global OEMs mass energy storage systems emerging as an important new growth sector
- Increasing number of energy storage system deployments now adopting the lithium ion battery platform as the technology of choice

# LITHIUM MARKET UPDATE

- **Demand side of lithium ion battery supply chain continued to show strong growth** – as expected, growth in electric vehicle sector driving demand
- Emergence of energy storage as a **new growth sector with strong potential**
- **Spot price performance in China notably weakened** starting in Q2 2018
- Poor macro sentiment and financial liquidity in China, whole of **domestic supply chain underwent destocking cycle**
- **Rest of the World pricing sustained robust levels**, despite volatility in China
- **Ramp up of new supply slower than expected** – from both from existing producers in South America and new entrants in Australia

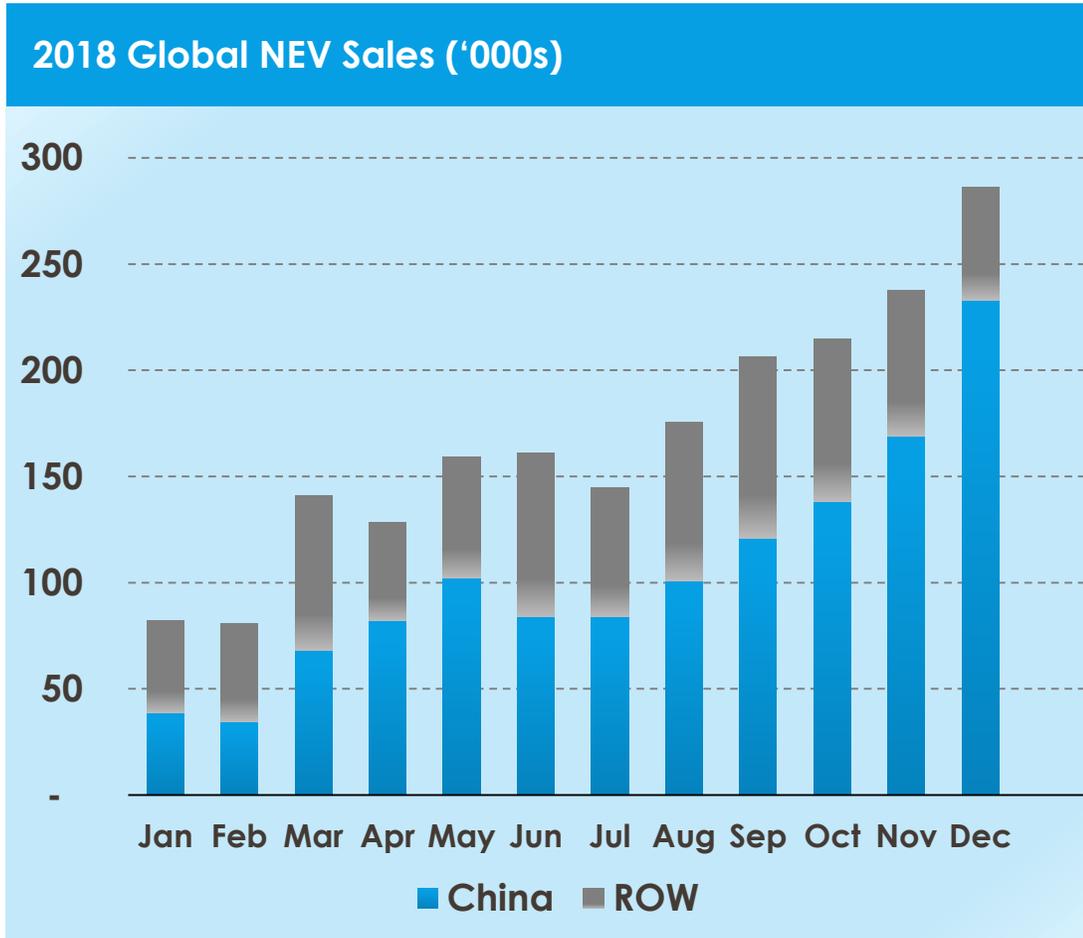


# End Usage Market Review



# Global Growth in Electric Vehicles

Global growth in electric vehicles continues to be led by China, with Rest Of The World markets also delivering strong increases



- Global electric vehicles sales **exceeded 2 million vehicles** in 2018
- China reported NEV **sales of 1.26 million, a growth of 61.5%** year-on-year versus 2017
- Rest Of The World reported **sales 763K vehicles, a growth of 69.6%** year-on-year in volume
- Reported ROW **sales volume growth was higher than China**
- China reported a **larger share in pure electric vehicles with BEVs commanding a 78.4%** share of all NEVs sold in China
- The US market is catching up, with **BEVs reporting a 66.1%** of all **plug-in vehicles sold** in 2018

#### Sources

- CAAM, CleanTechnica, Inside EVs

# Top Selling EV Models

Tesla maintains leading share in the US market, whereas China market is still dominated by domestic brands - **with the launch of the Model 3, will expect to see Tesla growth accelerate in in Europe and China from 2019 onwards**, also expecting new models being launched by global Auto OEMs

US Market			European Market			China Market		
Brand	Model	2018 Units Sold	Brand	Model	2018 Units Sold	Brand	Model	2018 Units Sold
Tesla	Model 3	139,782	Nissan	Leaf	40,609	BAIC	EC	90,637
Toyota	Prius Prime	27,595	Renault	Zoe	38,538	Chery	eQ	46,967
Tesla	Model X	26,100	BMW	i3	24,432	BYD	Qin	45,054
Tesla	Model S	25,745	Mitsubishi	Outlander PHEV	23,921	BYD	e5	43,902
Honda	Clarity PHEV	18,602	VW	e-Golf	21,252	JAC	iEV	42,024



