

# Battery metals Investor day

Investing in critical metals to enable a more sustainable future

14 November 2023

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#### MINERAL RESOURCES AND MINERAL RESERVES

Sibanye-Stillwater's Mineral Resources and Mineral Reserves are estimates at a particular date, and are affected by fluctuations in mineral prices, the exchange rates, operating costs, mining permits, changes in legislation and operating factors. Sibanye-Stillwater reports its Mineral Resources and Mineral Reserves in accordance with the rules and regulations promulgated by each of the SEC and the JSE at all managed operations, development, and exploration properties.

#### **WEBSITES**

References in this presentation to information on websites (and/or social media sites) are included as an aid to their location and such information is not incorporated in, and does not form part of, this presentation.





Session	Speaker(s)	Presentation times (CAT)	Q&A sessions (CAT)	Comfort break (CAT)
1. Strategic overview	1. Neal Froneman	13:00- 13:32 32min		
2. Market outlook – SFA	<ul><li>2.1 Lakshya Gupta - Battery basics</li><li>2.2 Lakshya Gupta - Powertrain and EV battery trends</li><li>2.3 Thomas Chandler - Lithium market</li></ul>	13:32– 14:15 43min	14:15 – 14:30 10-15min	14:30 – 14:40 10min
3. Keliber lithium project	<ul> <li>3.1 Mika Seitovirta - Keliber lithium project: overview</li> <li>3.2 Pentti Grönholm - Geology, resources and exploration</li> <li>3.3 Markus Kivimäki &amp; Hannu Hautala – Detailed information</li> <li>3.4 Riku Sauso – Financial overview</li> <li>3.5 Sirpa Olaussen - ESG and biodiversity</li> </ul>	14:40 – 15:10 30min	15:10 – 15:20 10min	
4. Rhyolite ridge project	4. Robert van Niekerk	15:20 – 15:35 15min		
5. Closing remarks	5. Neal Froneman	15:35 - 15:40 5min	15:40 – 16:00 10min+	Done at about 16:00

# 1. Sibanye-Stillwater strategic overview

Neal Froneman: Chief Executive Officer, Sibanye-Stillwater





# Our 3D strategy provides a compelling framework for business success in a volatile world

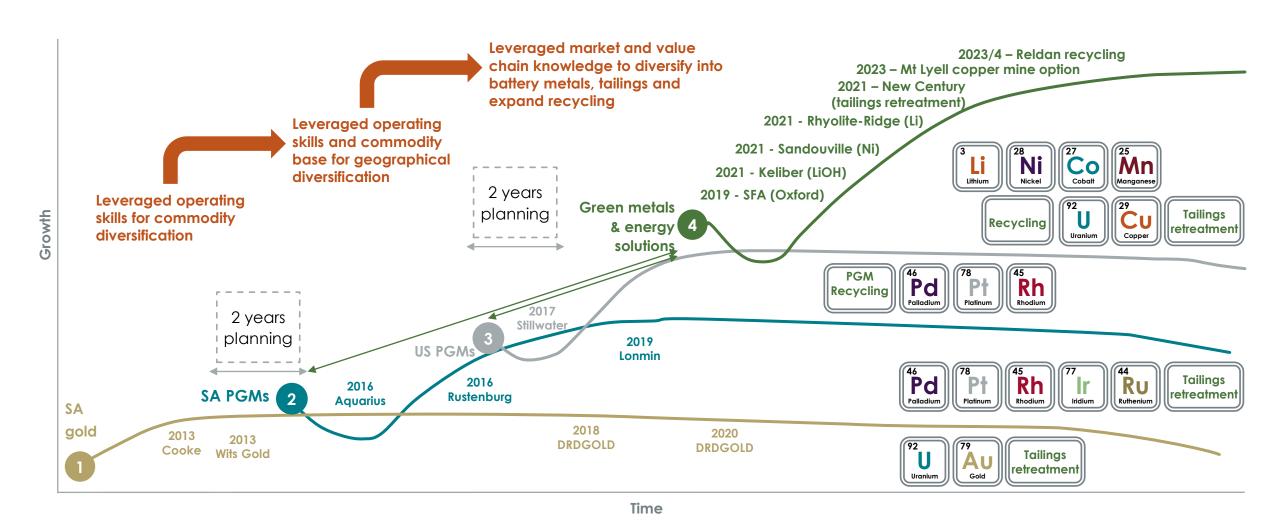




Structured for future relevance amidst disruption to the world environment, society and economies



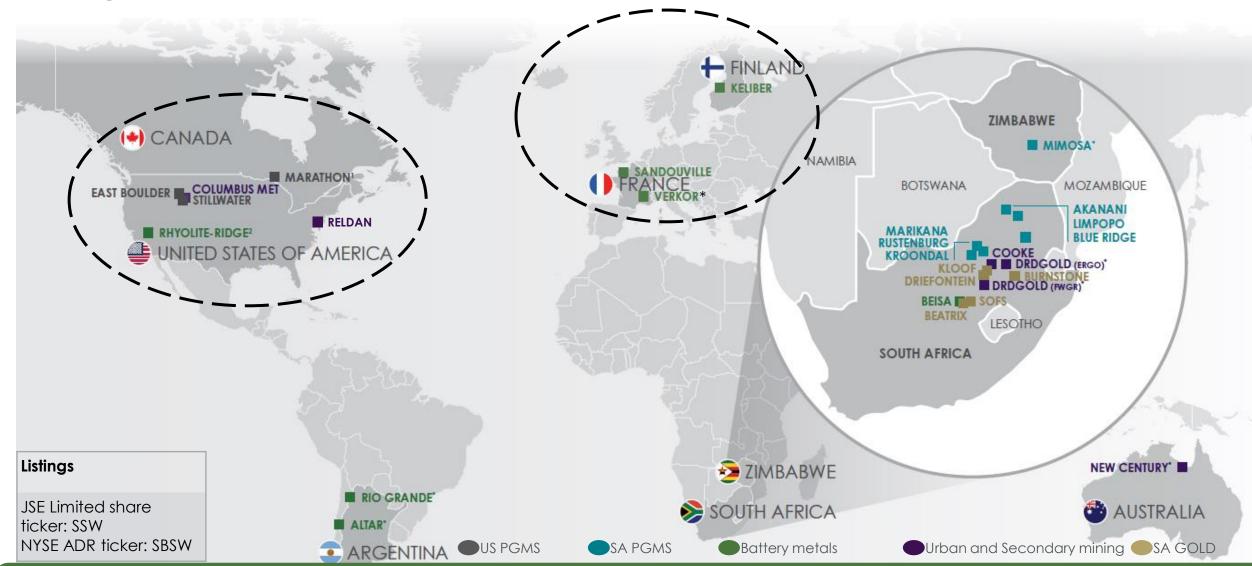




Pivoting for ongoing delivery of future value through our green metals and energy solutions strategy

# Global green metals portfolio





Green metals include PGMs, battery metals, uranium etc.

Source: Company information

\* Verkor's headquarter is located in Grenoble, but planned plant is to be located in Dunkirk (just north of Sandouville)

# The grey elephants – driving change



Increasing regulation is being passed to promote establishment of regional value chains
The geostrategic importance of access to Africa's mineral wealth is intensifying

At least 453,000 workers have participated in 312 strikes in the U.S. in this year alone\*; increasing social tension in South Africa

Increasing scarcity of raw materials is putting a premium on materials stewardship with recycling and recovery of resources from waste becoming global imperatives

Intelligent **Pandemics Multipolarity Ageing Adapting** culture and strategy to navigate the grey elephants sharply transforming the world **Angry Angry** people planet Big Inequality squeezes

New climate extremes are being recorded in 2023 accelerating the global call to action and the transition to a clean energy economy

By the end of 2022, 23% of global carbon emissions were covered by active carbon pricing initiatives with the percentage increasing exponentially

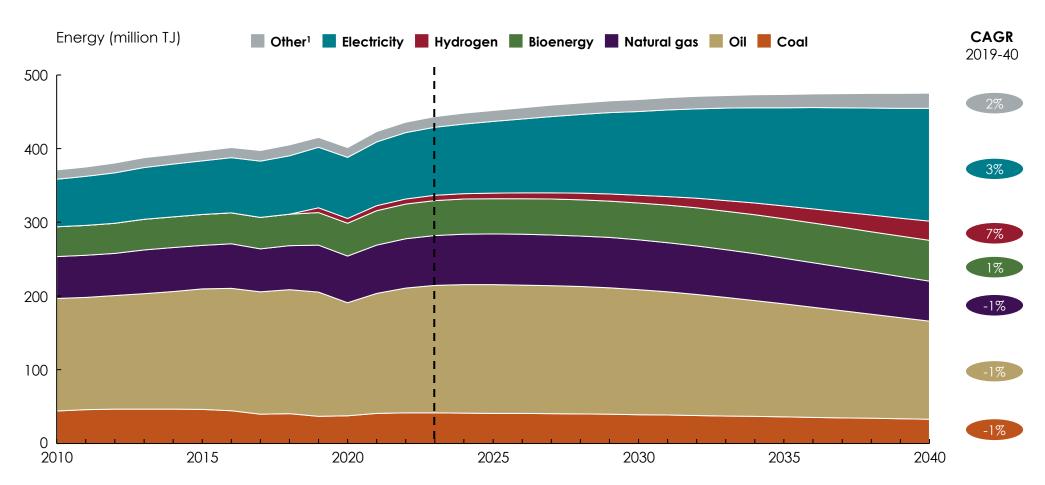
Highly probable, high-impact, yet often ignored factors that are shaping the 2020s



# Energy mix predicted to shift towards electricity and hydrogen



Share of electricity and hydrogen in final consumption expected to grow to ~40% by 2040

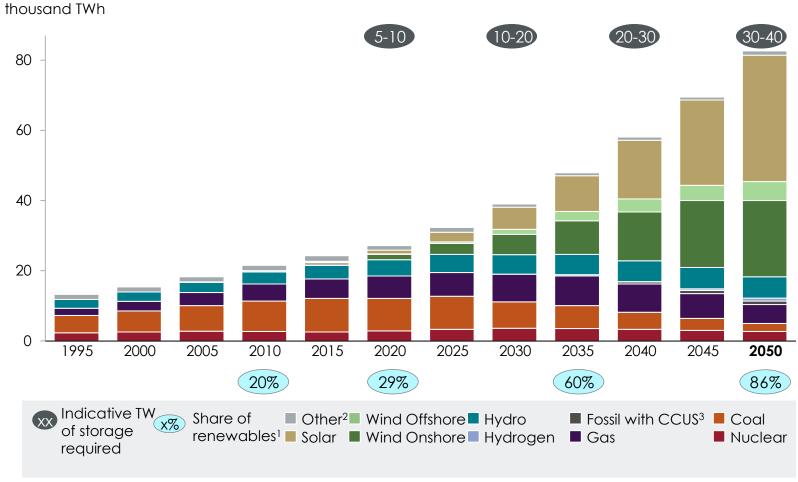


#### Steady transition to a clean energy economy

# Renewables expected to account for 80-90% of global power generation



#### Global power generation



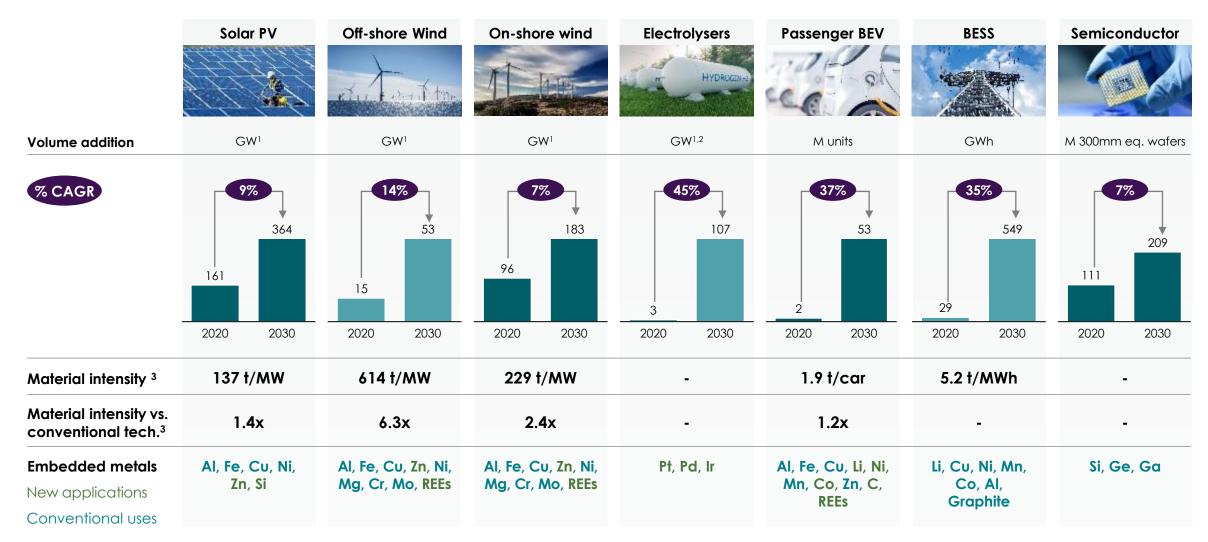
- Renewables projected to dominate
   share expected to double from 30
  to 60% in the next 15 years
- Majority of growth expected from solar and onshore wind given declining costs
- Thermal generation, especially gas, expected to continue meeting base load requirements

Further Acceleration Scenario

- 1. Includes solar, wind, hydro, biomass, BECCS, geothermal, and marine and hydrogen-fired gas turbines
- 2. Other includes bioenergy (with and without CCUS), geothermal, marine, and oil
- 3. Includes gas and coal plants with CCUS

# Clean energy technologies have high metals intensity





#### **Further Acceleration Scenario**

- 1. Energy capacity additions
- 2. Based on hydrogen capacity additions
- 3. Minerals and metals only. For Renewables: compared to coal/gas, in kg/MW, for BEV: compared to an internal combustion engine, in kg/unit;

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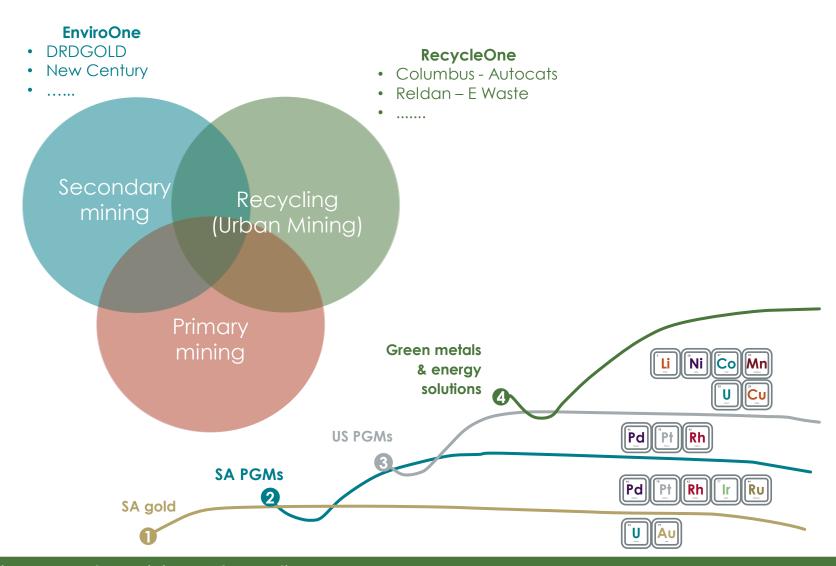
Highly probable, high-impact, yet often ignored factors that are shaping the 2020s



