Aleees-KY(5227) Investor Conference

Advanced Lithium Electrochemistry (Cayman) Co., Ltd.

2023.10

Disclaimer

The presentation provided during this briefing includes forecasts and assessments of future conditions. These statements regarding future conditions are based on the information currently available to the company, involve risks and uncertainties, and may result in significant differences between actual results and expected conditions. We remind you not to overly rely on this information. Additionally, unless required by law, the company will not be responsible for updating or announcing the results of these forecasts.

Summary

- In 2023, Aleees has achieved IP licensing agreements with three publicly listed companies in Europe, the United States, and Australia for Lithium Iron Phosphate (LFP) technology. Three more IP licensing agreements are expected to be finalized in 2024
- Aleees's plan for 2024 involves evolving into a comprehensive lithium battery IP service platform. This platform will provide production and customer validation capabilities to universities and research institutions, offering IP solutions for anode materials and electrolyte enhancements to European and American customers. This will help many universities and research institutions that struggle to achieve commercial production
- To prevent competition with its customers and reduce losses, Aleees will systematically reduce its LFP production operations. This reduction will involve minimizing supply to Chinese customers and retaining only essential pilot production activities. The company's long-term goal is to transform entirely from an LFP material manufacturer to a lithium battery IP service provider within three to five years

Part A

■ Company Profile

Advanced Lithium Electrochemistry (Cayman) Co., Ltd.

A Well-established LFP Company

- Founded in Taiwan in 2005, with its operation, R&D, and production all within Taiwan.
- The Taiwan plant has extensive experience in mass production, having produced nearly 20,000 tons of various types of LFP products.
- As the world's oldest supplier of LFP materials and related intellectual property, Aleees has the most comprehensive manufacturing technology and patents for LFP battery cathode materials outside of China.
- Aleees Taiwan holds over 130 exclusive patents globally
- Aleees has 48 customers working on energy storage and EV batteries, span across Europe, America, Japan, Korea, and South Asia.

Management Team

Edward Chang

- Founder-
- 18 years of service
- Double carbon coating patent co-inventor

Frank Tsai

- 16 years of service
- High Voltage material & multiple CAM patents inventor
- In charge of M12/M121 series & High Voltage product
- Clients: Kyocera、LGES FIB、FREYR

Mike Huang

- 11 years of service
- Precursor patent & multiple CAM patents inventor
- In charge of A14/A19
- Lead the company to complete the GSY qualification
- Clients: GSY、Japan top car company

Allen Hsieh

- 17 years of service
- Precursor patent & multiple CAM patents inventor
- Double carbon coating patent co-inventor
- In charge of NCM R&D

Y.K Lin

- 16 years of service
- Multiple CAM patents inventor
- Double carbon coating patent co-inventor
- In charge of M23/E22(LMFP)
- Clients: SAFT、LMFP customer

Rango Kuo

- 9 years of professional background
- 5 years of service
- Extensive experience in mass production & production control
- Lead the plant to complete multiple customer's qualification

R&D Team
23 people

- Highest seniority in RD: 16 years
- Average seniority: 4 years
- 131 in-house patents, 17 patents for EV & ESS applications

Bing Joe Hwang

- Chair Professor of Dept. of CE & Dean of Sustainable Energy Development Center of NTUST
- Innovative nano- structure energy materials R&D
- Host of German-Taiwan SSB Material Development
- Humboldt Research Award winner (2021)
- Lifetime national chair professorship, MoE

Nae-Lih Wu

- Distinguished Professor of NTU
- Electrochemical energy storage material & nanomaterial R&D
- Host of German-Taiwan SSB Material Development

Michel Armand

- LFP carbon coating original patent inventor
- LFP CAM commercialization contributor
- Solid polymer electrolyte R&D
- CIC energiGUNE scientific advisor
- Directeur de Recherche at Centre National de la Recherche Scientifique (CNRS)

Chunsheng Wang

- Professor of University of Maryland
- Development of advanced LIB materials
- Director of Center for Research in Extreme Batteries (CREB)
- Associate Editor: ACS Applied Energy Materials (2017~present)

Tech & QA Team
91 people

- Highest seniority: 14 years
- Average seniority: 6 years
- Only global supplier certified by GSY for clean process

Milestones

- Over the past 18 years, Aleees has become a state-of-the-art lithium iron phosphate (LFP) industry leader, with proprietary expertise and intellectual property.

