PIEDMONT LITHIUM

NATIONAL ACADEMIES OF SCIENCE, ENGINEERING, MEDICINE

LITHIUM – MADE IN THE USA

Building an American Source of Lithium Hydroxide to Power the Energy Storage Transformation

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NasdaqPLL

ASXPLL

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LiOH

AGENDA

- Intro to Piedmont Lithium
- Market Dynamics
- Localization of the Li-Ion Battery Supply Chain
- Why this matters
- Q&A

PIEDMONT LITHIUM AT A GLANCE

Building America's Leading Source of Lithium Hydroxide to Power the Electric Vehicle Transition

- An American company – based in Gaston County, NC
- Strategic lithium assets in three critical locations
- Only U.S. integrated mine-to-spodumene-to-hydroxide project
- ~40% interest in Canada's largest lithium project
- Earning 50% of Africa's best-located lithium business
- Industry-leading ESG profile
- Strong balance sheet to fund growth

WORLD-CLASS TECHNICAL PARTNERS

PRIMERO | Metso:Outotec | SGS | Marshall Miller & Associates | HDR | MINVIRC

RESOURCE

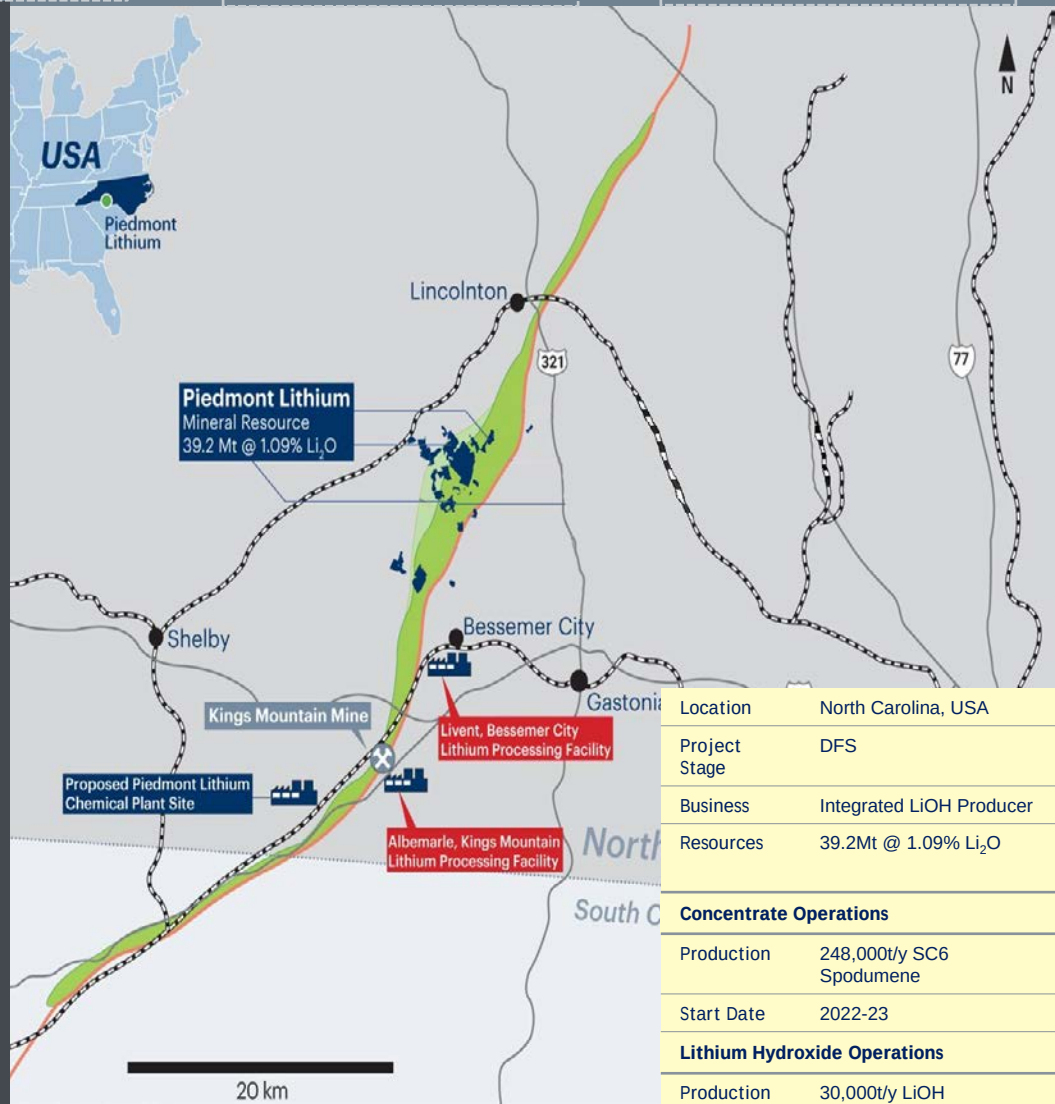
- Shallow Quarry
- Pure Spodumene
- Exploration Ongoing

LOCATION

- "Cradle of Lithium"
- Vast Infrastructure
- Transport Distances
- Skilled Local Labor
- Favorable Climate

ECONOMIC

- Zero State Royalties
- Low Corporate Taxes
- By-product Credits

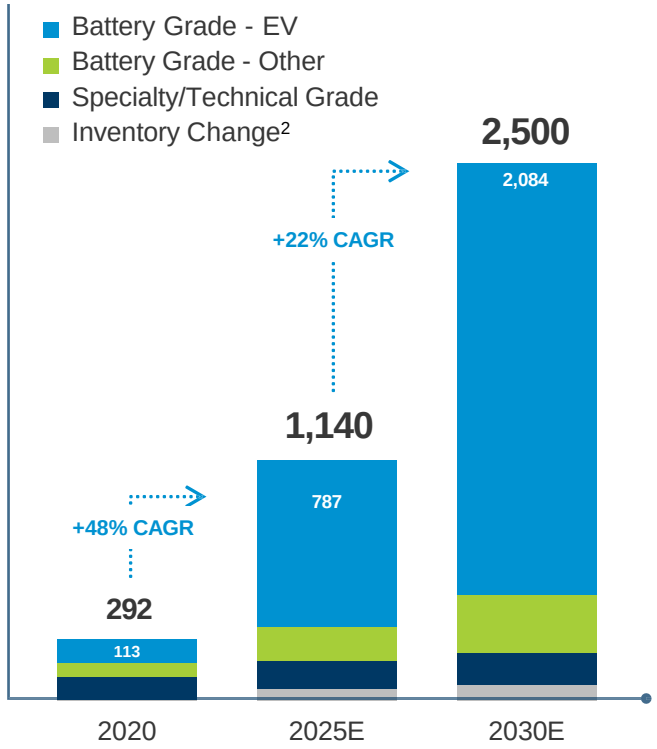


Location	North Carolina, USA
Project Stage	DFS
Business	Integrated LiOH Producer
Resources	39.2Mt @ 1.09% Li_2O
Concentrate Operations	
Production	248,000t/y SC6 Spodumene
Start Date	2022-23
Lithium Hydroxide Operations	
Production	30,000t/y LiOH

