

# ESG aspects of lithium production from brine in Latin America – SQMs sustainable development plan case study

DERA Industrieworkshop Lithium – SQM - Stefan Debruyne – June 23<sup>rd</sup>, 2022



# **Customary Note Regarding Forward-Looking Statements**

SQM (NYSE: SQM, Santiago Stock Exchange: SQM-A, SQM-B) is a global company engaged in strategic industries for human development, such as health, food, clean energy and the technology that moves the world.

This presentation contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as: "anticipate," "plan," "believe," "estimate," "expect," "strategy," "should," "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make concerning the Company's Sustainable Development Plan, business outlook, future economic performance, anticipated profitability, revenues, expenses, or other financial items, anticipated cost synergies and product or service line growth.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are estimates that reflect the best judgment of SQM management based on currently available information. Because forward-looking statements relate to the future, they involve a number of risks, uncertainties and other factors that are outside of our control and could cause actual results to differ materially from those stated in such statements, including our ability to successfully implement the Sustainable Development Plan. Therefore, you should not rely on any of these forward-looking statements. Readers are referred to the documents filed by SQM with the United States Securities and Exchange Commission, specifically the most recent annual report on Form 20-F, which identifies other important risk factors that could cause actual results to differ from those contained in the forward-looking statements. All forward-looking statements are based on information available to SQM on the date hereof and SQM assumes no obligation to update such statements, whether as a result of new information, future developments or otherwise, except as required by law.



About SQM
Sustainability
Lithium Market
Final Remarks

KEY FIGURES<sup>1</sup>

# **SQM** at a Glance: Business line Overview



### LITHIUM AND **DERIVATIVES**

~19% Market Share<sup>1</sup>

Volume: 115 kMT



**SPECIALTY PLANTS NUTRITION** 

~51% Market Share¹

Volume: 1,085 kMT

• Revenues: US\$990 mm



**IODINE AND DERIVATIVES** 

**POTASSIUM** 



**INDUSTRIAL CHEMICALS** 

Revenues: US\$2,247 mm

~31% Market Share¹

Volume: 13 kMT

Revenues: US\$495 mm

~1% Market Share<sup>1</sup>

Volume: 833 kMT

Revenues: US\$470 mm

~71% Market Share<sup>12</sup>

Volume: 139 kMT

Revenues: US\$122 mm







**IODINE AND DERIVATIVES** 



**POTASSIUM** 



**INDUSTRIAL CHEMICALS** 

2022 LTM<sup>4</sup> Revenues: US\$4.4 billion | 2022 LTM<sup>4</sup> Adjusted EBITDA<sup>5</sup>: US\$2.2 billion | 2022 LTM<sup>4</sup> Adjusted EBITDA Margin<sup>5</sup>: 51%

NFD/Adjusted EBITDA<sup>5</sup>: 0x | Moody's: Baa1 | Standard and Poor's: BBB+

<sup>1.</sup> Market share percentages have been developed by us using internal and external sources and reflect our best current estimates, which have not been confirmed by independent sources.

<sup>&</sup>lt;sup>2</sup> Market share in the industrial potassium nitrate market as of December 31, 2021.

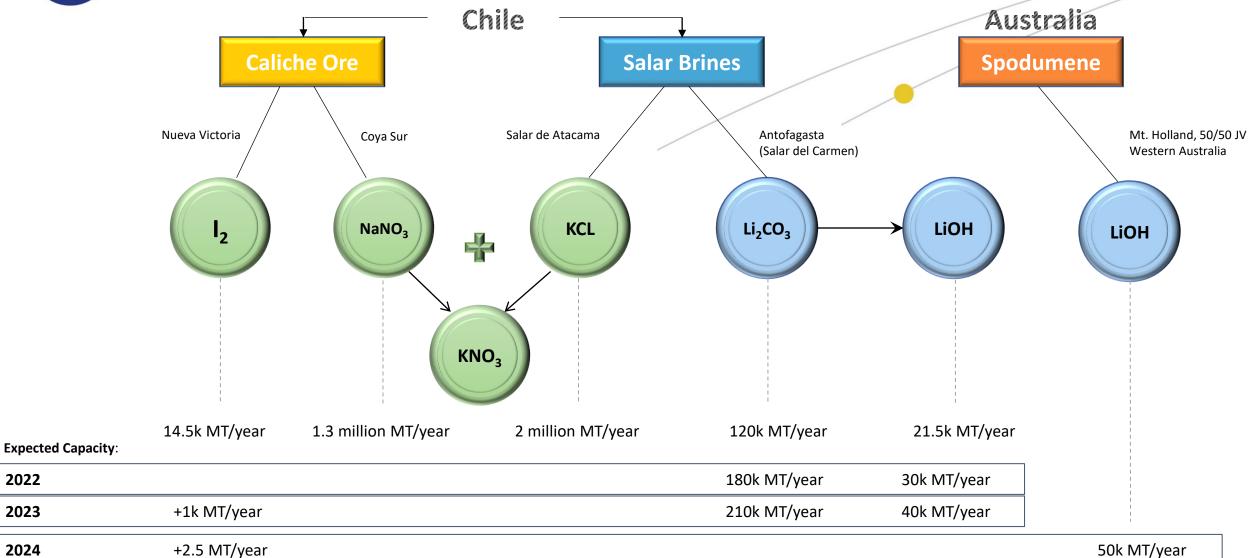
<sup>&</sup>lt;sup>3</sup> Contribution to gross profit for the twelve months ended March 31, 2022.