### **Embracing resource stewardship**



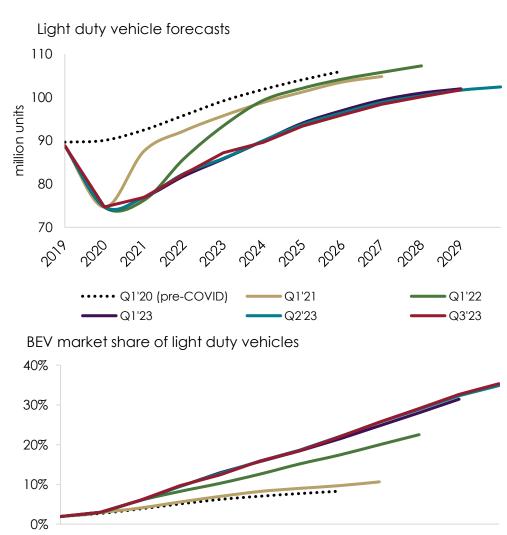
- Preserving scarce resources
- Aligned with key emerging regional strategies
- Meaningful progress in developing our portfolio



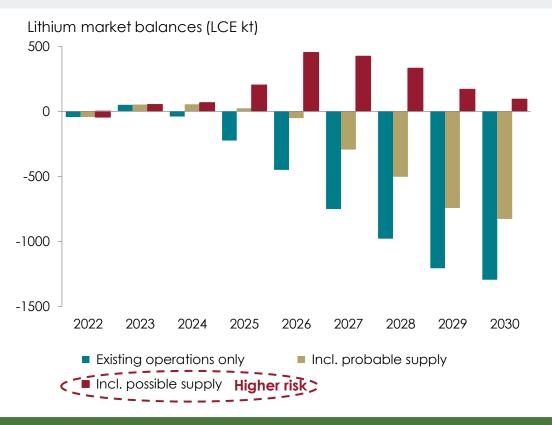
A unique balanced portfolio of primary mining, secondary mining and recycling

# Expected critical mineral deficits place BEV growth at risk





- Commissioning and ramp-up issues may keep the market tighter, with challenges already experienced at several new mines
- Risks heightened due to unconventional deposits and unproven processes and technologies
- Likely prolonged application of ICE vehicles



~28m BEV units at risk in 2030 based on existing operations; 18m units at risk including probable supply

Source: SFA (Oxford); LMCA/GlobalData

# The grey elephants – driving change



Increasing regulation is being passed to promote establishment of regional value chains

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By the end of 2022, 23% of global carbon emissions were covered by active carbon pricing initiatives with the percentage increasing exponentially

Highly probable, high-impact, yet often ignored factors that are shaping the 2020s



# Video: WATCH: Pete Stauber tears into Sec. Pete Buttigieg over EV mandates





Ignore internal combustion engines at your peril

# The grey elephants – driving change



Intelligent Increasing regulation is being passed **Pandemics** to promote establishment of regional value chains The geostrategic importance of access to Africa's mineral wealth is intensiving **Multipolarity Ageing** New climate extremes are being **Adapting** recorded in 2023 accelerating the global culture and call to action and the transition to a strategy to clean energy economy At least 453,000 workers have participated navigate the grey By the end of 2022, 23% of global carbon in 312 strikes in the U.S. in this year alone\*; elephants sharply emissions were covered by active increasing social tension in South Africa transforming carbon pricing initiatives with the the world **Angry Angry** percentage increasing exponentially people planet

Inequality

Big

squeezes

Highly probable, high-impact, yet often ignored factors that are shaping the 2020s



Increasing scarcity of raw materials is putting a premium on materials

stewardship with recycling

and recovery of resources from waste

becoming global imperatives

# Focused on the Western World's ecosystems



#### North America

- Joint venture agreement<sup>1</sup> for the Rhyolite Ridge lithium project in Nevada, USA
- US government Inflation reduction act (IRA) supportive: conditional commitment for a loan of up to US\$700m² for Rhyolite Ridge

#### France

- Acquired 100% of the Sandouville nickel refinery in France, which is ideally located to the European end-user markets
- Investing downstream in Verkor alignment with the French battery market ecosystem

#### **Finland**

- Acquired stake in the Keliber lithium project in Finland ahead of the lithium price surge
- Finnish government partnership through Finnish Minerals Group, which manages the Finnish state's mining industry shareholdings



Timely acquisitions in key markets supplying battery metals into nearby regional gigafactories





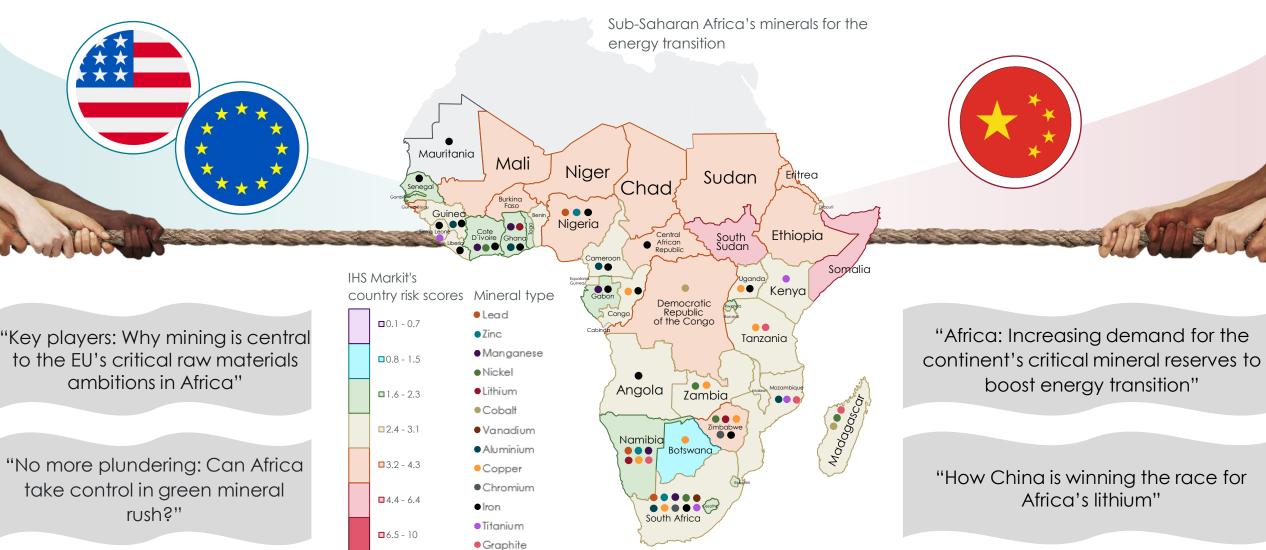


Source: CIC energiGUNE

- 1. Subject to various conditions including the award of relevant permits https://www.sibanyestillwater.com/news-investors/news/transactions/nevada-rhyolite-ridge/
- 2. U.S Government offers conditional commitment for a loan of up to US\$700 million for the Rhyolite Ridge lithium-boron project https://www.sibanyestillwater.com/news-investors/news/news-releases/
- ★ The Keliber lithium project transaction was announced on 23 Feb 2021 https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/

# Africa: a key player in the future energy transition





A competitive advantage to engage globally

# 2. Battery metals market overview SFA (Oxford)







# Consulting analysts in tomorrow's commodities and technologies



# **Lakshya Gupta**

Senior Market Analyst - Battery Materials

Thomas Chandler
Principal Lithium Supply Analyst























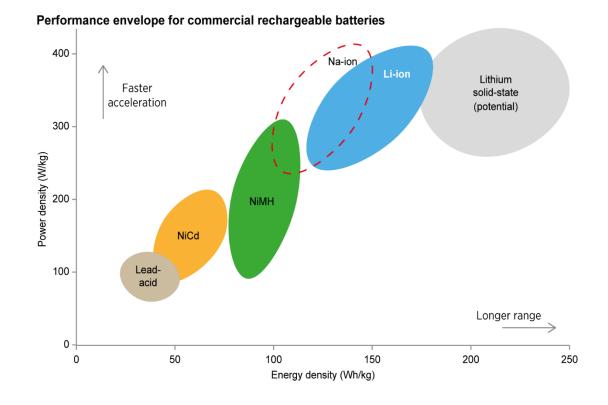




### Battery 101 Lithium-ion has become the industry standard

### LITHIUM-ION BATTERY

#### DISCHARGE CHARGE **ELECTROLYTE ELECTROLYTE SEPARATOR SEPARATOR** ANODE (-) ANODE (-) COPPER CURRENT COPPER CURRENT CATHODE (+) CATHODE (+) COLLECTOR COLLECTOR ALUMINIUM CURRENT ALUMINIUM CURRENT COLLECTOR COLLECTOR LI-METAL LI-METAL CARBON CARBON



Performance is determined by composition of cell components.

LITHIUM ION

LI-METAL

OXIDES

**ELECTRON** 

- Ions move through the separator during normal operation, between the two electrodes of the cell.
- Lithium-ion batteries have the highest potential performance relative to other commercial rechargeable batteries.
- Na-ion is an emerging battery chemistry, but range limitations could hinder deployment in EVs

SFA Oxford

Confidential: SFA (Oxford)

Source: SFA (Oxford)

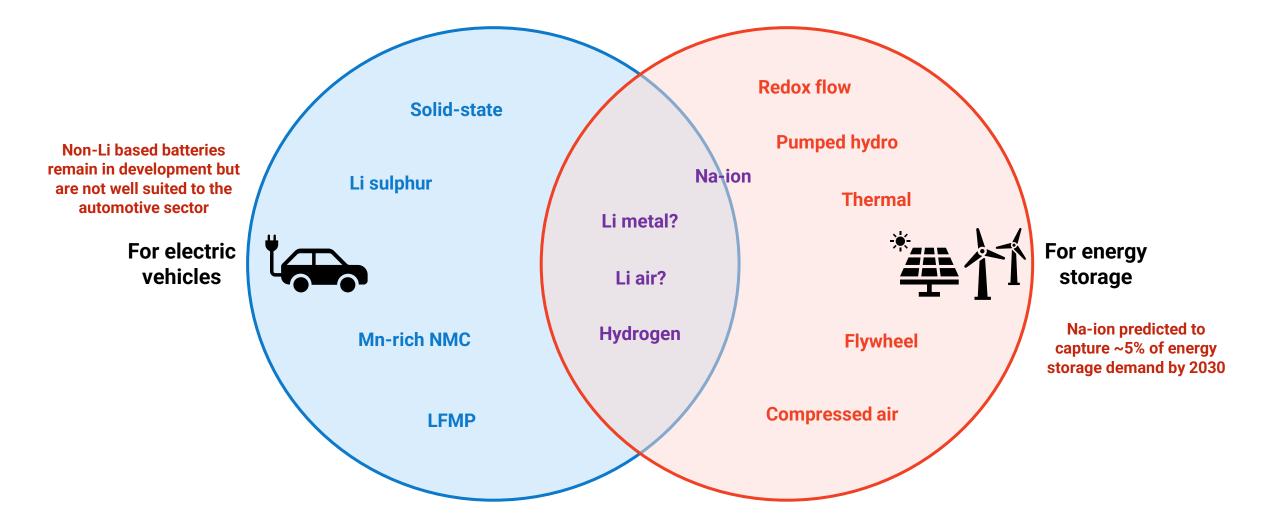
LITHIUM ION

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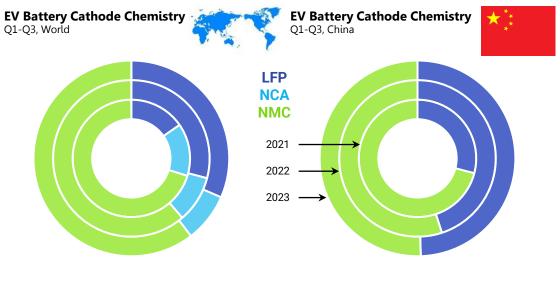
# Technology evolution Na-ion is the biggest threat but mostly in energy storage

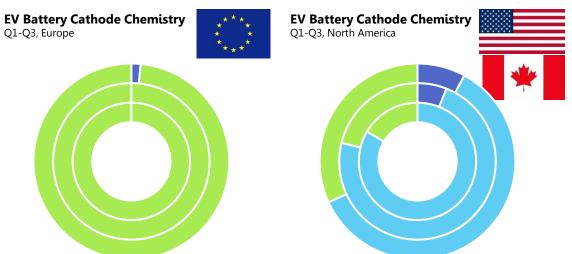


SFA Oxford

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### EV battery installations by chemistry LFP uptake remains limited outside of China



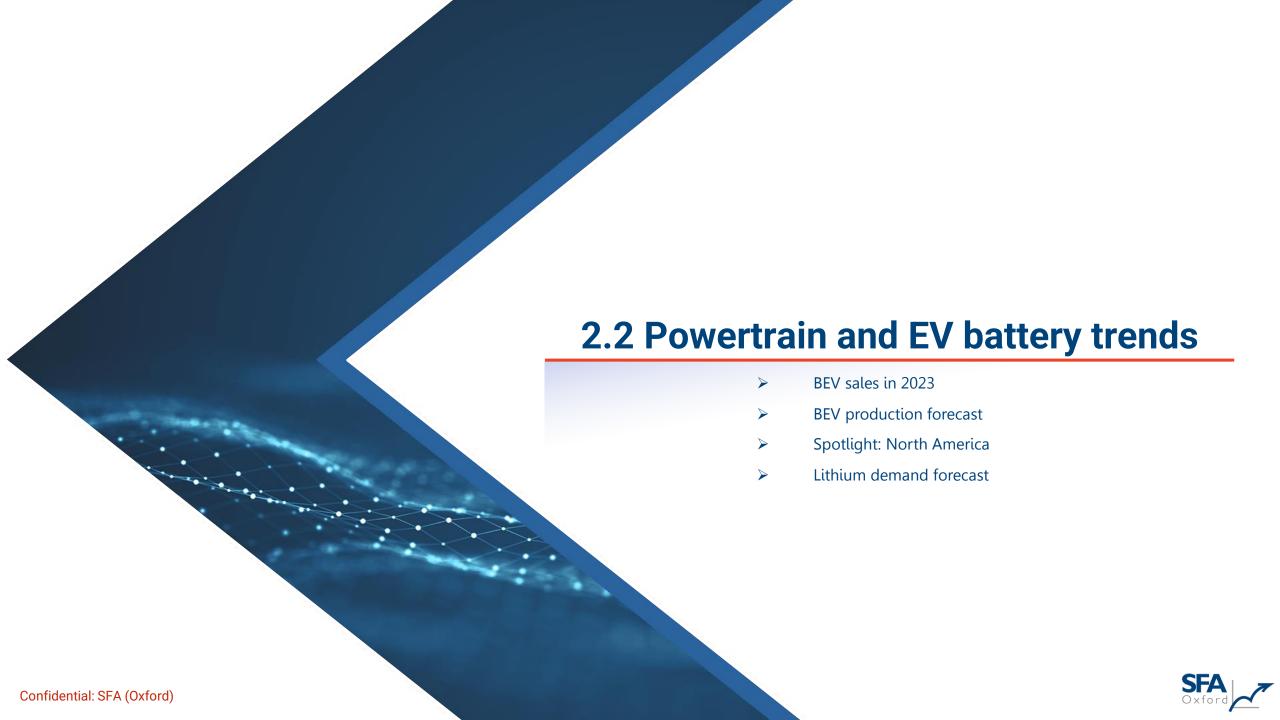


- Cumulative EV battery installations have increased 45% YoY in 2023 (Q1-Q3), to over 460 GWh.
- On a regional basis, China captures 60% of EV battery installations while Europe and North America capture 20% and 15% respectively.
- By chemistry, nickel-rich cathodes (NMC, NCA) capture almost 70% of battery capacity installations over the period. Lithium-iron phosphate (LFP) share has only marginally increased this year as uptake remains limited outside of China.
- The limited LFP equipped EVs outside of China use cells imported from China. Regional production of these cells remains virtually non-existent.
- Battery capacity installations are a better estimate of material consumption as average battery pack sizes can vary by region and cathode chemistry. While EV sales are positively correlated to raw material demand, battery capacity is the more accurate metric. For example, three 20kWh plug-in hybrids (60 kWh total) will consume fewer battery and 1x80kWh car).