LITHIUM DEMAND DRIVEN BY EV PENETRATION AND BATTERY SIZE

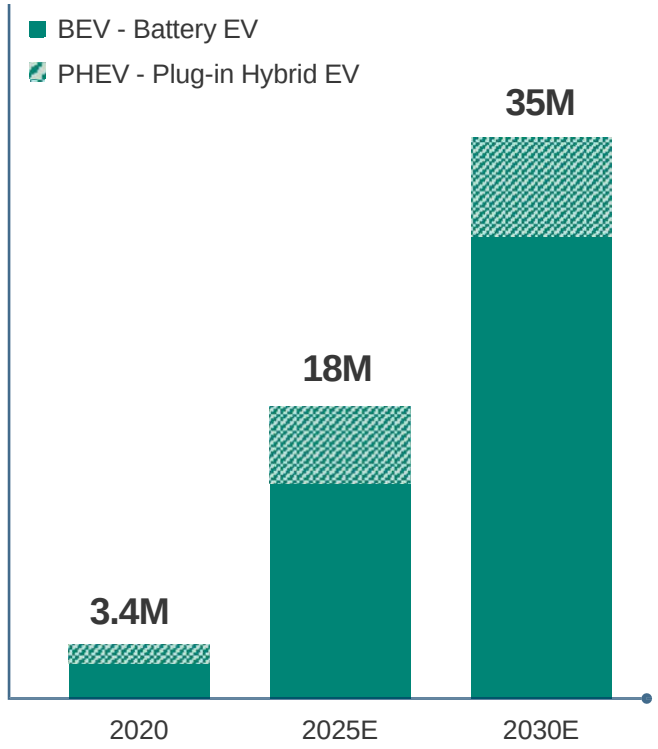
Lithium Demand by Application[1]

(ktpa LCE)



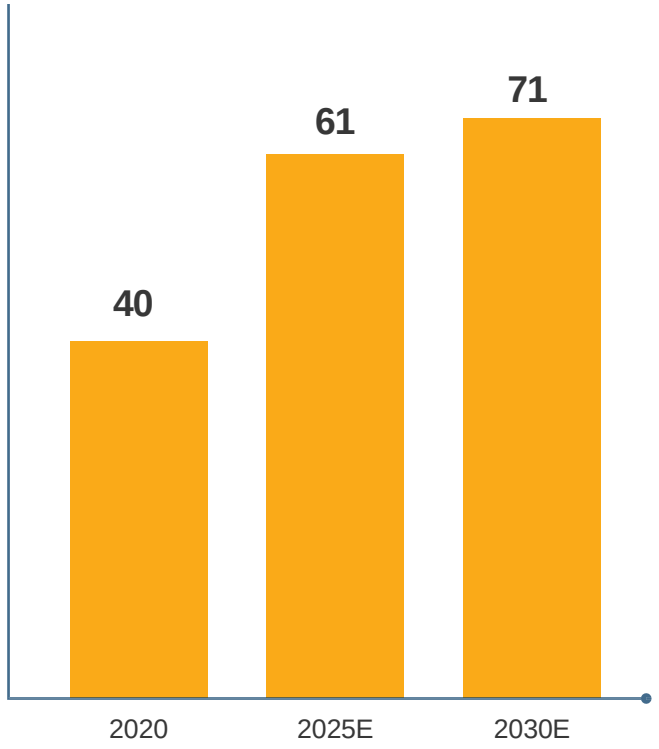
EV Production[1]

(Vehicle Units)



Battery Size (EV Average) [1]

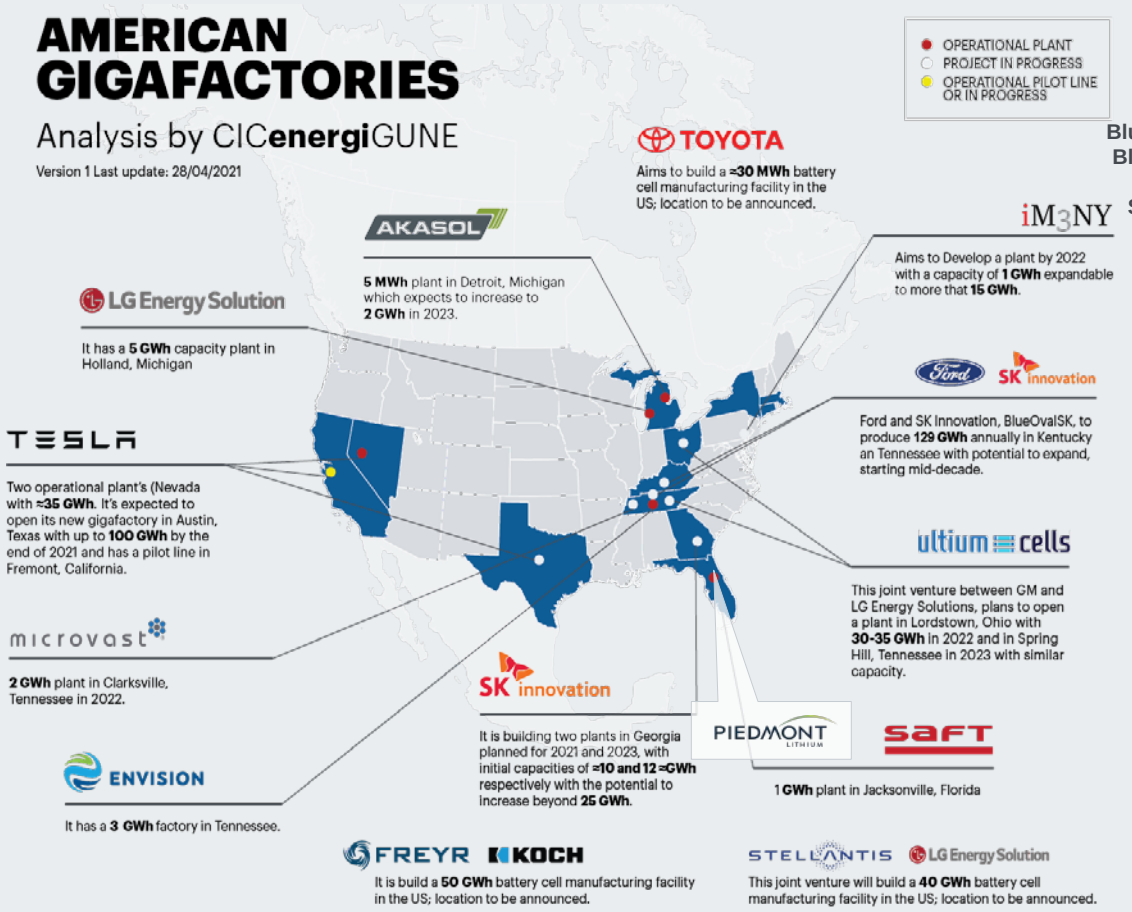
(kWh per EV)