<sup>&</sup>lt;sup>4</sup> Last twelve months ended March 31, 2022.

<sup>&</sup>lt;sup>5</sup> Adjusted EBITDA = gross profit - administrative expenses + depreciation and amortization. Adjusted EBITDA margin = Adjusted EBITDA/revenues.



# **SQM** at a Glance: Products & Capacities

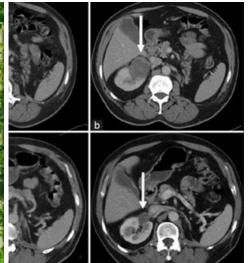




# **Unique product and value proposition**



Vertical farming
KNO3
Up to 90% less water
consumption in food
production



X-Ray Contrast Media
lodine
Essential element in
human health, nutrition
and technology



Thermal Solar Salts
NaNO3/KNO3
Solution for intermittency
challenge of renewable energy



Electromobility
Lithium
Decarbonizing Transportation

















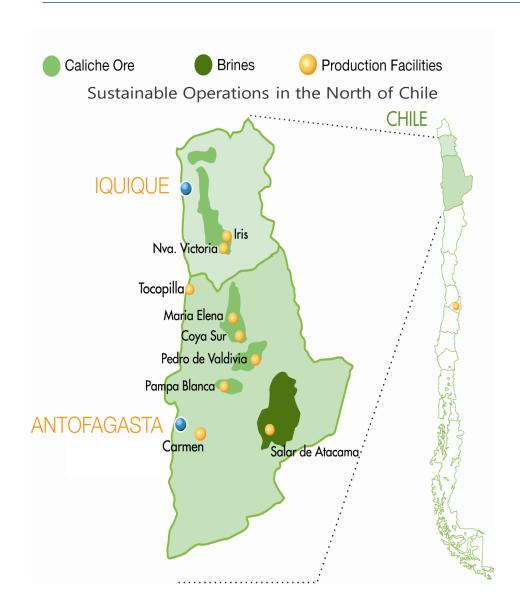


# PRESENTATION SQM ELECTRIC MINING FLEET – HUANCHACA RUINS - ANTOFAGASTA





# **Natural Resources**



### **NATURAL RESOURCES**

### ☐ CALICHE ORE

- Caliche ore is only found in Chile
- The world's largest deposits of **nitrates** and **iodine**
- Proprietary mining rights pursuant to exploitation concessions

### **□** SALAR BRINES

- High concentrations of potassium and lithium.
- High evaporation rates.
- Production rights are pursuant to a lease agreement with CORFO until
   2030.

