

The Development of the Lithium-Ion Battery Supply Chain in Europe and its Influence on Critical Raw Materials

INFINITY LITHIUM

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Disclaimer

For Consideration

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Competent Persons Statement

- ❖ The information in this report that relates to Exploration Results is based on the information compiled or reviewed by Mr Adrian Byass, B.Sc Hons (Geol), B.Econ, FSEG, MAIG and an employee of Infinity Lithium. Mr Byass has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Byass consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

INTRODUCTION

Electric mobility From
Wait and See mode to
Action mode



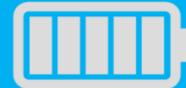
Europe

To Become #2 Largest
EV Maker In The World



Batteries

Alliances & Long term Supply
– Strong Exposure to Asia



EU & Governments

Start To Intervene & Protect
The Region



Europe

Could Become The
#2 Largest Market
For Battery Metals



Co, Ni, Li

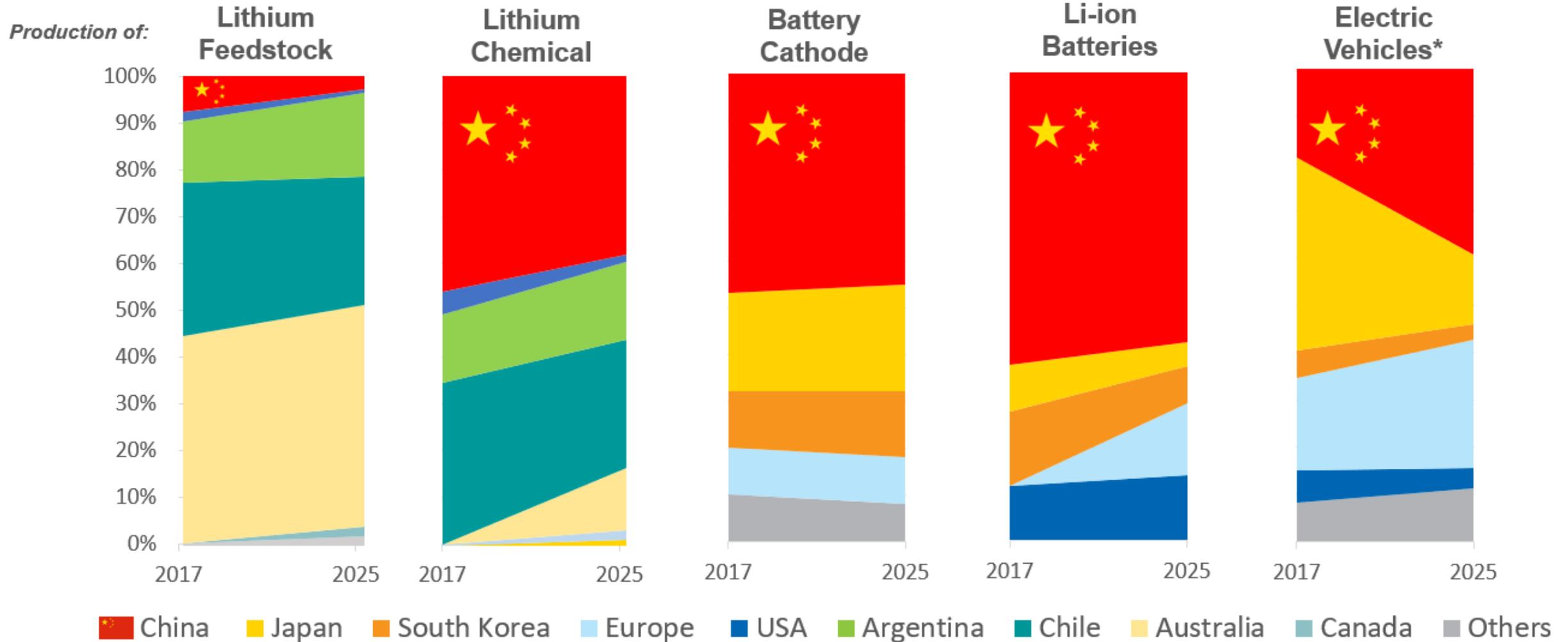
Europe Is A Minor
Battery Raw
Materials Producer



Large Domestic
Resources & Projects To
Support
The Industry



Who Really Controls the Lithium-ion Batteries Supply Chain?



Source: IHS Markit

*Including HEV, PHEV & EV

E-MOBILITY



Q3 2018 News The European EV Supply Chain

European Parliament
"European parliament backs 40% cut in vehicle CO2"



El Pais
"The Government proposes to veto the sales of gasoline and diesel cars in 2040"



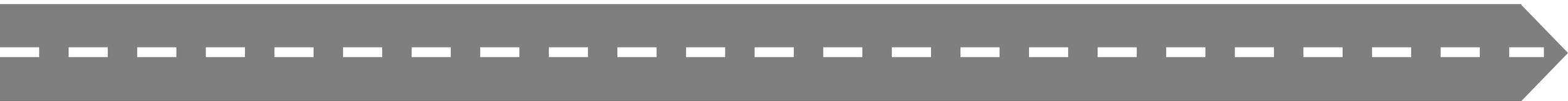
Reuters
"VW plans to sell electric Tesla rival for less than 20,000 euros"



The Guardian
"It's the only way forward': Madrid bans polluting vehicles from city center"



Audi
Audi will invest over €14 billion in e-mobility advance



The Driven
"Electric car sales surge in Europe, as diesel car sales slump"



Reuters
"VW capable of building 50 million electric vehicles"



Reuters
Volkswagen says last generation of combustion engines to be launched in 2026

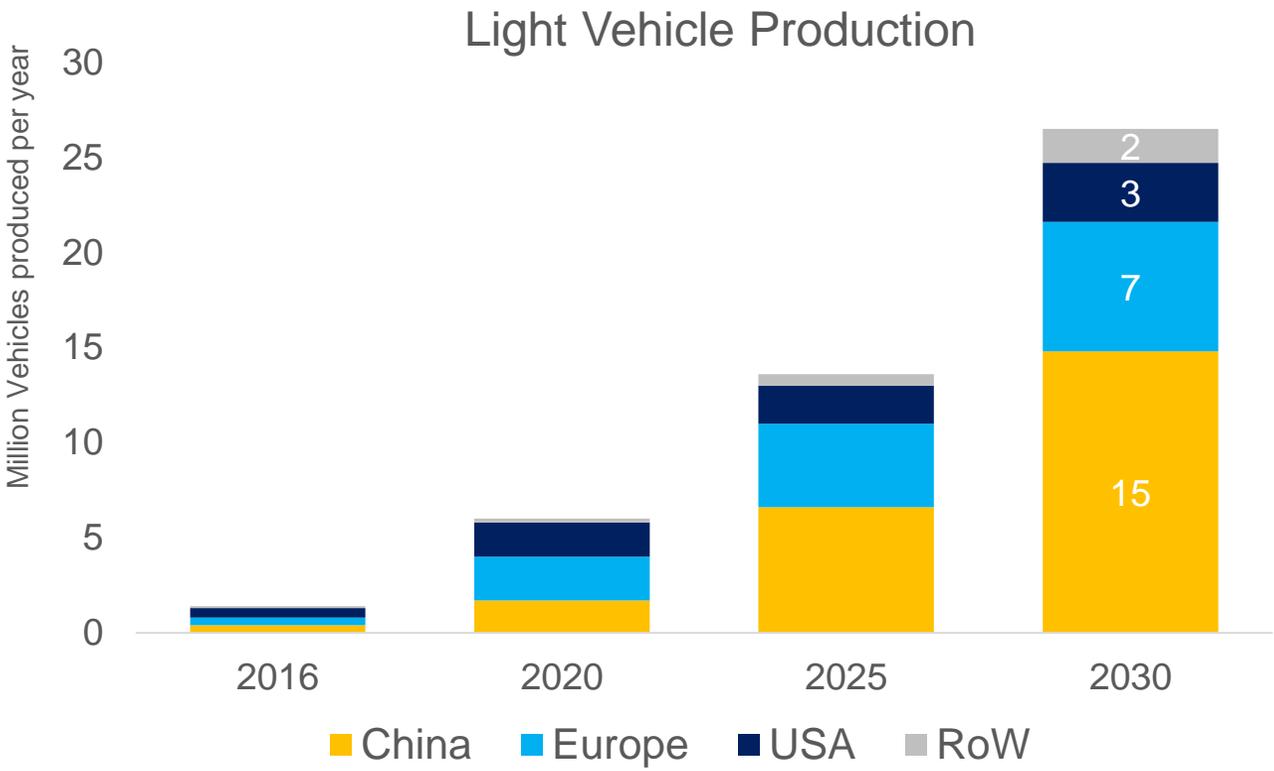


Reuters
VW says could build up to 15 million electric cars



Financial Times
Brussels agrees 2030 carbon dioxide targets for cars

Global EV Outlook – China in the Lead, Europe to Follow



Source: McKinsey Sustainable Mobility Initiative

No matter which forecast you are looking at, all predict tremendous growth in EVs