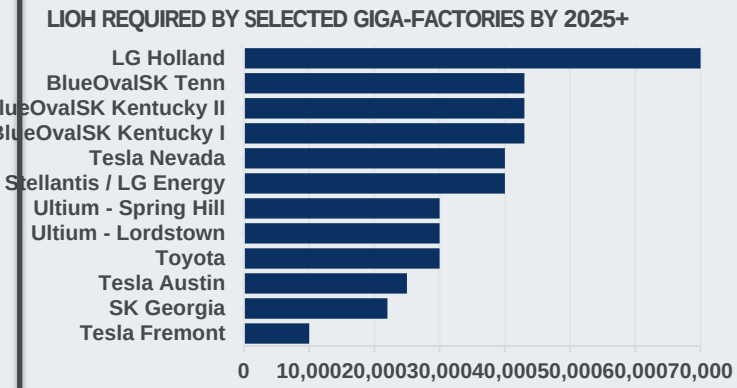


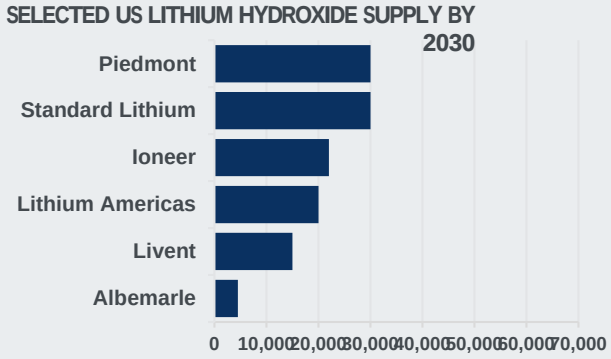
Strong EV demand growth is expected to continue through the decade

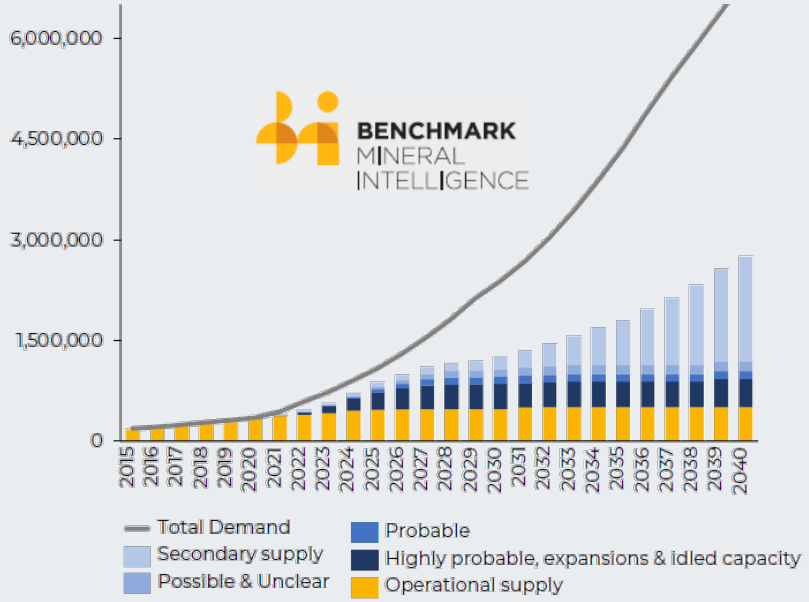
[1] IHS Markit, Roskill, B3, CRU , BNEF, BMI. **Lithium Intensity of Energy Storage Demand**: 0.83, 0.83, and 0.86 kg LCE/kWh in 2020, 2025, and 2030, respectively; calculated from demand model output of total lithium demand (total real consumption and YOY inventory change), which accounts for lithium consumption of different technologies and applications. [2]Inventory change assumes an average three-months of available inventory.