### **□** PROJECTS ABROAD

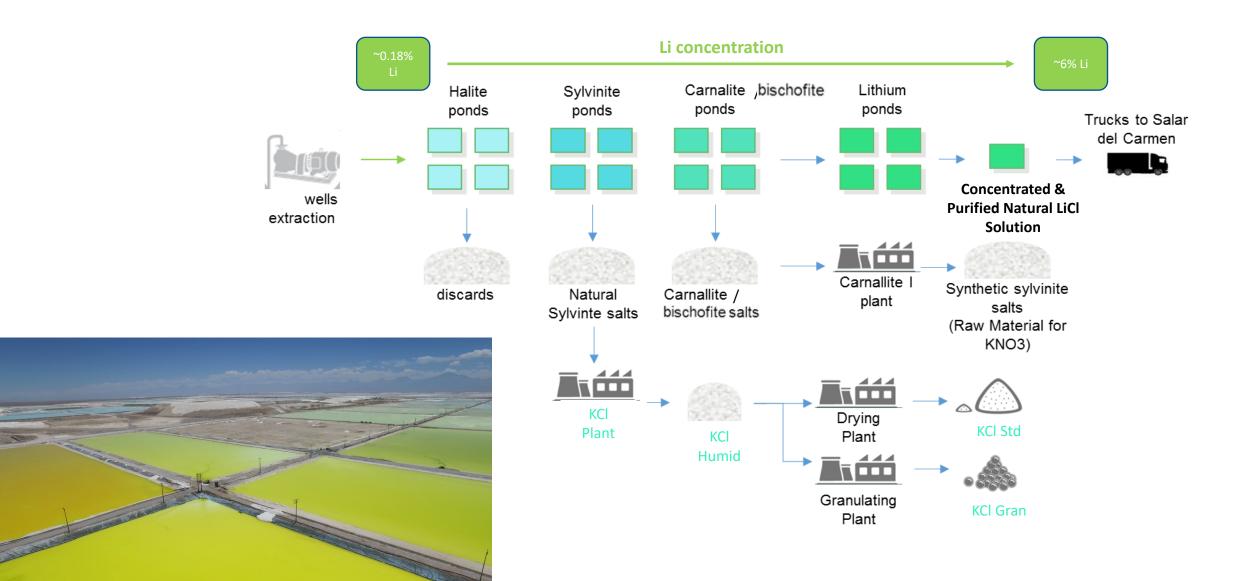
• COVALENT Lithium (Australia).

### **EXPERIENCE AND TECHNICAL KNOW HOW:**

- Over 50 years experience in Iodine and Nitrates.
- Over 20 years experience in Potassium and Lithium.



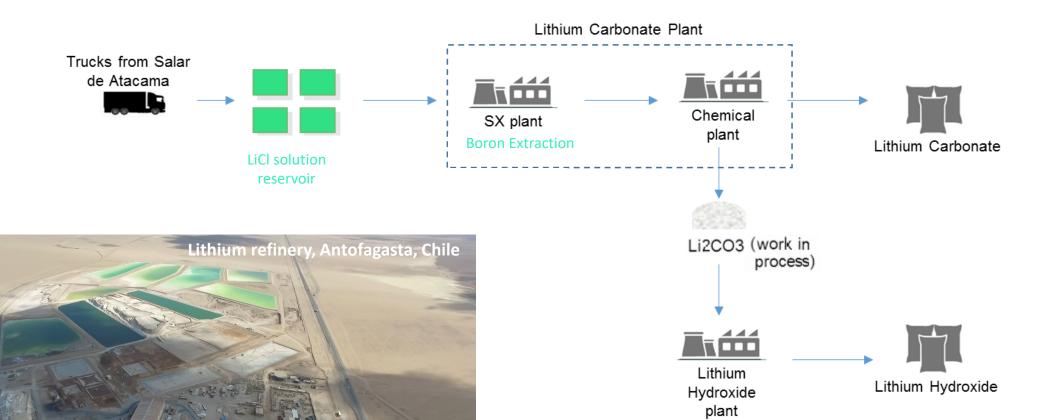
# **SQM Salar de Atacama Natural Lithium Chloride Production Process**







# **Antofagasta Lithium Refinery Operates on Recycled Waste Water Since 2012**





About SQM
Sustainability
Lithium Market
Final Remarks



"Companies have an obligation above and beyond the required laws and regulations to protect and promote integrated and sustainable operations for all who are involved or related to them. With renewed energy, we announce our own commitments from our Sustainable Development Plan". - Ricardo Ramos, CEO



# Our commitment to Sustainability



### **Continental water reduction**

40% by 2030 and 65% by 2040.



### **Brine extraction reduction**

Reduce brine extraction by 50% by 2028.



### **Emissions reduction**

Carbon neutral in the lithium, potassium chloride and iodine products by 2030, and in all of our products by 2040.



