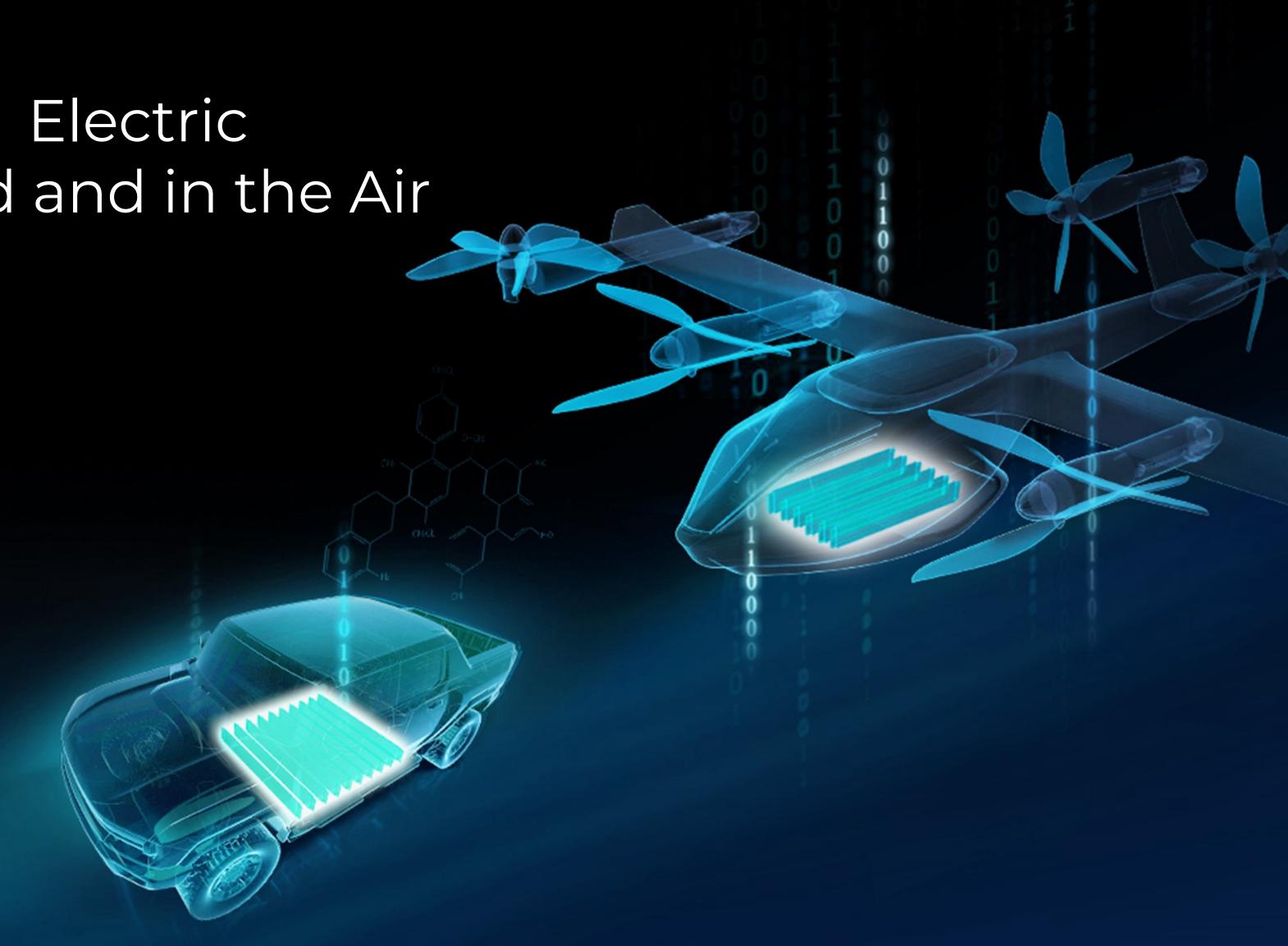


Powering a New Era of Electric
Transportation on Land and in the Air
with Li-Metal Batteries

Al for Science & Safety

Investor Presentation
June 2024



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### The SES Al Opportunity

#### DIFFERENTIATED BATTERY TECHNOLOGY PLATFORM

Leading Energy Density with Proven Safety Characteristics and Supported by Al

#### VALIDATED BY OEM PARTNERS

Partnerships with Leading Auto and Urban Air Mobility OEMs

#### DESIGNED FOR MANUFACTURING AT SCALE

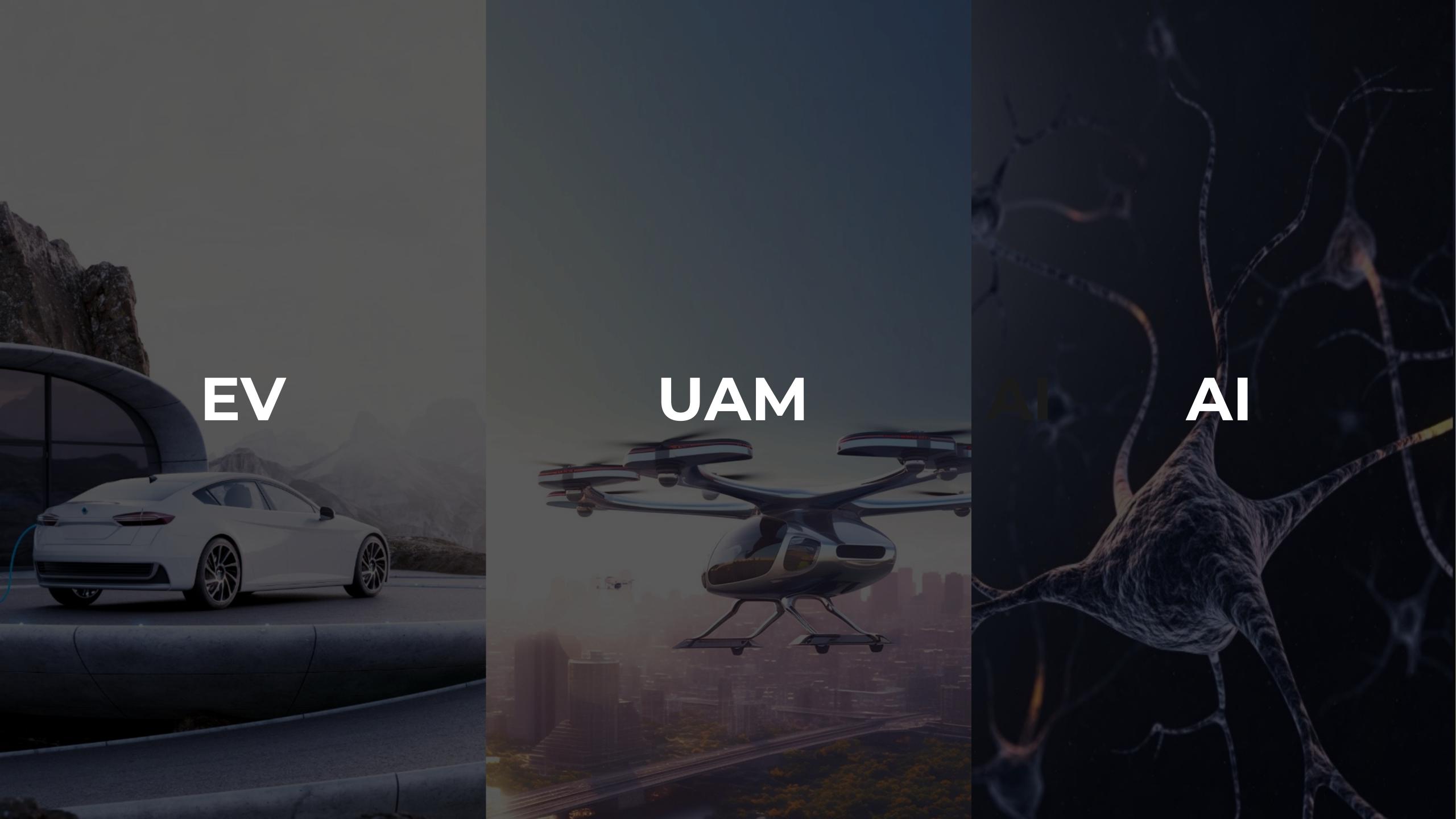
Industry-Leading Manufacturing Maturity Among Li-Metal Cells Today

#### LARGE AND GROWING TAM IN BOTH EV AND UAM

Substantial Opportunity to Increase Market Share Today and Over Longer Term

#### **WORLD-CLASS MANAGEMENT TEAM**

SES Possesses Significant Thought Leadership in EV/UAM Battery and Al Development Experience



### Battery <> Al for Science & Safety



#### Prometheus

Al for Science

Mapping the vast universe of small molecules, building and training new AI foundation models and identifying suitable molecular candidates for next-gen Li-Metal battery electrolytes.



#### Hermes Human R&D

Formulating and testing electrolytes based on novel molecules recommended by

Prometheus using highthroughput to develop nextgen battery materials.



#### Apollo

Human Engineering

Developing cell design, engineering and manufacturing process for both internal platforms and customer requirements in EV and UAM.



#### Avatar

Al for Safety

Ensuring near 100% safety guarantee in the field by building and training deep learning models with design, manufacturing quality and vehicle testing data.



~ 10<sup>12</sup>

Access to the world's largest molecular database



> 99.6 %

Considered to be the world's highest Coulombic Efficiency on Li-Metal



**Ist** 

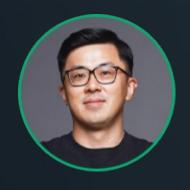
World's first automotive A-sample and B-sample JDA in Li-Metal



> 92 %

Currently the world's highest incident prediction accuracy for Li-Metal

### Battery <> Al for Science & Safety (Our Team)



DR. QICHAO HU Founder. Chairman & CEO





Forbes 30 Under 30 MIT Technology Review Innovators Under 35 PhD in Applied Physics from Harvard BS in Physics from MIT



JING NEALIS Chief Financial Officer **view** sunpower'

18 years of finance experience, including at public companies.

Previously worked at View, SunPower, Shunfeng, Suntech Power and Deloitte.



DR. HONG GAN Chief Science Officer BROOKHAVEN ( ENEVATE

25 years of battery R&D experience.

Key contribution in silicon-based Liion and Li-S technologies.

PhD in Chemistry from Uni. of Chicago and PostDoc from Uni. of Rochester.



**DANIEL LI** Chief Manufacturing Officer A123° SYSTEMS

15 years of experience working in the lithium-ion battery industry, including in senior roles at A123.

Rich experience and perspective in cell engineering, manufacturing, quality, management and operation.



DR. KANG XU **Chief Scientist** 

MRS Fellow, ECS Fellow, emeritus ARL Fellow and one of the world leading researchers in electrolyte materials and interfacial science.

Published more than 350 papers in this field, with an h-index of 118, and has been recognized with many awards for the discovery of new electrolyte materials and understanding of the fundamental mechanisms.



DR. WINSTON WANG SVP of Product Development

Managed battery R&D at DJI. Responsible for DJI's key drone smart battery and power systems launch.

PhD in Mechanical Engineering from the University of Hong Kong.



**KYLE PILKINGTON** Chief Legal Officer

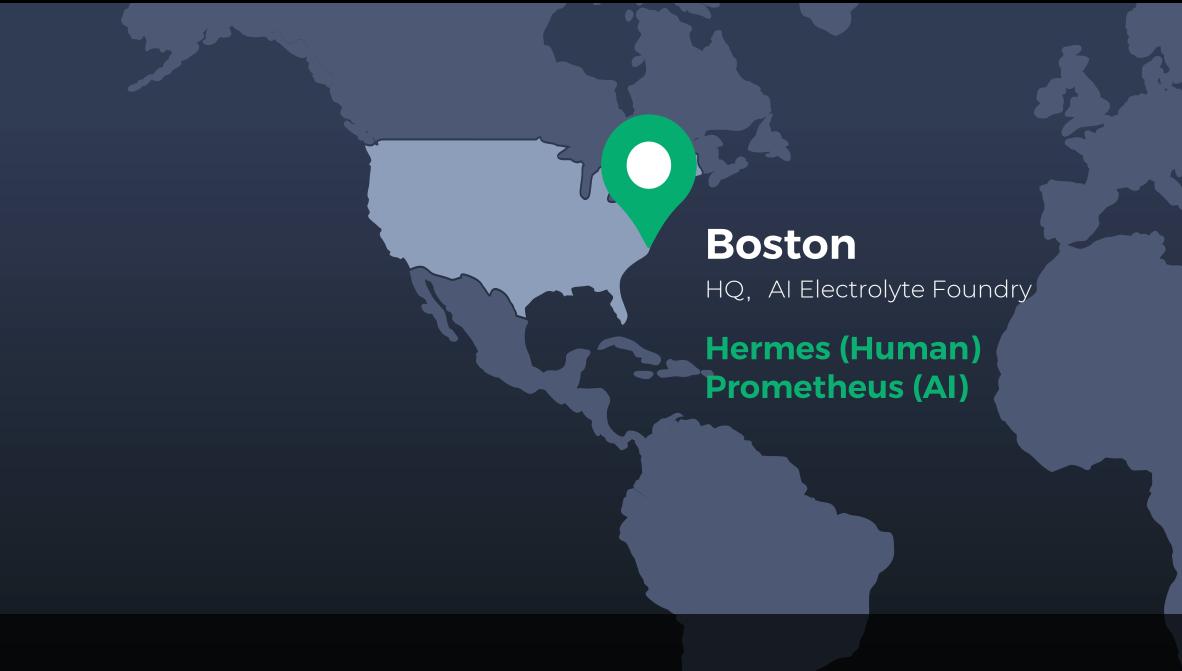


16 years of international legal experience, including in capital markets, securities law, corporate governance and M&A.