DOMESTIC SHORTFALLS ANTICIPATED



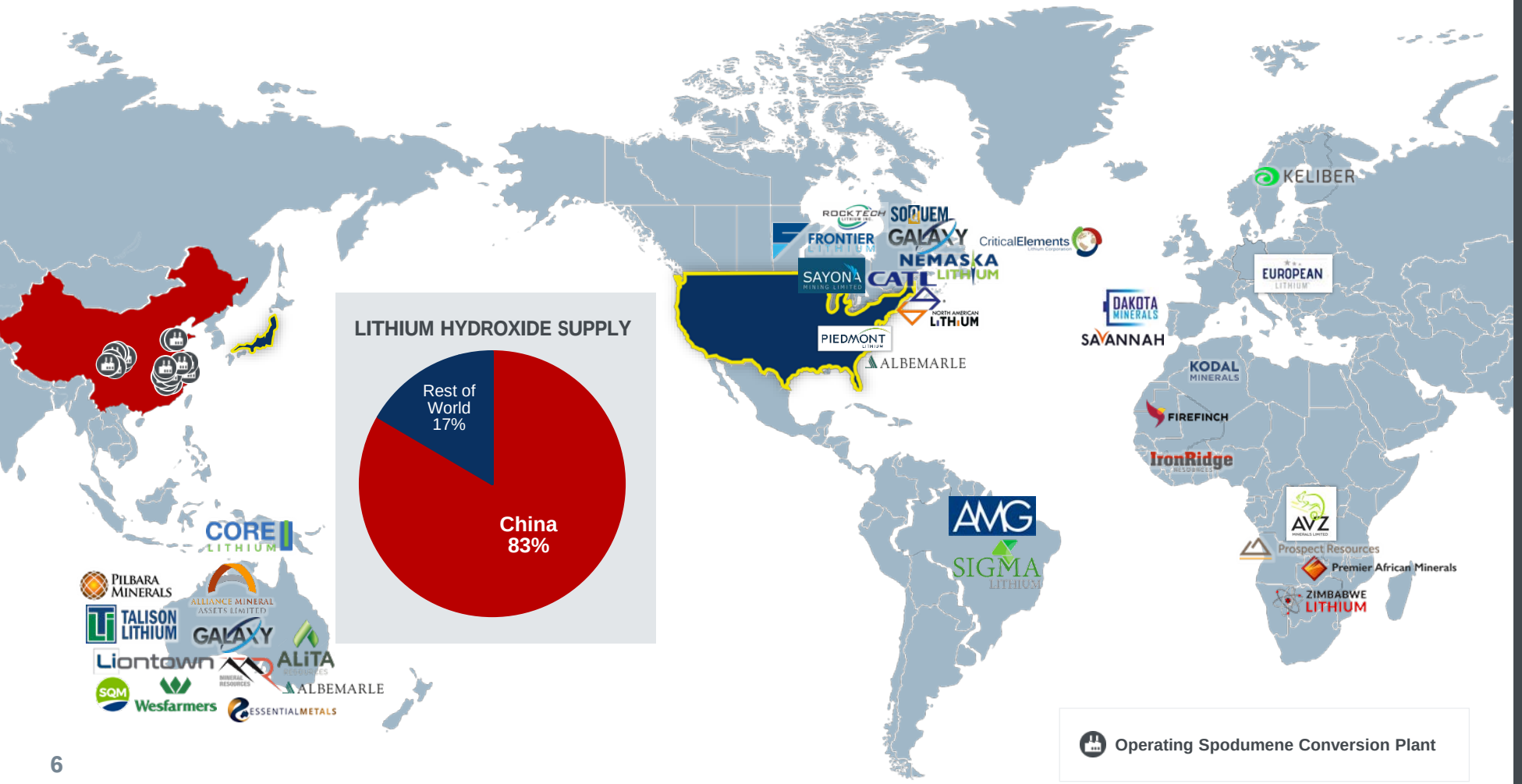






Source: Benchmark Mineral Intelligence – Lithium Forecast, Q3 2021, company announcements and Piedmont Lithium estimates

SPODUMENE PROJECTS EXIST WORLDWIDE, BUT NEARLY 100% OF LiOH CONVERSION OCCURS IN CHINA



LiOH

~100%
OF WORLD SPODUMENE PRODUCTION IS CONVERTED IN CHINA

CHINA
PRODUCES MOST OF THE WORLD'S LITHIUM HYDROXIDE

US AND EUROPEAN
AUTO COMPANIES SEEKING TO LOCALIZE SUPPLY CHAINS

NORTH CAROLINA
IS AN IDEAL LOCATION FOR HYDROXIDE PRODUCTION

USA SUPPLY CHAIN SUPPORTIVE POLICY BACKDROP

Biden infrastructure plan proposes spending $174B to boost America's EV market

CHUCK SCHUMER WANTS TO REPLACE EVERY GAS CAR IN AMERICA WITH AN ELECTRIC VEHICLE

Energy Secretary Granholm says U.S. needs to produce more EV minerals

The Age of Electric Cars Is Dawning Ahead of Schedule

Record Electric Vehicles Sales in USA!

Ford announced plans to invert $29B toward electric & autonomous vehicles

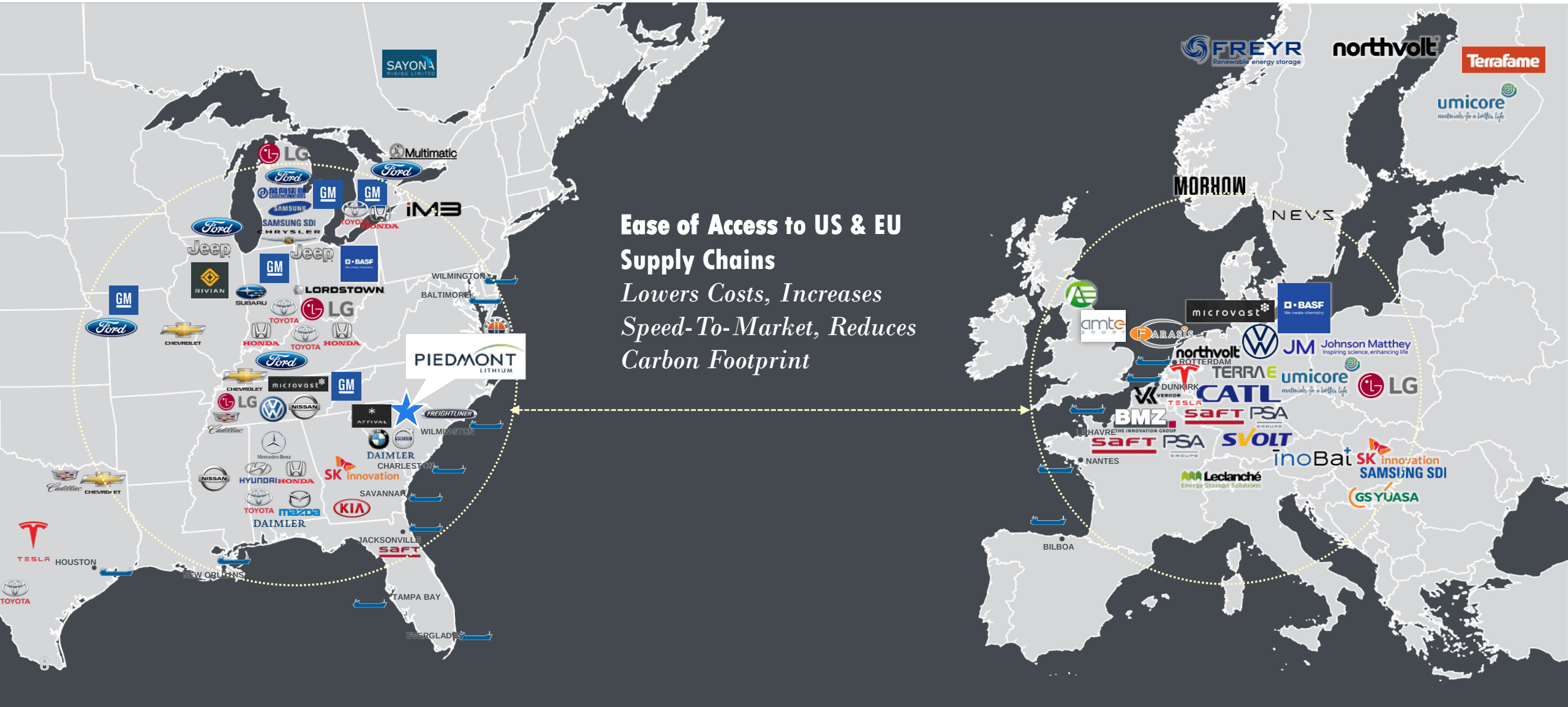
EVs Shifting into Overdrive: can commodity supply keep pace?