## **Waste reduction**

50% by 2025











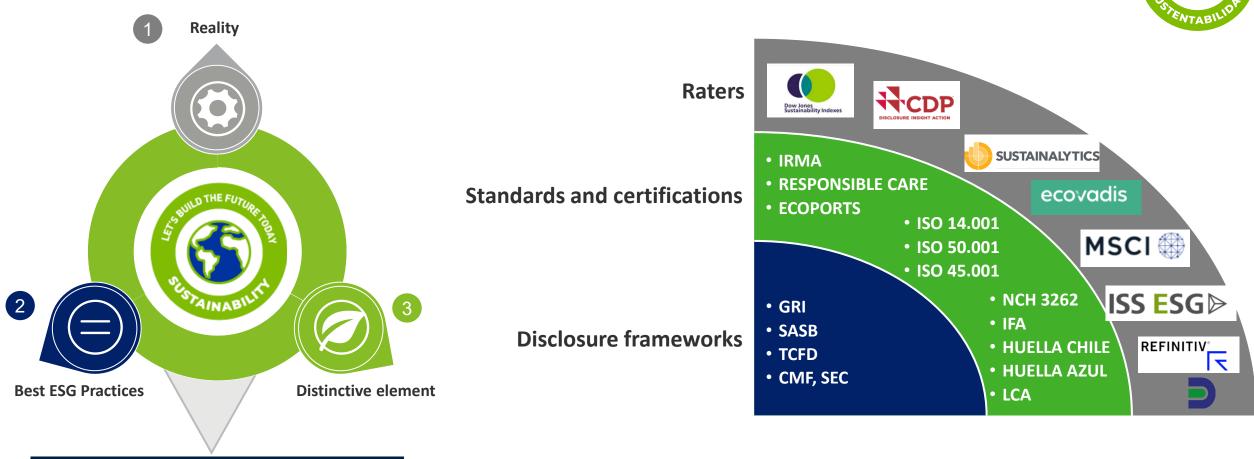
- Member of the United Nations Global Compact, Global Battery Alliance, DJSI Chile y DJSI MILA Pacific Alliance. We submitted our first disclosure report under CDP Climate change guidance and started external audit under IRMA.
- We are working to certify in our Carmen Lithium facilities, Salar de Atacama and in Coya Sur under ISO 14,001 during this year.
- As part of Race to Zero initiative and our aim to reduce our logistics carbon footprint, we have established an ambitious agenda to develop high tonnage transportation via electric trucks. This agenda considers several pilots in 2022 of different trucks that will perform tests in our operations.

 Last month we published our audited 2021 Sustainability Report under GRI and SASB standards.



# **ESG Reporting and certifications**





### **CORPORATE ESG CERTIFICATION STRATEGY**

Integration of different requirements and generation of synergies between areas



# S&P Global

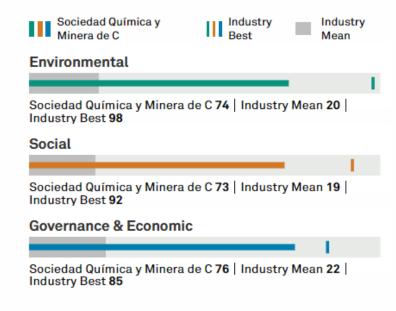
# The Sustainability Yearbook - 2022 Rankings

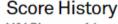
# Sociedad Química y Minera de Chile S.A.

TICKER: SQM Industry: CHM Chemicals Country: Republic of Chile

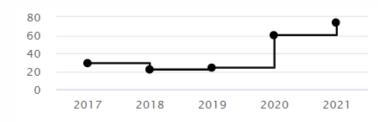
**ESG Score** 

74





Y/Y Change: 14



Last Updated: November 12, 2021. Updated annually or in response to major developments.

Data Availability: Very High



# **Transparency and Traceability**

www.sqmsenlinea.com

Online monitoring portal for the Salar de Atacama



### Available Data:













rine Industrial Wa

Meteorology

Hydrogeological environmental monitoring

A unique system in the national lithium industry for continuous collection of data for a better understanding of the Salar de Atacama behavior over time.

Publicly available as a verification tool of extraction obligations compliance, based on established operational rules to ensure the sustainability of the Salar de Atacama and its surroundings.