Previously worked at International Game Technology, Sullivan & Cromwell, Gibson Dunn and Baker McKenzie.

## Battery <> Al for Science & Safety (Our Sites)







Test bunker for large automotive Li-Metal cells

2012	2017	2021	2022	2023	2024	2025	2026
Est. (MIT	Start	Sign	NYSE	Sign world's	Build	Sign	Sign
spinoff)	Avatar	world's	listing	first EV	2 EV B-	world's	world's
		first EV	(NYSE:	B-sample	sample	first EV C-	first EV
Start		A-sample	SES)		lines and	sample	SOP
Hermes		(GM,		Start	1 UAM line		
		Hyundai,		Prometheus		Ship UAM	
		Honda)				cells and	
		Start				modules	
		Apollo					

### Partner with Leading Automakers



- \$50MM+JDA (March 2021)
- \$60MM equity investment (since 2015)
- Joint pre-production facility (going forward)
- GM's CTO serves as a director on our Board



- JDA (May 2021)
- \$50MM equity investment (May 2021)
- \$50MM PIPE commitment (June 2021)
- Joint pre-production facility (going forward)



- JDA (January 2022)
- Largest single investor in PIPE financing -- \$75 million
- 6<sup>th</sup> major global car manufacturer to invest in SES

Other Investors





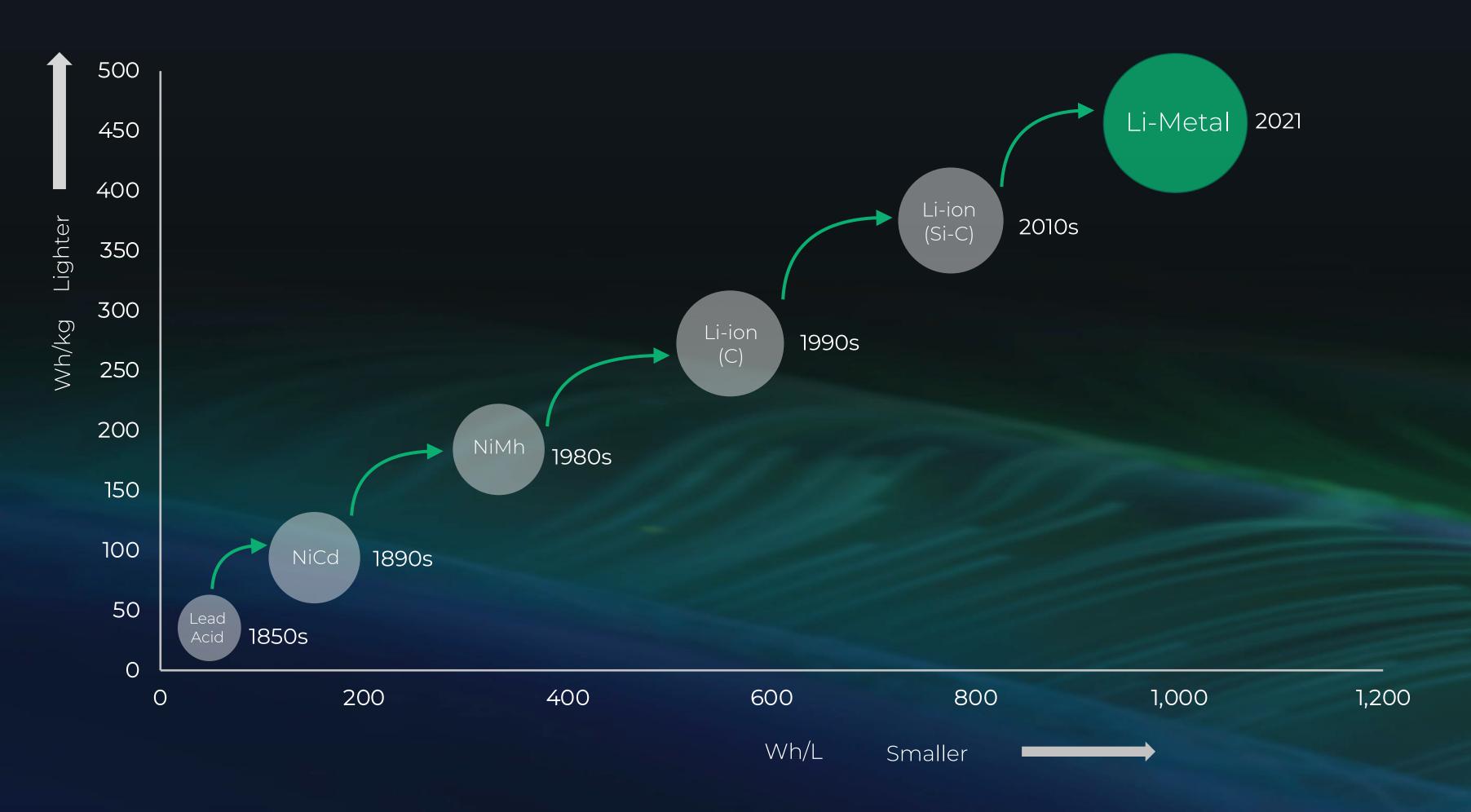




TEMASEK



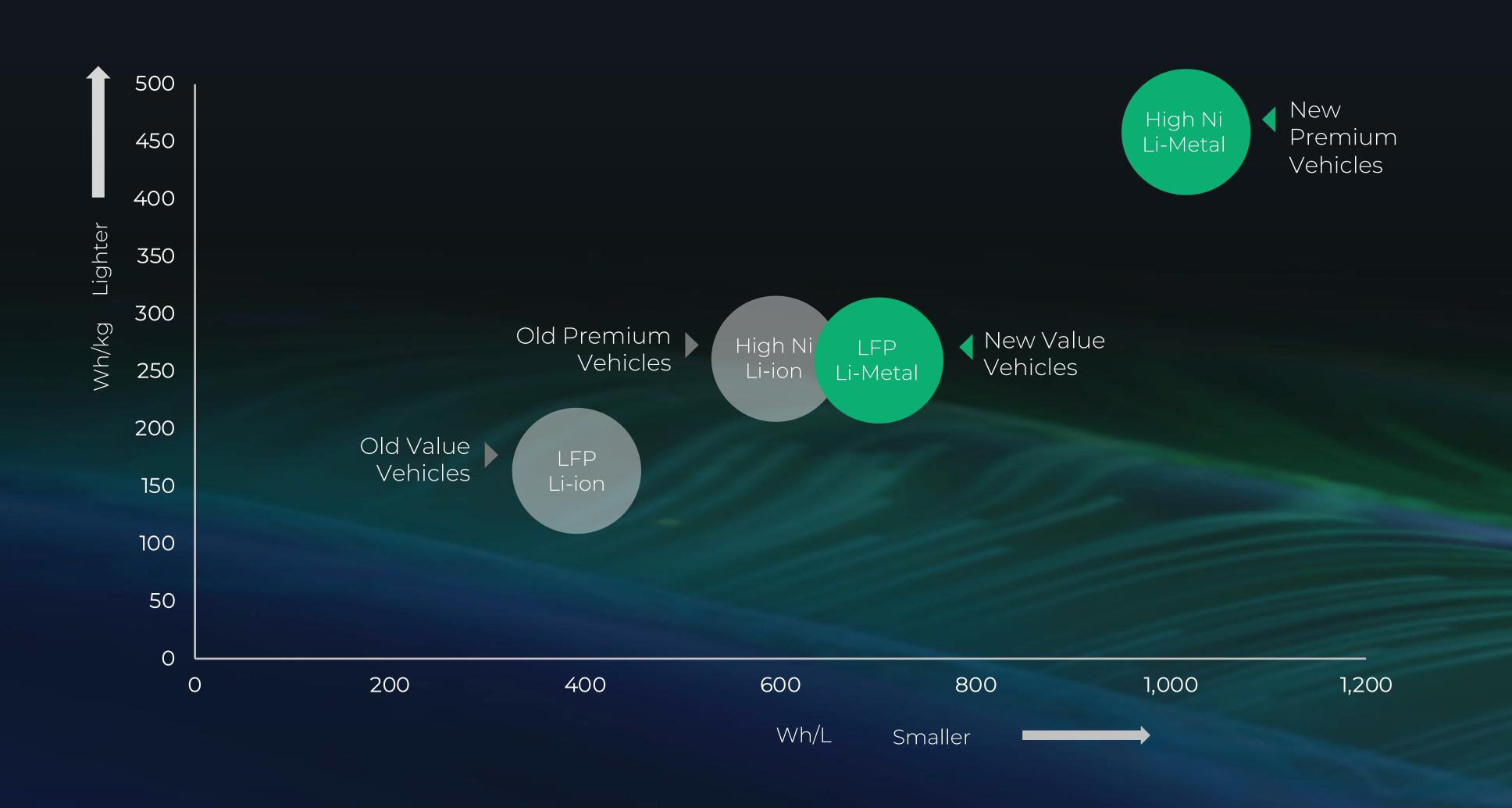
### A Step-change from Li-ion Batteries



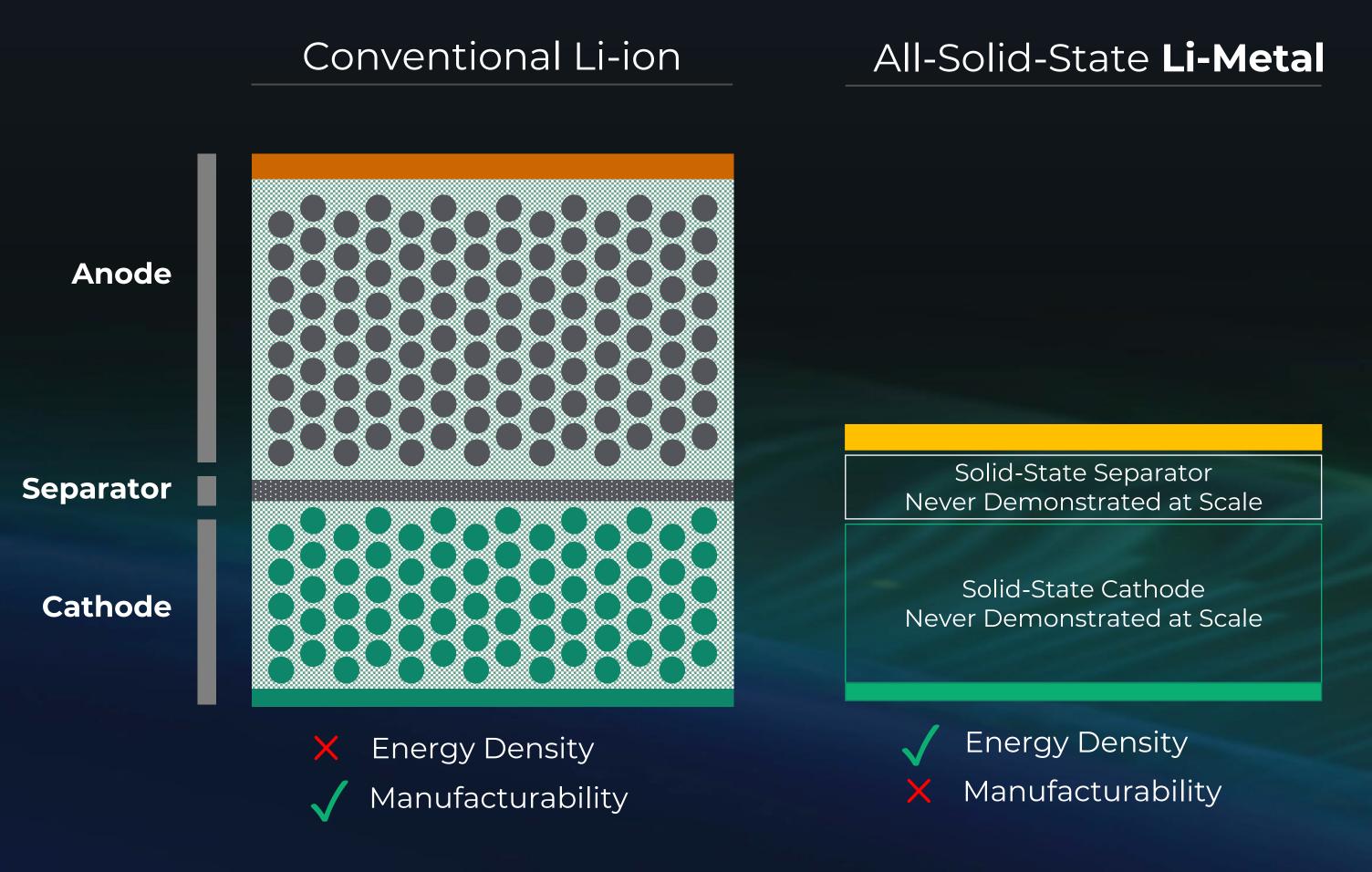
Transistor areal density: 2X every 18 months