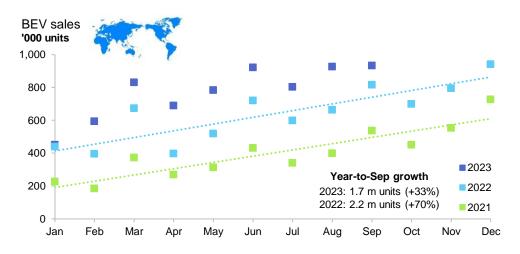
SFA Oxford

Confidential: SFA (Oxford)

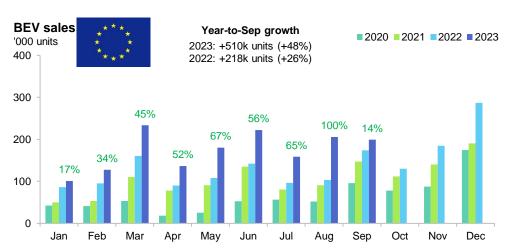
Source: SFA (Oxford), EV-Volumes

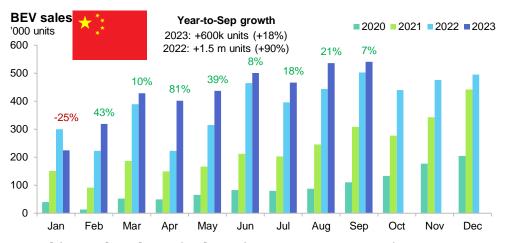


### BEV sales in 2023 Lower growth expected as Europe & North America uptick insufficient to offset China slowdown

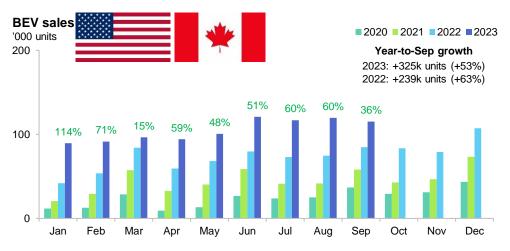


 While cumulative sales are up 33% in the year to September, growth is lower by 500k units versus the same period last year.





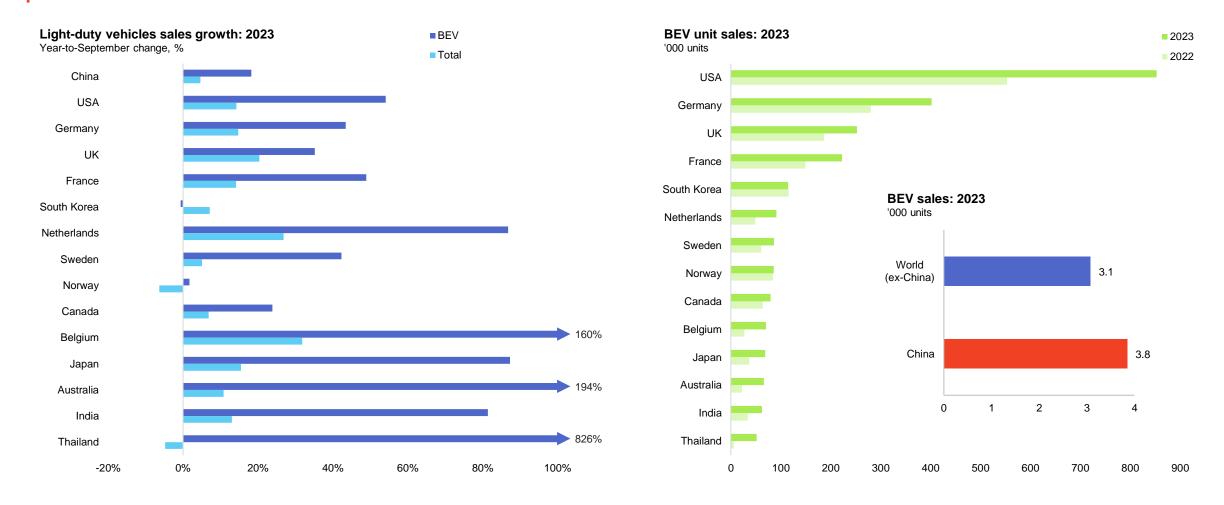
 China's slowdown is the primary concern. Weaker consumer confidence caused by a worsening macroeconomic outlook and price wars are starting to be visible in the sales.



Europe and North America are exhibiting strong demand pull for BEVs, with sales up ~50% in the first nine months of the year. Both regions combined represent 50% of growth in BEV sales this year. In contrast, China's contribution to growth has dropped to 35%, from 72% last year.



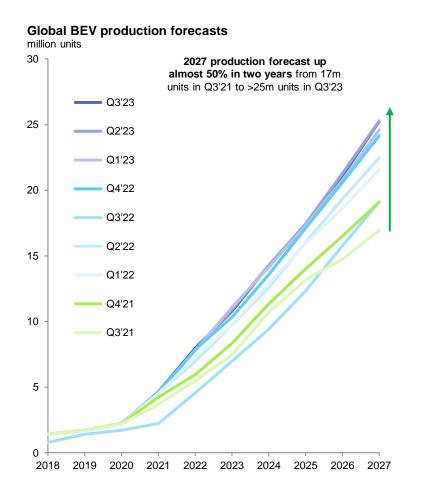
### BEV sales in 2023 Continue to outpace the wider automotive sector

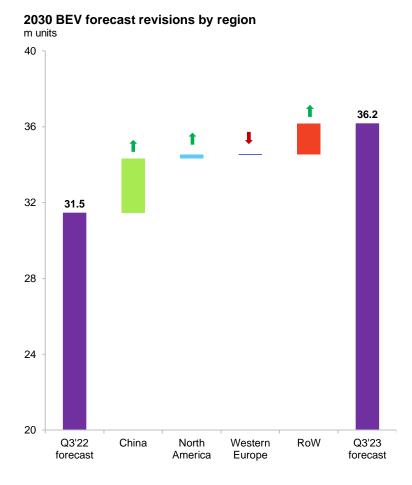


- BEV sales growth continues to outperform the wider automotive sector in almost all major automotive markets.
- China's share of global BEV sales has dropped to 55%, from 62% last year.

SFA Oxford

### BEV light-vehicle production revisions BEV outlook now exceeds 25 m units by 2027, 35 m by 2030





- BEV upgrades have slowed in recent months but long-term drivers remain in place.
- Now projecting global BEV penetration of 35% in 2030, for all light-duty vehicles.
- Output from Chinese OEMs primarily responsible for longer-term production upgrades in recent months.

Confidential: SFA (Oxford)

Source: SFA (Oxford), GlobalData



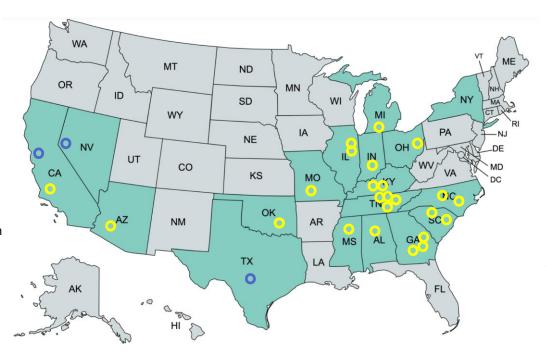
# Spotlight: North America OEMs (domestic and foreign) seeking to capitalise on IRA incentives

**BYD** operates a 55,000-square-foot electric bus and coach manufacturing facility in Lancaster, California.

**Lucid Motors** currently produces 35,000 EVs in Arizona and plans to expand to 90,000 by the end of 2023.

**Rivian** has an NMC plant in Illinois and is planning to build a \$5 bn plant in Georgia that is expected to be operational in 2024. Received a \$1.5 bn incentive package from the state of Georgia.

**Tesla**: Currently EV production and a 10 GWh pilot plant in Freemont, California. Tesla also has a high-volume semi-truck factory in Northern Nevada near Gigafactory 1 in Nevada. Gigafactory 5 in Texas is producing its Model Y and the Cybertruck.



**BlueOval SK (Ford & SK Innovation)** plans to build a mega campus in Tennessee and two plants in Kentucky by 2026 with a \$11.4 billion investment to support Ford's battery and truck assembly plant for the electric F-150 and the company's EVs under the Ford and Lincoln brands.

**Canoo,** the California-based EV start-up is building a production facility on a 400 acre-site outside of Tulsa, Oklahoma to produce its delivery vans, which is expected to be operational by the end of the year.

Lion Electric is manufacturing electric school buses and urban 6 and class 8 trucks from its NMC 30-35 GWh plant in Joliet, Illinois.

**Ford** is planning to invest \$100 m to re-tool its plant in Missouri to produce all-electric vans and license CATL's LFP technology to build a \$3.5 bn 35 GWh plant in Marshall, Michigan.

**Stellantis and Samsung SDI** are planning to invest over \$2.5 bn to build a 23 GWh plant in Kokomo, Indiana, that will be online in 2025 and plans to add an additional 10 GWh by 2027.

**BMW** is producing EVs from its plant in South Carolina and broke ground for a new battery assembly plant nearby. BMW's EV production differs from other OEMs as their plants combine EV and ICE vehicle production.

**Honda** broke ground on a \$3.5 bn EV plan with LG Energy in Ohio and plans to invest \$700 m to retool three established ICE plants in the state for EV production.

**Hyundai** is building a new \$7 bn mega plant in Georgia that is expected to build 30,000 EVs per year by 2026. Hyundai and LG Energy also broke ground on a \$4.3 billion battery plant close by to support their assembly plant that will be operational in late 2025.

**Mercedes-Benz** launched production of its EV plant in Alabama to build an EQS SUV for the N. American market.

**Nissan** has two Tennessee facilities and plans to invest \$250 m to re-tool its Mississippi plant.

**Proterra** is moving its California facility to its South Carolina plant to build heavy-duty electric transit vehicles.

**Toyota** plans to build a \$1.3 bn battery plant in North Carolina that is expected to start production by 2025.

**Vinfast** broke ground on building a \$2 bn car production plant in North Carolina that is expected to start production in 2024.

**Volvo** has a battery assembly and vehicle plant in South Carolina and will be producing the Polestar 3 from Polaris (Volvo's joint venture with Geely) alongside its EX90.

**VW** started production of the ID.4 at its manufacturing facility in Chattanooga, Tennessee.



Confidential: SFA (Oxford)

# Spotlight: North America Few EV-friendly states: CA, CO, MA, MD have the highest adoption rates

**California** – rebates of up to \$2,000 for BEVs and \$1,000 for PHEVs (can be increased to \$5,500 for low to moderate-income families) + many other benefits

**Colorado** – \$5,000 tax credit + an additional \$2,500 on vehicles below \$35,000 starting in 2024.

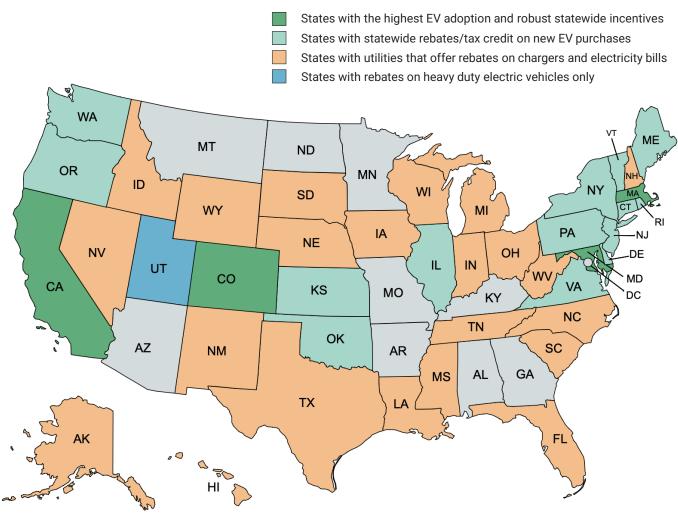
**Kansas** – Tax credits of up to \$2,400 for alternative energy vehicles

**Oklahoma** – tax credit of up to \$5,500 for new alternative fuel vehicle below 6,000lbs + \$200 electricity bill rebate

**Oregon** – Rebate of \$2,500 + an additional \$5,000 to low-income families

**Utah** – No rebates for LDV drivers but rebates of \$3,000 to \$15,000 for alternative fuel heavyduty vehicles

**Washington** – Sales tax exemption of up to \$15,000 for a new BEV + \$400 rebate for charging installation



States that penalise EV drivers with extra fees: Alabama, Arkansas, California (road improvement tax), Georgia, Hawaii, Iowa, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin, Wyoming and Utah.