**Sources**

- CAAM, CleanTechnica, Inside EVs

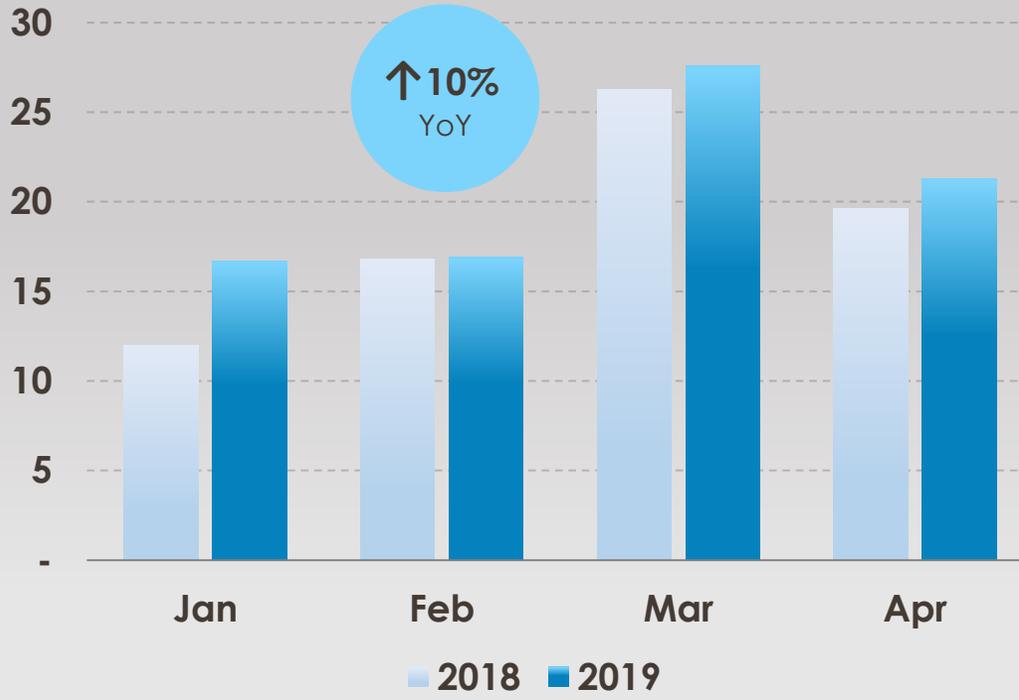
## China Market – 2018 vs 2019 YTD NEV Sales ('000s)

YTD cumulative sales reported at **c.380,000 vehicles**, representing **strong growth of 70%** over the c.223,000 vehicles reported sold in the same period last year



## US Market – 2018 vs 2019 YTD NEV Sales ('000s)

YTD cumulative sales reported at **c.82,500 vehicles**, representing **modest growth of 10%** over the c.74,920 vehicles reported sold in the same period last year



**Sources**

- CAAM, Inside EVs

Sector now showing encouraging growth – notably, this is a sector where China is currently having to play catch-up with ROW, global market estimated at 50GWh by 2020 and 300GWh by 2025

## Selected ROW ESS Projects

Project	Operator / Partners	Energy Storage
Hornsedale Power Reserve 129MWh		
Moss Landing Energy Storage 1.1GWh		
Vistra Moss Landing Energy Storage 1.2GWh		

Legend

2,000 Tesla Model 3 equivalents<sup>1</sup>

## Selected Chinese ESS Projects

Project	Operator / Partners	Energy Storage
Xinjiang Power 100MWh		
Sinopec Jiangsu 100MWh		
China Tower 2018A – 1.5GWh 2019E – 5GWh		

- China market still in early stages of deploying large scale ESS into the market
- China Tower, the largest base station operator, with 1.8M towers, announced that it had **ceased using lead acid batteries by the end of 2018** and was switching to lithium battery systems
- Estimated total requirement – 146GWh, target deployment for replacing existing plus new systems projected at up to **27GWh per year, or equivalent of up to 22kt LCE each year**

### Sources

- Company Announcements, BNEF, IRENA, US DOE

### Note:

1. 1 x Tesla Model 3 = 60kWh Battery

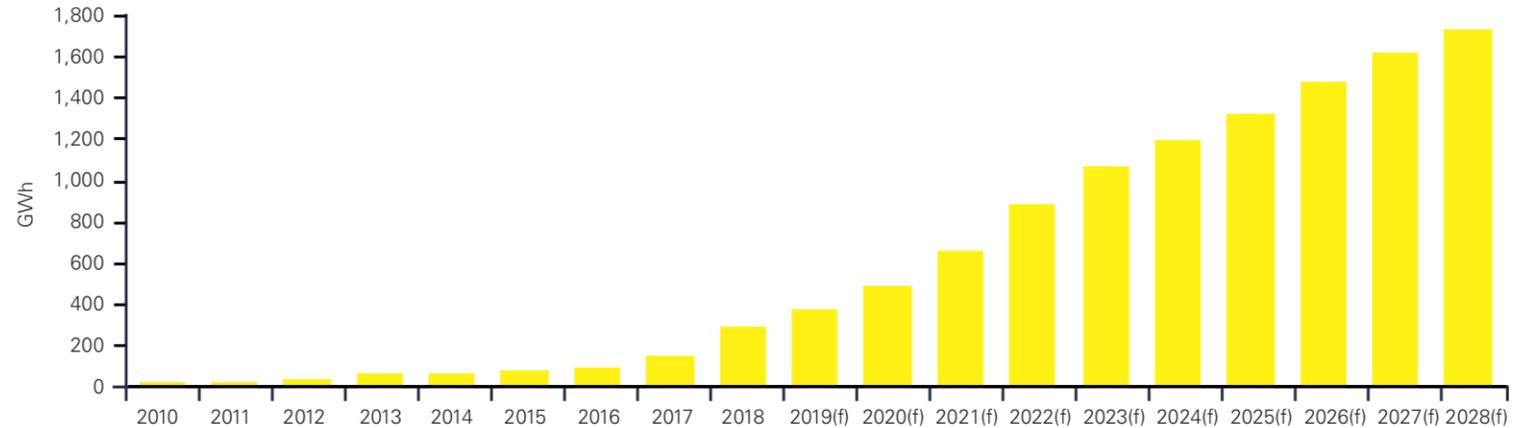


# Global Battery Capacity Growth Continues

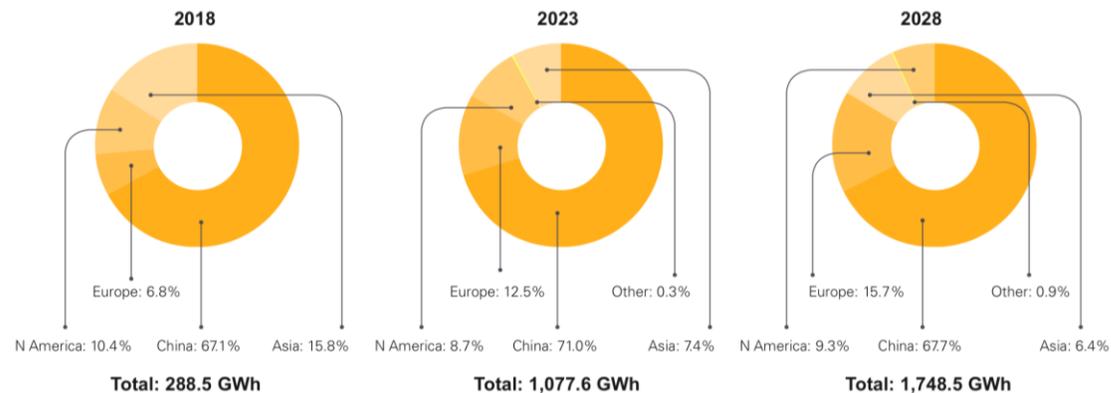
## Global Leading Battery Manufacturers Scaling For Growth