2005 — Founded

2007 — Exclusive Material Patent Granted

2009 — Mass Production

2011 — 80+ of Global LFP Patents Granted

2013 — IPO

2020 — Qualified by leading Japanese & South Korean clients

2021 — Cumulative sales exceeded 15,000 tons

2022 — Aleees AU, US, and UK Founded; In October, signed a production license and service contract with FREYR Battery

2023 — Signed licensing agreements with ICL and AVENIRA in February and September

GS YUASA Creating the Future of Energy

LG Chem

ICL

KYOCERA

24m

FREYR Clean battery solutions

AVENIRA LIMITED

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2023 — Aleees India Founded

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- Cumulative sales exceeded 20,000 tons

GS YUASA Creating the Future of Energy

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ICL

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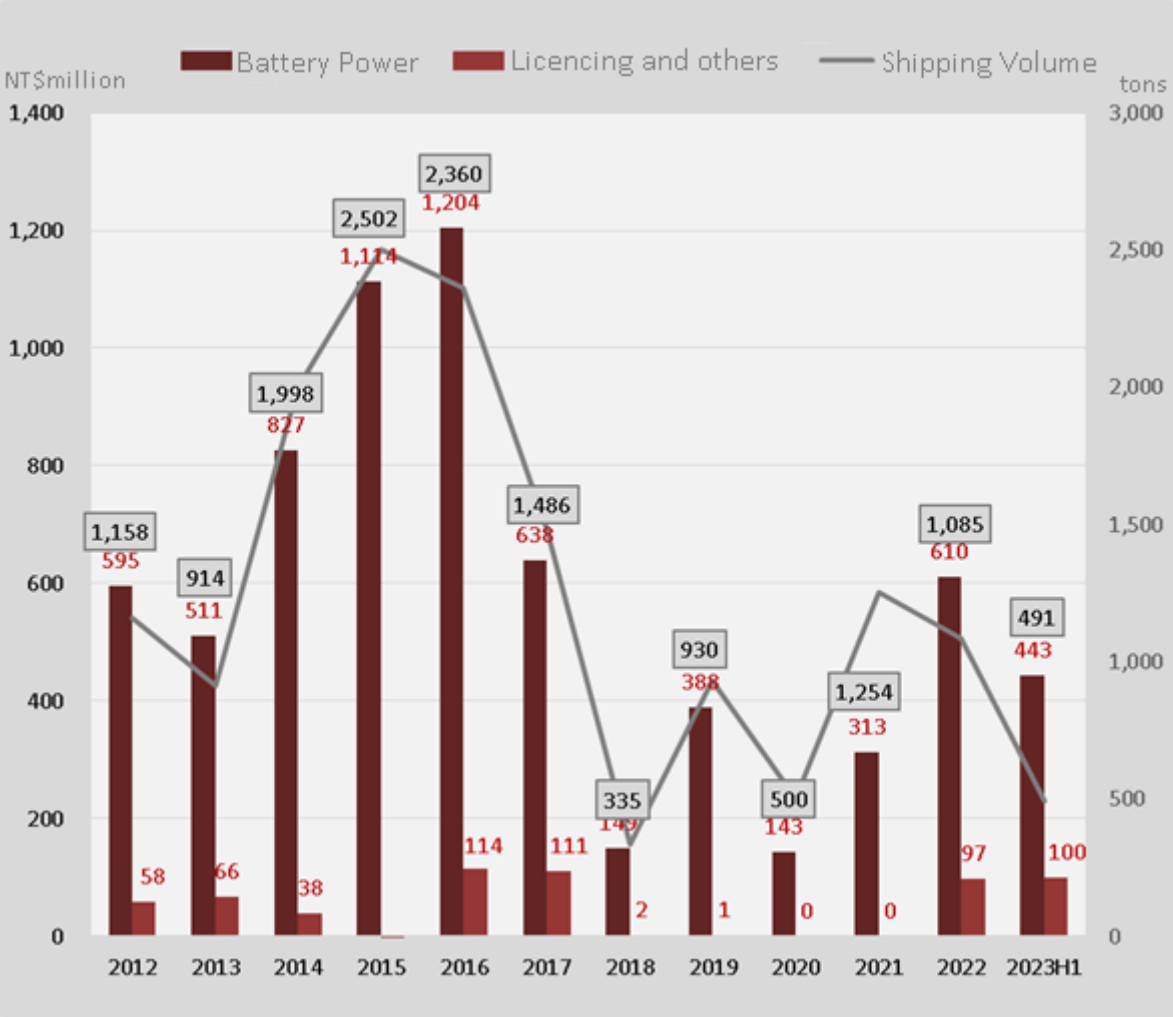
24M