Battery energy density: 2X every 30 years

### Li-Metal is the "End-Game" for EV



# Why Liquid Li-Metal



SES Li-Metal **Energy Density** Manufacturability

### Li-Metal Batteries



#### DENSER

>400 Wh/kg and 1,000 Wh/L, providing longer range for EVs and eVTOLs



#### SCALABLE

Manufacturable at scale using existing Li-ion processes



#### LIGHTER

Ultra-thin Li-Metal anode reduces battery weight



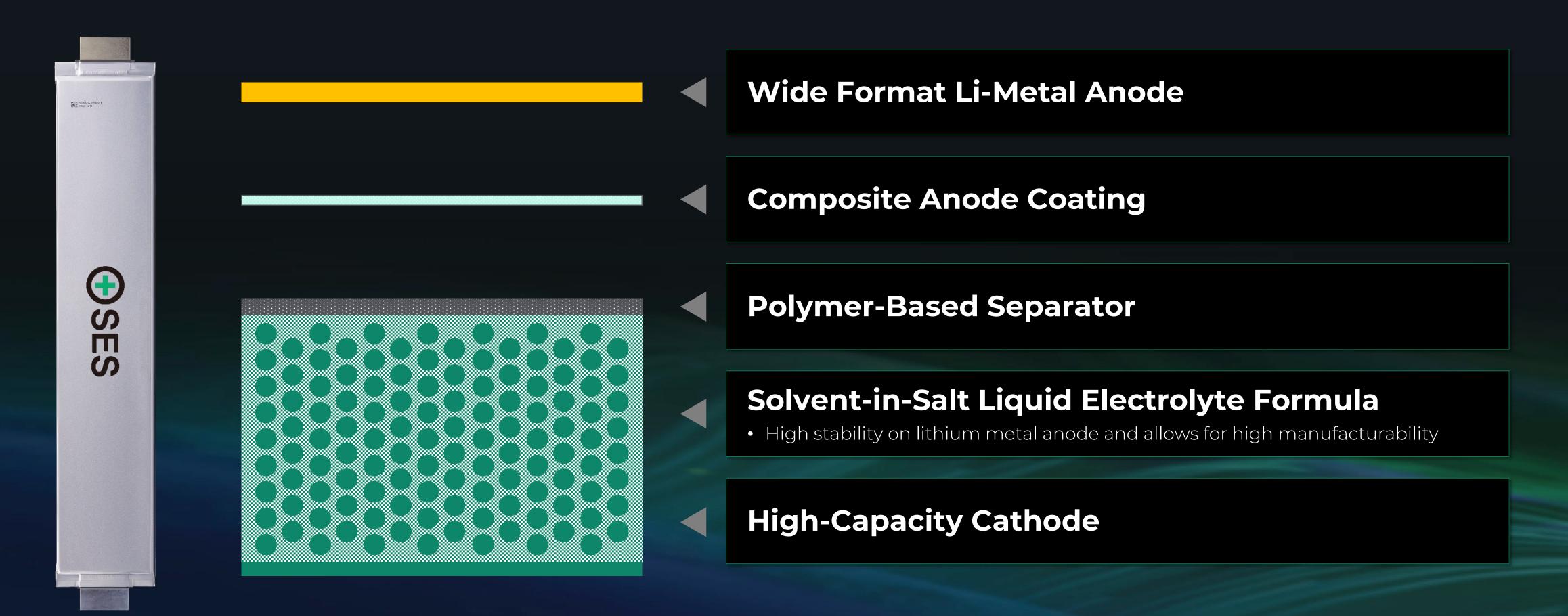
#### **SMARTER**

Al-powered algorithm monitors battery health

Superior Technology, Safety and Manufacturability



### Li-Metal Batteries



Combined in a Proprietary Cell Design for Optimized Performance and Safety

# Our Intellectual Properties





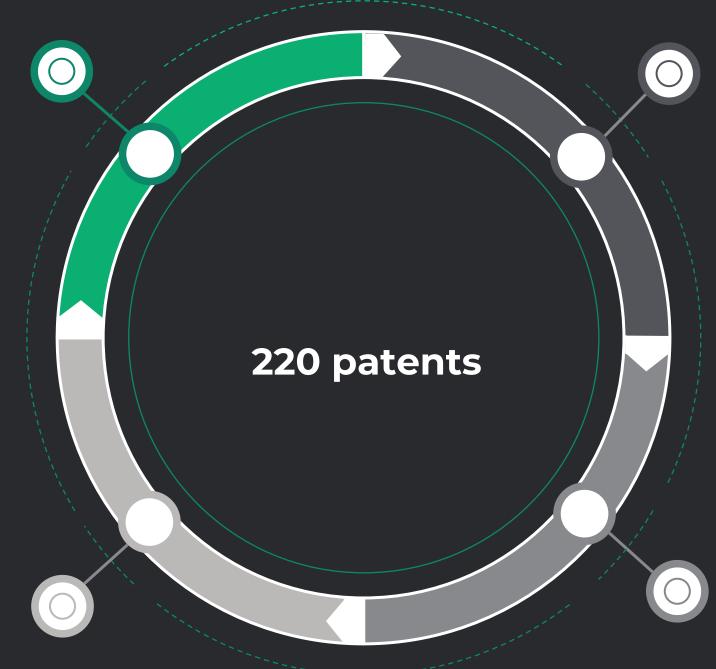
#### Materials

- Electrolyte
- Salt
- Anode
- Separator



#### Al Powered BMS

- Safety Algorithm
- Monitoring & Diagnostics





#### Cells/Packs/Modules

- Anode-Free
- Anode-Light
- High Energy Density
- Packs / Modules (Expandable & Constrained)



#### Recycling

- Mossy Lithium Recovery
- Lithium Metal Extraction

### Hyundai Partnership Enters Next Phase



Hyundai has announced it will spend \$51 billion over three years to bolster is growth potential in EVs and new mobility business. More than half of the investment will be for R&D infrastructure and assembly lines for EVs, including software and battery technology.

Source: Reuters, March 27, 2024



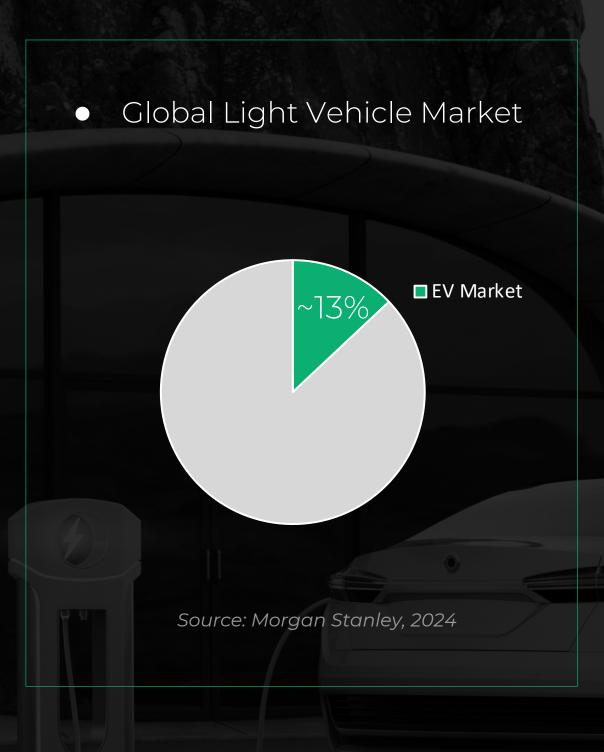
# SES AI, Hyundai and Kia enter next phase of joint development

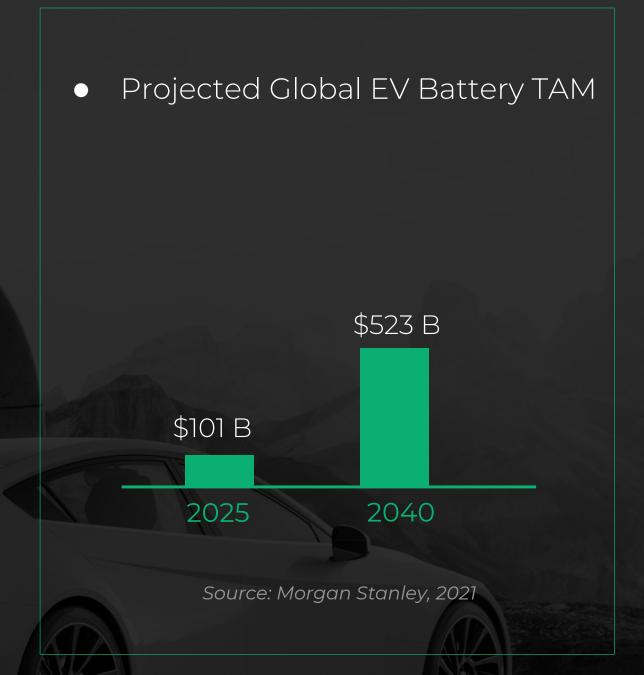
Two firsts for SFS Al>>

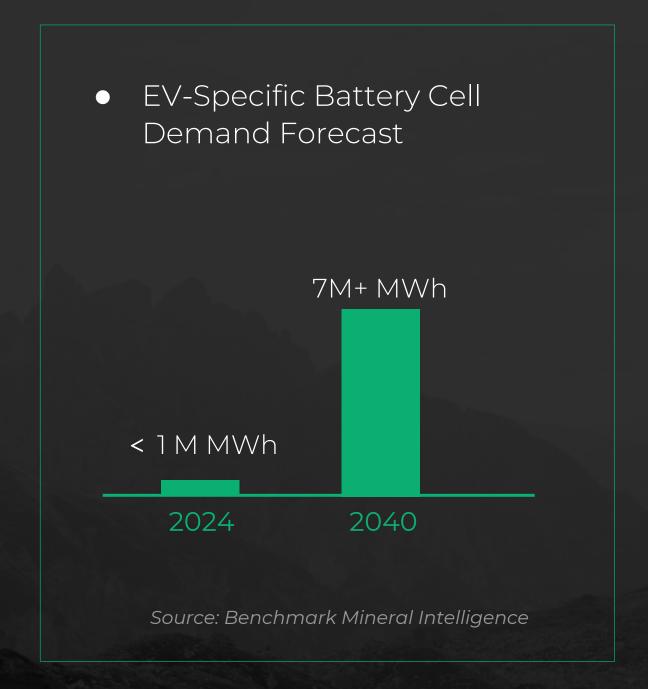
- **First time** a Li-Metal battery manufacturer agree to build a line within an automotive OEM's facility.
- Only Li-Metal battery company to have two B-sample development JDAs underway.