- **Tesla** – 50GWh at Giga 1, Giga 2-4 adding 100GWh+ in total capacity
- **LG Chem** – scaling up to global capacity of 90GWh by 2020
- **BYD** – growing from 28GWh in 2018 to total 64GWh by 2020
- **Wanxiang** – investing US\$10B to build total 80GWh capacity EV battery plant
- **CATL** – initial 50GWh target now upscaled to 88GWh by 2020

## World Lithium Ion Megafactory Capacity



## Megafactory Capacity by Region



**TOTAL CAPACITY PIPELINE BY 2028:**  
**1,748.5GWh**

### Sources

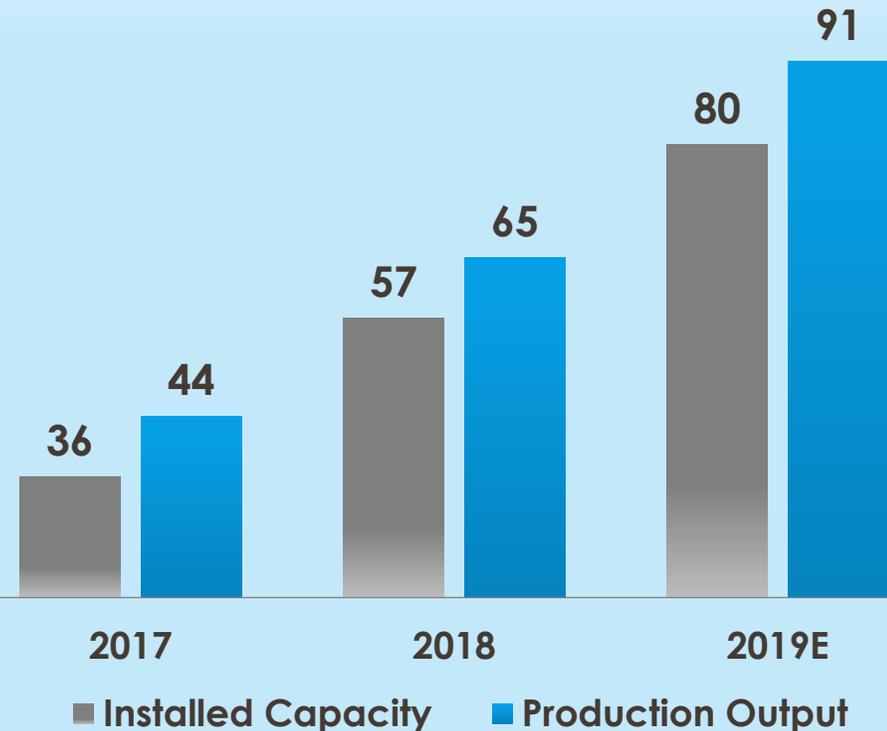
- Benchmark Mineral Intelligence

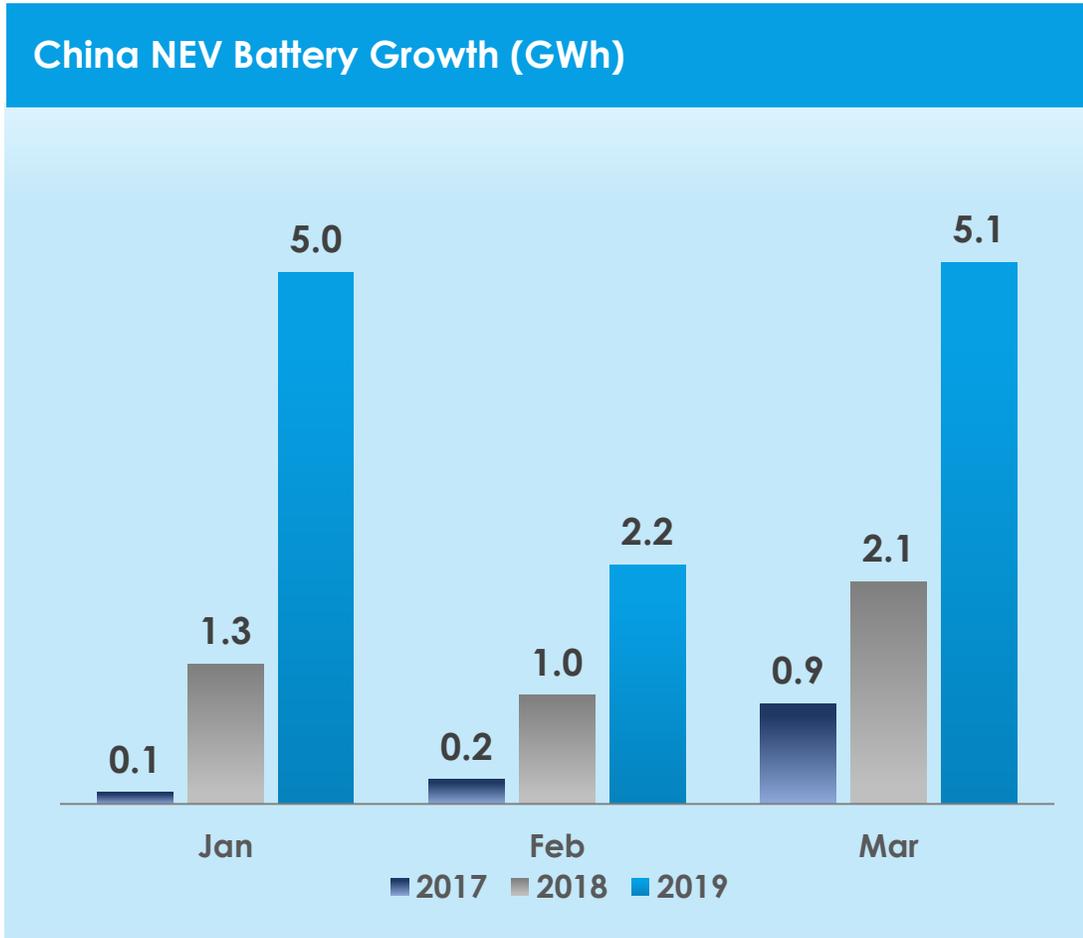
# 2018 China Lithium LiB Manufacturing Output