US Committed to build Local Li-Ion Battery Supply Chain

GM Aims to Go All Electric by 2035

ELECTRIFICATION DEMANDS REGIONALIZATION

United States – Sustainable location and business friendly environment)



ELECTRIC VEHICLES

Automakers are rapidly transitioning into the growing electric vehicle market.

With several vehicle manufacturing companies planning to go all-electric by 2035, there is a sudden increase in the demand for lithium.

Piedmont Lithium would be America's #1 lithium supplier.

MATERIALS

PIEDMONT LITHIUM
ALBEMARLE
Livent
SQM

CATHODES

SMM
BASF
Panasonic
umicore
JM Johnson Matthey

BATTERIES

FREYR
microvast
ROMEO POWER TECHNOLOGY
QuantumScape
enovix
Panasonic
CATL
SK innovation
LG Chem

VEHICLES

TESLA
RIVIAN
LORDSTOWN
CANOO
HYLIION
LION
ARRIVAL
WORKHORSE
PROTERRA
XLFleet
JOBY AVIATION
LUCID
Faraday Future
ELMS

AFTER MARKET

blink
chargepoint
EVBOX
volta
EVgo
NUVVE

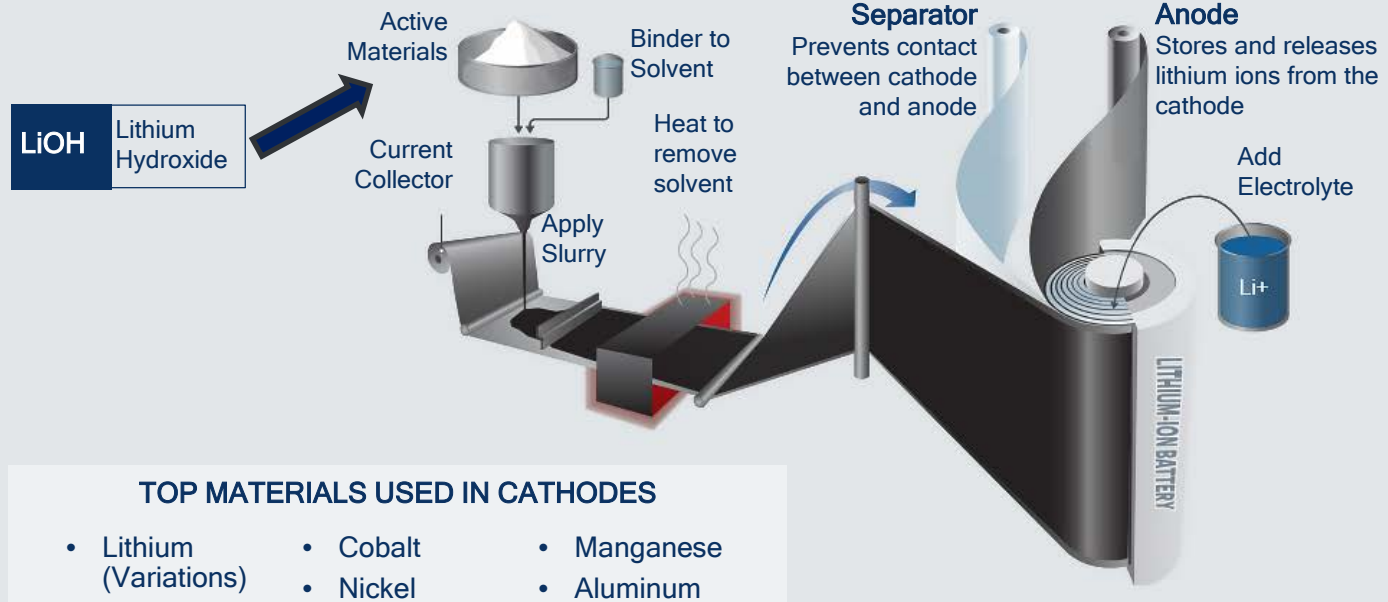
RECYCLING

Li-Cycle
REDWOOD MATERIALS
ReCell ADVANCED BATTERY RECYCLING
BATTERY RESOURCERS

Cathode

Source of Lithium ions; determines capacity and average voltage

LiOH Lithium Hydroxide



Separator

Prevents contact between cathode and anode

Anode

Stores and releases lithium ions from the cathode

TOP MATERIALS USED IN CATHODES

- Lithium (Variations)
- Cobalt
- Nickel
- Manganese
- Aluminum

WHY IS ALL THIS IMPORTANT?

PROJECTIONS

- Bloomberg projects worldwide sales of 56 million passenger EVs in 2040, of which 17 percent (about 9.6 million EVs) will be in the U.S. market.

- The Organization of the Petroleum Exporting Countries (OPEC) foresees roughly 320 million EVs on the road by 2040.

OPPORTUNITY

- If all batteries for Bloomberg's projected 9.6 million U.S. passenger EVs were manufactured abroad, that would result in roughly $100 billion in imports. **FCAB's Vision and Goals need to be a National Priority.**
- For 9.6 million EV's, assume average battery size ~65kwh, that equals to ~630GwH of Battery capacity, requiring **550kta of Lithium Hydroxide**.
- By 2050, every 2ND car on the streets in the world could be electric. This would **reduce global CO2 emissions** by ~1.5 gigatonnes per year, which is equivalent to the total current CO2 emissions of Russia.

TRANSPORTATION

WHY IS ALL THIS IMPORTANT?

PROJECTIONS

- Total annual U.S. electricity generation from wind energy increased from about 6 billion kWh in 2000 to about 338 billion kWh in 2020.

- In 2020, wind turbines were the source of about 8.4% of total U.S. utility-scale electricity generation.

- Solar and Wind installations are highly inefficient due to limitations of the grid and ability to supply the consumers.

OPPORTUNITY

- Energy Storage and Lithium-Ion Batteries. Use energy storage batteries to store and dissipate solar and wind energy generation (**replace Peaker power plants**) back into the Grid.