**Connecticut** – Rebates of \$750 to \$7,500 depending on the type of alternative fuel vehicle

**Delaware** – Rebates of \$1,000 to \$2,500

**Illinois** – Rebate of \$4,000 for the purchase of a new EV

**Massachusetts** – Rebate of \$3,500 on vehicles \$55,000 or less on or after November 10, 2022

**Maine** – Rebates of \$1,000 to \$7,500 depending on income

Maryland – Tax credit of up to \$3,000 for vehicles \$50,000 or less after July 1, 2023

**New Jersey** – Exempt from sales tax and rebate of \$2,000 to \$4,000 depending on vehicle price

New York – Rebate of \$2,000

**Pennsylvania** – Rebate of \$500 to \$2,000 depending on family income

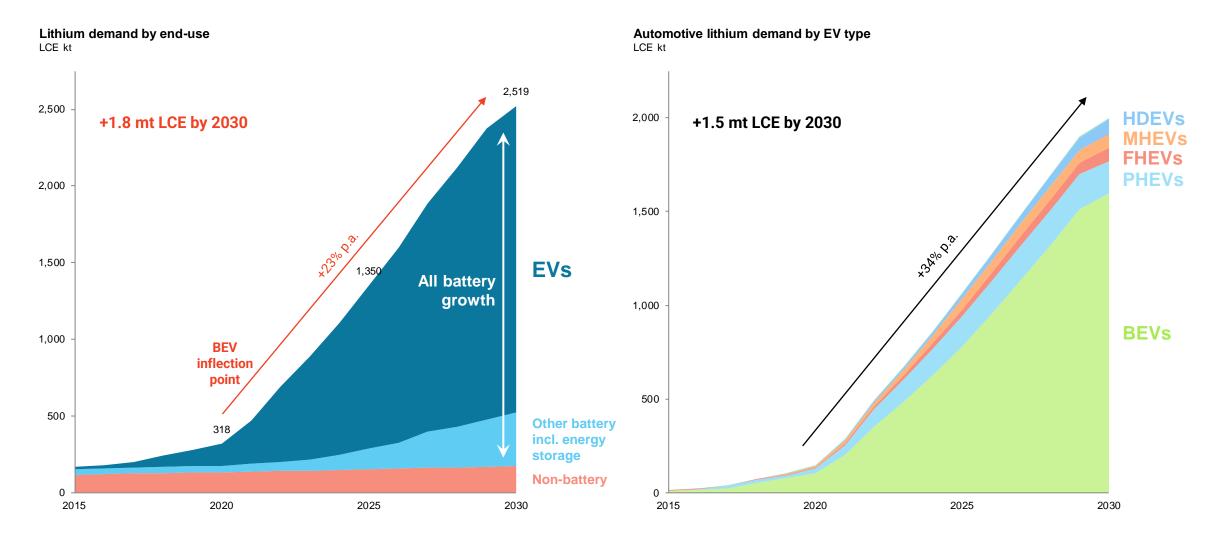
**Rhode Island** – Rebate of up to \$2,500 on vehicle \$60,000 or less

**Vermont** – Rebates of \$1,500 to \$4000 depending on income

**Virginia** – Credit of \$2,500 with an additional \$2,000 for low to moderate-income families



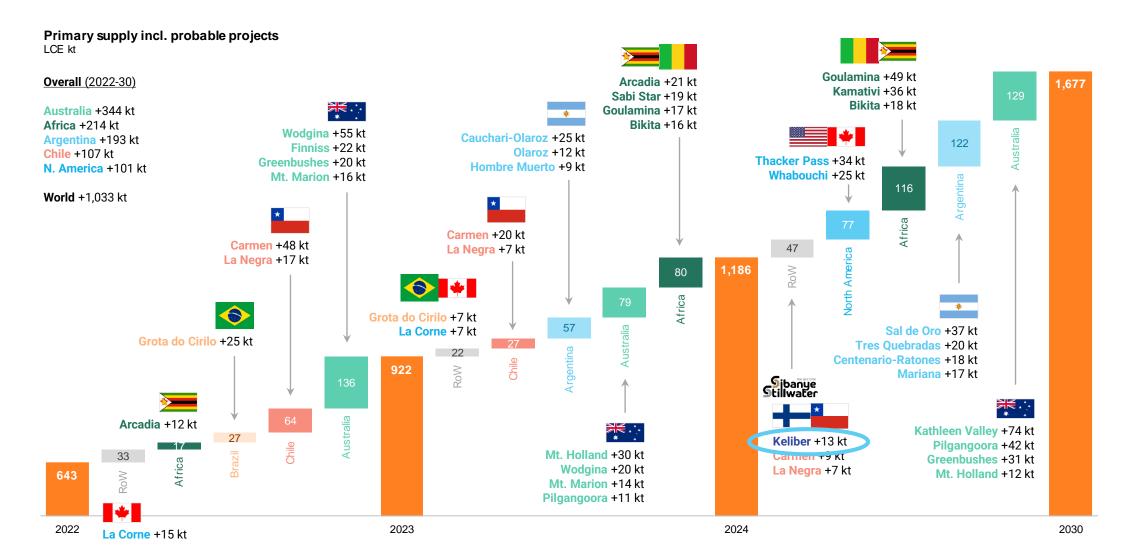
# Gross demand BEVs driving growth; total demand exceeding 2.5 mt by 2030





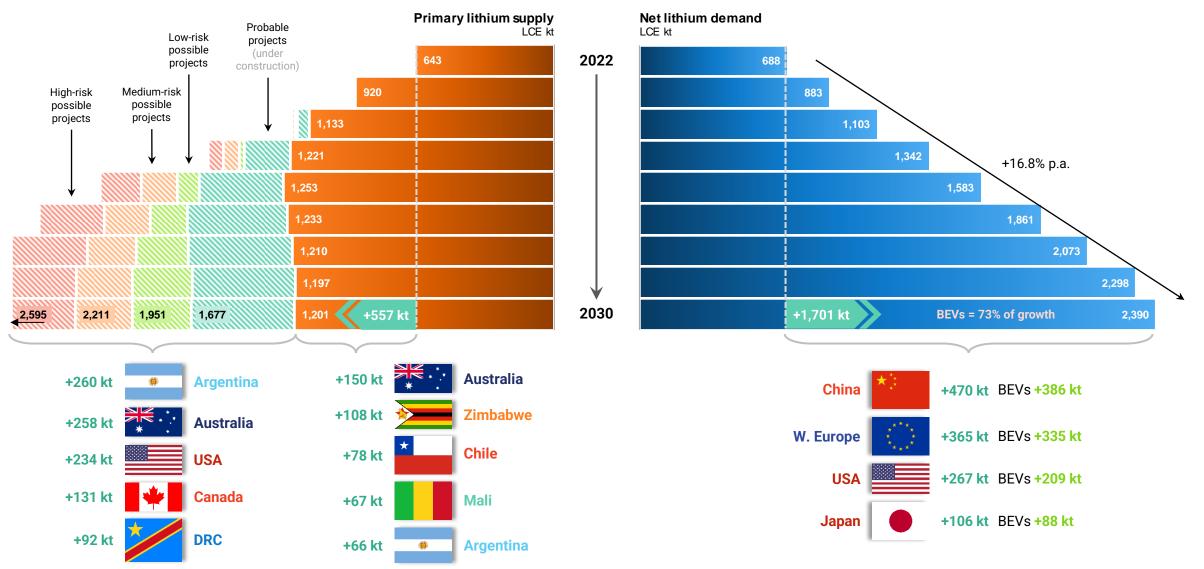


### Primary supply growth Africa and North America emerging as important suppliers





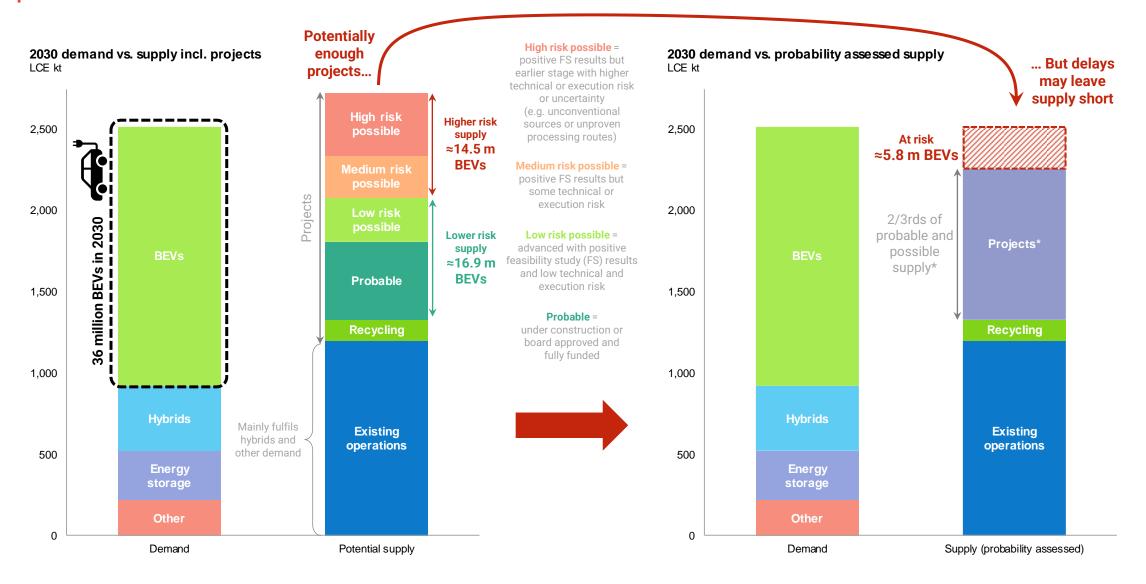
# Supply vs. demand Further investment in supply required to meet demand projections



Source: SFA (Oxford). Note: Supply excludes recycling. Regional demand figures exclude non-automotive battery demand. Chart figures may not sum correctly owing to independent rounding.



# Supply constraints Some 6 m BEVs could be at risk in 2030 even including projects

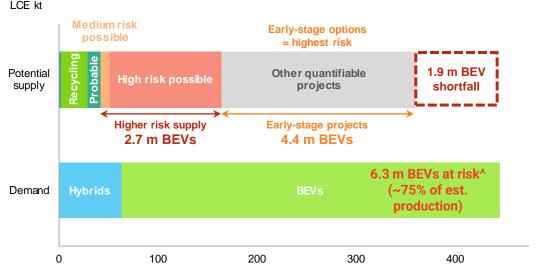




#### European supply constraints Around 75% of local BEV production may depend on imported lithium

#### European lithium supply vs. EV demand LCE kt 500 Existing operations Meztern Entobe, 2 EA dewayd onflook Probable projects 400 Medium risk possible projects High risk possible projects **Europe needs** all the lithium 300 mines it can Stillwater get! 200 Keliber Potential European ~30% of LCE mine supply\* 100 High risk demand in 2030 0 2023 2024 2025 2026 2027 2028 2029 2030

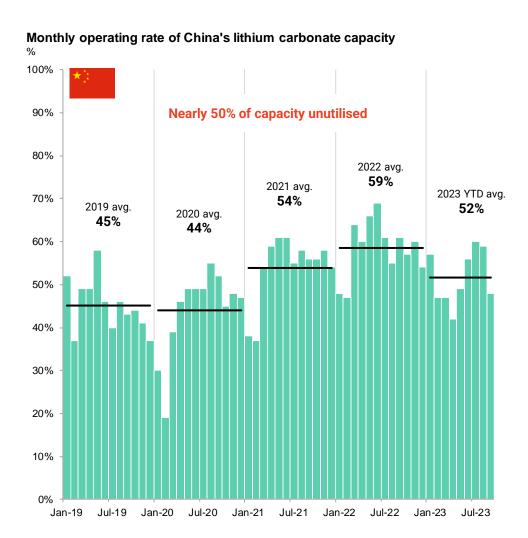
2030 European EV demand vs. supply incl. projects



- European demand is exceeding local lithium supply. Demand from EVs alone is estimated to reach nearly 450 kt LCE by 2030, with BEVs accounting for ~85% by the end of the decade. Meanwhile, potential lithium supply is forecast to be just 164 kt LCE including recycling and probable and possible projects.
- **75% of Europe's planned BEV production is at risk** based on the region's potential lithium shortfalls by 2030. This is assuming all high risk possible supply comes on-stream, which is far from certain given recent issues, meaning even more production could be under threat.
- Local opposition and permitting issues threaten European projects, particularly traditional hard rock options. These obstacles have derailed the Jadar project in Serbia and continue to threaten projects in Portugal and Spain. The Critical Raw Materials Act (CRMA) aims to streamline permitting for projects in the EU, but it has not yet been adopted.
- Europe may fail to meet its CRMA extraction target that at least 10% of the EU's lithium consumption should be mined domestically by 2030. Excluding high risk possible projects, the EU may not be able to meet this target, however, potential supply including these projects is equivalent to approximately 30% of demand in 2030.
- The region remains far from self-sufficiency in both lithium mining and processing and refining, meaning the domestic EV supply chain is likely to be reliant on raw material and lithium product imports in 2030. However, global competition for lithium is set to be fierce, which may limit the material available to the European market from overseas.



## Processing capacity China's lithium capacity is underutilised



#### Monthly operating rate of China's lithium hydroxide capacity 100% 2021 avg. 2022 avg. 63% 63% 90% 2019 avg. **57%** 2020 avg. 80% 2023 YTD avg. **52**% 51% 70% 60% 50% 40% 30% 20% 10%

Jul-19

Jan-20

Jul-20

Jan-21

Jul-21

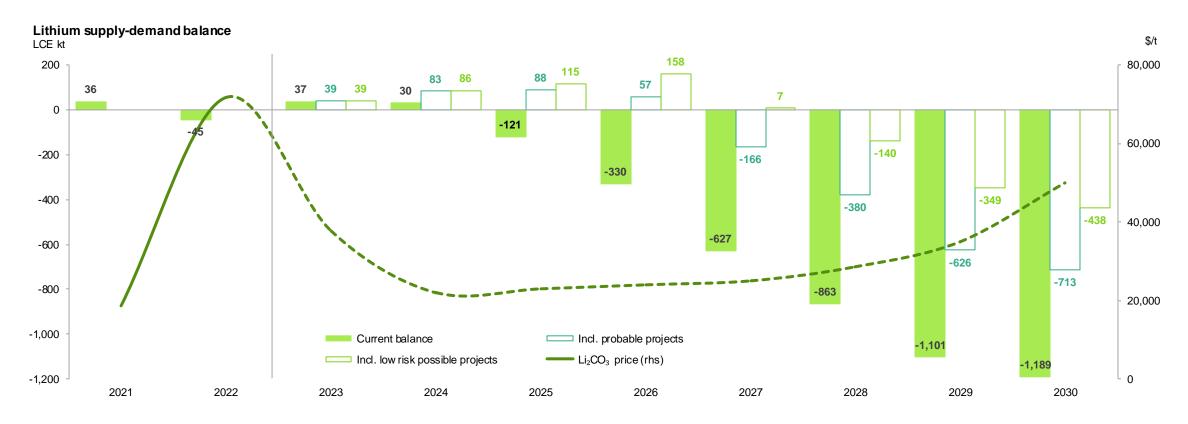
Jan-22



Confidential: SFA (Oxford)

Jul-22

## Market summary Prices predicted to stabilise at historically high levels



- Prices have declined but they remain at historically high levels for both lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>) and lithium hydroxide (LiOH).
- The lithium market is forecast to move to mounting deficits from 2025 onwards (excluding projects), but supply from 'probable' and 'low-risk possible' projects could potentially keep the market balanced through to 2027.
- Prices are likely to reach a floor in 2024, before starting to rise again to incentivise higher-risk projects.
- Keliber and Rhyolite Ridge set to begin production during the rising price period.

Confidential: SFA (Oxford)

Source: SFA (Oxford), Bloomberg



#### Conclusion

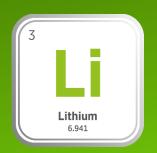
### BEV demand still rising; project supply uncertainty lingers

#### **EV** trends



- Lithium-ion batteries set to remain the go-to solution for EVs.
- NMC remains the globally dominant chemistry.
- > BEV sales continue to outperform the wider automotive sector.
- Latest projections indicate a 35% BEV penetration rate by 2030.

#### **Lithium markets**



- > Prices predicted to stabilise at historically high levels and rise thereafter.
- Further investment in supply required to meet demand projections.
- ➤ 6 m BEVs could be at risk based on potential shortfalls in 2030.
- > 75% of European BEV production reliant on imported lithium.





## **Oxford Battery Metals Lectures**

Thursday 9th May 2024

Join us in Oxford for the SFA Battery Metals Lectures 2024.

SFA (Oxford) has a track record of holding industry-leading events over the past 14 years.

With speakers ranging from CEOs, thought leaders and industry experts from across the battery value chain.