## Overview

- In line with growth in NEV volumes, **battery consumption and output has also increased significantly year-on-year**
- Installed capacity (as calculated by total battery capacity installed in vehicles sold) **growing at 30% CAGR**
- Annual incremental demand going forward expected to rise - **increased volumes + increasing battery size per vehicle**
- Growth outlined in chart refers to China NEV batteries only – **does not include growth from other applications**, such as small format and energy storage
- Projections also **do not include growth potential from ROW markets and other applications**, such as small format and energy storage applications

## China NEV Battery Growth (GWh)





- In spite of cautious sector sentiment ahead of the anticipated policy changes, **China NEV installed capacity in the first quarter reported strong growth**
- **2019 YTD achieved 12.3GWh of installed capacity** in NEVs, compared to only 4.4GWh in 2018 for the same period, **representing 279% YoY growth**
- Historically, the **first quarter represented 3.5% and 7.7% of the full-year achieved** NEV battery installed capacities in 2017 and 2018 respectively
- **2019 YTD aggregate installed capacity equivalent to 15.4% of current projected full year capacity**
- Some possible front-end loading of NEV battery installations, ahead of the revised subsidy policy release in March, **also indicative of increasing battery sizes**

# China Policy – Not Just About Subsidies

## Overview

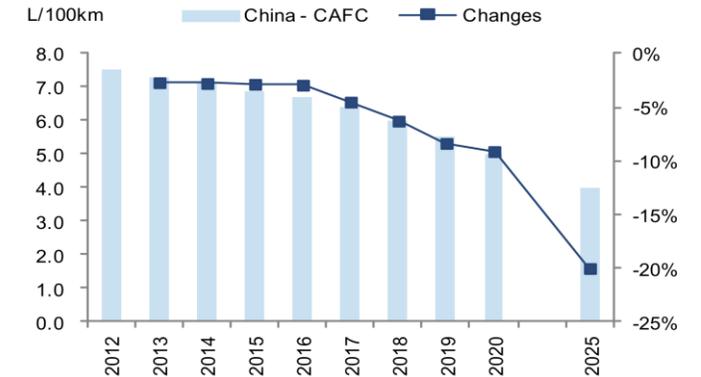
- NEV Credit Scheme to go live this year, **requiring 10% in 2019 and 12% in 2020**
- For example, an OEM producing **1M vehicles will need 100K NEV credits**
- **NEV Credit Scheme to be used in tandem with the Corporate Average Fuel Consumption (CAFC) scheme** to encourage more NEV production
- **CAFC targets set by MIIT**, scheme skews to encouraging pure electric
- Major cities in China still applying license plate restrictions, **NEV plates much cheaper and easier to obtain**

## NEV Credit By Vehicle

Type	Credit Calculation
<b>BEV</b>	Max 5, $f (0.012 \times R + 0.8)$
<b>PHEV</b>	2

\*R = electric driving range (km)

## CAFC Requirements In China



## Vehicle Plate Restrictions In Major Cities In China

City	Success Rate	Lottery/Bidding	License Plate For NEV
<b>Beijing</b>	0.12%	Lottery Only	Separate lottery with higher success rate
<b>Guangzhou</b>	1.46%	Lottery & Bidding	Free plate without lottery or bidding
<b>Hangzhou</b>	0.92%	Lottery & Bidding	Free plate without lottery or bidding
<b>Shanghai</b>	4.49%	Bidding Only	Free plate without bidding
<b>Shenzhen</b>	0.81%	Lottery & Bidding	Free plate without lottery or bidding
<b>Guiyang</b>	0.69%	Lottery Only	Free plate without lottery
<b>Tianjin</b>	0.78%	Lottery & Bidding	Free plate without lottery or bidding

### Sources

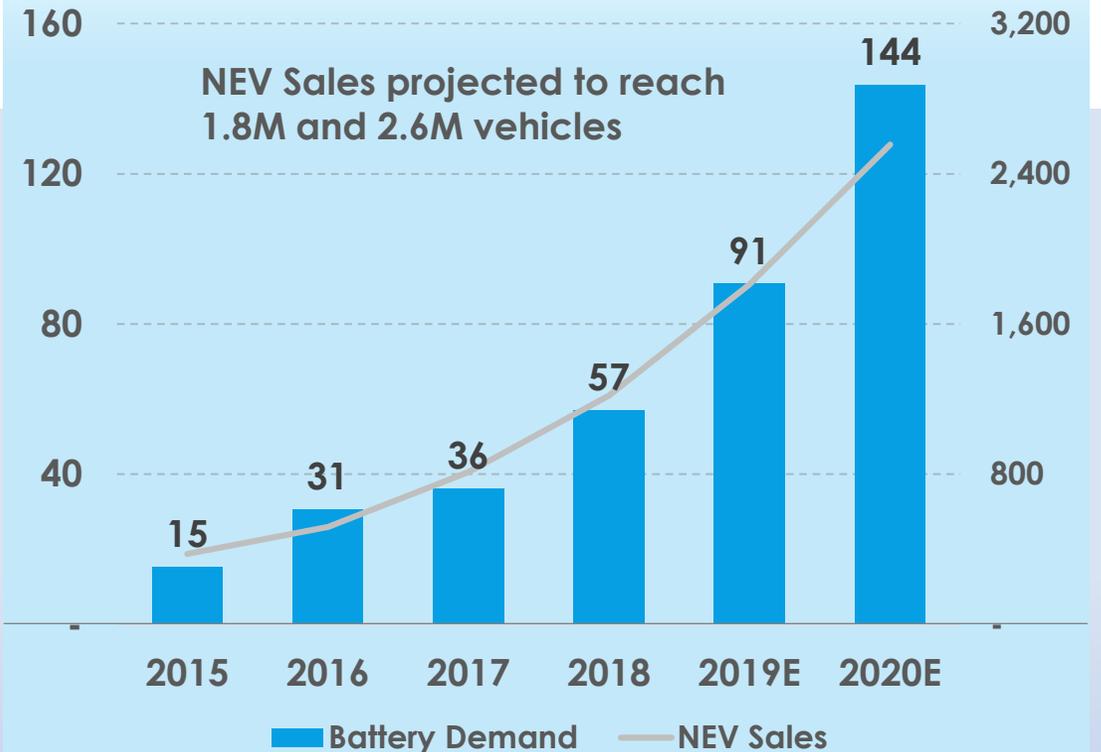
- MIIT, GTJA

# China NEV Battery Demand Projections

## Overview

- NEV Sales projected to reach **1.8M and 2.6M vehicles in 2019 and 2020**
- Based on 2018 NEV sales of 1.2M vehicles and 57GWh of installed capacity, **equated to average battery capacity was 45KWh per NEV**
- Current forward projections imply that **average battery capacity per NEV will be 50KWh and 55KWh for 2019 and 2020**
- **Increasing volumes + increasing battery capacity per vehicle = increasing lithium intensity for NEVs**
- Incremental growth in GWh in **2019 and 2020 of +34GWh and +53GWh**, equivalent to **incremental 27kt LCE and 42kt LCE for each respective year**