McKinsey: EV production will reach more than 26 million globally by 2030. China is expected to add around 15 million EVs by year 2030 (56% market share), followed by Europe (26% market share) and the US (12% market share)

BNEF: EVs sales to surge to 30 million by 2030. China leads with sales reaching almost 39% of the global market in 2030. China leads on adoption rates, with EVs accounting for 19% of all passenger vehicle sales in China in 2025. Europe is close behind at 14%, followed by the U.S. at 11%

Platts: by 2025, the EU will actually have a deeper penetration rate for EVs (30%) than in China (15%) and in the US (8%).

E-Mobility: Electric Cars Are Not The Entire Story

- A large part of the mobility market is unaccounted for in lithium-ion battery forecast
- The road, the sea and the sky will move to electric too with many companies working towards this goal, from the small start up to the large corporation
- Those applications will lead to further growth for demand and additional pressure on battery raw materials in the future

Road Heavy



Road Light



Sea/Water Ways



Sky





LITHIUM-ION BATTERIES

Q3 News around the European Li-ion Battery Supply Chain

Financial Times "BMW Group, Northolt and Umicore join forces to develop sustainable life cycle loop for batteries"

Business Desk "Coventry to become home to UK's first manufacturing site for electric car batteries"

Business Korea Samsung SDI close to Landing a \$1 Billion EV Battery Order from BMZ

Reuters "Germany's Varta steps up plans to mass produce electric car battery cells"

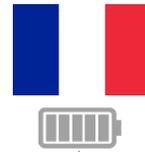
Reuters Daimler to buy \$23 billion of battery cells for electric car drive

Reuters "Germany has set aside 1 billion euros to support battery cell production"

VW "Volkswagen nominates further battery cell supplier – SK Innovation"

DAIMLER

SAMSUNG



Financial Times "EU to offer billions of funding for electric battery plants, four groups planning to build European rival to Tesla's 'gigafactory'"

Reuters "France seeks European battery deal as electric car growth accelerates"

Electrive BYD considers European battery cell factory

Bmw Germany and France declare support for battery production

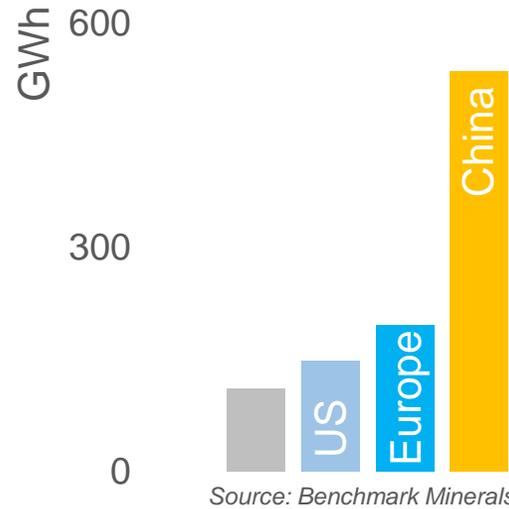
Reuters "BASF and Nornickel join forces in European EV battery push"

Electrive "Germany wants to have about 30% of global battery production in 2030 take place in Europe."

Electrive Audi agrees to assemble battery packs in Germany

A Number of New Lithium-ion Factories Planned in Europe

LIB Giga Factories Capacity by 2025



And...



is looking at launching battery production in Europe



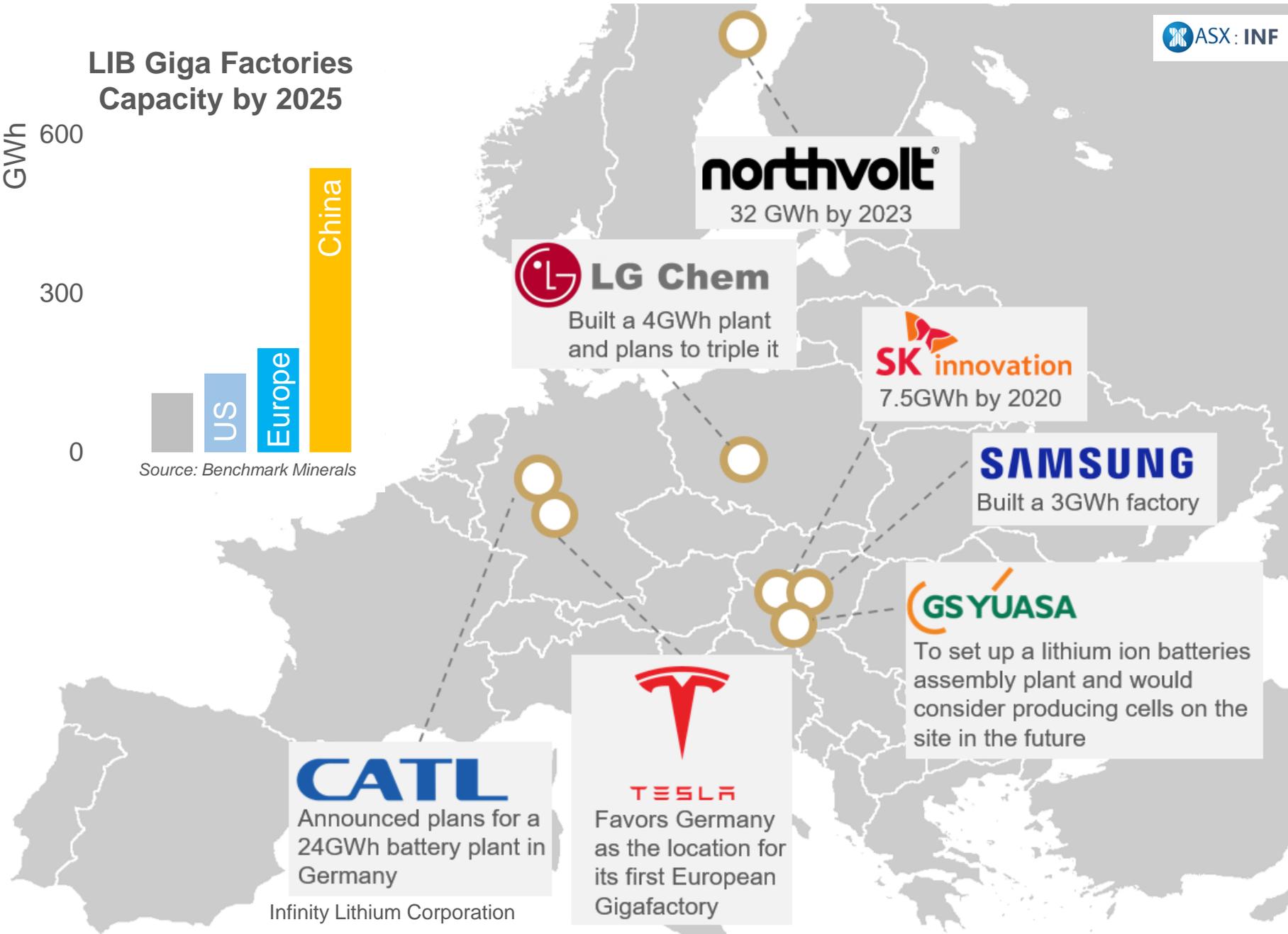
signed a deal to build a factory that would launch production in 2023



selecting the final site for a large-scale lithium-ion cell, plant in the EU



Blackstone Resources to invest \$230M in German EV battery factory plan



New Cathode Investments – One More Step Towards Back Integration

Cathode Investments in Europe



Umicore is planning to build a cathode plant in Poland. The first phase of this investment is included in the € 660 million programme announced earlier this year. Umicore is due to start deliveries in late 2020.