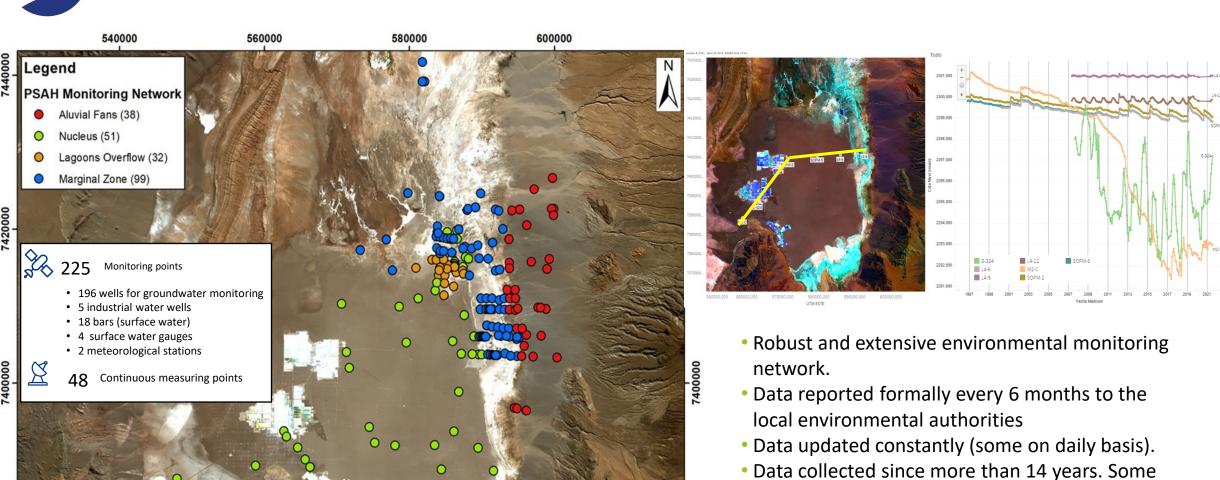




560000

580000

# Hydrological environmental monitoring system



600000

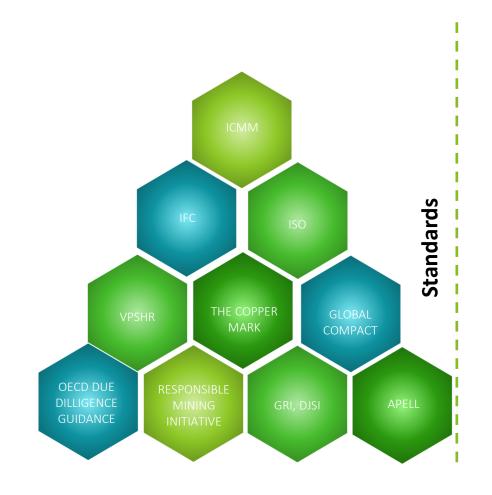
**PSAH**: Hydrological Environmental Monitoring Plan (for its acronym in Spanish)

monitoring points have up to 25 years of data

available.

# **IRMA Standard- Context**



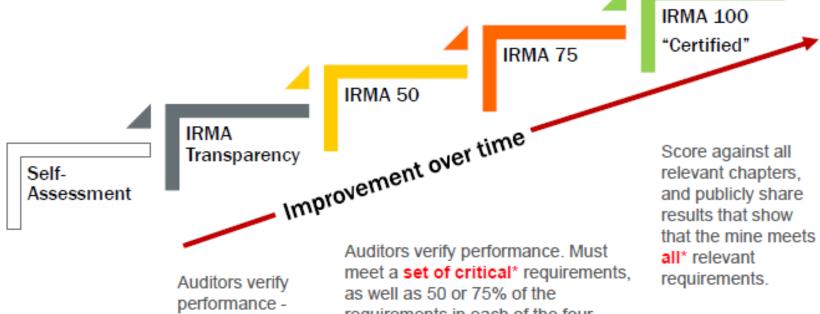






# IRMA Achievement Levels





Mines can selfscore. May opt to share publicly.

may be one chapter, all or something in between. Publicly share results.

requirements in each of the four Principle areas of the Standard. Must share results publicly.