## Battery Demand (GWh) (LHS) and NEV Sales ('000s) (RHS)



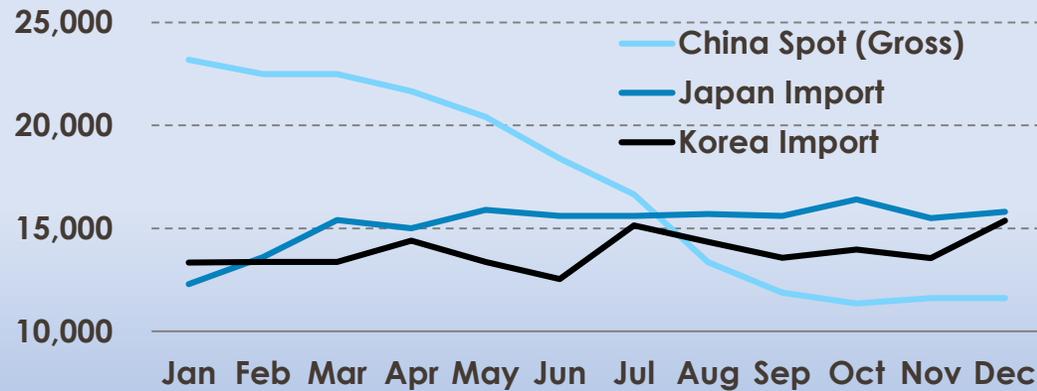
### Sources

- GFS

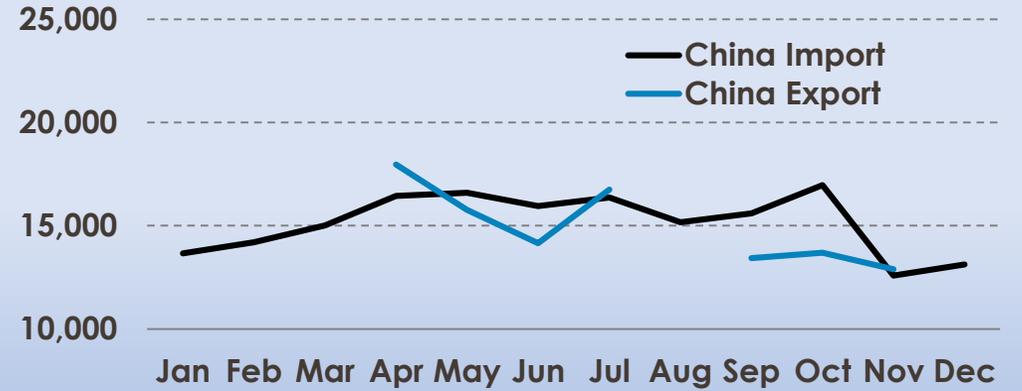


# Lithium Pricing & Volume Analysis

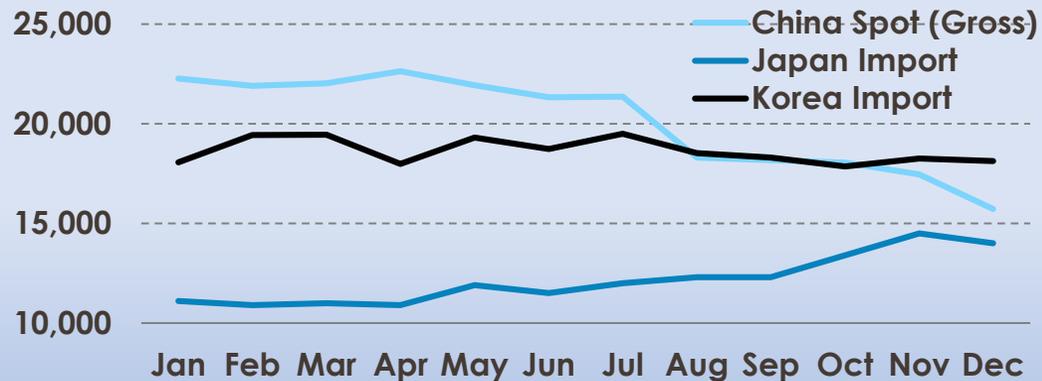
## Global Pricing – Lithium Carbonate USD



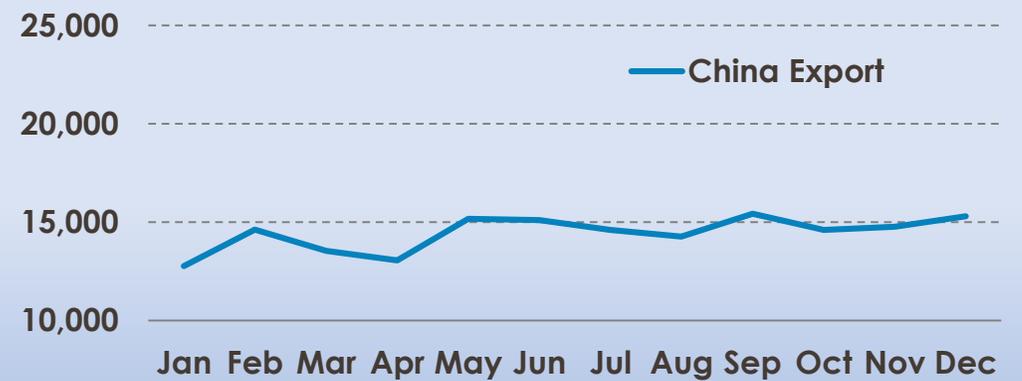
## China Import / Export Pricing – Lithium Carbonate USD