- **Enable micro-grid systems** to more efficiently and effectively generate, store and distribute energy to the consumers.

ENERGY STORAGE

WHY IS ALL THIS IMPORTANT?

PROJECTIONS

- Between 2003 and 2007, one in twenty-four fuel convoys ended in a US casualty and attributed more than three thousand US military and DoD contractor deaths to fuel convoys in Iraq and Afghanistan during that time.

- The military requires thousands of unique types of Li-Ion batteries each year resulting in over $200 million in annual procurements from the Defense Logistics Agency (DLA), which is only a portion of overall annual demand.
  - Many of the batteries and 'materials' used to produce these batteries are from **China** and other Asian nations.

OPPORTUNITY

- Power and energy supply via energy storage (ie…Lithium-Ion Batteries). This includes comms equipment, vehicles, etc…to **minimize 'refueling'**.

- Development of a **local Lithium-Ion Battery supply chain** and resultant materials (starting with Lithium)

NATIONAL SECURITY

THANK YOU FOR YOUR TIME

- Thank you – National Academies of Sciences, Engineering, Medicine
- Thank you – Jasmine Bryant, Kasia Kornecki, Dave Howell, Anna Stefanopoulou

The National Academies of
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PIEDMONT LITHIUM

Nasdaq: PLL ASX: PLL PIEDMONT LITHIUM

APPENDIX

SUPPLY SHORTAGES ANTICIPATED – ACCELERATED DEMAND

"New projects will be unable to respond fast enough as the recent low-price environment has led to underinvestment."

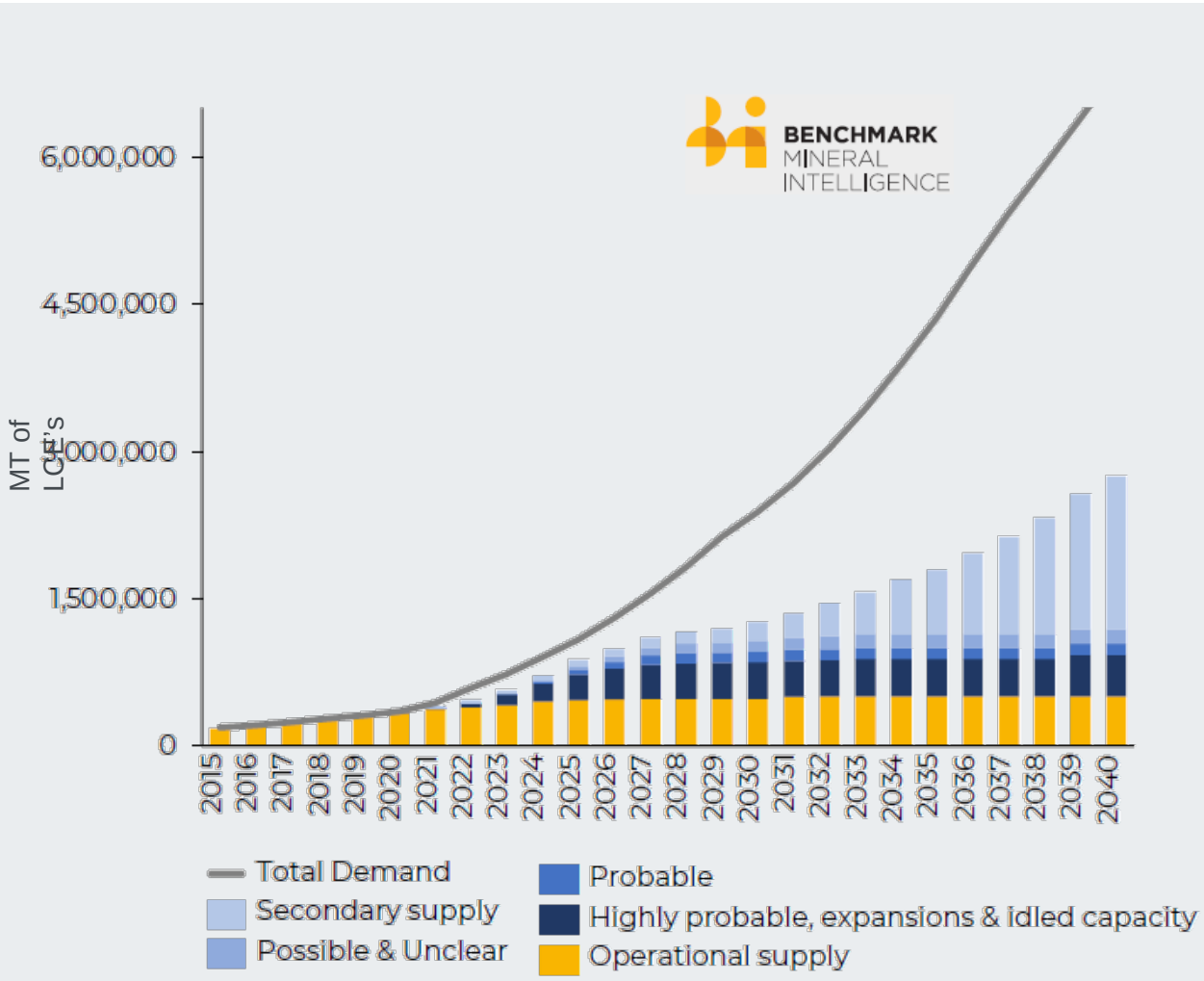
Benchmark Minerals Intelligence – March 2021

"Beyond 2025, we continue to forecast significant market deficits, noting a ~7x increase in supply is required to meet our 2030 demand forecast."

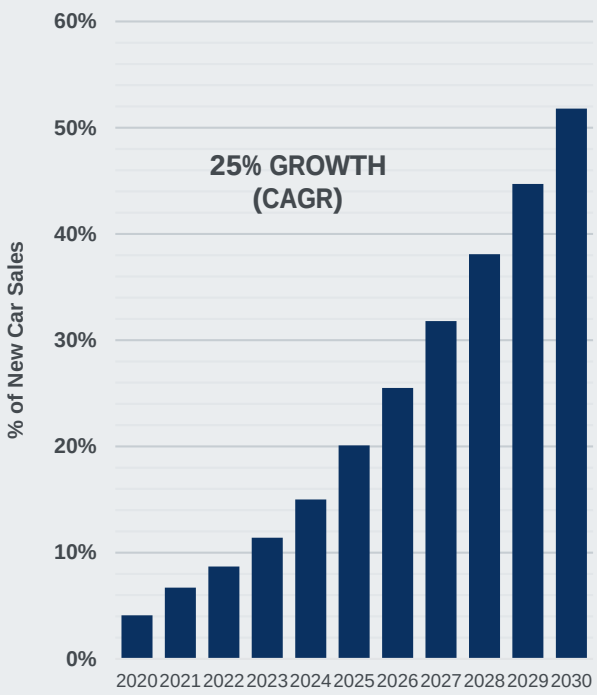
Canaccord Genuity – February 2021

"It seems inevitable that battery-grade lithium prices will rise above $15/t over the coming months."