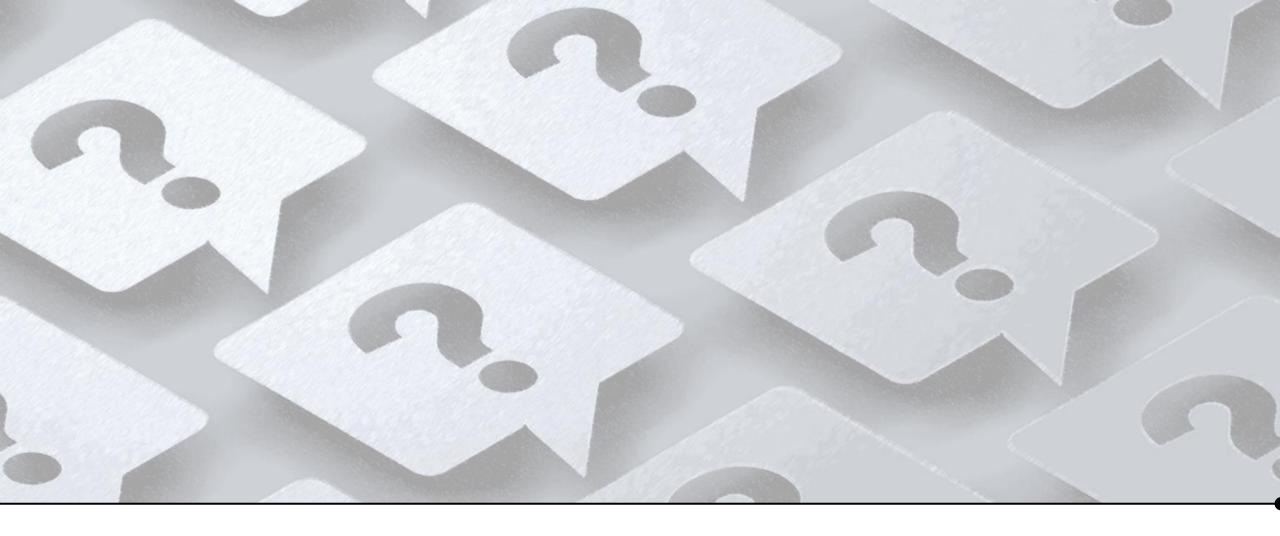
Agenda to be announced in early 2024.

## Save the date









# Questions?

Webcast and conference call

Email: <u>ir@sibanyestillwater.com</u>



Tickers: JSE: SSW and NYSE: SBSW

Website: www.sibanyestillwater.com

## 3.1 Keliber lithium project: overview

Mika Seitovirta: Chief Regional Officer Europe

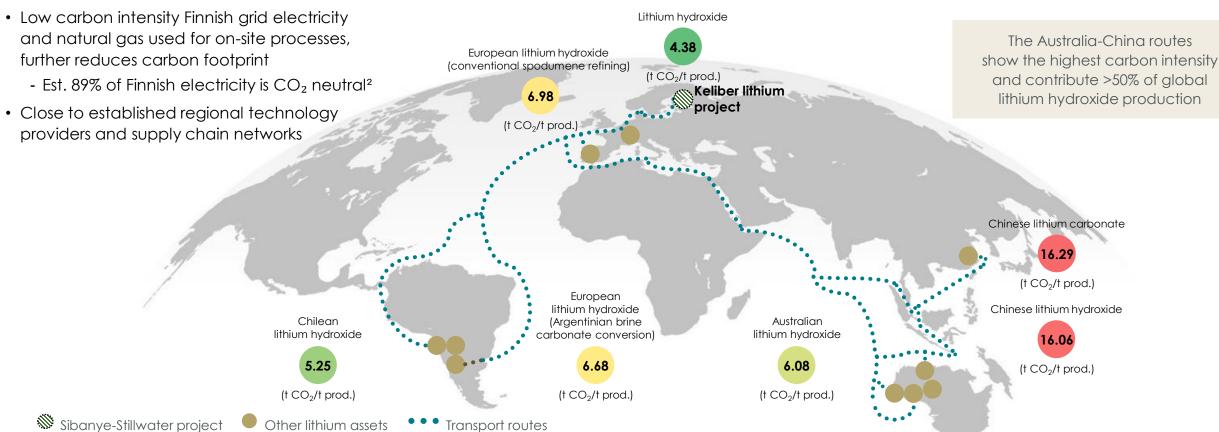




## Delivering low carbon intensity, "green" lithium hydroxide into chosen European ecosystem



 Proximity to European markets supports lowest emission intensity relative to seven primary lithium chemical transport routes to region<sup>1</sup>



Competitively positioned to supply the European battery ecosystem with differentiated, green lithium hydroxide



2. Source: Finnish Energy, 2022 statistics

## Strategic positioning close to logistical infrastructure with all operations in close proximity



The Keliber lithium project aims to be the first fully integrated "mine to battery grade" lithium hydroxide producer in Europe

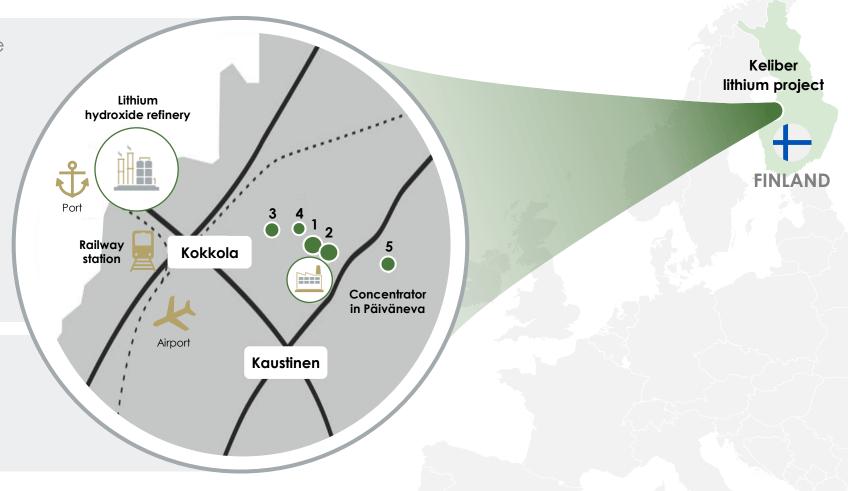
- Located in central Ostrobothnia, Finland, among the most significant lithium regions in Europe
- Current 16-years of planned production from five initial mining areas\*
- Mines and concentrator approx. 60km from refinery in port of Kokkola
- Syväjärvi
- 2 Rapasaari
- **3** Emmes
- 4 Outovesi
- **5** Länttä



Concentrator in Päiväneva



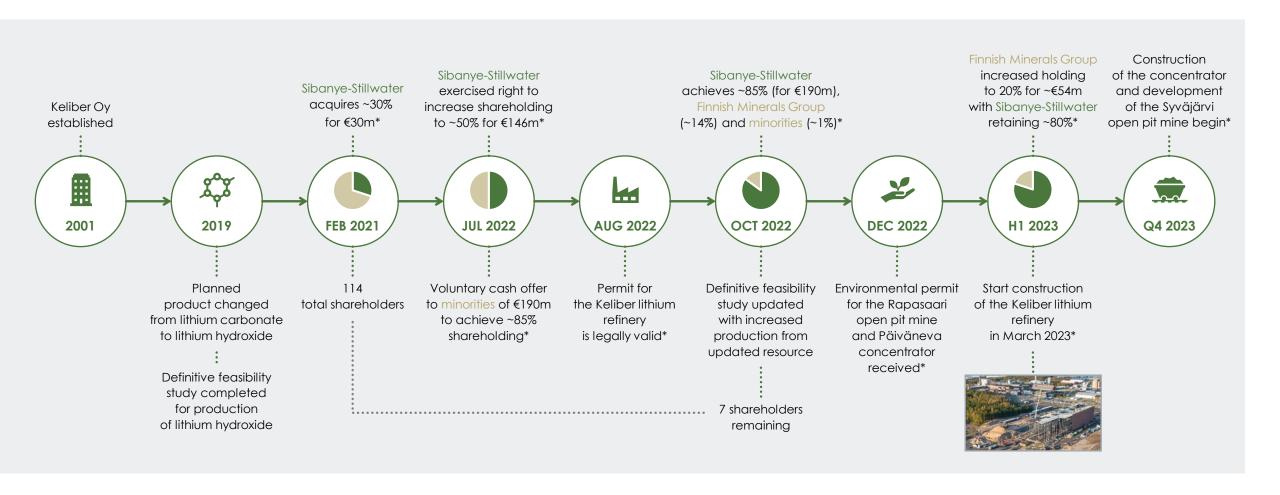
Lithium hydroxide refinery in the port of Kokkola



#### Short, efficient, low-emission, and traceable supply chain

## Keliber lithium project timeline: permitted, approved and equity funding secured



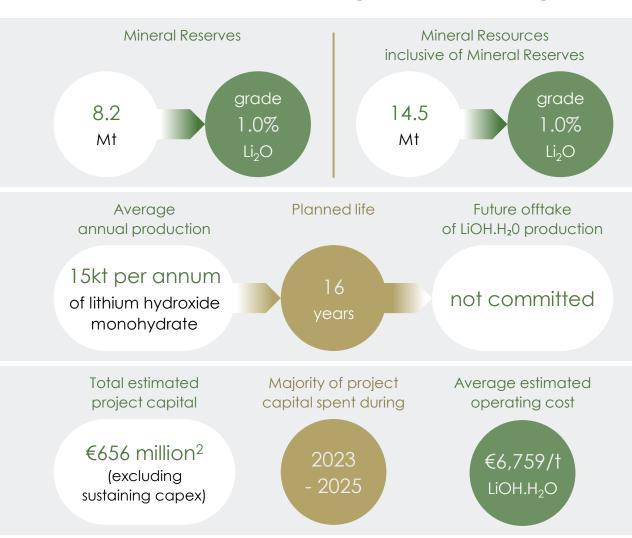


#### Project fully approved and on schedule for production of lithium hydroxide during 2025/26

\* For further information and details regarding the timeline presented, please visit <a href="https://www.sibanyestillwater.com/business/europe/keliber/keliber-news/">https://www.sibanyestillwater.com/business/europe/keliber/keliber-news/</a>, <a href="https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/">https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/</a> and <a href="https://www.sibanyestillwater.com/news-investors/news/news-releases/">https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/</a> and <a href="https://www.sibanyestillwater.com/news-investors/news/news-releases/">https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/</a> and <a href="https://www.sibanyestillwater.com/news-investors/news/news-releases/">https://www.sibanyestillwater.com/news-investors/news/transactions/keliber/</a> and <a href="https://www.sibanyestillwater.com/news-investors/news/news-releases/">https://www.sibanyestillwater.com/news-investors/news/news-releases/</a>

## Key parameters<sup>1</sup> – fully integrated, battery-grade, lithium hydroxide producer







#### Attractive economics with upside from increasing electric vehicle demand expected in years to come

- 1. The declared Mineral Reserves exclude underground Mineral Resources from the Rapasaari mine which are included in the production profile, pending further technical studies
- 2. Excludes sustaining capital and excludes capital from planned underground mine

## 3.2 Geology, resources and exploration

Pentti Grönholm: Senior Manager, Geology









	Pegmatite	Brine	Sedimentary	Geothermal sources
Primary geography	Australia, Africa, North America, Europe	North and South America, China	North America, Europe	Central Europe
Lithium bearing mineral	<ul><li>Spodumene (the Keliber lithium project)</li><li>Lepidolite</li></ul>	Lithium-rich brines in salars	<ul><li>Searlesite (Rhyolite Ridge project)</li><li>Jadarite</li><li>Lithium clays (illite-smectite)</li></ul>	Thermal wells with low concentration of Li (100s ppm)
Extraction method	Conventional rock mining	Saline water pumped to the surface, evaporation in ponds	Open pit mining	<ul> <li>Drilling into pressurized superheated underground reservoirs</li> <li>New technology required for DLE (Direct Lithium Extraction)</li> </ul>
Initial product	<ul><li>Mineral concentrate</li><li>Spodumene - lithium oxide</li></ul>	<ul> <li>Li rich salts (chlorides) containing K, Na, Mg</li> </ul>	Mixed Li-B silicates	Mixed Li-containing salts
Advantages	<ul> <li>Commercially proven process</li> <li>Flexibility to reprocess into the desired lithium chemical (carbonate or hydroxide)</li> </ul>	<ul><li>Commercially proven process</li><li>Simple flowsheet</li><li>Historical low cost production</li><li>Low C-emissions</li></ul>	<ul> <li>Opens up new reserves when processing developed</li> <li>Co-processing of several elements</li> </ul>	<ul> <li>Product obtained from geothermal heat projects</li> <li>Low environmental impact</li> </ul>
Disadvantages	Need for kiln for conversion of spodumene increases C- emissions	<ul> <li>Slow process with evaporation</li> <li>Water impact of evaporation ponds</li> <li>Large surface footprint</li> </ul>	Process under development	Process under development

#### Declared attributable Mineral Resources and Mineral Reserves<sup>1</sup>



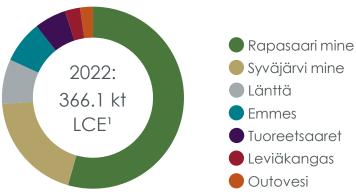
#### Mineral Reserves<sup>2</sup>

#### 31 December 2022 LCE **Tonnes** Li<sub>2</sub>O Mt kt Länttä Proved + Probable 0.2 6.3 1.1 Outovesi Proved + Probable 0.2 1.3 6.7 Rapasaari mine Proved + Probable 6.0 0.9 133.1 Syväjärvi mine Proved + Probable 1.8 1.1 47.5 **Grand total** Proved + Probable 8.2 1.0 193.6

#### Mineral Reserves



#### Mineral Resources inclusive of Mineral Reserves



#### Mineral Resources inclusive of Mineral Reserves

			31 December 2022		
			Tonnes Mt	Li₂O %	LCE kt
	Emmes	Measured + Indicated	0.9	1.2	27.6
	Länttä	Measured + Indicated	1.1	1.0	29.1
	Outovesi	Measured + Indicated	0.2	1.4	8.4
	Rapasaari mine	Measured + Indicated	6.9	1.0	169.9
		Inferred	1.3	0.9	29.4
	Syväjärvi mine	Measured + Indicated	2.3	1.2	69.3
		Inferred	0.1	0.8	2.0
	Leviakangas	Indicated	0.2	1.1	4.6
		Inferred	0.2	0.9	5.3
	Tuoreetsaaret	Inferred	1.2	0.7	20.6
Sub total		Measured + Indicated	11.6	1.1	308.9
Sub total		Inferred	2.9	0.8	57.2
Grand total			14.5	1.0	366.1
					0.51

Mineral Resources have been delineated in seven deposits, all within 25km of the Kaustinen area

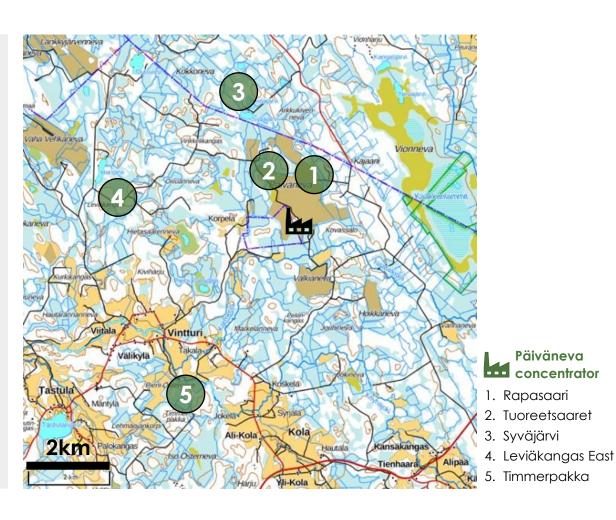
#### Extensive Mineral Resources and upside potential on current declaration based on exploration results