BASF and **Norilsk Nickel** enter exclusive negotiations to cooperate on raw material supply for battery materials production in Europe. BASF intends to invest up to €400 million in a first step to build production plants for cathode materials in Europe.



Johnson Matthey expects to start production in 2021-22 in Europe of a battery material it has developed with improved performance and reduced cobalt content to contain costs.

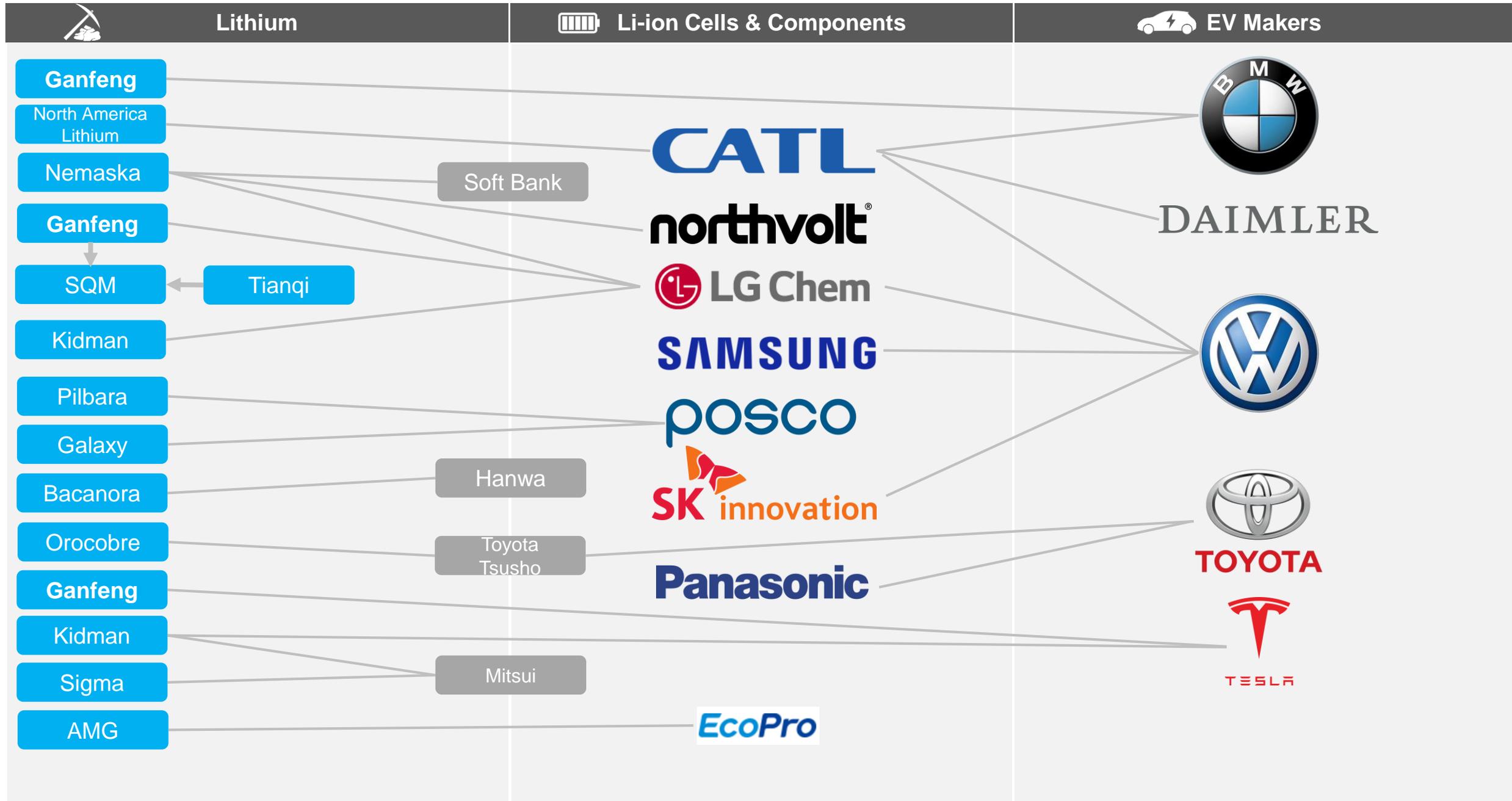


Northvolt is also planning to build its cathodes in-house after they start their battery factory in Sweden.