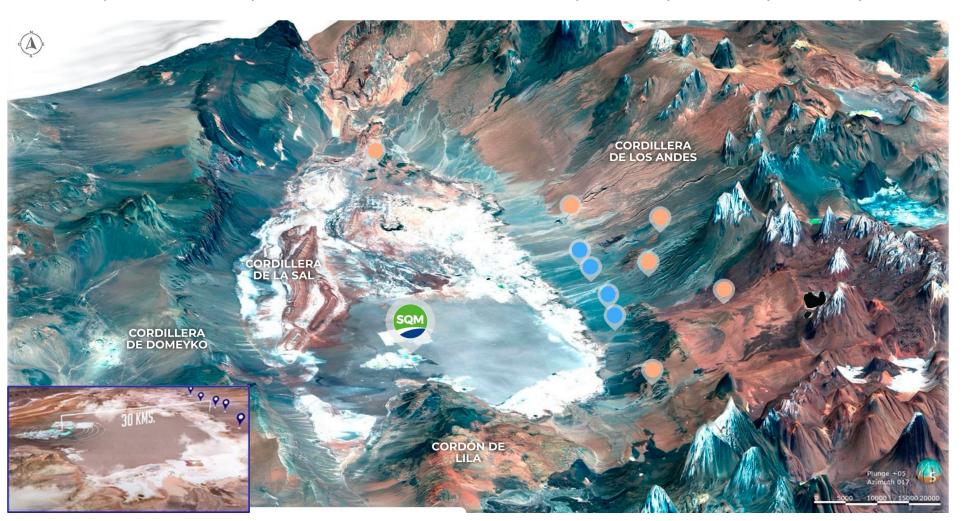
\*some minor nonconformity allowed if timebound corrective action plan in place

\*some minor nonconformity allowed if timebound corrective action plan in place



# Salar de Atacama – The origin of our lithium

We operate in a unique environment and take our responsibility for it very seriously



- The Salar de Atacama is a salt encrusted depression within which lies an underground deposit of brine.
- Our brine extraction happens in the South-West of the nucleus more than 30 km away from the local communities.
- Local communities are located 100 to 1,000m higher in altitude than the nucleus.



# Salar de Atacama – Hydrology Video







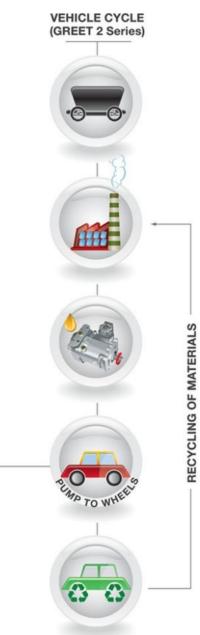
### GREET® Model

The Greenhouse gases, Regulated Emissions, and Energy use in Technologies Model

The GREET model is a one-of-a-kind analytical tool that simulates the energy use and emissions output of various vehicle and fuel combinations. Sponsored by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy. GREET offers two free platforms to use: the GREET.net model and the GREET Excel model.

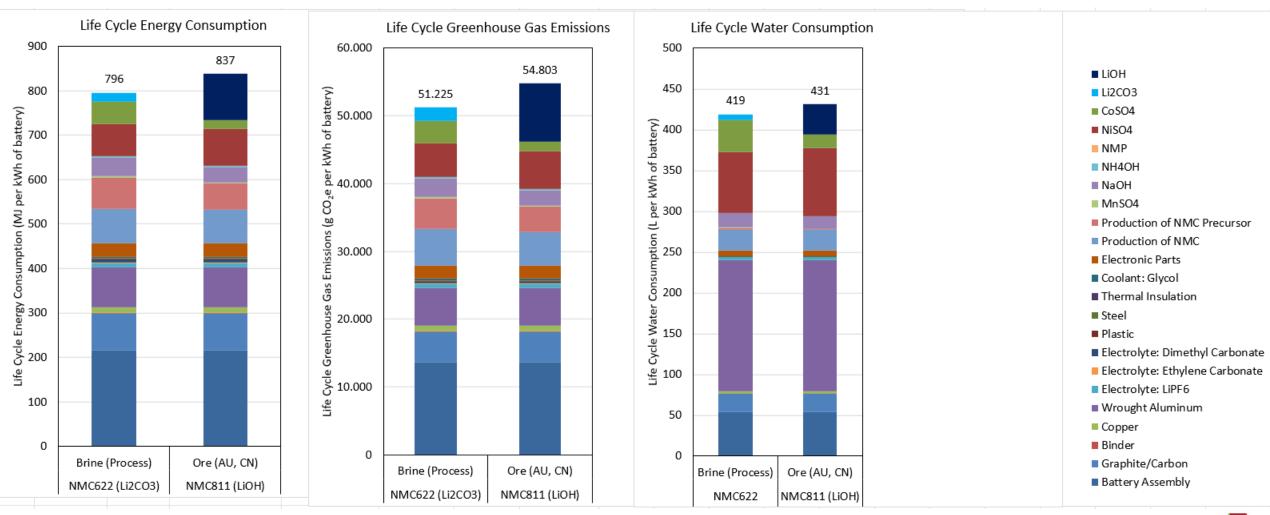
To get a complete picture of the energy and environmental impacts of a technology, it is important to consider the full life cycle – from well to wheels for fuels and from raw material mining to vehicle disposal for automobiles.