- 1. Attributable Mineral Resources and Reserves based on Sibanye-Stillwater's 84,96% shareholding in the Keliber lithium project as at 31 December 2022
- 2. Mineral Reserves are limited to open pit ore reserves and exclude the Rapasaari UG mine

### Located in leading European lithium jurisdiction



- Exploration in the Central Ostrobothnia region, focusing on both the expansion of the known deposits and identification of new ones
- Lithium exploration permits include
  - 13 exploration permit areas covering a total area of 5 982 ha (~60km²)
    - An exploration permit (19.86 ha) and a mining permit (488.97 ha) are in legal process due to appeals
- 29 exploration permits (80.4km²) under application
  - Renewal dates for the exploration permits between 2023-2025
    - > Renewal under standard conditions of Finnish Mining Act

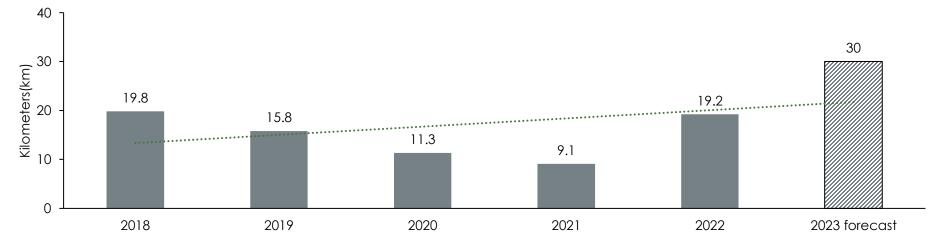


### Exploration: Positive outlook from drilling programme

Stillwater

- Enhanced drilling programme approved for 2023
  - During 2018-2022 the annual exploration budget was €1 2m
  - For 2023, the exploration budget increased to €4.5m
- At end Q3 2023, a total of 23 km has been drilled, mainly at the Rapasaari, Tuoreetsaaret and Syväjärvi areas
- Mainly shallow levels have been drilled, i.e. first 200 vertical meters
- New target areas that have been tested by drilling include Leviäkangas East and Timmerpakka

Exploration, resource and geotechnical drilling







Targeting growth in the region through increased exploration during 2023

## Recent exploration results positive – potential for material increase in Mineral Resources



- Assays of diamond drill core samples have returned numerous excellent ore-grade lithium intercepts
- Based on these results, a Mineral Resource estimate update has been initiated for seven lithium deposits, which are expected to be concluded during 2024
- Based on the preliminary results, a material increase in resources is anticipated
   Top 10 drilling intercepts during 2023

Hole-ID	Downhole length (m)	Li <sub>2</sub> O (%)	From (m)	Length x Li₂O	Deposit
RA-402	86.35	1.08	28.20	93.50	Tuoreetsaaret
RA-380	26.25	1.11	20.45	29.10	Tuoreetsaaret
RA-396	37.25	0.73	28.45	27.19	Tuoreetsaaret
RA-411	21.50	1.10	75.30	23.74	Tuoreetsaaret
RA-368	14.00	1.59	294.80	22.24	Tuoreetsaaret
RA-370	13.50	1.60	117.10	21.60	Rapasaari
RA-400	24.00	0.88	36.45	21.07	Tuoreetsaaret
RA-359	25.65	0.75	20.70	19.27	Tuoreetsaaret
RA-371	11.50	1.59	84.05	18.25	Rapasaari
S-155	13.10	1.14	156.50	14.97	Syväjärvi



Focusing on both the expansion of known deposits, as well as identification of new ones

## 3.3 Detailed information – Keliber lithium project

Markus Kivimäki, VP Legal and environmental Hannu Hautala, SVP and head of the Keliber lithium project

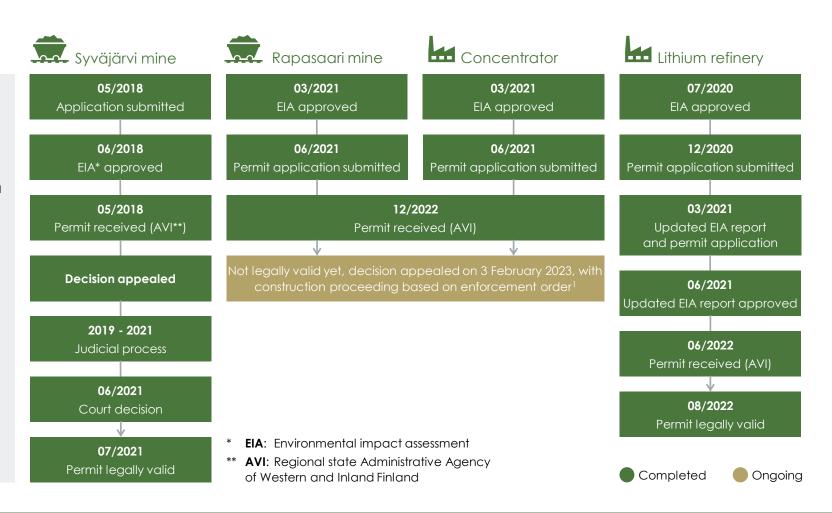




### Granting of key permits reflects the outcome of years of effort



- First project in Europe for battery grade lithium hydroxide that has reached construction phase
- The concentrator and the second mine,
   Rapasaari, received an environmental permit in
   December 2022, including an enforcement order<sup>1</sup>
  - Appeal process<sup>2</sup> runs in parallel with construction
- Current mining permits cover three mines (7.13km²)
  - Syväjärvi, Rapasaari, Länttä



#### Resource and time invested over the last decade resulted in the majority permits already received

<sup>1.</sup> Enforcement Order, i.e. right to start construction and operations despite of an appeal

<sup>2.</sup> Handling of appeals in Court processes may take from 6 to 36 months. The court process is connected with a time risk

## Keliber lithium refinery – under construction<sup>1</sup>



- ✓ Environmental and construction permits for the lithium refinery in Kokkola received in 2022
  - operative permits (e.g. chemical safety, mining safety and radiation safety permits) to be applied before production starts
- ✓ Refinery planned to process third party material until concentrator commissioned
  - Likely to be short term (~9 months) before own material is ready to be refined
  - Third party processing period enables testing of refinery and learnings prior to own concentrate refining



#### Key parameters

Construction time
2.5 years

Expected capacity
15 000 LiOH.H<sub>2</sub>O
tonnes per annum

Workforce
120
(including contractors)

Capital

€418m²

(refinery only)

Targeting production ramp-up from H2 2025 for 12-18 months

Third-party processing before processing own ore

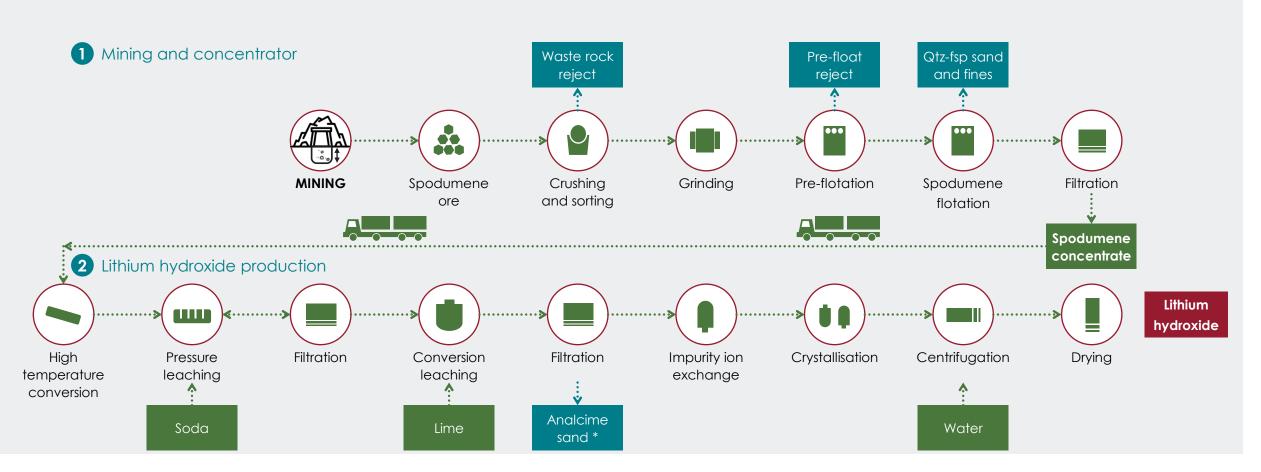
#### Located in Kokkola Industrial Park offering world-class infrastructure and logistics

- 1. Sibanye-Stillwater approves implementation of the Keliber lithium project and begins the construction of the Keliber lithium hydroxide refinery https://www.sibanyestillwater.com/news-investors/news/news-releases/2022/
- 2. Increase in capital of €59m announced in October 2023, will result in improvements in the effluent water treatment process ensuring compliance with the environmental permit. It will also increase lithium recoveries in the refinery process

### Fully integrated production of lithium hydroxide from own ore



- Majority of the chosen technology is established and in operational use at other companies
- Soda pressure leaching is the only novel technology with environmental and other benefits compared with sulphuric acid digestion



Integrated production means quality control through the whole production chain as well as low CO<sub>2</sub> emissions and costs

### Soda pressure leaching – a novel and beneficial technology



- The benefits of soda pressure leaching compared to conventional methods (i.e. sulphuric acid roasting) include:
  - Soda leaching is more selective than sulphuric acid and doesn't dissolve unwanted impurities such as iron (Fe) etc, thus rendering a purer end product
    - > Simple process with fast throughput
    - Acid- and sulphate-free process
    - > Inert and neutral/alkaline mineral residue
    - > Expected to produce battery-grade lithium hydroxide with less purification cycles
- The soda leach technology developed by Metso (formerly Metso Outotec) has been successfully demonstrated at pilot scale on spodumene concentrate that has been calcinated into beta-phase from Syväjärvi and Rapasaari ore:
  - Syväjärvi in January 2020 (over 300 hours of continuous lithium hydroxide plant test)
  - Rapasaari in July 2022 (over 400 hours of continuous lithium hydroxide plant test)
- Metso is currently providing the same soda pressure leaching technology to two other major lithium hydroxide producers
  - Twenty feed materials tested for ten customers to develop their investment
  - Several projects in the piloting phase





#### Soda pressure leaching significantly more environmentally beneficial than sulphuric acid digestion

#### Päiväneva concentrator – earth works commenced in November 2023



#### Key parameters – concentrator

Construction time

2 years

Expected concentrate capacity 200 000

tonnes per annum

Workforce 60

(including contractors)

Capital

€229m¹

(concentrator only)

Targeting ramp-up in 2026

- ✓ Permits received end 2022, construction approved in October 2023 following decision to comply with permit conditions
- ✓ Construction able to proceed despite appeals process
- Concentrator process and technology standard similar to other lithium concentrators



#### Concentrator situated close to mine sites and refinery

### Syväjärvi open pit mine – preparation work ongoing for initial mined production



- ✓ Permits legally valid: provides initial mined production
- ✓ Preparation work since 2022, e.g. water management and building infrastructure
- ✓ Additional water management work ongoing, to enable earthworks and extraction of utility stone for the concentrator construction site
- ✓ Conventional truck and shovel mining method for open-pit mining

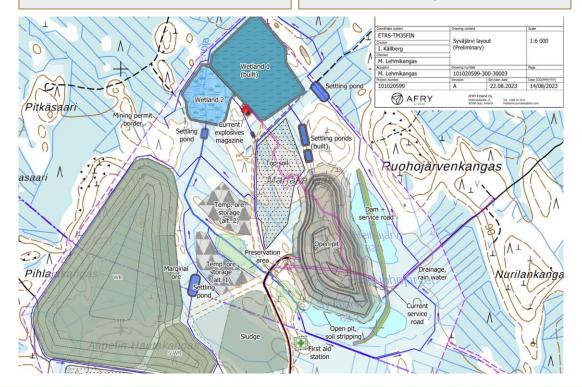
#### Key parameters – Syväjärvi open pit mine

2.1m tonnes ore produced over life at 5.94:1 stripping ratio

Capital €9m (Syväjärvi open pit mine only)

Average grade of 1.07% Li<sub>2</sub>O

Life of mine 4.5 years



## Indicative production profile – sixteen years from initial mining areas<sup>1</sup>



First production from 3<sup>rd</sup> party concentrate in 2025

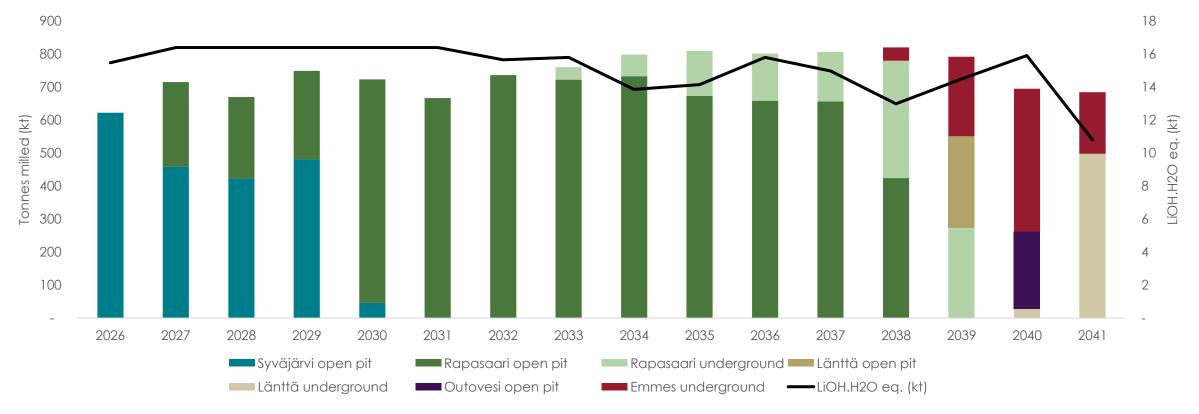
First production from own ore estimated in **2026** 

Battery-grade lithium hydroxide monohydrate

15kt per annum

- Syväjärvi open pit will be the first mine in production
- Rapasaari mine (incl. underground) accounts for 60% of production
- These two mines account for more than 12 years production
- Promising exploration potential in the surrounding vicinity