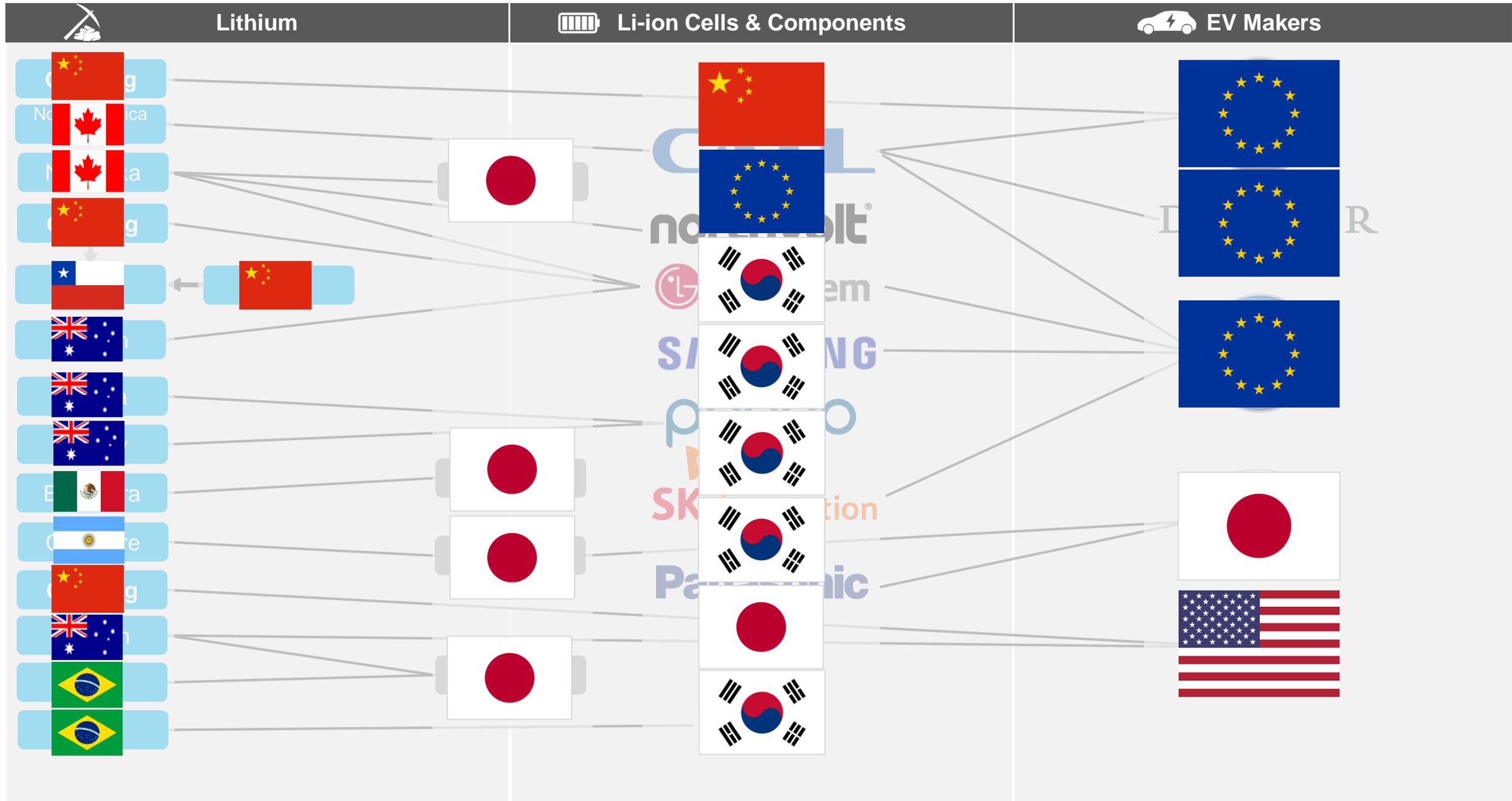


ALLIANCES Metals - Batteries - EV

2018 Key Agreements & Investments in the Lithium-ion Battery Supply Chain



2018 Key Agreements & Investments in the Lithium-ion Battery Supply Chain



Multiple Lithium Offtake Deals – Dominated by Asia

Suppliers			Off-takers				Estimated Max. offtake volume per year	
Country	Supplier	Stage	Product	Off-taker	Country	Icons	Volume	
AUS	MIN/Ganf/Neo – Mount Marion	Producing	Spod.	Ganfeng	CHN	🇨🇳	●	
AUS	Tawana/AMAL – Bald Hill	Producing	Spod.	Burwill Commodity	HK	🇭🇰	●	
			Spod.	General Lithium	CHN	🇨🇳	●	
			Spod.	Ganfeng	CHN	🇨🇳	●	
AUS	Pilbara Minerals - Pilgangoora	Producing	Spod.	Great Wall Motors	CHN	🇨🇳	●	
			DSO	Atlas Iron/SinoSteel	CHN	🇨🇳	●	
			DSO	Tinci Mining	CHN	🇨🇳	●	
			Spod.	Posco	SK	🇰🇷	●	
			Spod.	Lionergy Limited	CHN	🇨🇳	●	
AUS	Altura Mining - Pilgangoora	Producing	Spod.	Ganfeng	CHN	🇨🇳	●	
			Spod.	OptimumNano	CHN	🇨🇳	●	
AUS	Kidman Resources - Kwinana	Planning	LiOH	Tesla	USA	🇺🇸	●	
			LiOH	Mitsui	JPN	🇯🇵	●	
			LiOH	LG Chem	SK	🇰🇷	●	
AUS	Core Exploration	Feasibility	DSO	Yahua	CHN	🇨🇳	●	
ARG	Lithium Americas – Cau/Olaroz	Construction	Li2CO3	Ganfeng	CHN	🇨🇳	●	
			Li2CO3	Bangchak Petroleum	THA	🇹🇭	●	
ARG	NRG Metals – Hombre Muerto	Feasibility	Li2CO3	Chemphys	CHN	🇨🇳	●	
			LiChem	Johnson Matthey	UK	🇬🇧	●	
CAN	Nemaska - Whabouchi	Construction	Li2CO3	FMC	USA	🇺🇸	●	
			LiChem	Softbank	JPN	🇯🇵	●	
			LiOH	Northvolt	SWE	🇸🇪	●	
			LiOH	LG Chem	SK	🇰🇷	●	
CAN	Sayona - Authier	Feasibility	Spod.	Huan Changan Lico	CHN	🇨🇳	●	
	AMG - Mibra	Producing	LiChem	Ecopro	SK	🇰🇷	●	
	Sigma – Grota do Cirilo	Feasibility	Spod.	Mitsui	JPN	🇯🇵	●	
MEX	Bacanora Minerals – Sonora	Feasibility	Li2CO3	Nextview New Energy Lion	CHN	🇨🇳	●	
			Li2CO3	Hanwa Co	JPN	🇯🇵	●	
CHN	Ganfeng	Producing	LiChem	LG Chem	SK	🇰🇷	●	
CHN	Ganfeng	Producing	LiOH	Tesla	US	🇺🇸	●	
CHN	Ganfeng	Producing	LiChem	BMW	DEU	🇩🇪	●	
MLI	Birimian		Spod.	General Lithium	CHN	🇨🇳	●	
ZWE	Prospect Resources - Arcadia		Rock	Sinomine	CHN	🇨🇳	●	
MLI	Kodal Minerals - Bougouni	Feasibility	Rock	Suay Chin	SGP	🇸🇬	●	
DRC	AVZ Minerals - Manono		Rock	Guangzhou Tinci	CHN	🇨🇳	●	
			Rock	Beijing Nat Batt Technology	CHN	🇨🇳	●	
NAM	Desert Lion Energy - Rubicon		DSO	Jiangxi Jinhui Lithium	CHN	🇨🇳	●	



37 offtake deals
76% from Asia
51% Chinese
8% Europe

55%
Feedstock Supply Deal





POLITICAL SUPPORT

European Intervention & Protectionism Is On Its Way

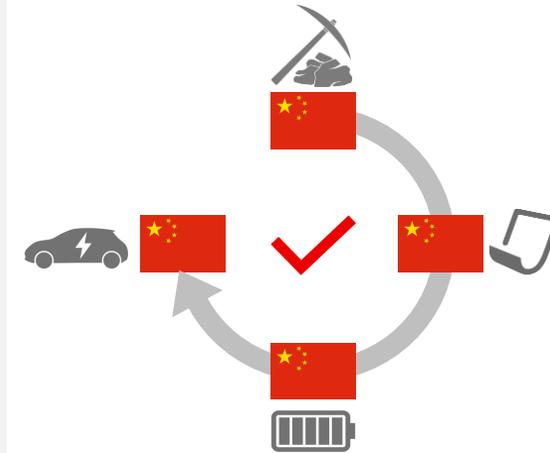


Patrick Pouyanné - CEO Total

“I will not launch the group and Saft in operations worth several billion euros if in the end we do not have the **fair competitive framework** between us and others”

“Today, if you want to provide an electric vehicle in China with a battery, it must be built in China by a Chinese manufacturer”

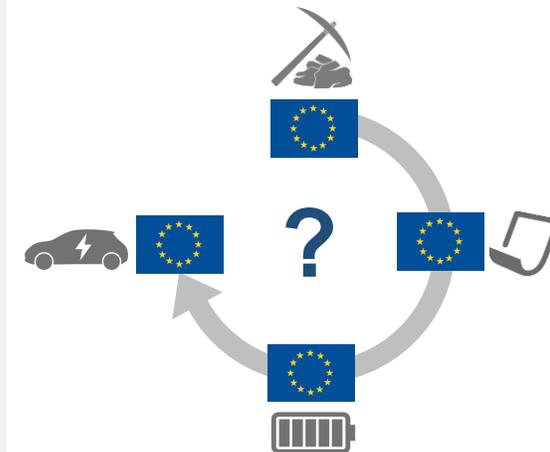
“The dialogue we're having with European governments is to know if we can **protect ourselves** like that in Europe.”



Maros Sefcovic - Vice President of the European Commission

“The European EV battery market could come to be worth 250 billion euros annually by 2025”

“We are ready to discuss ... **financial assistance** – be it under the Important Projects of Common European Interest (IPCEI) or under Public Private Partnerships with the **European Investment Bank (EIB).**”



Germany Leading European Efforts For Mass Electrification



*“Germany has set aside 1 billion euros to support battery cell production in order to **reduce the dependence** of German carmakers on Asian battery suppliers and **protect German jobs**”*



Angela Merkel
German Chancellor

*“I think we should, within the framework of our own strategic abilities, work with other European countries on our **own battery cell production**”*



Peter Altmaier
German Economy
Minister

*“The goal is to cover around **30 percent of global demand** for battery cells from German and European production by 2030”*



Christian Hirte
Deputy Economy
Minister

*“We have a concentration of **risk in the automobile sector**...The industry is too dependent on the combustion engine...The government therefore wants to help the sector in its efforts to diversify”*



EU Finally Focus on Strategic Raw Materials



“EU accelerating plans to develop lithium mining & refining capacity”

- EU push to develop a **strategic value chain** for manufacturing EV LIBs inside Europe
- Europe now wants to **secure access** to the raw materials
- Inside Europe, attention has focused on mapping out the raw materials available on **European soil**
- *“There are new projects for production in Europe. Mines are opening or re-opening and there is prospection going on to open some new ones”*



EU’s Critical Raw Materials

- **CRM** – strategic classification of raw materials allows for subsidies and support
- Whilst lithium is not currently on the CRM, movement in the space suggests the importance and dynamic of supply in raw materials is readily recognized