## Global Pricing – Lithium Hydroxide USD



## China Export Pricing – Lithium Hydroxide USD



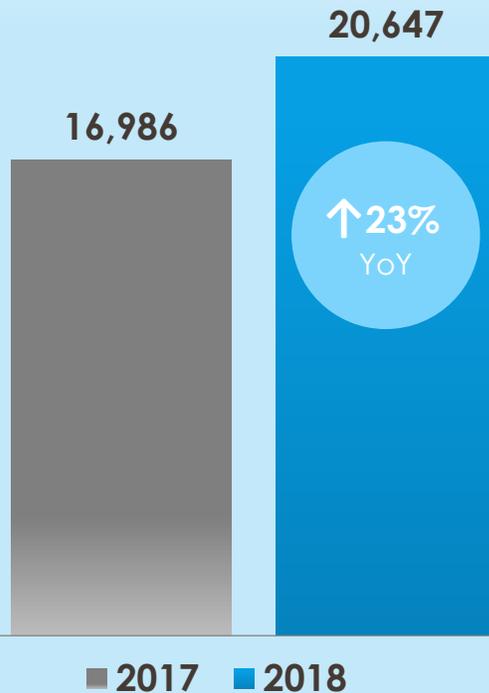
### Sources

- Japanese, Korean and Chinese customs data

# Lithium Trade Data – Japan

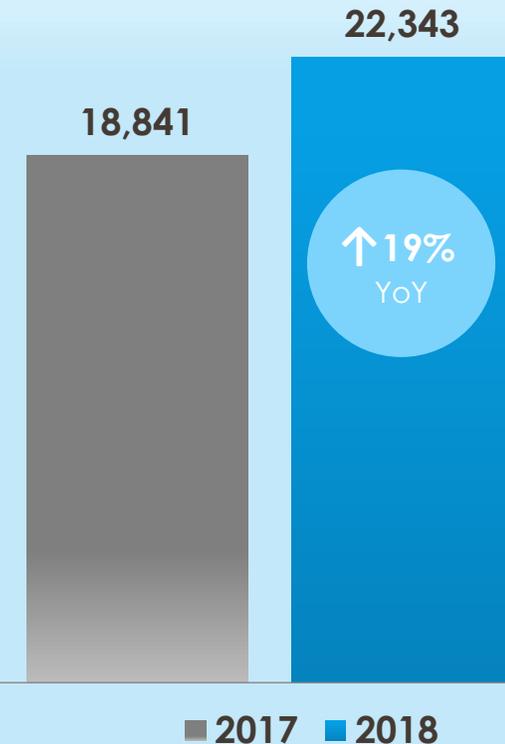
Lithium chemicals import volumes into Japan showed steady increases in 2018, for both lithium carbonate and lithium hydroxide products

## Lithium Concentrate Imports (tonnes)



- Lithium chemicals share in Japan **evenly balanced between carbonate and hydroxide**
- Average prices for 2018:
  - Carbonate ranging from **US\$14.8K-19.5K/t**
  - Hydroxide ranging from **US\$11.1K-16.9K/t**
- Carbonate market leading consumer is **Nichia** (supplying to Japanese LiB manufacturers and domestic OEMs)
- Hydroxide consumption dominated by **Sumitomo Metals & Mining/Panasonic for Tesla**

## Lithium Carbonate Imports (tonnes)



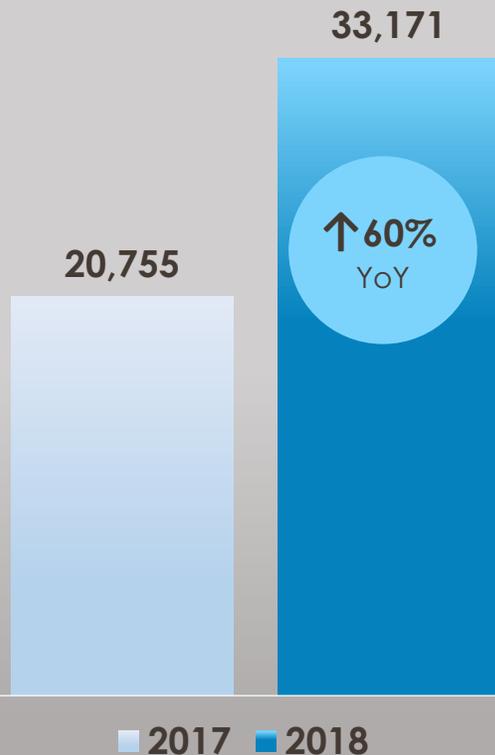
### Sources

- Galaxy Resources, Japanese customs data

# Lithium Trade Data – Korea

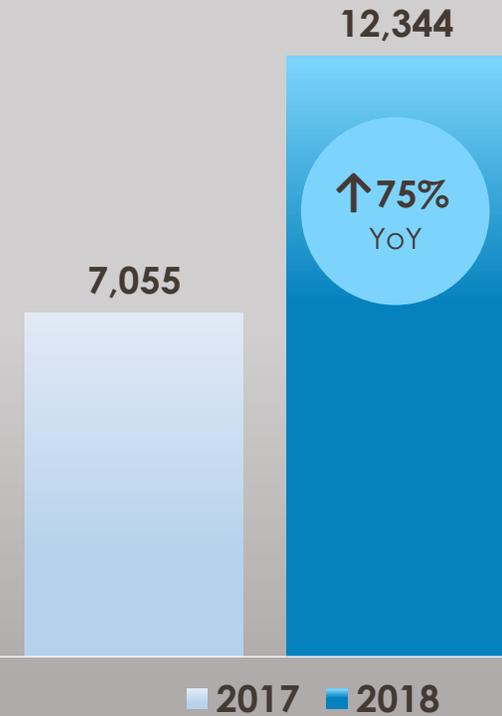
Lithium chemicals import volumes into Korea showed very strong growth in 2018, outpacing consumption growth rate in Japan, Korea market now a larger consumer by volume than Japan

## Lithium Carbonate Imports (tonnes)



- **Carbonate is the dominant share chemical** in the Korean market, hydroxide growth encouraging
- Average prices for 2018:
  - **Carbonate US\$13.8K/t**
  - **Hydroxide US\$18.6K/t**
- Increase in volumes due **to local LiB players being suppliers to European OEMs** (including BMW, VW, Mercedes, Renault etc.), who are all **launching new EV models in 2019**
- Expect to **see lithium imports in Korea outpace Japan** going forward (44kt vs 40kt LCE in 2018)