FREYR Clean battery solutions

AVENIRA LIMITED

Summary of Sales Revenue

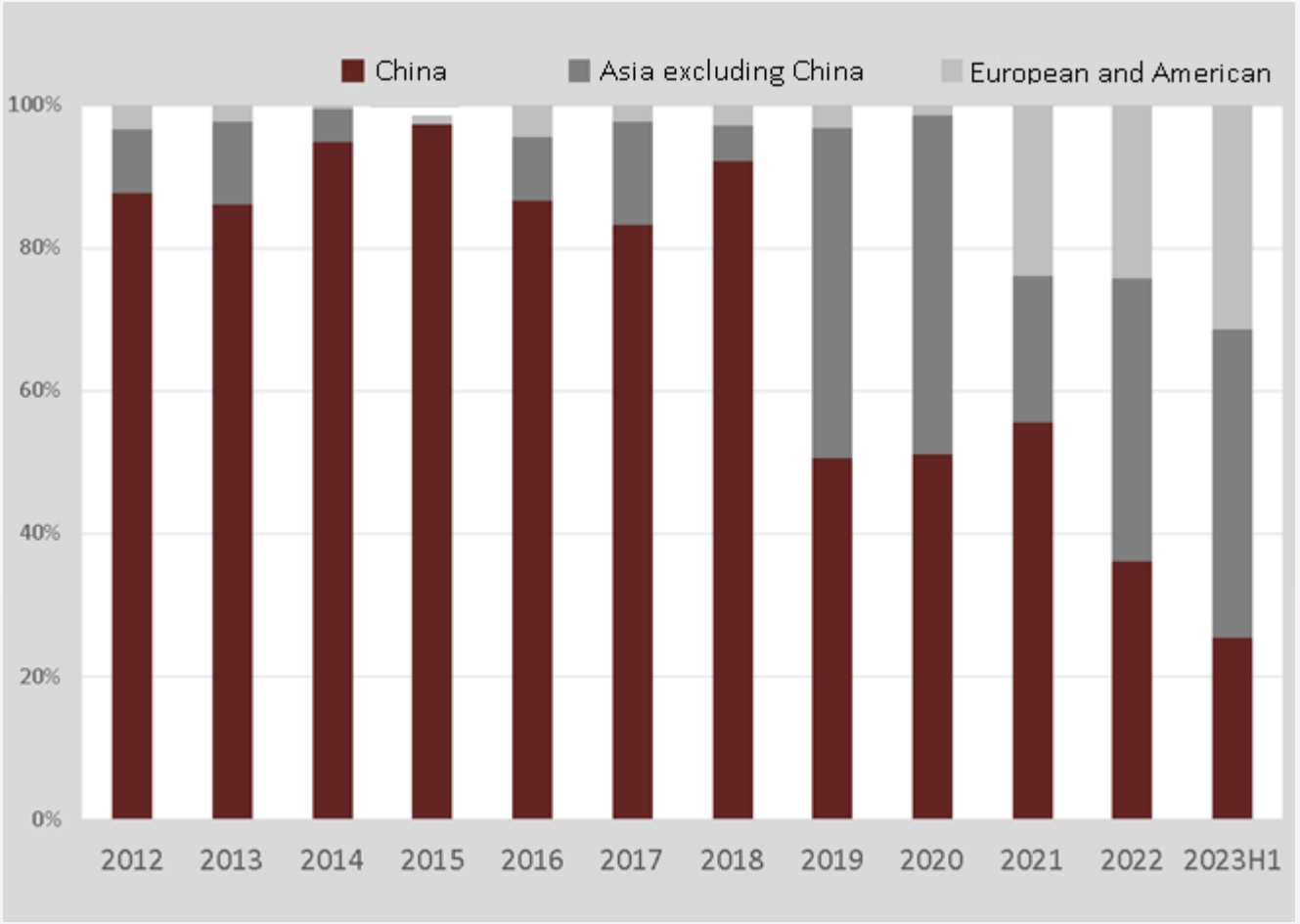


- **Before 2017, the company experienced steady revenue and shipment growth, thanks to China's new energy policies. However, in the latter half of 2016, changes in Chinese subsidy policies led to a decline in sales volume. Starting in 2018, the company actively began transitioning its focus to markets outside of China.**
- **Facing difficulties in fundraising and expanding its production facilities, KY Corporation has shifted its focus towards asset-light licensing business. In 2022, the company successfully licensed its technology to Freyr, and in 2023, it entered into a licensing agreement with ICL.**
- **Between 2021 and 2023, lithium prices saw a significant increase, leading to a decrease in shipment volume. However, the company's revenue continued to show growth trends.**
- **While actively developing its licensing business, the company has seen a growing number of validation customers. To meet the demands of these validation customers, the company has allocated more production capacity to produce their specified products. As a result, we have started to reduce the sales volume of battery materials**

Note: Other income includes revenue from battery cells, batteries, electric buses, and demonstration operation services, etc. In 2022 and 2023, it primarily consists of licensing income.

Summary of Sales Area

- **Before 2018, China accounted for over 80% of the company's revenue.**
- **In September 2016, China's electric vehicle subsidy policies began to phase out**