Olga Garcia Garcia, Minister of Economy & Infrastructure of Extremadura – Spain

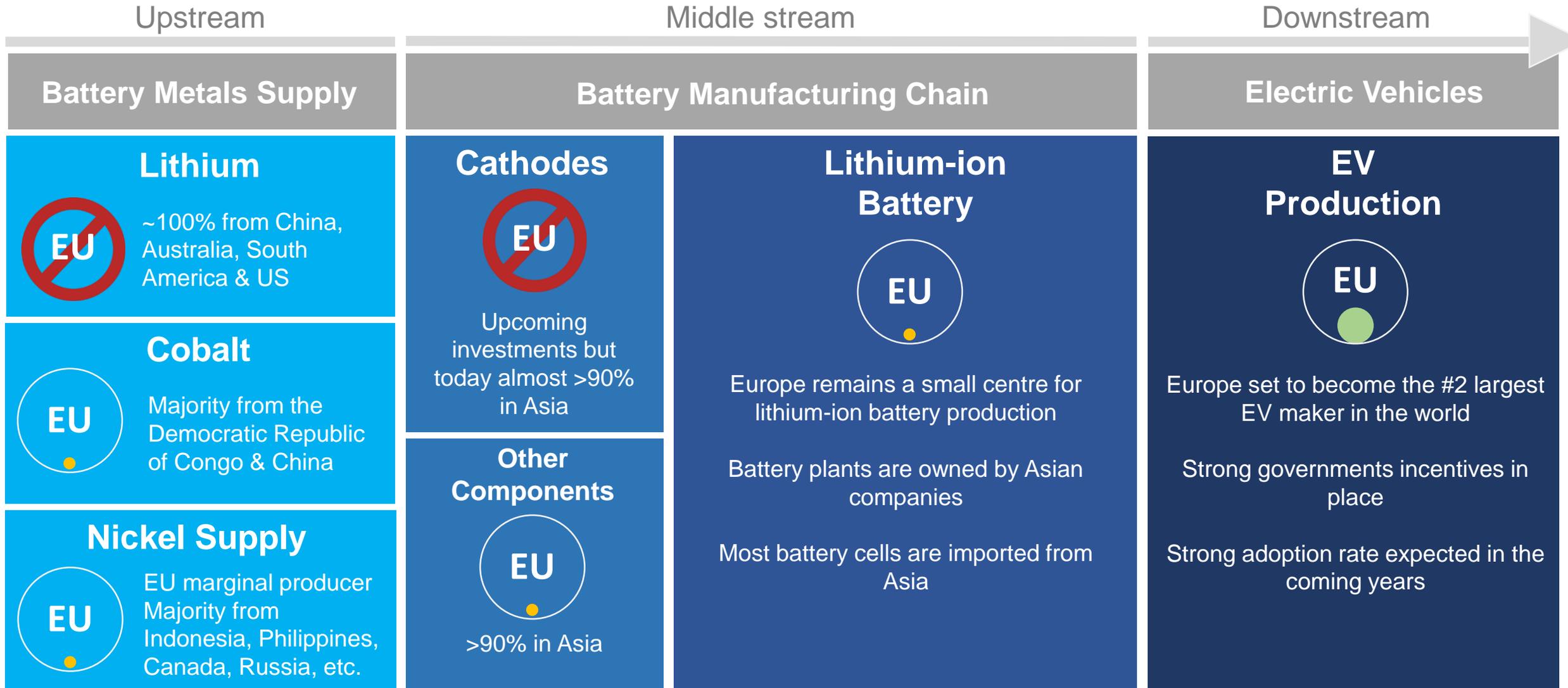


“Mining in Extremadura (Spain) is a key strategy in the energy transition”

An aerial photograph of a mining or construction site. The ground is a mix of light-colored soil and dark, possibly mineral-rich, patches. A large pile of grey, angular rocks or gravel is on the right side. Two Volvo excavators are visible: one in the upper right and one in the lower right, both with their arms extended. A yellow wheel loader is positioned on the left side. The text "EUROPEAN BATTERY METALS" is overlaid in the center in a large, white, sans-serif font.

EUROPEAN BATTERY METALS

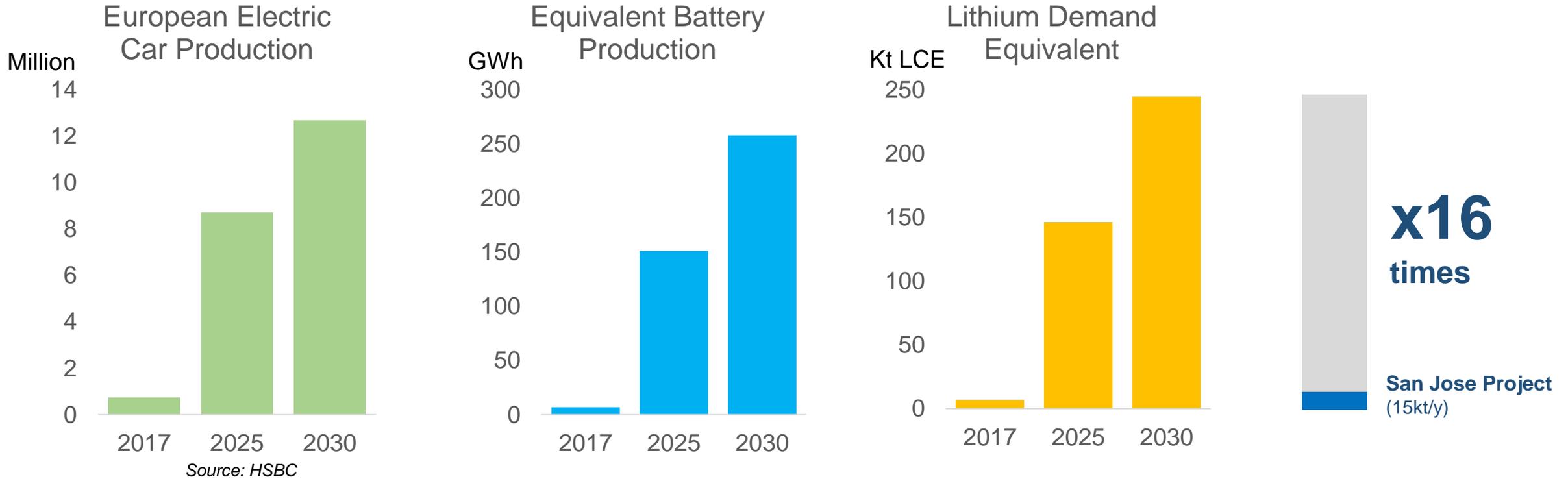
Today, Europe is Poorly Integrated in the Li-ion battery Supply Chain



A Fully Integrated European Lithium-ion Battery Supply Chain



The EU is pushing to have a fully integrated domestic supply chain, from producing EVs all the way back to producing raw materials. What would it mean for domestic lithium demand?



Notes: Electric cars include HEV, PHEV and EV. Average battery pack for EV is 33kWh in 2017, 45kWh in 2025 and 52kWh in 2030. PHEV average battery pack around 12kWh, HEV around 1kWh. LCE consumption per kWh averaging 0.9Kg.