## Lithium Hydroxide Imports (tonnes)



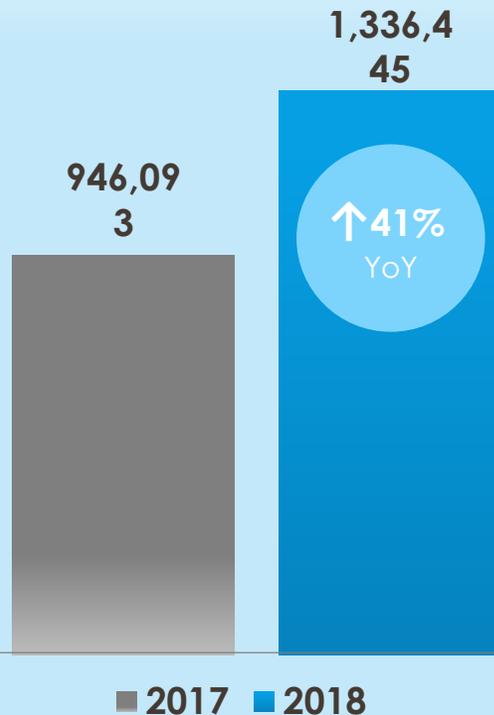
**Sources**

- Galaxy Resources, Korean customs data

# Lithium Trade Data – China

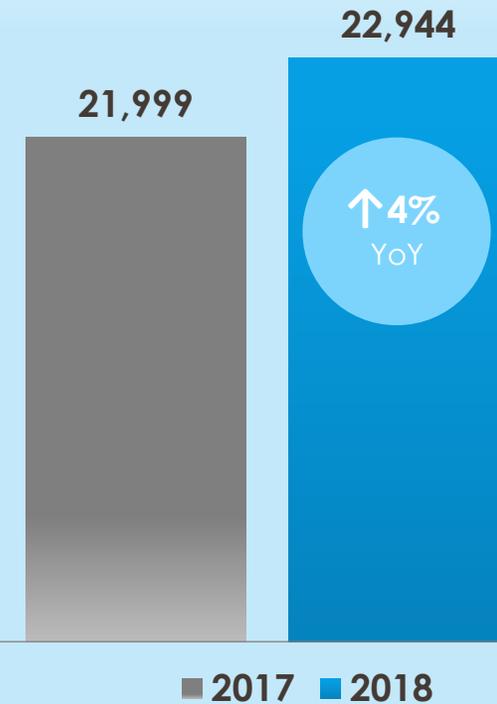
Import of concentrate feedstock and chemicals into China continue to show increases in volumes in line with demand pickup

## Lithium Concentrate Imports (tonnes)



- Lithium DSO shipments were 1.9M and 2.5M tonnes respectively in 2017 and 2018 – **shipments have ceased in Q4 2018** due to high cost and poor end quality product
- Average price of spodumene into China was **US\$598/t and US\$743/t for 2017 and 2018** respectively
- Average price of lithium carbonate imported into China was **US\$12.3K and US\$15.1K in 2017 and 2018** respectively
- Increase in lithium carbonate imports only moderate – **switching to new technical grade supply from Qinghai brines, prices of imported product being higher than domestic prices**

## Lithium Carbonate Imports (tonnes)



### Sources

- Galaxy Resources, Chinese customs data

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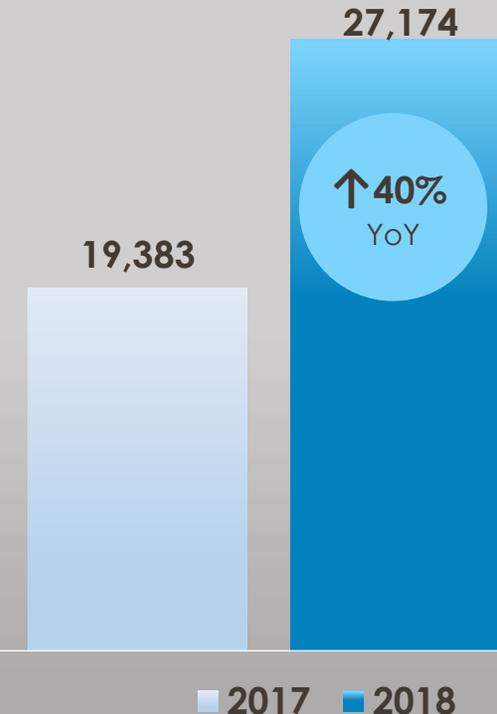
Export of lithium chemicals increasing due to strong demand pickup from overseas market for both lithium carbonate and hydroxide

## Lithium Carbonate Exports (tonnes)



- No exports of carbonate in 2017, increase in 2018 due to **strong overseas demand and soft price in China**
- Average price of exported **lithium carbonate was US\$14.9K/t** – much higher than spot prices of **US\$11.9K/t reported H2 2018**
- Expect to see continued growth of exports from low price environment in China, to **growth markets Korea and Japan** – South American production unable to keep pace with demand growth
- Hydroxide growth mainly attributable to **Tesla, moderate increase in NCM811 demand**

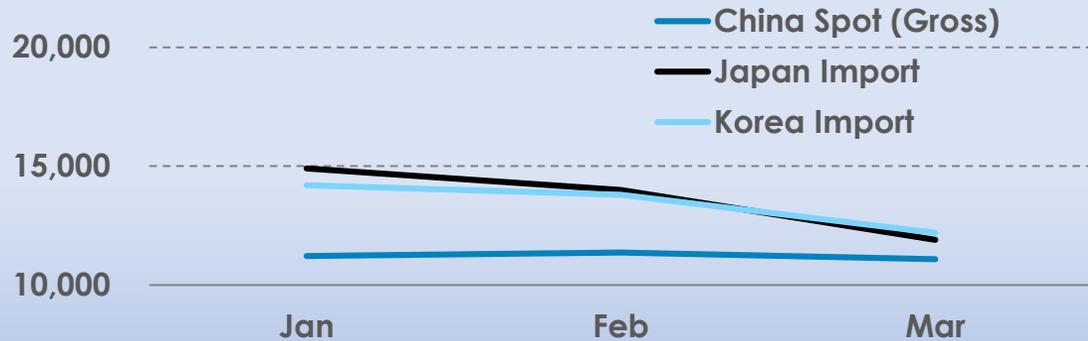
## Lithium Hydroxide Exports (tonnes)