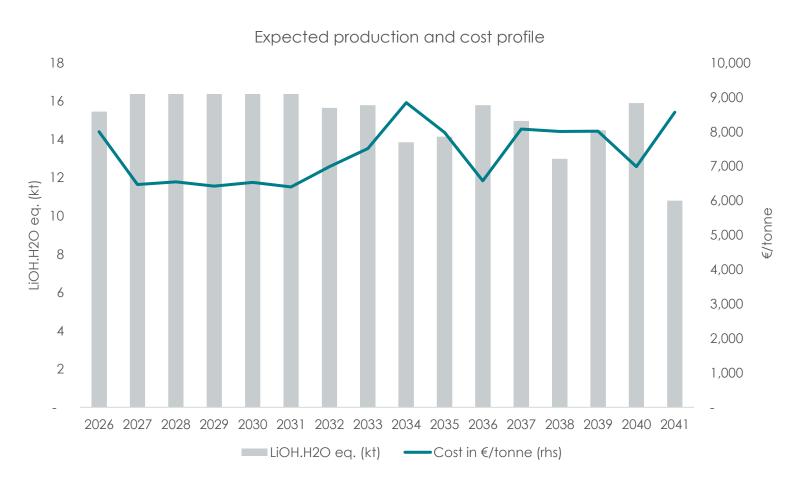




#### Delivering premium, low carbon product with significant upside potential

### Estimated average operating costs per tonne of LiOH.H<sub>2</sub>0 produced (real terms)



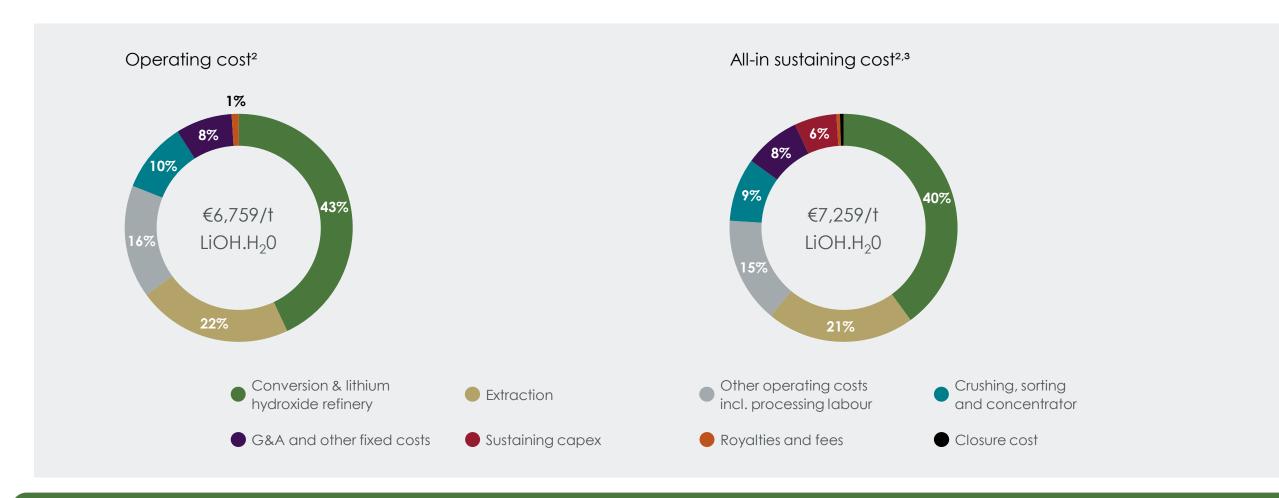




First project in construction phase in Europe which is expected to produce battery grade lithium hydroxide

## Average estimated project cost<sup>1</sup>





#### Competitive cost position for delivery of premium, green product

- 1. Average estimated operating cost at steady state and excludes a potential cost risk of 0-50 €/t LiOH.H₂0 due to magnetic waste handling & As, P and solids removal
- 2. Includes an additional 8 €/t LiOH.H<sub>2</sub>0 for concrete spraying at the Rapasaari open pit. This is due to the environmental permit requirements
- 3. All-in sustaining costs include open pit and underground sustaining capital

## 3.4 Financial overview

Riku Sauso, Vice President Finance





### Taxes and royalties - will support the local fiscus in future



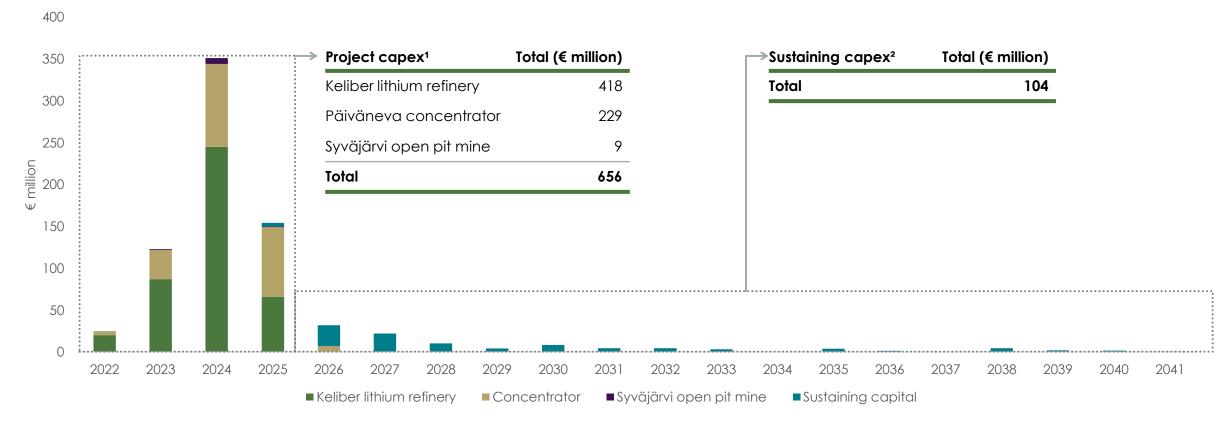
- Corporate income tax currently at 20%
- Compensation to landowners €50/ha/year and 0.15 per cent of the calculated value of metallic mining minerals, excavated and exploited during the year.
- Tax on mined minerals introduced in 2024, the tax for metallic minerals is 0.6% of the taxable value of their metal content
  - Relevant for Keliber from 2026 onwards
  - Tax payable some €1.5 million at current lithium market prices (for the average production year)
- Royalties payable
  - Generally, no royalties
  - Keliber lithium project, as per a separate agreement, to the Ministry of Employment €0.50 per tonne of ore (adjusted for inflation with Producer Price Index)
- Closure cost (rehabilitation)
  - Guarantees are required by the permit authorities
  - Closure costs included in sustaining capex



## Capital profile – major infrastructure upfront and first open pit mine







#### Low capital intensity, short lead time, superior return on investment

<sup>1.</sup> Project capital expenditure of €656m excludes capital for the future underground mine at Rapasaari

## Project financing - equity capital secured, with debt funding process underway



- ✓ Equity funding of €250 million secured funding initial stages
- √€79 million capital spend YTD Sep 2023
- ✓ Aiming to conclude debt arrangements by early 2024 will include working capital requirements

Funding and capital requirements	<b>Total capital</b> €656 million	<b>Equity funded</b> €250 million	<b>Debt funding</b> ~€500 million
Refinery	€418 million		
Syväjärvi mine (excl sustaining capex)	€9 million		
Päiväneva concentrator	€229 million		



## 3.5 ESG and biodiversity

Sirpa Olaussen - Senior Manager, Health, safety and quality





### Minimising impact on the environment



- Multiple Environmental Impact Assessments (EIA) completed during past years
- Main mining area and concentrator located in an existing peat production site
  - peat will be used as construction material for the tailings pond
- Continuous monitoring is in place to maintain the status of natural water
- Monitoring biodiversity and impact on living conditions of vulnerable species
- The project (and later the operation) will align with the multiple ESG/Sustainability frameworks of the Sibanye-Stillwater Group
- Integrated production and short transportation distances aid emissions management
- The innovative soda pressure leaching technology is sulphate-free and promotes energy and material efficiency
- Utilisation of waste rock, tailings, and analcime sand as construction material aligns with a circular economy approach



Design changes for flying squirrel



Ledges for otters



Feeding the golden eagle and building artificial nests



Ponds for moor frogs

#### Shared value creation, in line with Group purpose and vision



- Maintaining regular communications and dialogues with stakeholders
- Established grievance mechanisms with ongoing stakeholder assessment
- Collaborating with local educational institutions
- Focusing sponsorships on local youth and children
- Expecting positive economic contributions through future tax payments

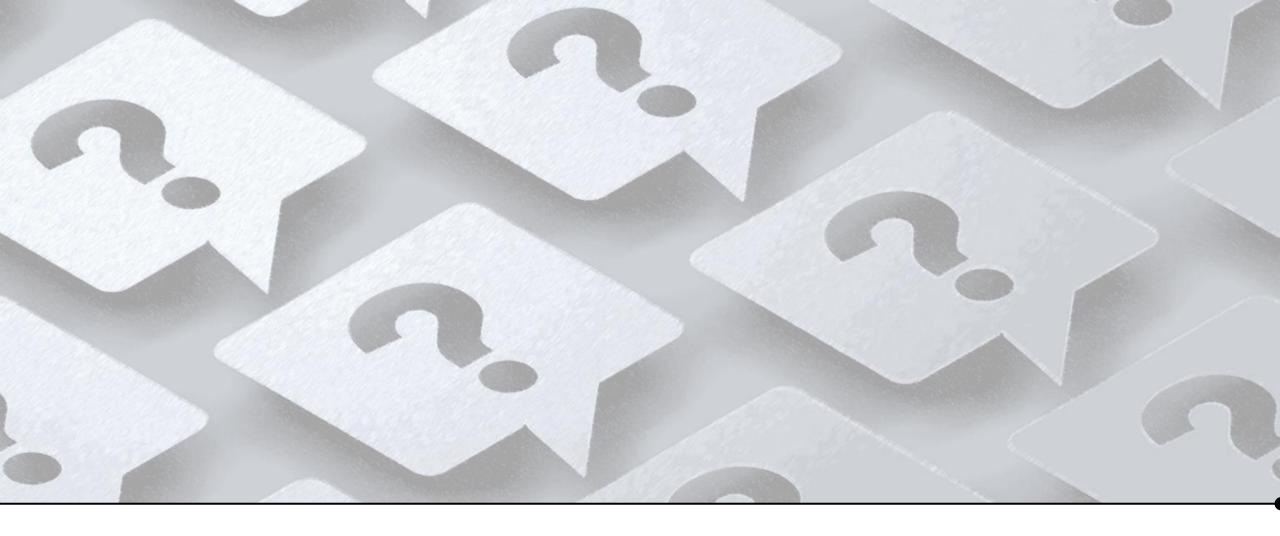
- Creating direct and indirect employment opportunities
- Several recruitments in progress
  - construction phase will employ ~500 people
  - steady-state production will employ ~350 people (incl. ~100 contractors)
  - potential indirect jobs in region ~7001
- Promoting a safe and respectful work environment that encourages professional development











# Questions?

Webcast and conference call

Email: <u>ir@sibanyestillwater.com</u>



Tickers: JSE: SSW and NYSE: SBSW

Website: www.sibanyestillwater.com

## 4. Rhyolite Ridge lithium-boron project

Robert van Niekerk, Chief Technical and Innovation Officer





#### **Future Rhyolite Ridge joint venture\***

- Acquired a 7.1% share in ioneer
- Need to contribute US\$490 million for a 50% interest in the Rhyolite Ridge JV
- Area consists of 2 mineralized basins 5km apart
- JV includes only the South Basin
- ioneer to contribute 100% of the North Basin to the JV for an additional \$50m
- ioneer will remain the operator of the JV

Rhyolite Ridge

IRA – source for US domestic lithium supply
 Strategic location – Nevada, a tier one mining jurisdiction
 Close to customer markets – World's 2nd largest car market
 Expansion potential

"Biden signs Inflation Reduction Act into law" (CNN Politics 16/08/2022)

https://www.cnn.com/2022/08/16/politics

Ideally positioned to serve the US EV market

#### Rhyolite Ridge project\*



- One of the most advanced lithium projects in the US
- Large, shallow lithium-boron sedimentary deposit in Esmeralda County, Nevada
- Close to existing infrastructure
- <sup>1</sup>Feasibility study
  - Mine plan 2.5Mt of ore for 26 years
  - Production lithium carbonate 22,000 tpa and boric acid 174,400 tpa
  - Boric acid credits offset against lithium carbonate cost
  - Advanced stage engineering
  - 2-year development cycle

- Permitting
  - In final stage of the federal permitting process
- Funding
  - US\$490 million conditional equity financing from Sibanye-Stillwater
  - US\$700 million conditional loan from the U.S. DOE
- Off-take agreement in place
  - Ford, PPES, EcoPro



The mine plan of operations that must be approved by the Federal Bureau of Land Management (BLM) Notice of intent published 20 December 2022 marking commencement of NEPA process

Record of Decision issued by the BLM Expected Q2 2024 (Subject to change without notice)



Air quality permit received 24 June 2021 Water pollution control permit received 19 July 2021 The project continues to progress through NEPA with a **draft Environmental Impact Statement** (DEIS) expected to be completed during Q4 2023



**Rhyolite ridge commences operations**Expected 2026 (Subject to change without notice)

#### Scalable, low cost project located close to US end user markets

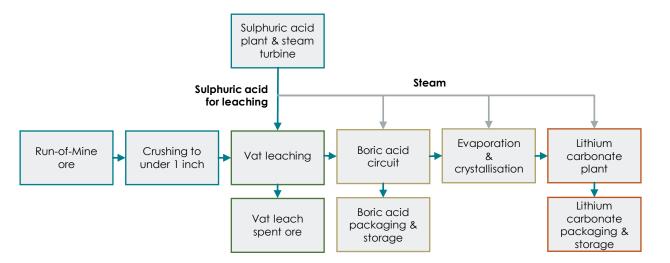
<sup>&</sup>lt;sup>1</sup> Source - ioneer's announcement titled "ioneer delivers DFS that confirms Rhyolite Ridge as a world-class lithium-boron Project", 30 April 2020

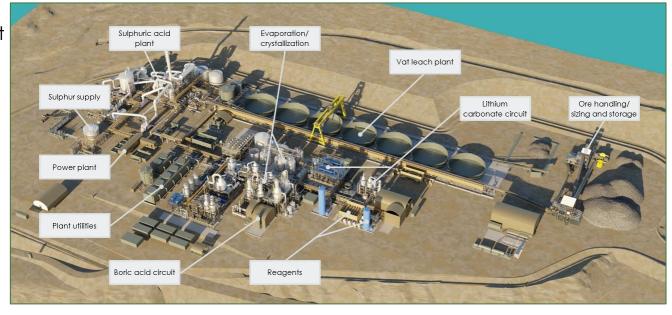
<sup>\*</sup> Source – Bell Potter Emerging Leaders Conference presentation, 13 September 2023

#### Rhyolite Ridge processing plant\*



- The processing plant consists of 3 sections:
  - Comminution and vat leaching
  - Boric acid production
  - Lithium carbonate production
- Capacity
  - 2.5Mtpa of ore treated
  - 22,000 tpa Li<sub>2</sub>CO<sub>3</sub> produced
  - 174,400 tpa H<sub>3</sub>BO<sub>3</sub> produced
- Sulphur will be delivered to the on-site sulphuric acid plant
- Water will be supplied from local wells
- 35MW of electricity will be provided by a steam turbine generator
- The plant will be owner-operated





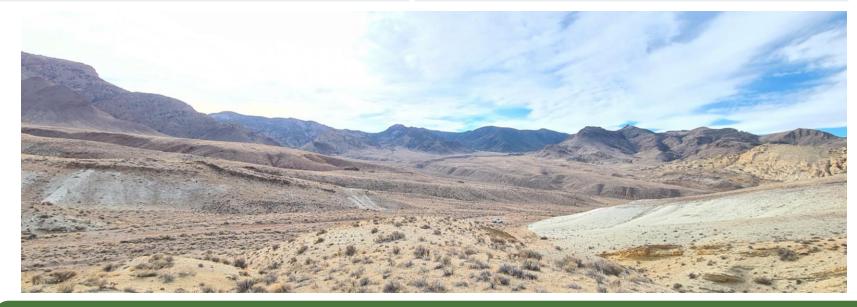
<sup>\*</sup> Source: Technical Report Summary of the Rhyolite Ridge Lithium-Boron Project by Golder, effective date September 30, 2021. Note that short tons in the report was converted to imperial tons