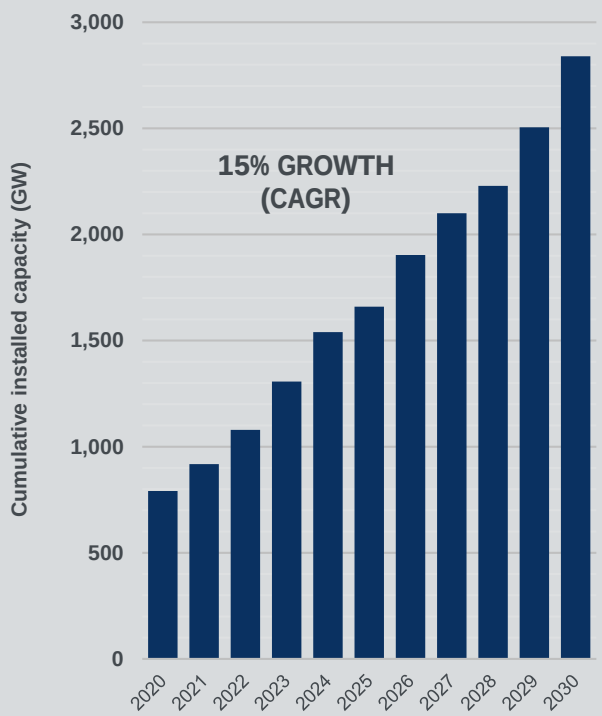
RK Equity – March 2021



ELECTRIFICATION & ENERGY STORAGE IS A GLOBAL MEGA-TREND WITH RAPID GROWTH



Source: UBS Research



Source: IRENA's renewable energy statistics (IRENA, 2019c) and future projections based on IRENA's analysis (2019a).

PIEDMONT LITHIUM

Carolinas Lithium Project

RESOURCES

- Shallow Quarry
- Pure Spodumene
- Exploration Ongoing

LOCATION

- “Cradle of Lithium”
- Vast Infrastructure
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ECONOMIC

- Zero State Royalties
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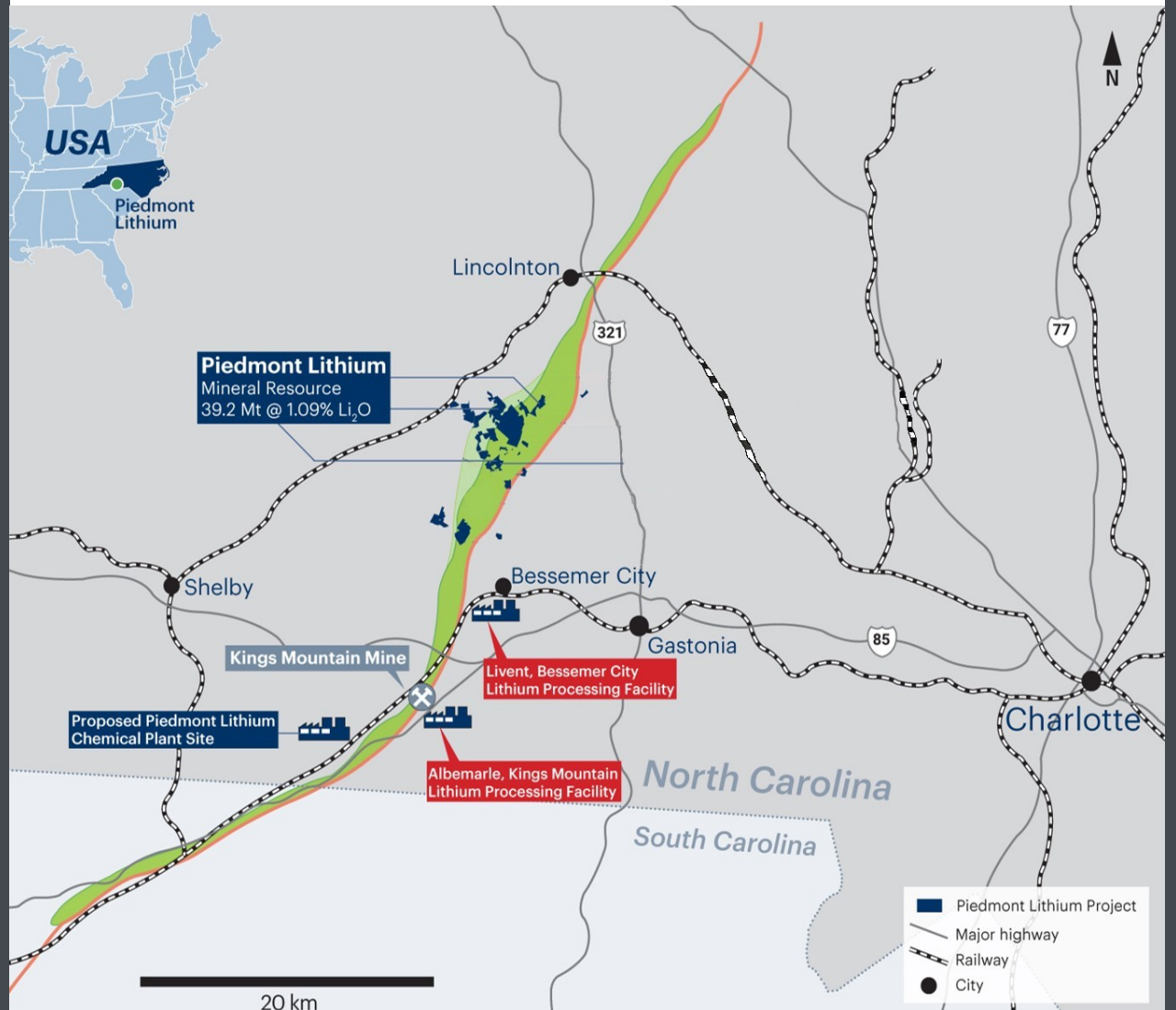