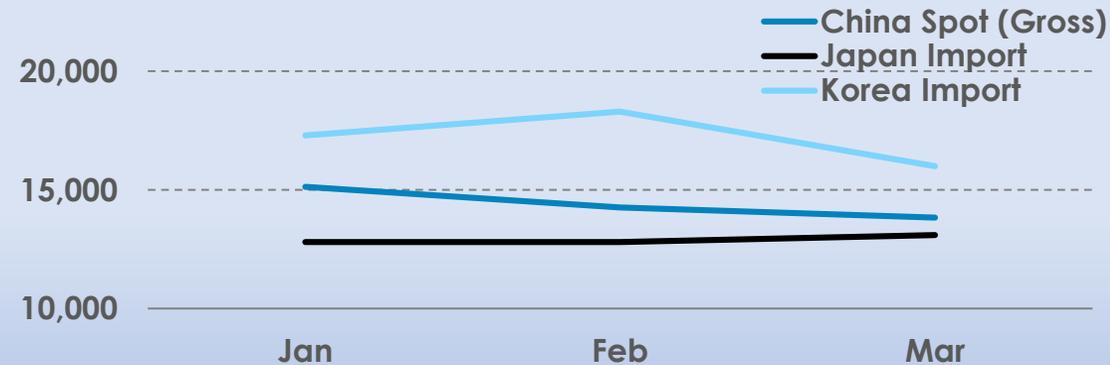
**Sources**

- Galaxy Resources, Chinese customs data

## Global Pricing – Lithium Carbonate USD



## Global Pricing – Lithium Hydroxide USD



- China spot prices for lithium carbonate have **remained steady since reaching current plateau in October 2018**
- Reported import prices for **lithium carbonate to the Korea and Japan have softened**, indications of convergence with China spot pricing – prior period export data in China showed **significant increase of flow of material from China (8.5kt exported in 2018 vs 1.5kt in 2017)** as a result of the lower prices
- Lithium hydroxide spot prices in China have softened c.10% since the end of previous year, **price adjustment range (since highs of 2018) now closer to that of lithium carbonate** over the same period
- Lithium hydroxide import pricing in **Korea has adjusted c.12% from 2018 year end**, while in Japan prices have **remained steady to slightly up**

### Sources

- Japanese, Korean and Chinese customs data

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**Outlook**

# End User Demand Growth

Demand growth trends still looking positive in China and ROW markets – launch of new models expected from global automobile OEMs and storage market segments also growing in importance

- Despite some previous perceptions regarding potential negative impact of the revised subsidy policy in China on NEV growth in 2019 – **contrary to that and following the release of the new subsidy framework, CAAM and industry analysts actually further increased 2019 projections, now to 1.7-1.8M NEVs for the year (or equivalent of 35-44% YoY growth), BNEF project global market at 2.6M EVs for 2019**
- Importantly, 2019 is not just a growth year for China but will also start to see the launch of new and more **mainstream EV models from the global automobile OEMs**, including:



Audi e-tron Quattro 95KWh



Mercedes EQC 80KWh



Mini Electric Est.50KWh



Porsche Taycan 90KWh



Kia e-Niro 64KWh



Volvo Est.60KWh



Audi e-tron Sportback 95KWh



Jaguar I-Pace 90KWh



VW E-Golf 36KWh

- Storage will also continue to see strong growth in international markets, as well as in China – increasing capacity sizing of those systems as well as broader adoption globally, will also lead to robust demand growth in this sector, China now starting to deploy large format systems, such as those in the China Tower network
- In summary, overall LiB volume is expected to continue to increase robustly over the coming years – importantly, the **format sizes of those batteries (new EV models and storage systems) continuing to get larger in capacity size, leading to demand growth rates in materials beyond just volume growth**

## Sources

- CAAM, BNEF, Company announcements

- **General market in China continues to face headwinds** due to the continuing trade tensions with the US, impact felt across all industries
- Poor macro sentiment in China with **ongoing limitations of financial liquidity, resulting in continued low levels of chemical and material product inventory** being held throughout the supply chain
- **Ramp up of new conversion capacity in China slower than expected** – expect timing being adjusted due to macro conditions, some spodumene inventories in the system
- **Seeing equalization of supply and demand of material** across Asia (China product flow overseas) due to price differences in 2018, now resulting in indications of price convergence between China and ROW
- Notwithstanding the general macro sentiment, **China end user segment growth continues to show strong and growing potential** – key market catalysts to watch include **launch of new EV models from global OEMs and their respective customer uptake**, expect flow on effect upstream through supply chain late 2019 and into 2020
- Expect overall **demand growth globally in LCE to be in the range of 15-20% for 2019**

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# Competent Person Statement

## **MT CATTLIN**

Any information in this report that relates to Mt Cattlin Mineral Resources and Ore Reserves is extracted from the report entitled “42% increase in Mt Cattlin resource to 16.7Mt” created on 23 January 2019 which is 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 announcement 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.

## **SAL DE VIDA**

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.

## **JAMES BAY**

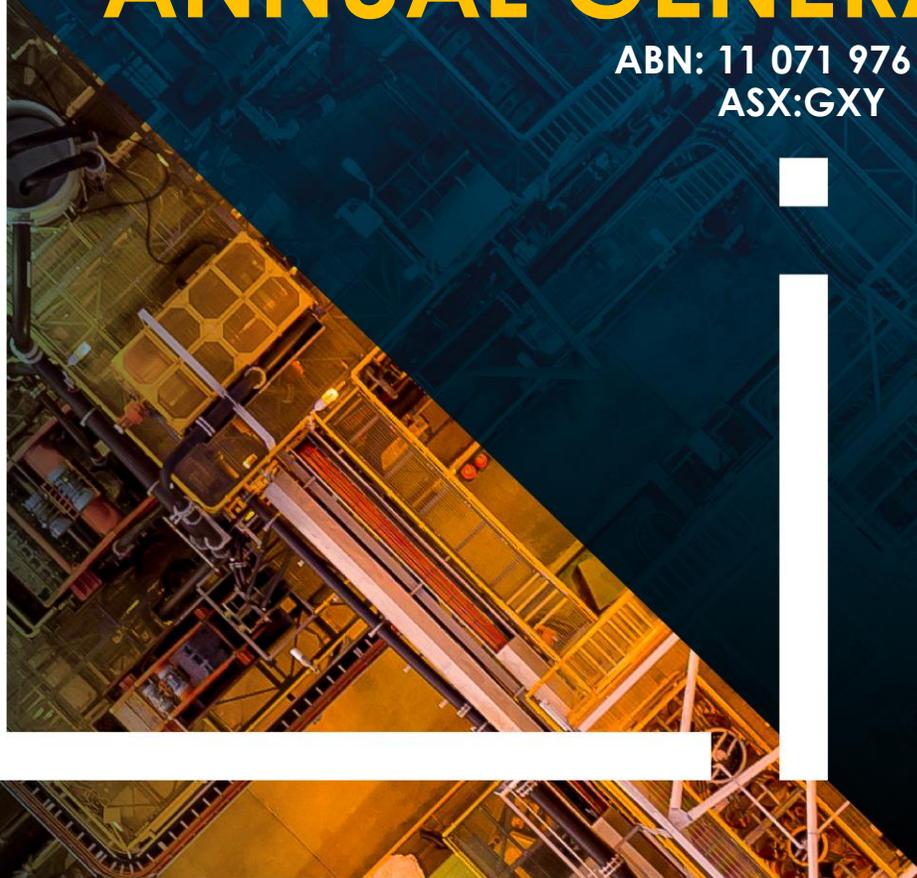
Any information in this report that relates to James Bay Mineral Resources is extracted from the report entitled “James Bay Resource Update” created on 4 December 2017 which is available to view on [www.gxy.com](http://www.gxy.com) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resources 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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