**WELL TO PUMP** 





# Footprint of Medium Nickel Cell (SQM brine Li<sub>2</sub>CO<sub>3</sub>) vs High Nickel Cell (AU spodumene converted in Sichuan)





- About SQM
- Sustainability
- Lithium Market
- Final Remarks







### **Global Lithium Chemical Market**

- Lithium market demand growth is expected to be ~30% in 2022, supported by continued growth of EVs sales around the world. During 1Q2022, EVs sales in China were over 125% higher than those reported during 1Q2021.
- Strong demand growth and tight supply have pushed prices to record high levels.
- Lockdown measures in China could have some impact on the volumes during 2Q2022, however, the market is expected to recover during 2H2022.

### **SQM lithium 2022**

- Expected sales volumes of at least ~140,000 tons for 2022.
- 2022 sales contracts: 50% contracted at variable price, 30% not contracted, 20% contracted at fix or variable price with ceiling:
  - most of fixed price contracts have been renegotiated to reflect the current pricing environment;
  - variable price contracts reflect prevailing market price with a delay of up to 3 months.



# Projects in development 2022-2024:

- Mt. Holland project, total CAPEX of ~US\$700 million
- Carmen Lithium Plant expansions to reach 210.000 MT and 40,000 MT of lithium carbonate and lithium hydroxide capacity, respectively, total CAPEX of ~US\$250 million
- Pampa Orcoma project to add 2,500 MT of iodine capacity and 320,000 MT of nitrates salts

2022 total CAPEX: ~US\$900 million





# **Agreement with CORFO**

### <u>Payments<sup>1</sup></u>

Li <sub>2</sub> CO <sub>3</sub>		LiOH		KCL		
US\$/MT	% <sup>2</sup>	US\$/MT	% <sup>2</sup>	US\$/MT	% <sup>2</sup>	
< 4,000	6.8	< 5,000	6.8	<300	3.0	
4,000 – 5,000	8.0	5,000 – 6,000	8.0	300 – 400	7.0	
5,000 – 6,000	10.0	6,000 – 7,000	10.0	400 – 500	10.0	
6,000 – 7,000	17.0	7,000 – 10,000	17.0	500 – 600	15.0	
7,000 – 10,000	25.0	10,000 -12,000 25.0		>600	20.0	
> 10,000	40.0	> 12,000	40.0			

### Example

Lithium Average Price, US\$/MT	\$50,000		\$40,000		\$30,000	
Total Lease Fee Paid	%	US\$/MT	%	US\$/MT	%	US\$/MT
Li <sub>2</sub> CO <sub>3</sub>	34.7%	\$17,372	33.4%	\$13,372	31.2%	\$9,372
LiOH	33.5%	\$16,730	31.8%	\$12,730	29.1%	\$8,730
Potassium Price, US\$/MT	\$1,000		\$900		\$800	
Total Lease Fee Paid	%	US\$/MT	%	US\$/MT	%	US\$/MT
KCL	12.1%	\$121	11.2%	\$101	10.1%	\$81

### **Production Allowance**

- Total production quota until 2030: **349,553 MT of LME**
- Total in LCE: ~2.2 million MT

### Contribution to the Development & Communities

- Annual contribution of ~US\$11-19 million for R&D efforts
- Annual contribution of ~US\$10-15 million to neighboring communities of the Salar de Atacama
- Annual contribution of 1.7% of SQM Salar's sales per year to regional development

Source: Company.

(1) Effective as of April 10, 2018.