### **EV TAM**

• The passenger EV battery TAM is massive with commercial EVs, drones and other applications further expanding the opportunity







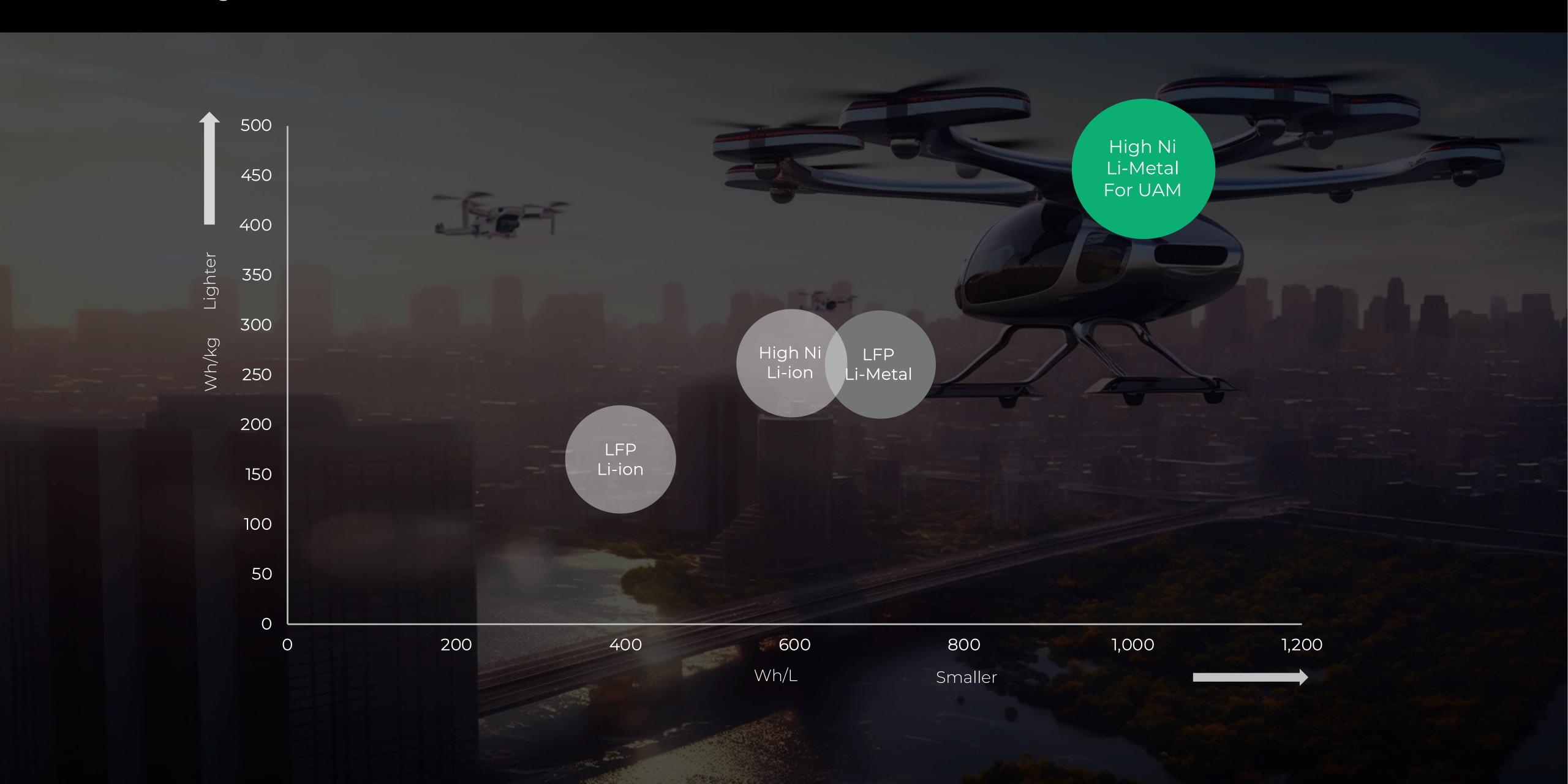


### UAM is an Adjacent Growth Opportunity

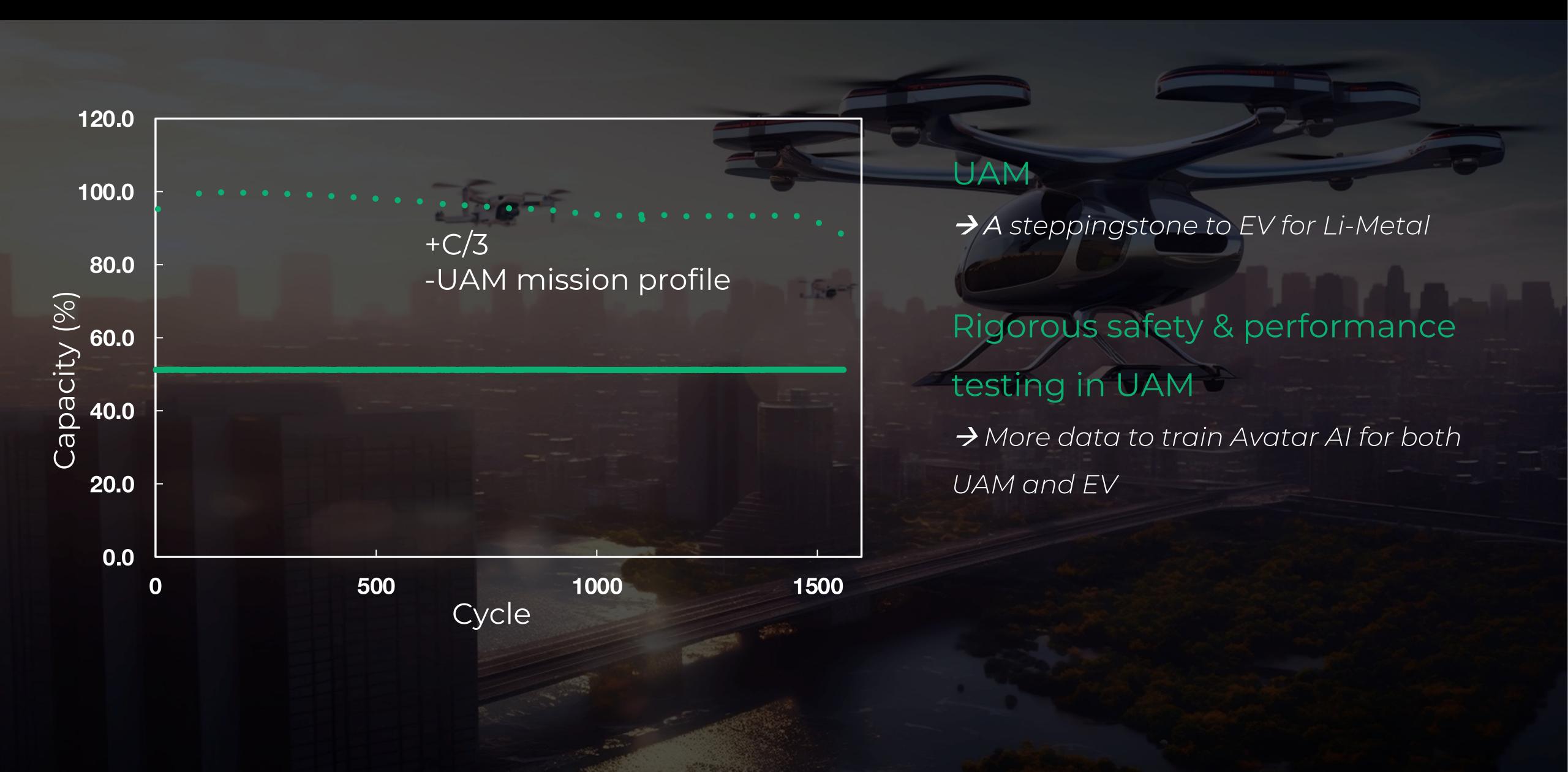
- Opportunity to be a first mover in Li-Metal for UAM, define industry standards and "make the market;" Li-Metal fundamentally changes the UAM market economics.
- A natural extension of current technological milestone and R&D achievements with automotive OEMs; EV B-samples are equivalent to UAM commercialization.
- Synergy with EV roadmap opens an additional TAM of \$30bn by 2030 with relatively low incremental investment.
- Generates revenue earlier than anticipated in 2025 while providing proof of concept for EV + data collection and training of Avatar AI.
- Signed a growing number of cell sampling and supply agreements with the top 5 UAM OEMs; working with OEMs on pack development and certification.



# Why Li-Metal for UAM

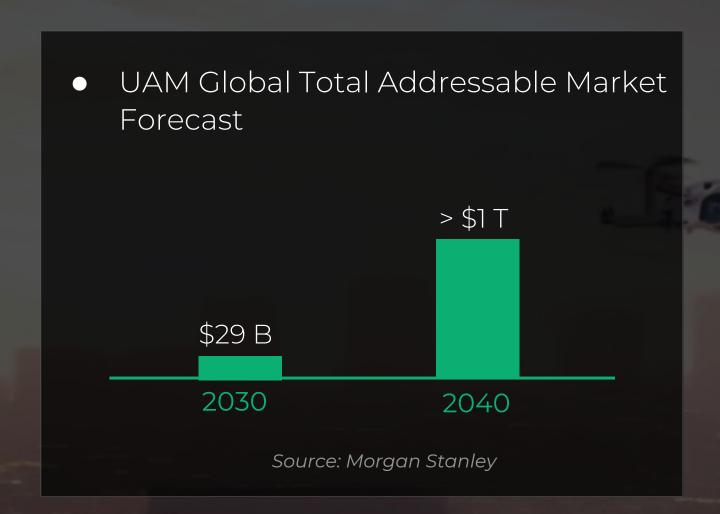


### Li-Metal is a Perfect Fit for UAM

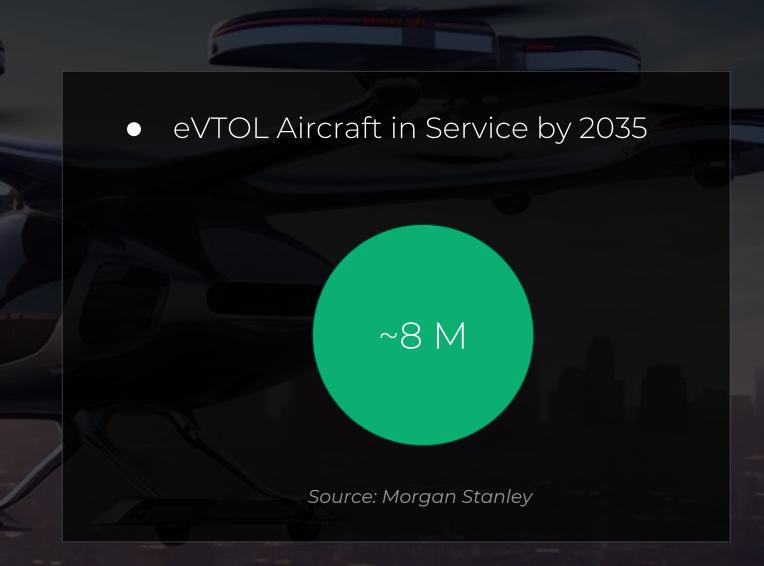


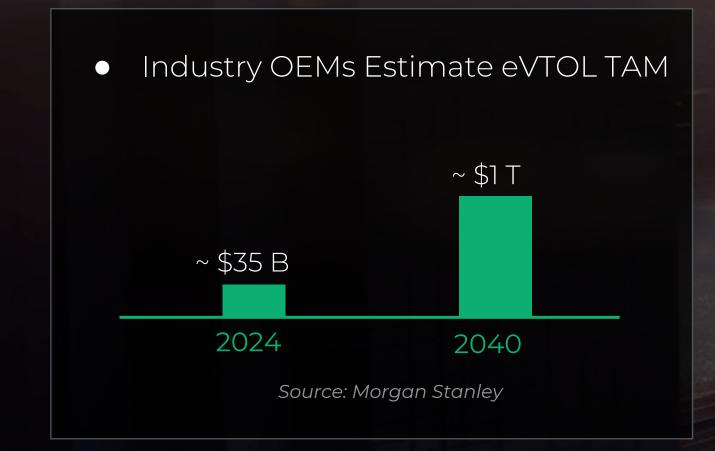
### A Large Growing TAM for UAM

• TAM estimates vary depending on the sources, but most are extremely large.