Many Paths to Develop an Integrated European Supply Chain

Lithium-ion
Battery
Supply Chain



Today

Example 1



Example 2



Tomorrow

European Mine



Co-owned /
co-developed conversion
plant in the EU



Collaboration with
a cathode maker



Cell and Battery pack manufactured in Europe by
a Japanese producer



Battery fitted in a
European EV

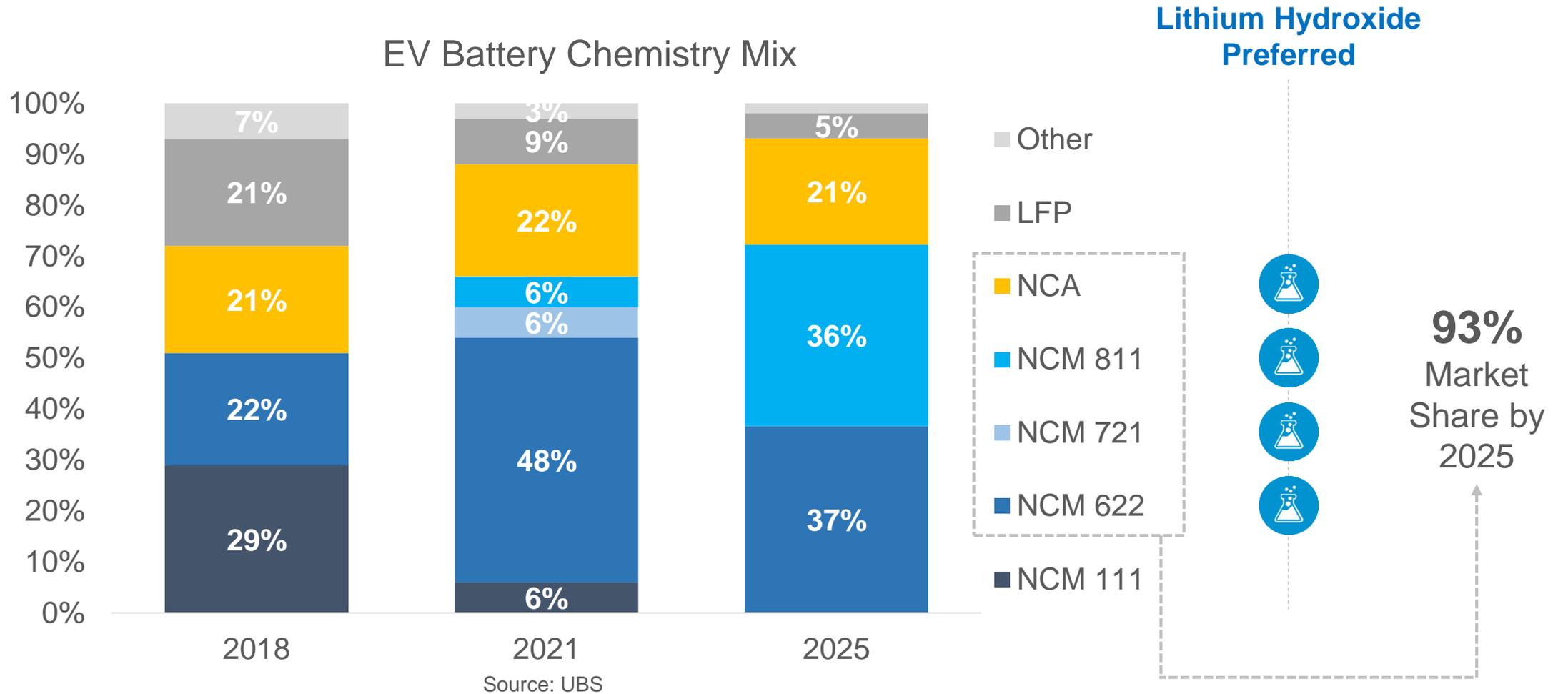


Example of
multi-level
collaboration

In the Future

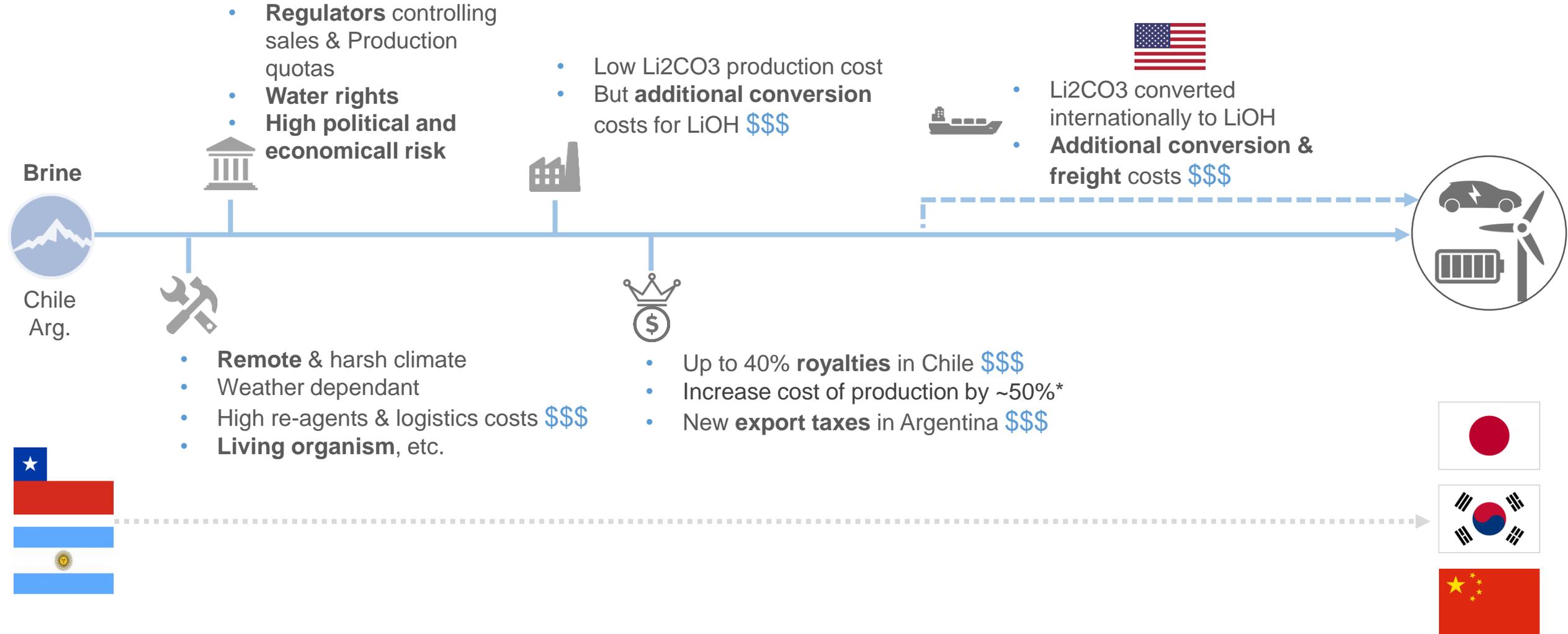


Cathode Evolution: Nickel-rich NMC to Dominate the Industry



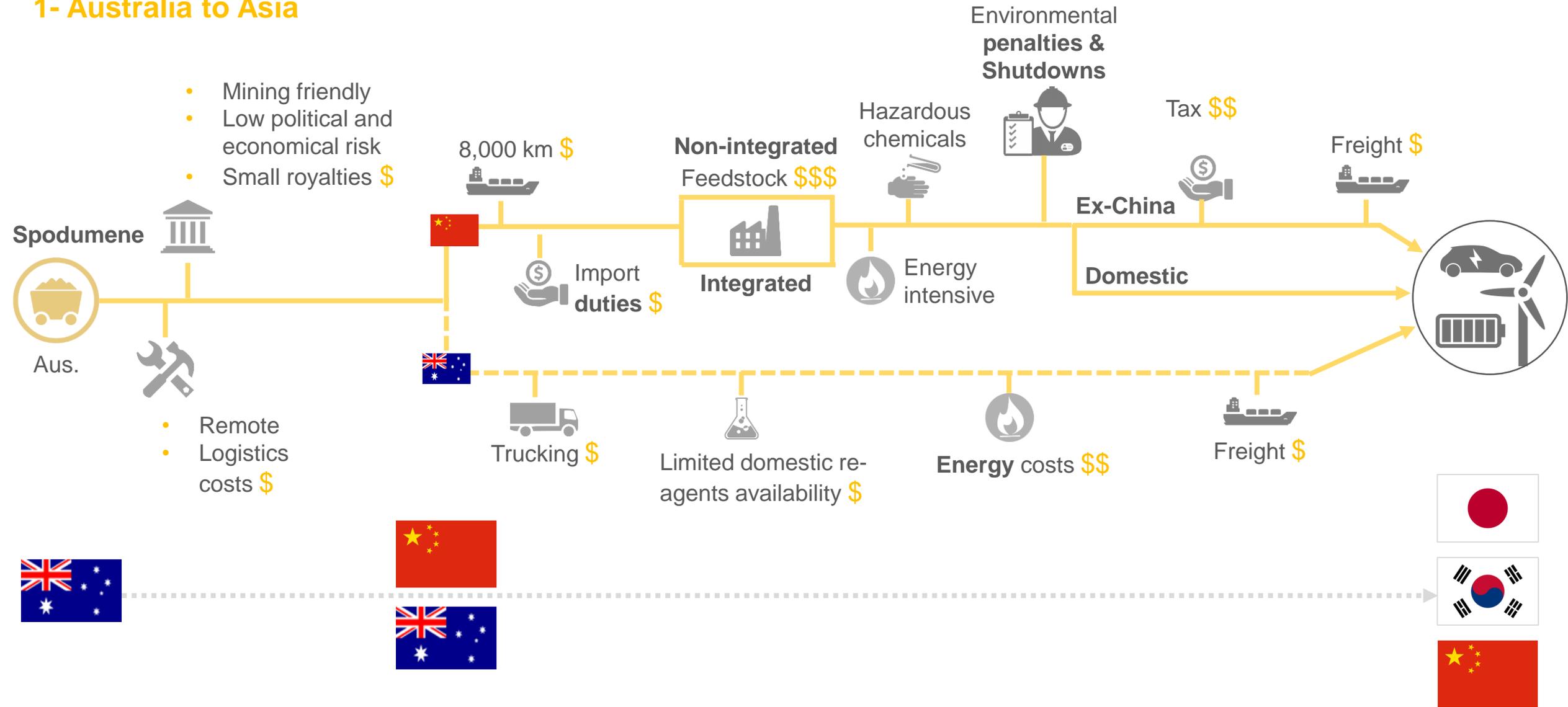
Many Paths to Market but Integration & Proximity is Key