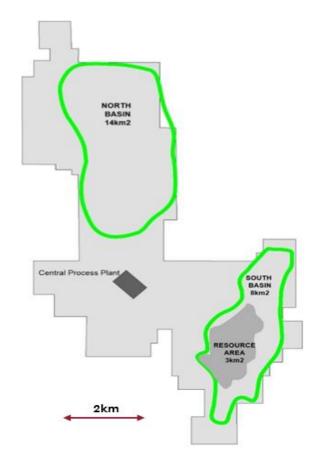
### Significant growth potential\*



- Feasibility study area < 15% of the total footprint
- South Basin has been extensively drilled
- North Basin defined through
  - > 50 holes drilled by US Borax in the 80's and 90's
  - 2 holes drilled by ioneer in 2016
- Resource potential extends in all directions

- Resources
  - Only declared for the South Basin
  - Resources were updated April 2023
  - Mineral Resource of 3.4Mt LCE



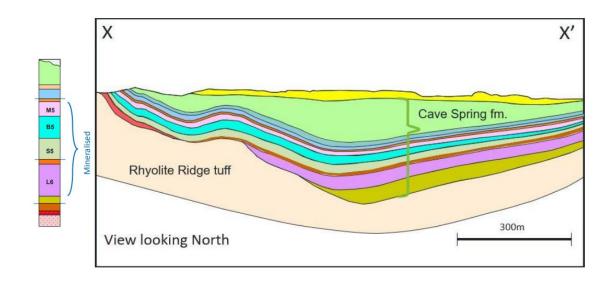


#### Vast footprint provides potential scalability in future

#### Further growth potential: conceptual studies underway\*



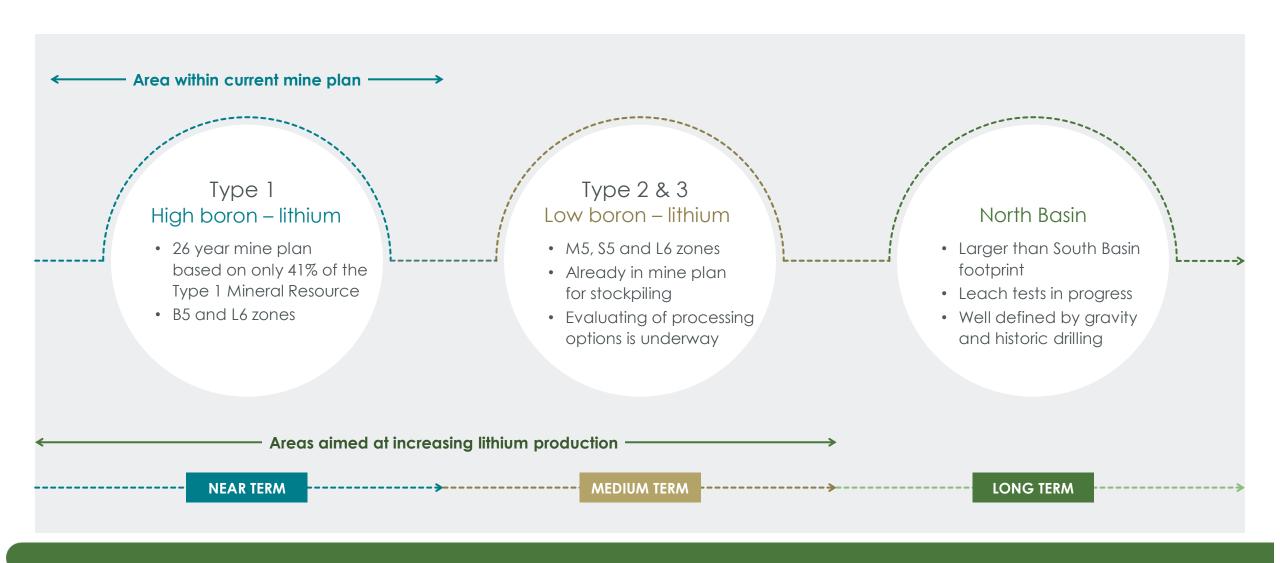
- Three distinct styles of lithium mineralisation
  - Type 1 mineralisation Lithium with high boron and low clay content -157Mt Mineral Resource containing 1.2Mt of lithium carbonate equivalent (LCE)
  - Type 2 mineralisation Lithium with high clay content 75Mt Mineral Resource containing 1.0Mt of LCE
  - Type 3 mineralisation Lithium with low boron and low clay content -128Mt Mineral Resource containing 1.1Mt of LCE
- Only Type 1 mineralisation is included in the 2020 Feasibility
- Evaluating future growth potential of the area with concept-level studies of
  - Unplanned areas and zones in the South Basin
  - North Basin
- In September, ioneer shared test results revealing 79% of the 360Mt Mineral Resource can be processed in a similar manner to Type 1 mineralisation



Testing suggests that material classified as waste in the feasibility study - low boron and low clay content - is acid leachable

## Key growth opportunities\*





#### Mineral Resources\*



	Ore unit	Ore tonnes (Mt)	Lithium grade (ppm)	Contained LCE (kt)	Boron grade (ppm)	Contained boric acid (kt)
High Boron	B5	79	1 800	770	17 200	7 790
	L6	73	1 350	530	10 900	4 520
	M5 (clay)	75	2 450	990	1 200	510
Low Boron	\$5	20	1 650	200	1 200	140
	L6	108	1 500	870	1 450	910
	Total	360	1 750	3 350	6 850	14 060



#### Current Mineral Resource declaration does not include 2022 - 2023 drilling results\*

Source: For further information on Resources and Reserves see 1) ASX release titled "Mineral Resource increases by 168% to 3.4 Mt lithium carbonate Underscores growth potential for U.S. supply chain" dated 26 April 2023 and 2) ASX release titled "Rhyolite Ridge Ore Reserve Increased 280% to 60 million tonnes" dated 30 April 2020. Note, totals may differ due to rounding. Mineral Resources include Ore Reserves

<sup>\*</sup> See ioneer's "Bell Potter Emerging Leaders Conference" presentation, dates 13 September 2023

## What Rhyolite Ridge offers\*



**/** 

The right products – lithium carbonate and boric acid



The right location – positioned to serve the US EV battery supply chain



An experienced team – with a proven track record



Expansion potential – Resource update, Phase 2 and Phase 3 expansions



Third party validation – US DOE



Clear path to production – with significant growth potential



## 5. Conclusion

Neal Froneman: CEO, Sibanye-Stillwater





## Investing for future value creation



- ✓ Well positioned for significant value creation from the supply of critical green metals into an anticipated rising price environment
- ✓ Unique exposure to both PGM's and Battery Metals
- ✓ Improving our geopolitical positioning and expanding our revenue base outside of South Africa
- ✓ Benefitting through the IRA from our focus on the Western World ecosystems
- Class leading resource stewardship with growing exposure to urban and secondary mining
- ✓ Keliber lithium project
  - Poised for delivery of lithium hydroxide into the growing European Battery ecosystem
  - Significant potential for scalability of both primary supply and refining capacity
- ✓ Rhyolite Ridge lithium project
  - Strategically located advanced lithium carbonate/boric acid project supplying the US ecosystem
  - Low-cost production with boric acid by-product credit
  - Large footprint and number of mineralised horizons offer potential growth and scalability
  - US Government support through the IRA and US\$700 million conditional loan from the DOE



# Questions?

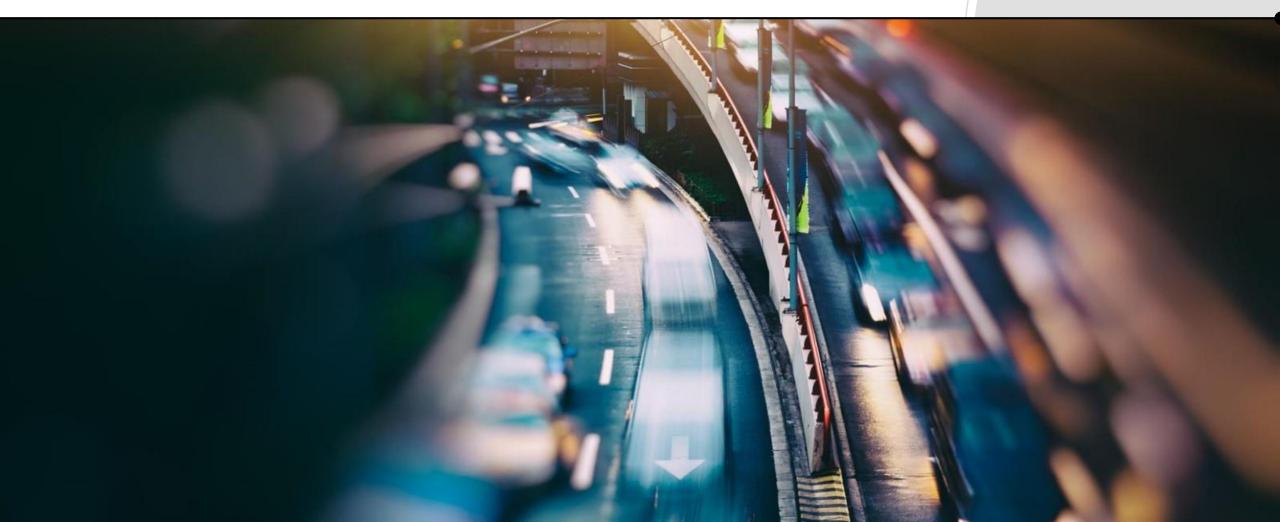


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## Appendix





## Competent persons' (CP or QP) declaration



The Mineral Reserves and Mineral Resources declared in this presentation represents a summary of the 31 December 2022 Keliber lithium project Mineral Resource and Mineral Reserve declaration available in the Group Mineral Resource and Mineral Reserve Report, which was published on 24 April 2023 and available at <a href="https://www.sibanyestillwater.com/news-investors/reports/annual/">www.sibanyestillwater.com/news-investors/reports/annual/</a>.

Sibanye-Stillwater prepares and reports its Mineral Resources and Mineral Reserves in accordance with the SAMREC Code, the updated Section 12 of the JSE Listings Requirements; and the SEC regulation SK sub part 1300.

Production volumes, Reserves and Resources are reported in metric tonnes (t). All financial models used to determine the managed Mineral Reserves are based on current tax regulations as at 31 December 2022. Rounding of figures may result in minor computational discrepancies. Where this happens, it is not deemed significant. The Mineral Resources and Mineral Reserves are estimates and are affected by fluctuations in mineral prices, the exchange rates, operating costs, mining permits, changes in legislation and operating factors.

In line with industry practice, Lithium (Li) Mineral Resources and Mineral Reserves total metal content is quoted in Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>) Equivalent (LCE), which is one of the final products produced in the lithium mining value chain. LCE is derived from in-situ Li content by multiplying by a factor of 5.323. Lithium Hydroxide Monohydrate (LiOH.H2O) can be derived from LCE by dividing by a factor of 0.88. Li cab be derived from Li<sub>2</sub>O by multiplying by a factor of 0.464.

For the attributable portion of the Keliber mineral resources, the competent person for the Syväjärvi, Rapasaari & Tuoreetsaaret deposits is Paul Payne, Principal Geologist at Payne Geological Services Pty Ltd. Paul is registered with the AuslMM (105622). The competent person for the Länttä, Outovesi, Emmes and Leviäkangas mineral resources is Mr Pekka Lovén, Consultant at PL Mineral Reserve Services, AuslMM (301822).

For the Rhyolite Ridge Project, the company relied on information provided by ioneer Ltd., the manager of the project and the reader is advised to visit <a href="https://www.ioneer.com/projects/about-rhyolite-ridge/reserves-resources/">https://www.ioneer.com/projects/about-rhyolite-ridge/reserves-resources/</a> for more detailed information.

Corporate governance on the overall compliance of the Group's Mineral Resources and Mineral Reserves has been overseen by the lead Competent Persons, included below. For the managed operations, Stephan Stander is the Group Lead CP for Mineral Resources; and Tom Van Ben Berg is the Group Lead CP for Mineral Reserves. Stephan is a registered member of the South African Council for Natural Scientific Professions (SACNASP 400089/96). Tom is a registered member of the South African Institute of Mining and Metallurgy (SAIMM 700497).

### Timelines with regards to appeals at Finland's Administrative Court and Supreme Court

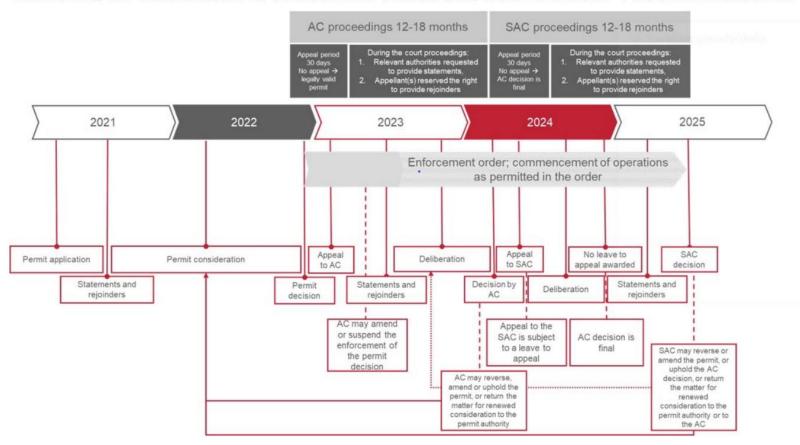


Proceedings at Administrative Court [AC] usually take 12 – 18 months

Proceedings at Supreme Court [SAC] usually take 12 – 18 months

Administrative Court [AC] may amend or suspend an Enforcement Order in a few months after receiving an appeal. This has not taken place => Enforcement Order stays valid

#### GENERAL TIMELINE OVERVIEW REGARDING COURT PROCEEDINGS

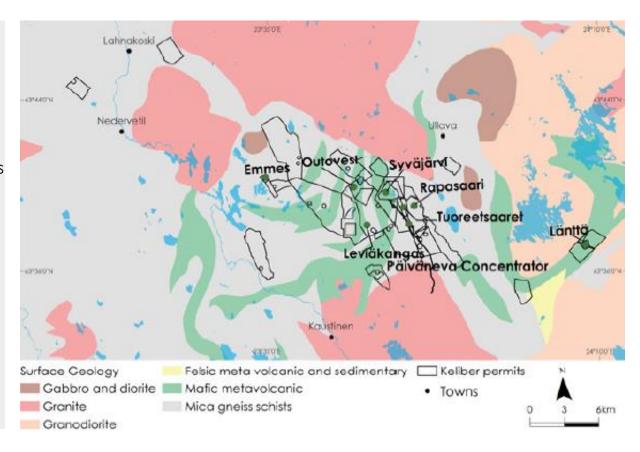


Regional State Administrative Agency has granted the Enforcement Order for the Concentrator and first mine, and Administrative Court has maintained it

#### Mineral-rich area in Finland



- In 1959, Spodumene (LiAlSi<sub>2</sub>O<sub>6</sub>), was discovered in boulders found in the Kaustinen area
- Lithium spodumene mineralisations in the region are hosted within pegmatite dyke intrusions
- The Central Ostrobothnia Lithium Province, spanning over 500 km², includes the seven most notable deposits and several lithium prospects
  - Syväjärvi, Rapasaari, Länttä, Emmes, Outovesi, Leviäkangas, and Tuoreetsaaret, are held by Sibanye-Stillwater
- The Central Ostrobothnia province's lithium reserves are estimated to rank among the most substantial in Europe



We hold permitting rights for all the significant lithium deposits in Finland