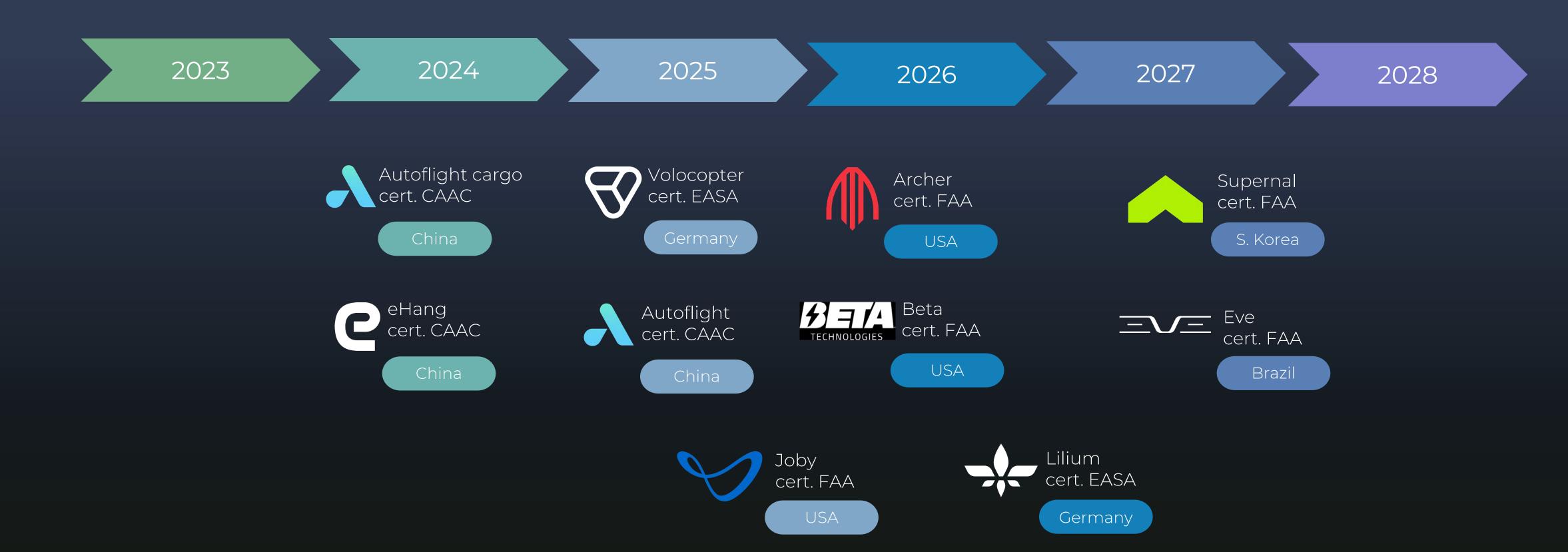


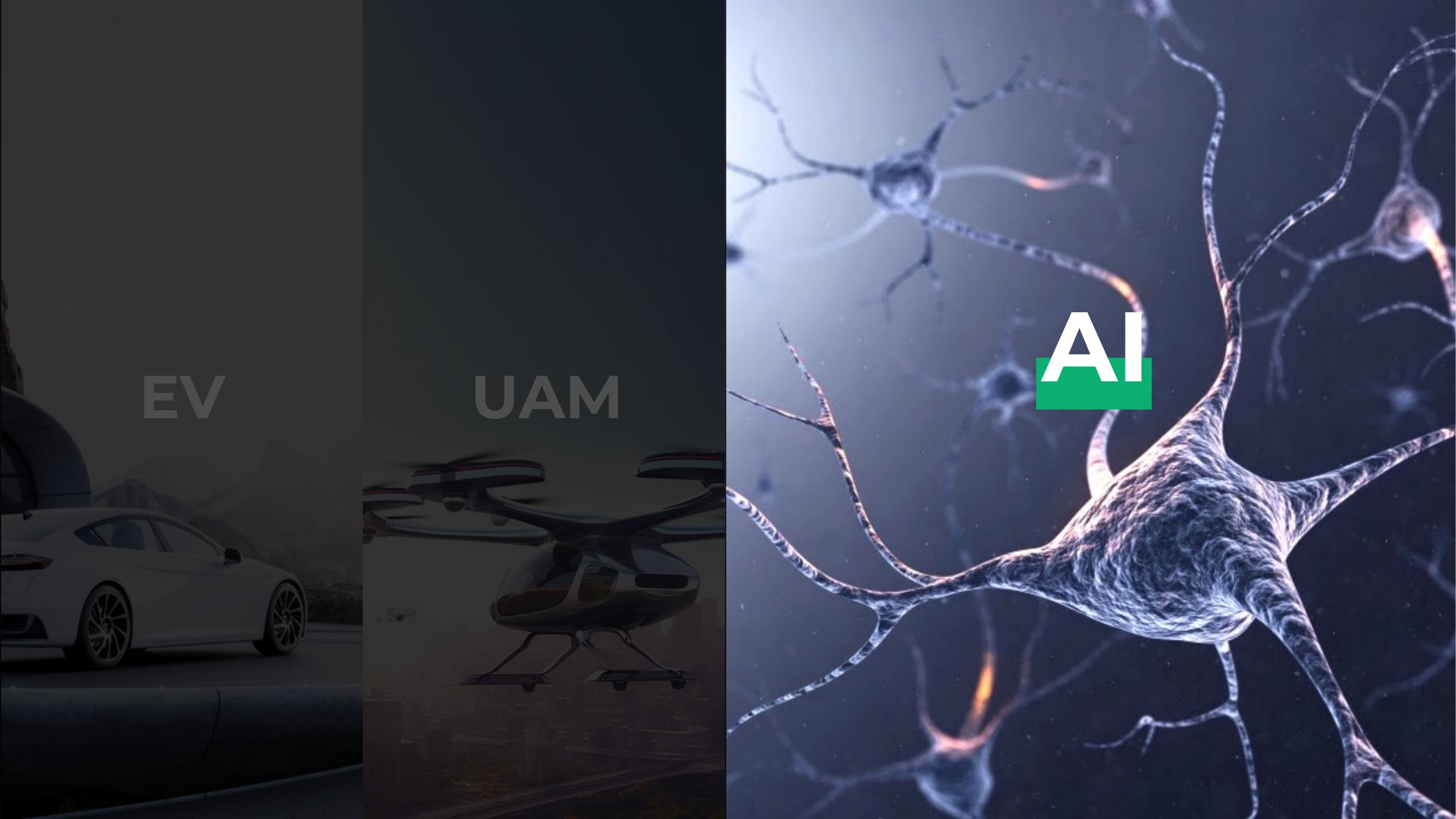






### UAM is Faster than EV for New Battery Technology





### Al for Science and Safety

Al for Safety

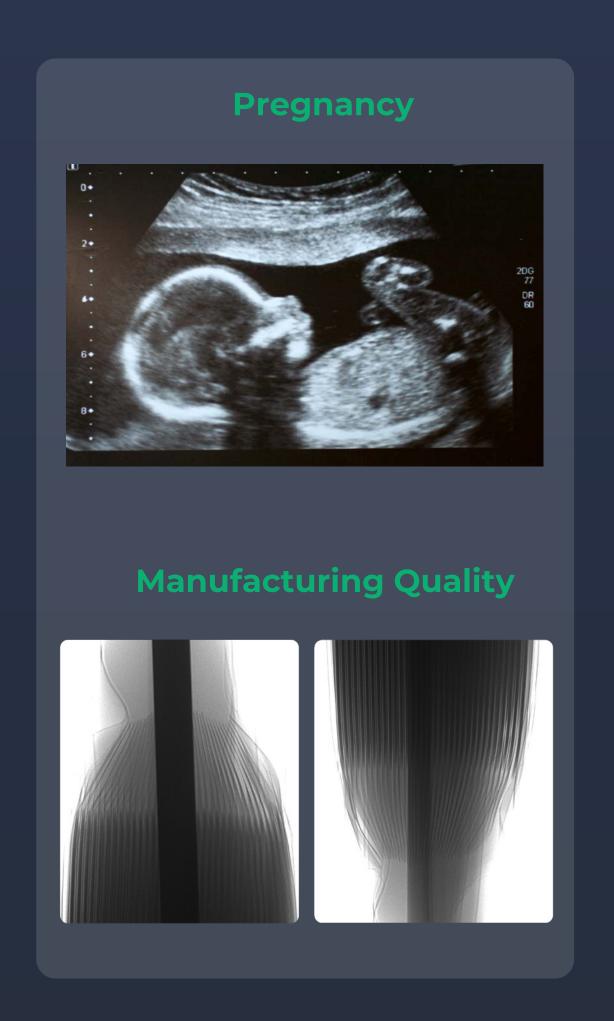
A → Predict incident and achieve near 100% safety guarantee for EV/UAM

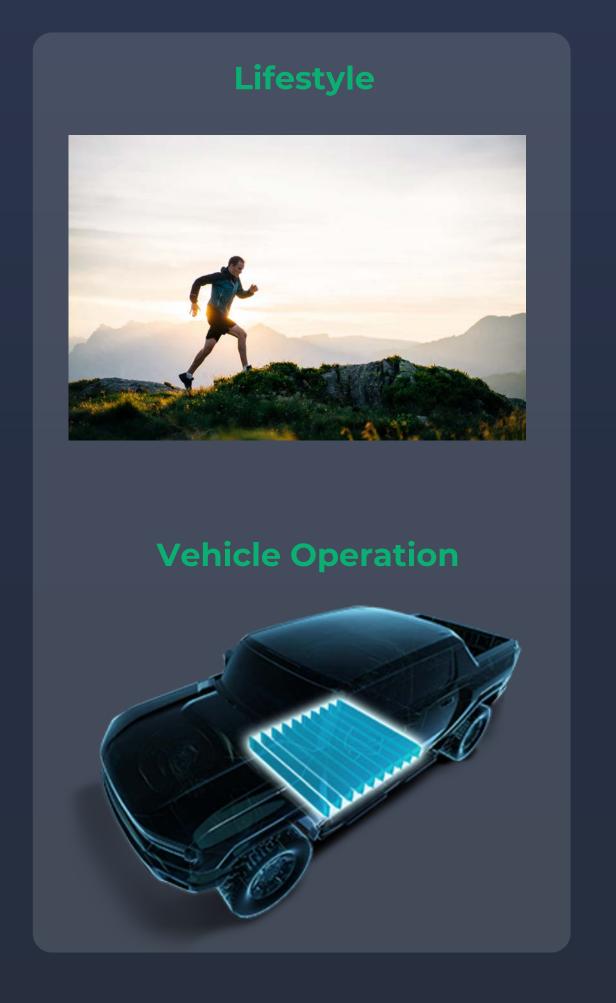
Al for Science

# Al for Safety (Avatar)

Battery = Person



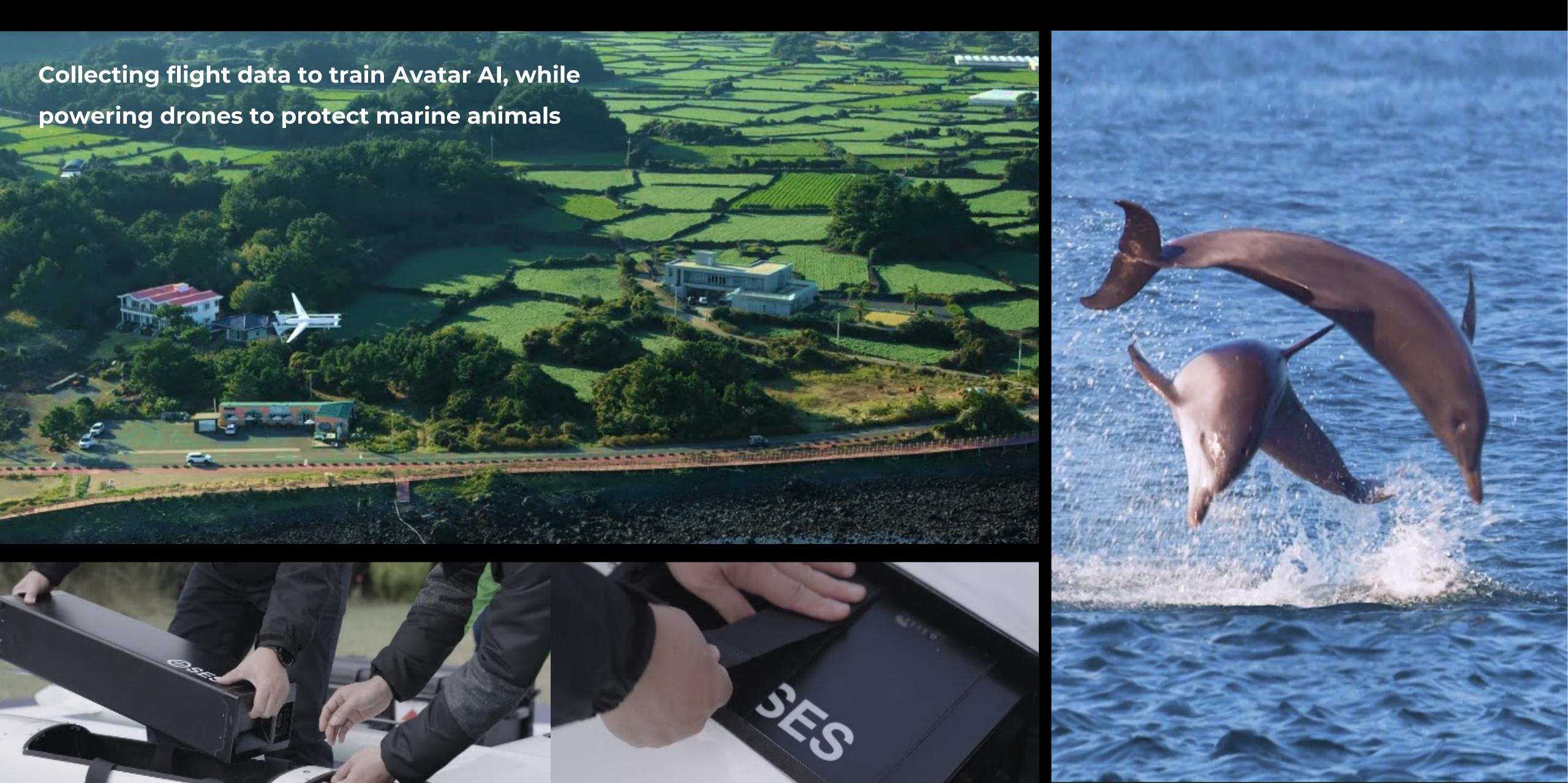




# Al for Safety (Avatar)

	2022	2023	2024 (forecast)
Cell manufacturing quantity	<1,000 per year	500-1,000 per month	>1,000 per month per line
Quality check points per cell	200	600	1,500 (incl. imaging data)
Avatar AI incident prediction accuracy	<60%	92%	95%