- **Starting in 2018, the company initiated a transformation to expand into markets outside of China. In 2019, efforts were made to increase sales ratios in markets like Japan and South Korea, leading to China's revenue proportion dropping to below 55%.**
- **In 2021, the company successfully expanded into the European and American markets.**
- **In 2022, Aleees adjusted its operational model and actively expanded the licensing business, which led to a further decline in revenue in the Chinese region, dropping below 40%.**



Summary of Income Statements

- **In 2021, due to the provisioning of bad debt for the FDG, there was an increase in non-operating losses. However, in 2022, non-operating losses significantly decreased.**
- **We successfully authorized Freyr in 2022, and we authorized ICL in 2023. This increased the proportion of licensing fees in our revenue mix, leading to a positive gross profit margin in our business operations.**

Year	2021		2022		2023H1	
Item	Amount	%	Amount	%	Amount	%
Total operating revenue	312,868	100%	707,524	100%	543,597	100%
Total operating costs	385,258	123%	689,375	97%	530,657	98%
Gross profit (loss) from operations	(72,390)	-23%	18,149	3%	12,940	2%
Operating expenses	199,994	64%	397,865	56%	189,867	35%
Net operating income (loss)	(272,384)	-87%	(379,716)	-54%	(176,927)	-33%
Non-operating income and expenses	(286,302)	-92%	(18,383)	-3%	(7,012)	-1%
Profit (loss)	(558,686)	-179%	(398,099)	-56%	(235,794)	-43%
Total basic earnings per share	(9.31)		(6.00)		(3.37)	

Part B

- **LFP Market in Europe & America**
- **Stronger-than-expected Demand**
- **Opportunities and Challenges**

Advanced Lithium Electrochemistry (Cayman) Co., Ltd.