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FACT SHEET

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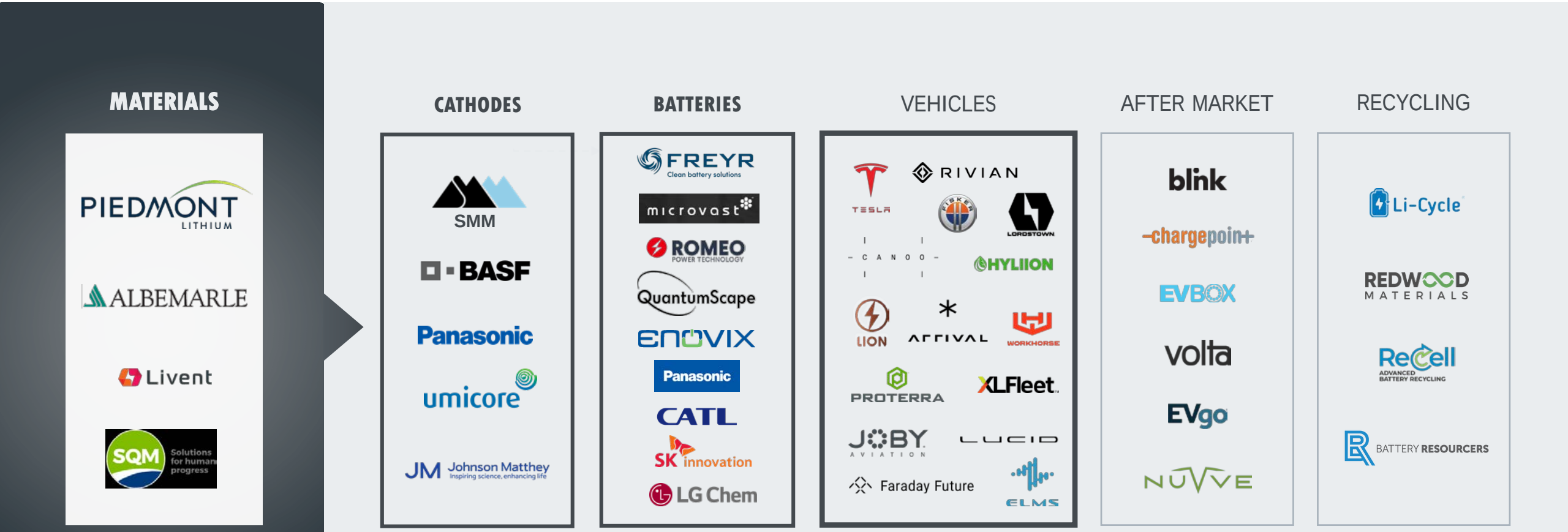
MASSIVE CAPITAL INVESTMENT REQUIRED

EV Revolution Won't Happen Without Indispensable Raw Materials



PROCESSES FOR CONVENTIONAL RESOURCES EXTRACTION

Resource Extraction

Hard Rock

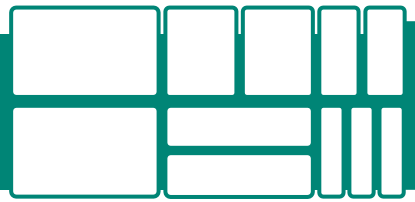
0.5- 2.5% Li_2O

SPODEUMENE

6% Li_2O Concentrate

Brine

0.01- 0.30% Li



PONDS

6% Li Concentrate

Lithium Conversion

Option to convert to lithium carbonate via 3rd party tolling

Optional further processing to produce hydroxide

Lithium Products

Battery and Technical Grade Lithium Hydroxide

Battery and Technical Grade Lithium Carbonate

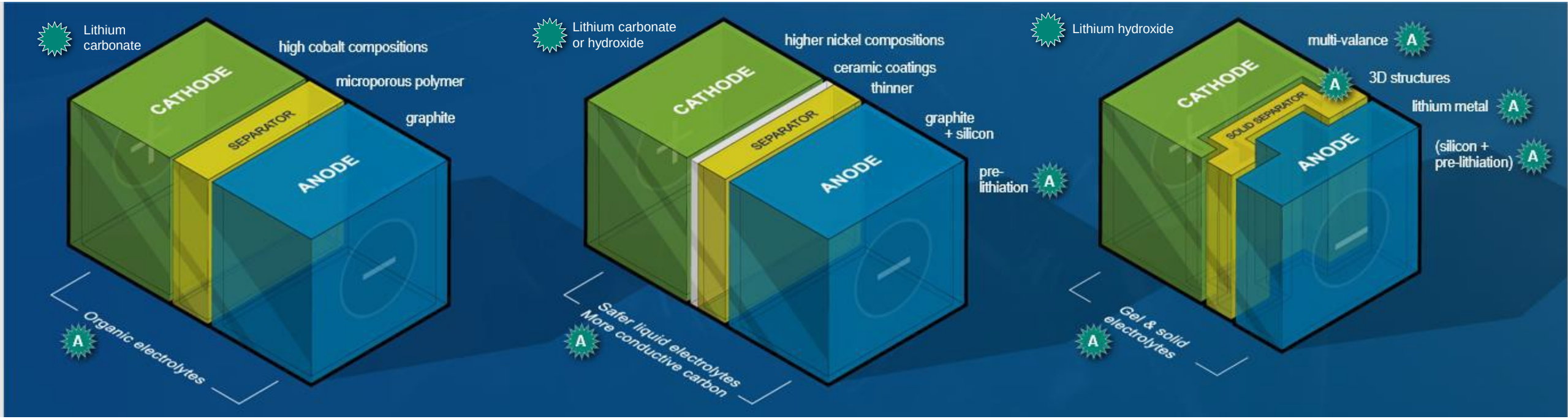
Battery and Technical Grade Lithium Hydroxide

Battery Grade Metal

Specialty Salts

NOVEL MATERIALS TO ENABLE NEXT GENERATION BATTERY PERFORMANCE

Legacy	Advanced	Next Generation
Established Technologies in Use (Current) e.g., LFP and higher cobalt chemistries	New Technologies in Commercialization (~2020-2025) e.g., NMC 622, NMC811 and higher nickel chemistries	New Technologies in Development (2025+) e.g., Li metal anode, solid-state
Low $100's/kwh[1]	20-40% improved energy density & improved costs[1]	2x energy density, ½ cost[1]



Improving safety, energy density, affordability, and charging speed to enable broad EV adoption

[1] Based on management estimates.