# Al for Safety (Avatar) – SES Al Cares

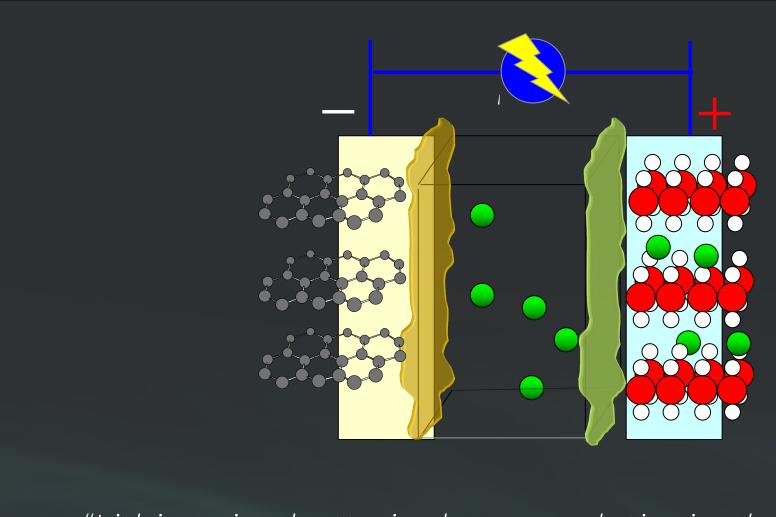


### Al for Science (Prometheus)

1980 Goodenough Transition M Oxides 1976 Whittingham
Sulfides & Intercalation
Concept

1986 Yoshino
Carbonaceous Anode
and Integration





"Lithium-ion batteries have revolutionized our lives ....laid the foundation of a wireless, fossil fuel-free society, and are of the greatest benefit to humankind."

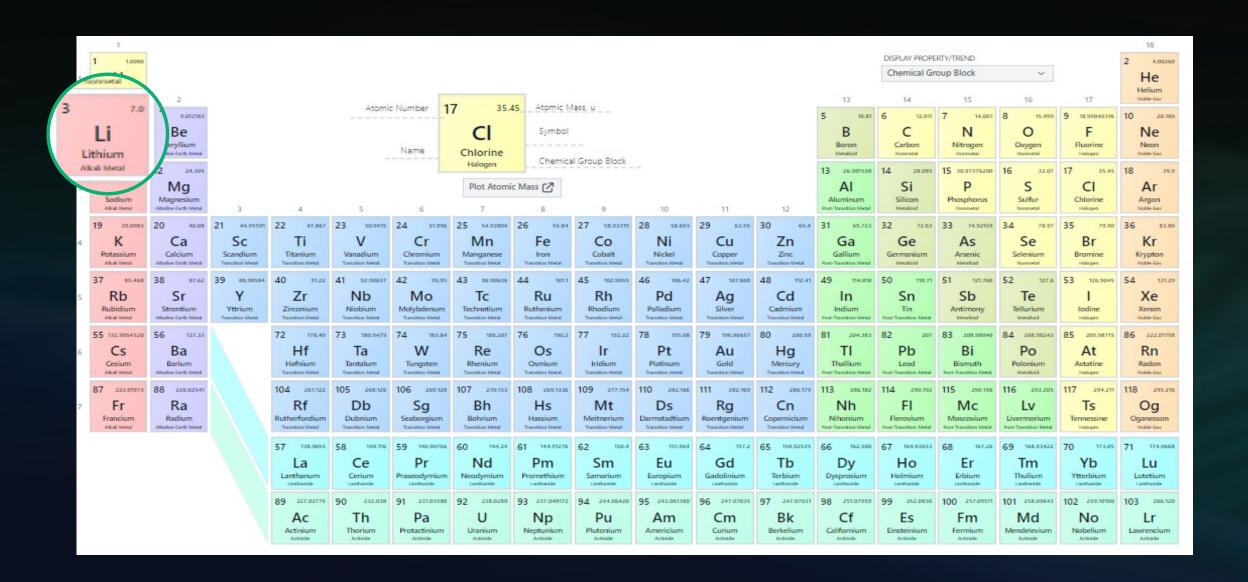
Nobel Committee Announcement October 9, 2019

Accelerate the development of future battery electrolyte materials for EV/UAM

It took 30+ years to develop the current Li-ion batteries. Progress by human (without AI/ML) is slow

### Al for Science (Prometheus)

#### The building blocks were already given...



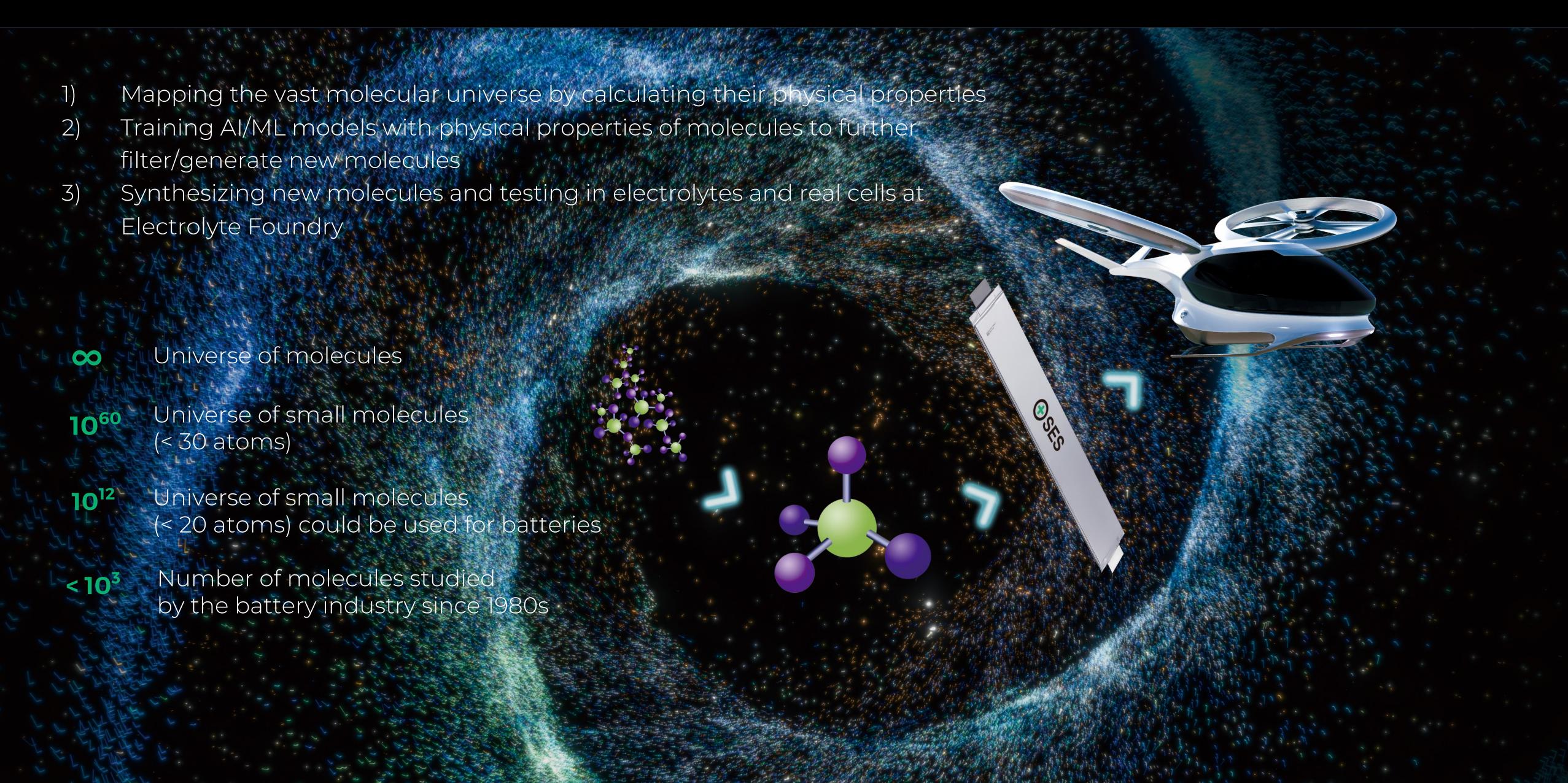
#### The 1<sup>st</sup> - Principle: Li<sup>0</sup> is the ultimate anode

- The 1<sup>st</sup> metal on the periodic table
- The lowest electrochemical potential
- The highest specific capacity
  - ✓ The lowest density
  - ✓ The smallest atomic #

#### The Challenge: Li<sup>0</sup> is too reactive

Need to discover new electrolyte materials

### Al for Science (Prometheus)



### 2024 – A Key Year in Commercialization of Li-Metal Batteries



#### Focus on EV B-sample JDAs

Build and operate new B-sample lines; address cell manufacturing quality; improve cell practical safety; accelerate future roadmap electrolyte development

#### Build and ship UAM cells to customers

UAM cells will be our first commercial products and we are building a dedicated UAM Li-Metal line and expect to ship our first batch of cells to customers

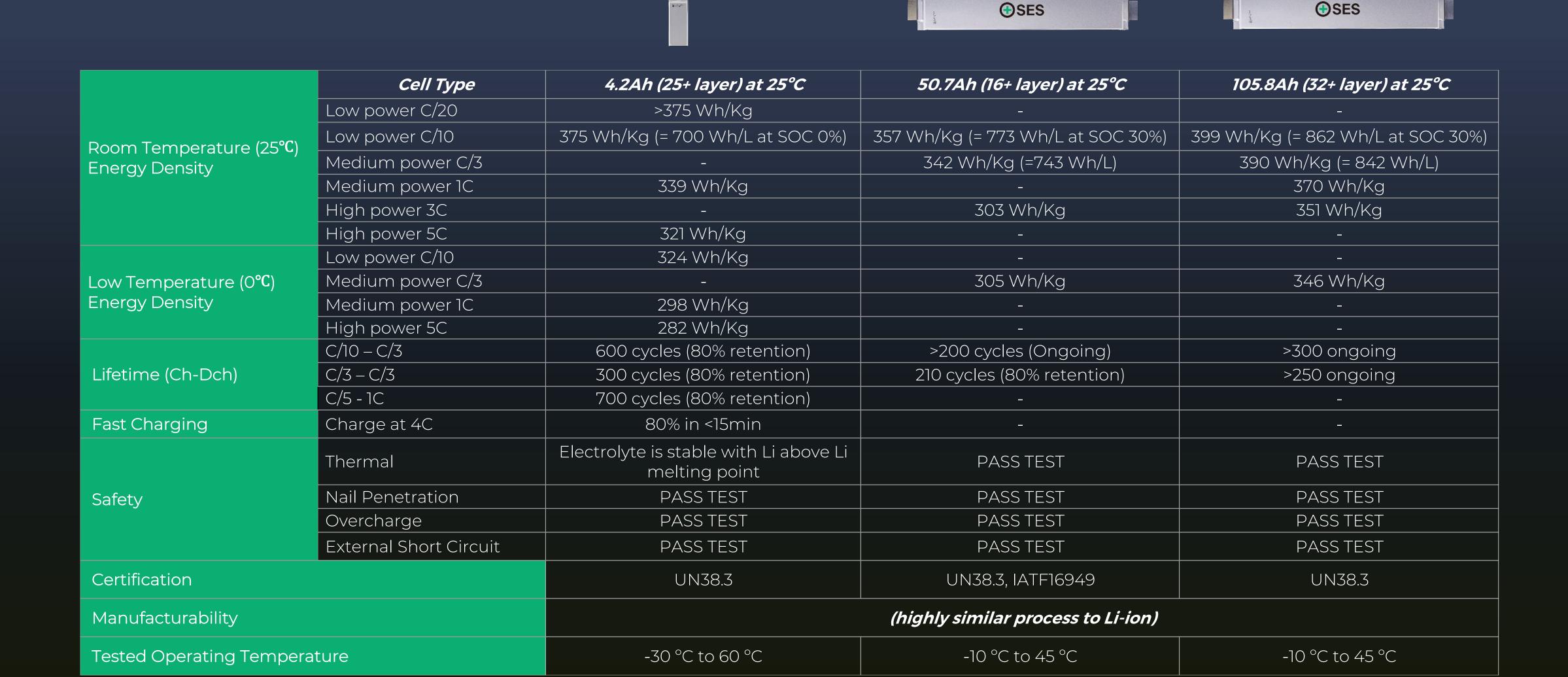
#### Improve Avatar AI incident prediction