1- South America to Asia



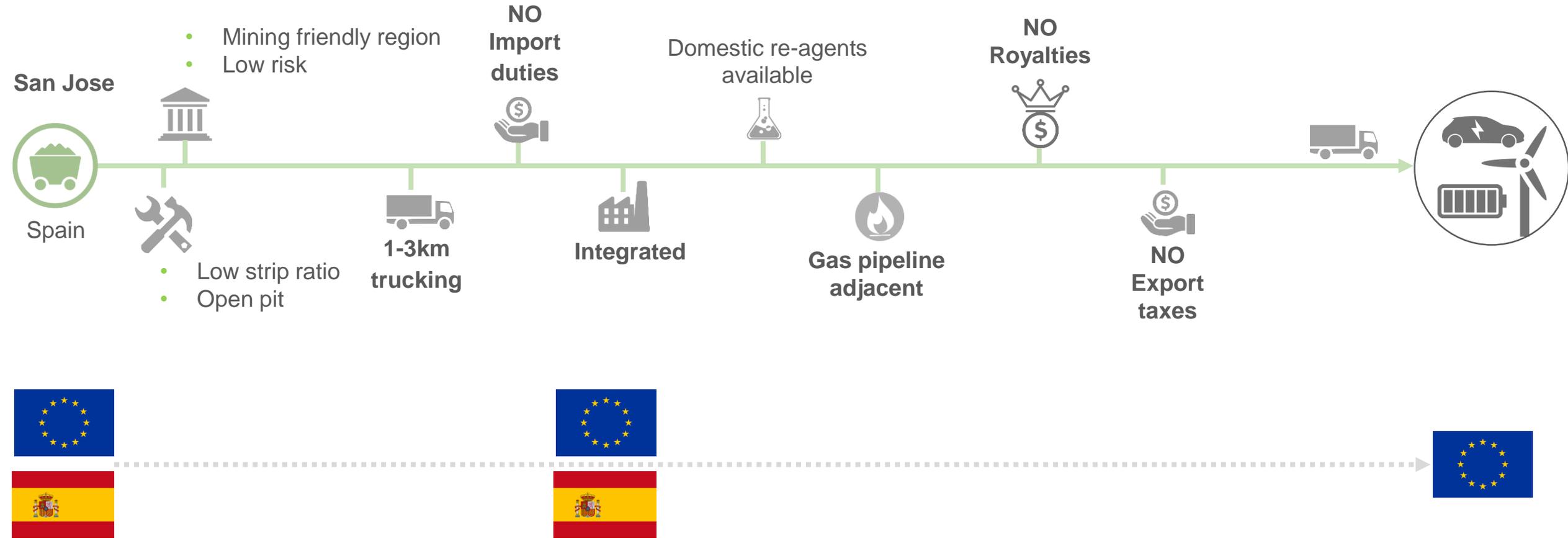
Many Paths to Market but Integration & Proximity is Key

1- Australia to Asia



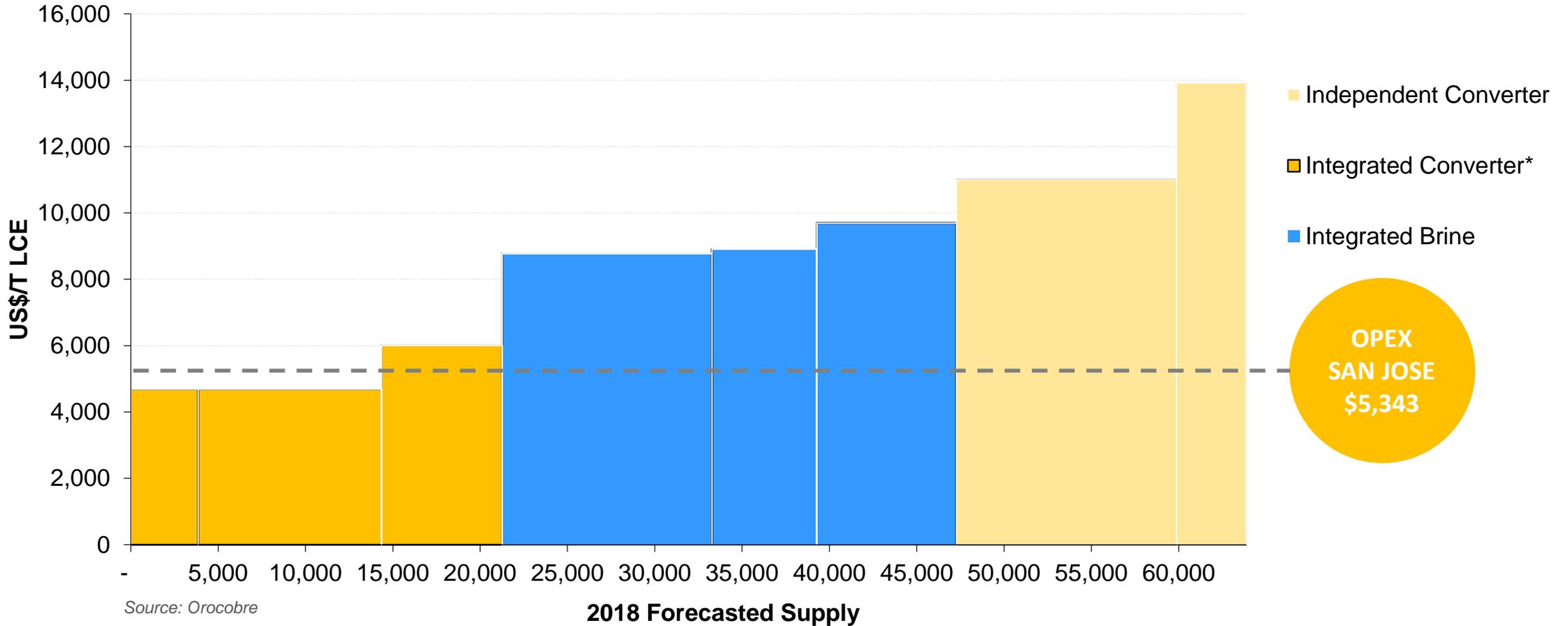
Many Paths to Market but Integration & Proximity is Key

3 – Europe to Europe



Li Hydroxide – Integrated Mineral Feedstock to Dominate

Hydroxide Cost Curve, Post-Taxes & Royalties



Source: Orocobre



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San Jose Lithium Project

Disclaimer

Scoping Study – Cautionary Statement

The Study referred to in this announcement is a preliminary technical and economic investigation of the potential viability of the San Jose Lithium-Tin Project. It is based on low accuracy technical and economic assessments, (+/- 35% accuracy) and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage; or to provide certainty that the conclusions of the Study will be realised. The Production Target referred to in this announcement is based on 91% Indicated Resources and 9% Inferred Resources for the life of mine life covered under the Study. In accordance with the twenty four (24) year mine plan incorporated into the Study, the first three (3) years of production (covering payback period) will come 96% from Indicated Resources. For full details of the Study refer to ASX announcement 29 November 2018.