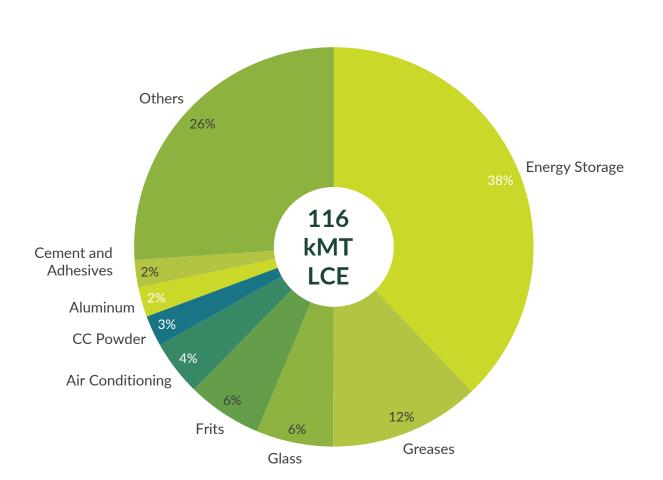
(2) % of final sale price

**CONFIDENTIAL** 

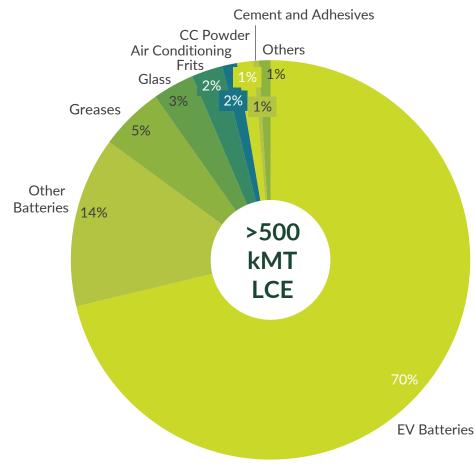
# **Demand**

# Li chemicals demand evolution by application

# Lithium chemical demand 2011 (%)



# Lithium chemical demand 2021E (%)

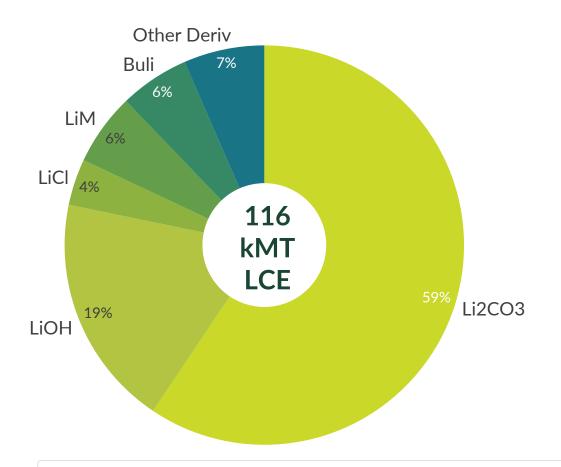


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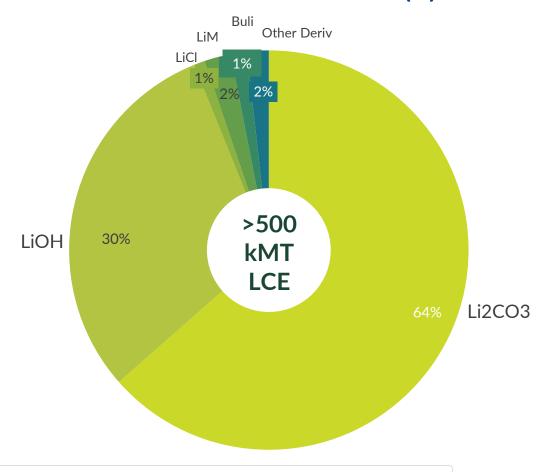
# **Demand**

# Li chemicals historical demand by product

# Lithium chemicals demand 2011 (%)



# Lithium chemicals demand 2021E (%)



SQM Lithium sales volume in 2021 ~101 kMT LCE



# for human plutions progress or human rogress Final Remarks

- SQM is a global company with balanced product portfolio:
  - Extensive know how and experience managing brines from Salar de Atacama.
  - Geographical diversification with lithium assets in Australia.
  - Reliable supply, high quality and long-term availability.
- New Lithium supply entering the market (greenfield and brownfield):
  - New supply/players will emerge with focus on the battery market.
  - Significant capital investment requirements & quality/production challenges.
  - Market will experience volatility and acting long term is fundamental.
- SQM's growth focused on taking care of our environment, communities and workforce.
  - Global leadership with a long-term expansion goal of +200k MT LCE.
  - Commitment to be carbon neutral in lithium by 2030.
  - Significant reductions in both brine extraction and freshwater consumption at Salar de Atacama.
  - > Fully integrated lithium producer from natural resource to chemical refining with full traceability.





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