Our ultimate goal is a nearly 100% safety guarantee for EV and UAM applications and we expect to achieve 95% and continue to pre-train our Avatar models with all EV Asample Li-Metal cells and train with new EV B-sample and UAM cells

# APPENDIX



### Cell Test Data Summary Table (4Ah vs. 50Ah vs. 100Ah)

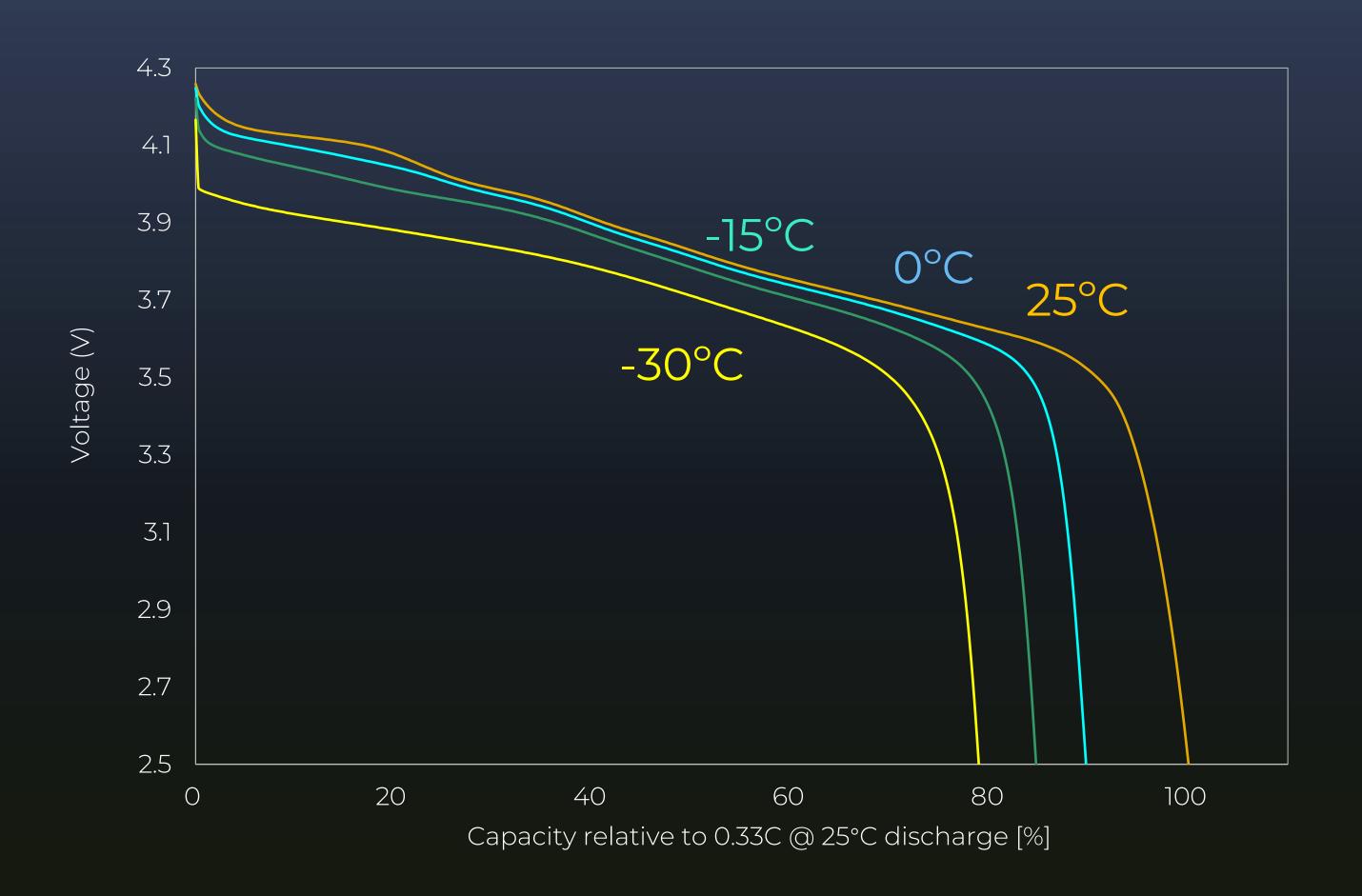


### Low Temperature Performance (100Ah Cell)



Excellent performance in cold weather

Retains 80% capacity (C/3 at 25°C) even at -30°C

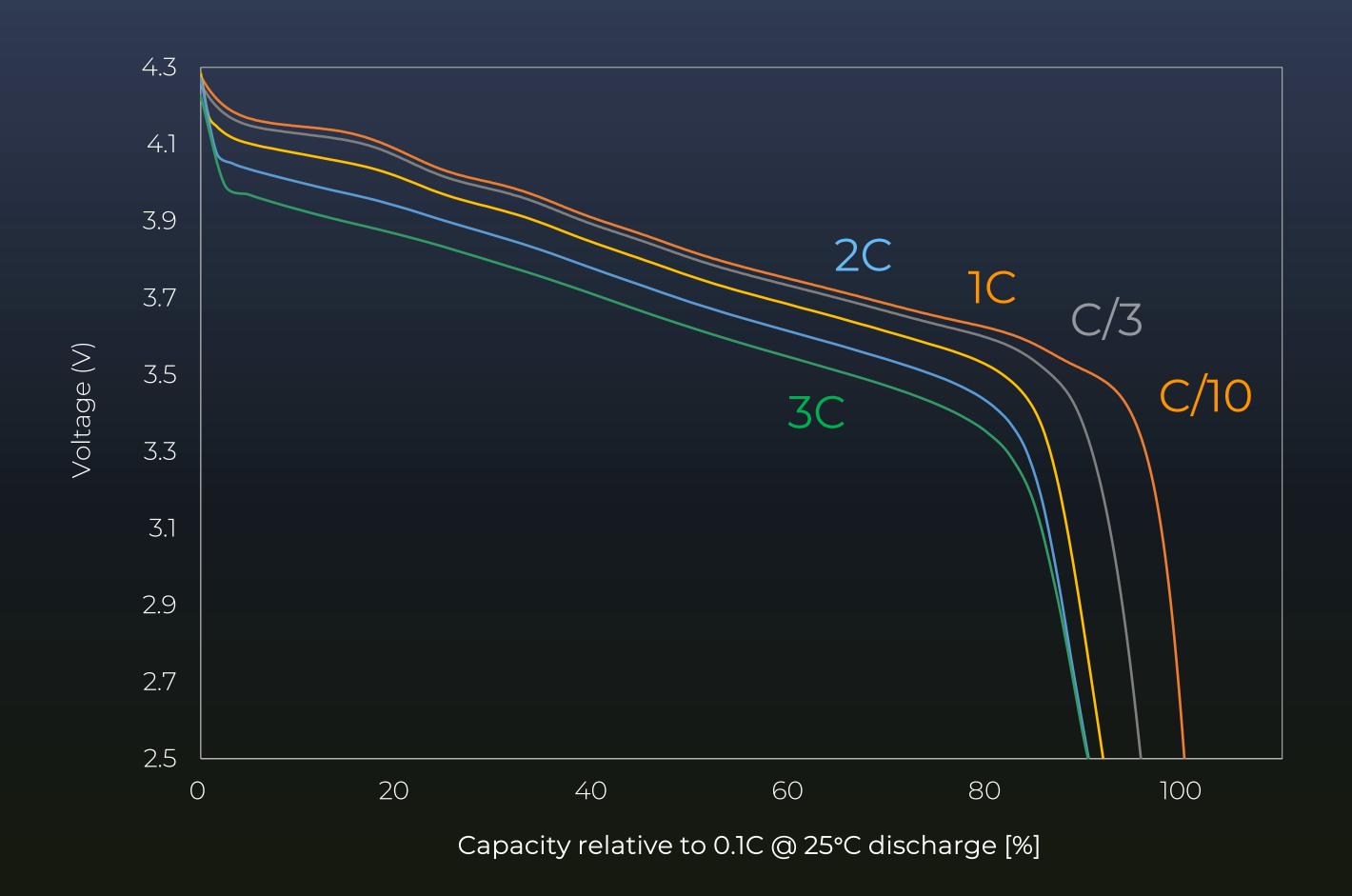


## High Power Performance (100Ah Cell)



Excellent
performance in
high power
requirements

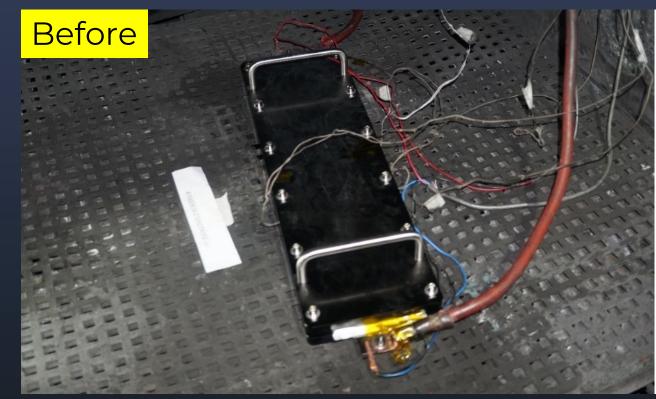
Retains 90% capacity (C/3 at 25°C) even at 3C