Competent Persons Statement

Snowden Mining (2017) and Cube Consulting (2018) estimated the total Mineral Resource for the San Jose lithium deposit using Ordinary Kriging interpolation methods and reported above a 0.1% Li cut-off grade. Full details of block modelling and estimation are contained in the ASX announcement dated 5 December 2017 and updated 22 May 2018.

The Resource which supports the Scoping Study was announced to the ASX on the 23 May 2018. Infinity is not aware of any new information or data that materially affects the information included in this ASX release, and Infinity confirms that, to the best of its knowledge, all material assumptions and technical parameters underpinning the resource estimates in this release continue to apply and have not materially changed.

The resource information in this report that relates to the December 2017 and updates in May 2018, updated Mineral Resources is based on the information compiled by Mr Patrick Adams, FAusIMM CP (Geology) and Mr Adrian Byass B.Sc Hons (Geol), B.Econ, FSEG, MAIG. Mr Adams and Mr Byass have sufficient relevant professional experience with open pit and underground mining, exploration and development of mineral deposits similar to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Person(s) as defined in the 2012 Edition of JORC Code. Mr Adams has not visited the project area and has relied on the documented (Byass, 2016-2018, Peters, May 2017) drilling, logging and sampling techniques used by Infinity in collection of data used in the preparation of this report. Mr Adams is a Principal Geologist and a Director of Cube Consulting Pty Ltd and consents to be named in this release and the report as it is presented. Mr Byass is employed by Infinity as a geologist and has visited the site during pre and post drilling activities, and consents to be named in this release and the report as it is presented.

Production Target and Scoping Study: The information in this report that relates to Exploration Results is based on the information compiled or reviewed by Mr Adrian Byass, B.Sc Hons (Geol), B.Econ, FSEG, MAIG and an employee of Infinity. Mr Byass has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Byass consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

San Jose Lithium Project



Scoping Study*

Lithium Carbonate – Completed
Lithium Hydroxide – Completed

Feasibility Study

Underway

JORC Resource (reported above 0.1% Li cut-off)

111.2Mt* (#2 in the EU) (Ind. 59Mt, Inf. 52.2Mt)
>1.6Mt LCE

Life of mine strip ratio

<1.2:1

Average ROM (yr1-8)

0.85% Li₂O : 2.1% LCE*

Plant feedstock

1.4% Li₂O : 3.5% LCE*

Ownership

50% JV interest moving towards 75% JV interest

Project life

24 years
Average 13kpta* LC depletes <50% of JORC resource

Product - battery grade

Lithium Hydroxide: 13-16kt pa +56.5%

San Jose Lithium Project

Location: Extremadura – Spain

Market: Europe & Global



*See Disclaimer on previous slide



Fully Integrated Project - From Mining to Lithium Hydroxide

- 2nd Largest Lithium JORC in the EU
- EU & Spain: Low investing risk

- Brownfield project & long life project - potentially decades

- Open pit – low risk, cheap bulk mining

- Very low strip ratio <1.2:1

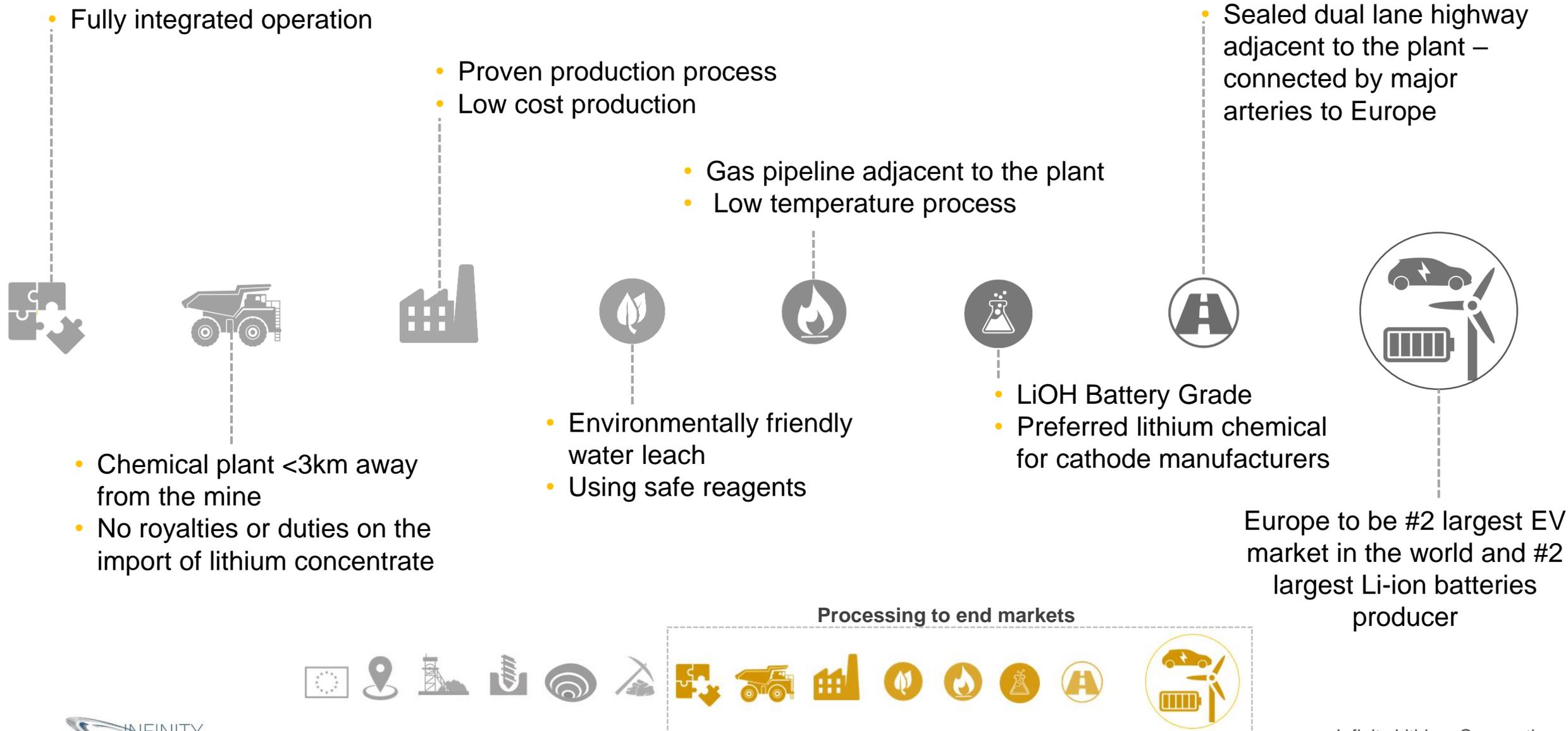
- 2.5h from Madrid via highway
- Extremadura – a proactive mining region

- JORC well supported ~12km of drilling completed

Mining



Fully Integrated Project - From Mining to Lithium Hydroxide



Scoping Study Project Economics* - Lithium Hydroxide

(100% Project Basis)

*See Disclaimer slide

NPV ₁₀ NPV ₁₀	Pre-tax	\$	US\$717m ⁽¹⁾ US\$1,017m ⁽²⁾	NPV ₈ NPV ₈	Post-tax	\$	US\$631m ⁽¹⁾ US\$905m ⁽²⁾
IRR	Pre-tax		51% ⁽¹⁾	IRR	Post-tax		37% ⁽¹⁾
Average OPEX			US\$5,343/t	CAPEX (Start-Up)			US\$288m ⁽³⁾
Gross Operating Cash Flow (1 st 10 years production)			US\$122m pa	Payback Period			2.3 years
Project Life			24 years	Resource (2 nd largest in EU)			1.6Mt LCE
Annual Production of lithium hydroxide			14-15kt pa	Annual ROM			1.25Mt pa



Fully integrated hard rock based project, from mining to producing battery grade lithium hydroxide, using a proven and low cost process, and generating high margins in a low risk environment.

Assumed Sales Price: (1) Average LOM LiOH US\$ 14,896/t
(2) Average LOM LiOH US\$ 17,733/t

Assumed CAPEX: (3) All CAPEX includes 10% contingencies
NPI CAPEX included at Start-up US\$11m (Inception to year 2)
Ongoing CAPEX US\$17m (year 3 to 7)

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Developing lithium production in Europe to
power a renewable future