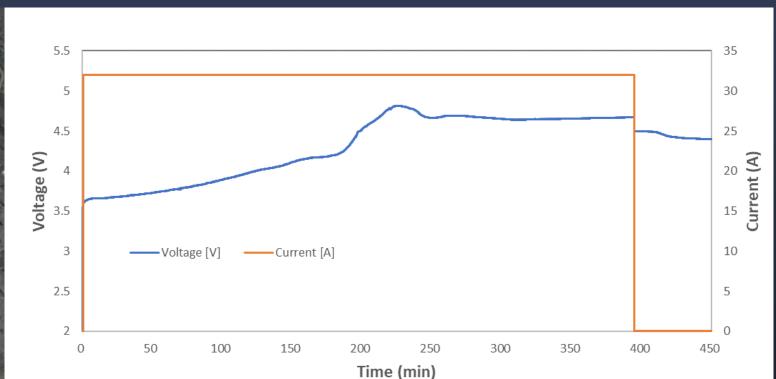




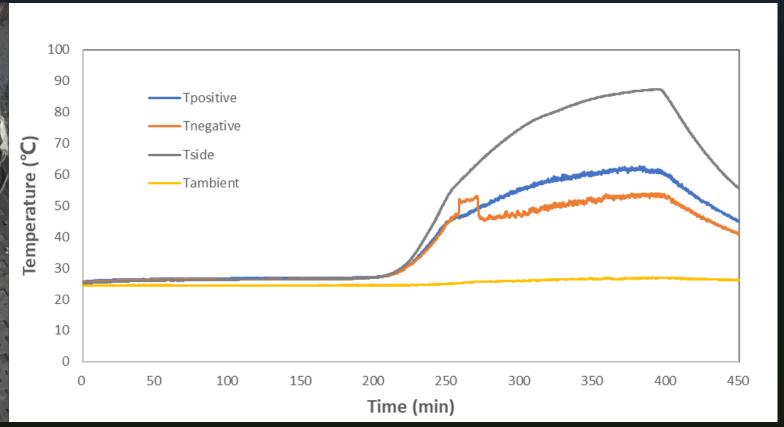
Overcharge

**√** Passed







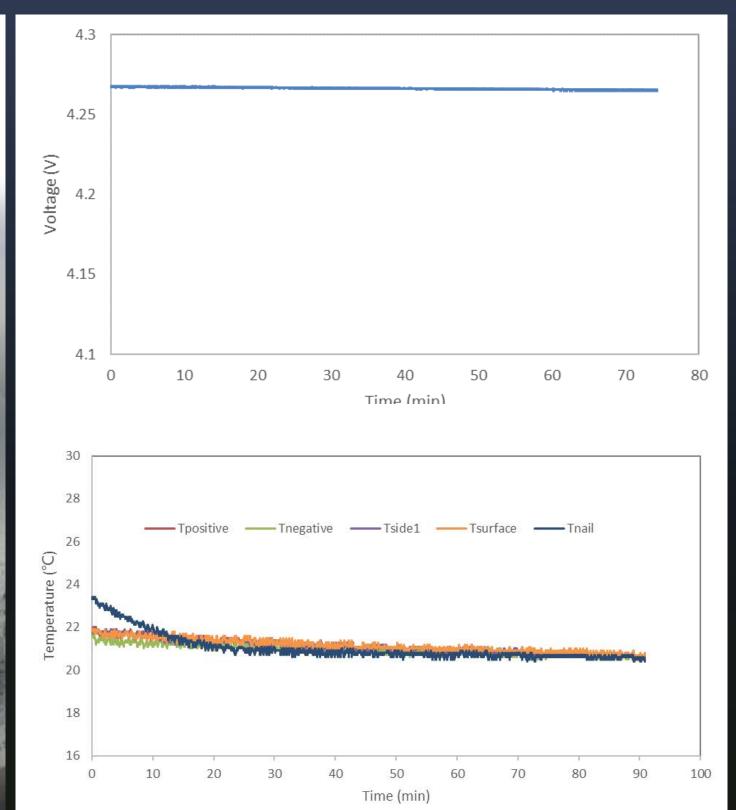




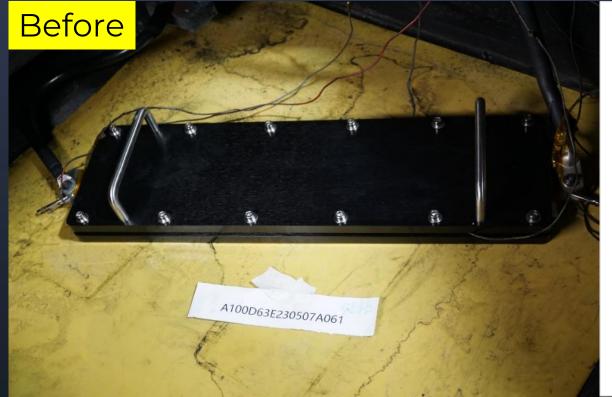
Nail Penetration

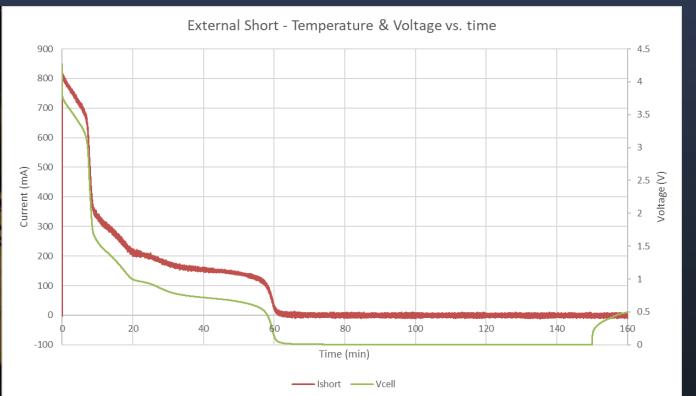
**√** Passed



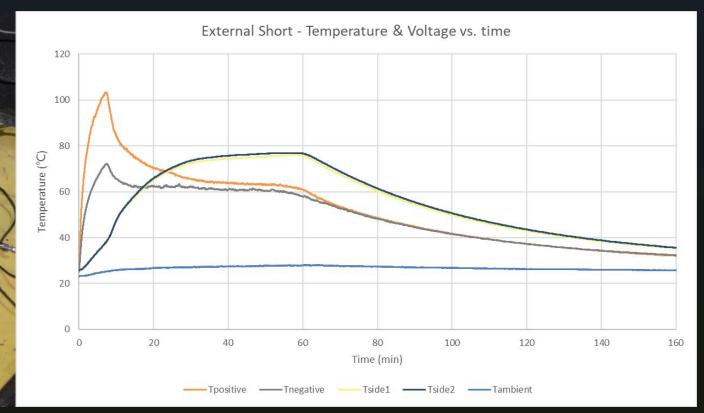








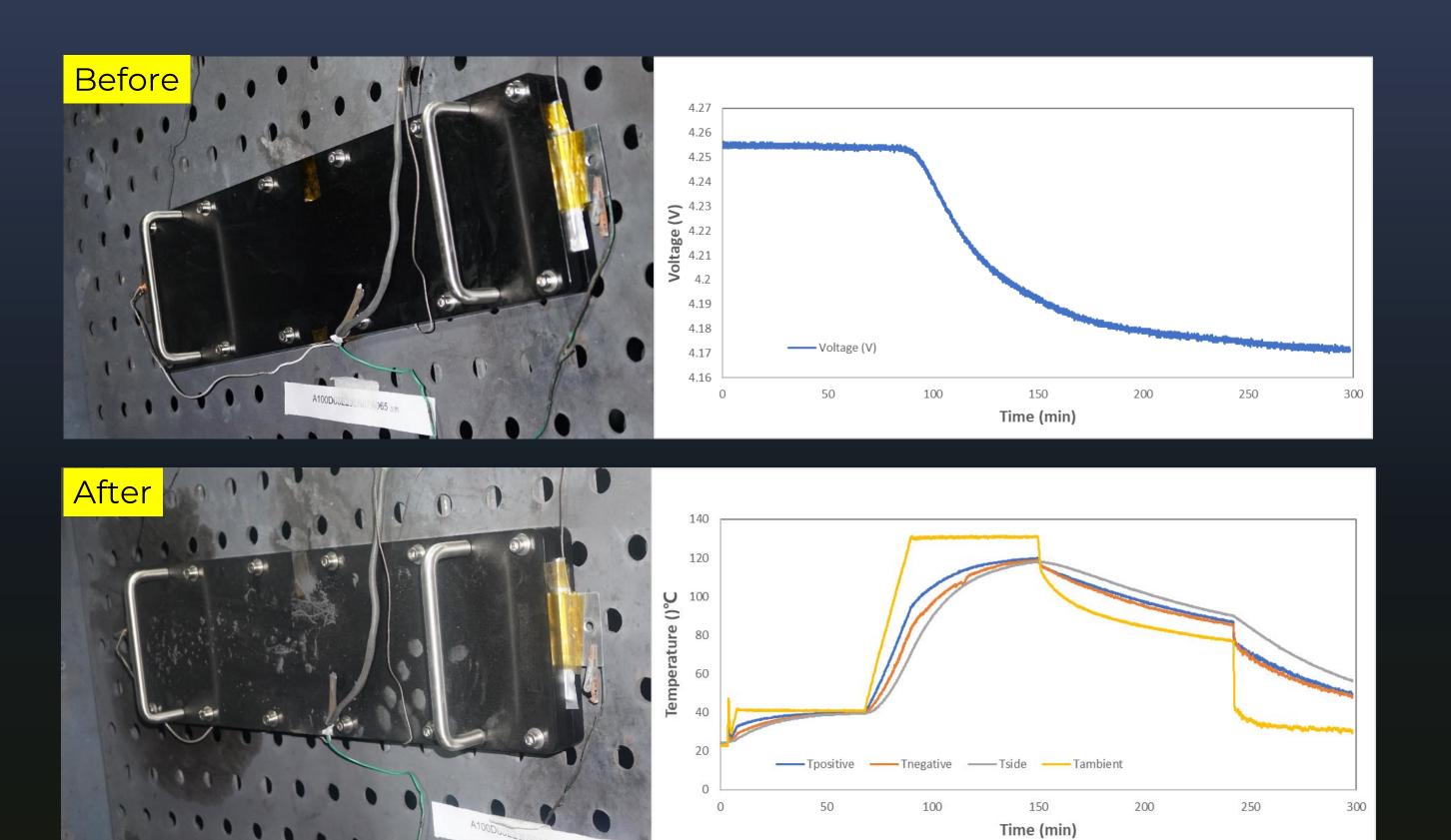






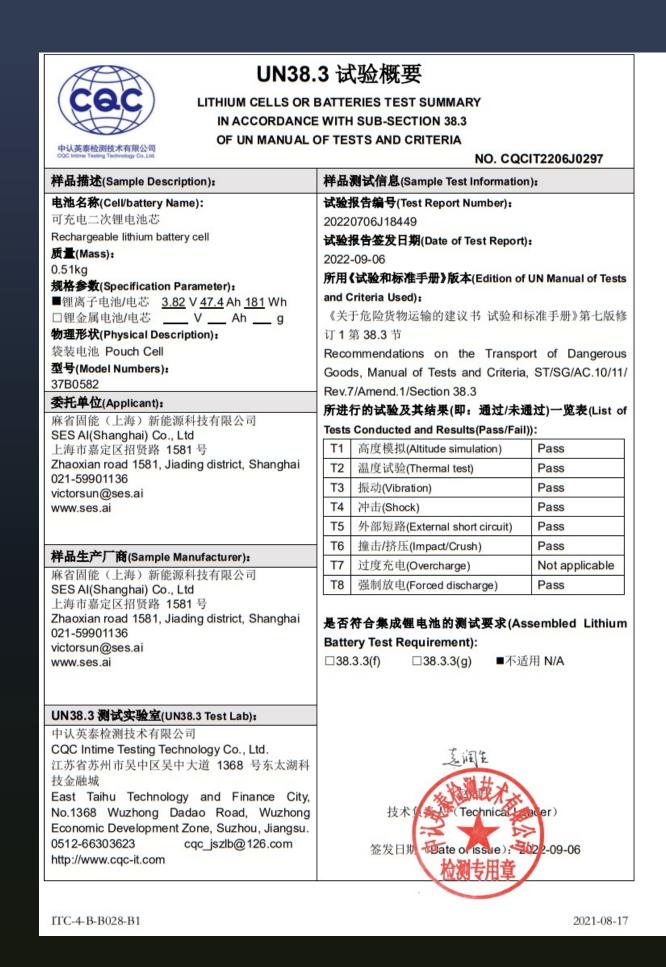
Thermal Stability

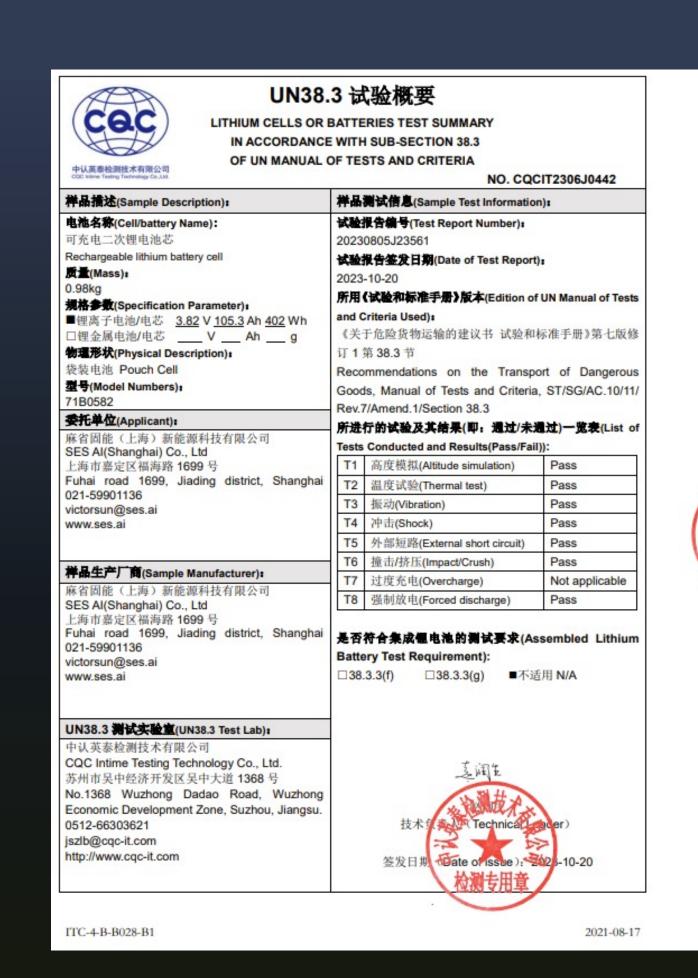
Very Passed



### UN38.3 Certification (50Ah & 100Ah Cell)







50 Ah **UN 38.3: Passed**  100 Ah **UN 38.3: Passed**  **SES**Beyond Li-ion<sup>TM</sup>