LFP is Extensively Applied to ESS & Standard-Range EV

- The vast majority of ESS will be lithium iron phosphate (LFP) batteries. (2021/4)
- We are changing our standard range models to lithium iron phosphate (LFP) batteries. (2021/10)--Elon Musk
- LGES unveils new battery storage solutions using LFP(2022/5/18)
- Annual battery demand will exceed 3,000 GWh by 2030 --Wood Mackenzie US (2022/03/22)

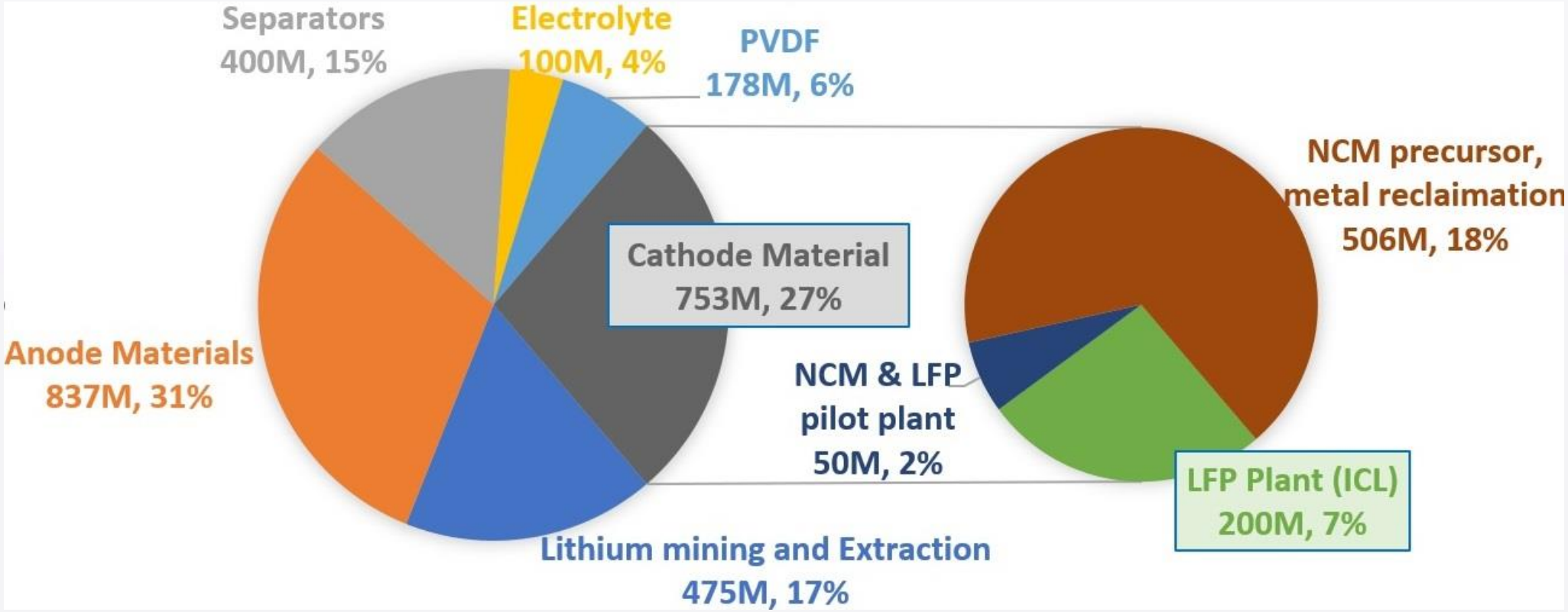
The U.S. subsidy for materials, batteries, EV, ESS

- **In 2021, U.S. President Joe Biden signed an executive order to set a goal that by 2030, 50% of new cars sold should be electric vehicles or plug-in hybrid electric vehicles (PHEVs).**
- **The Bipartisan Infrastructure Law allocates nearly $7 billion to strengthen the U.S. battery supply chain.**
- **The Inflation Reduction Act (IRA) provides $369 billion in investment tax credits for national energy security and the fight against global warming, providing up to a 30% tax credit for products and projects produced in the United States.**

Act	Scope of Application	Subsidy Content
Bipartisan Infrastructure Law	Battery materials	Investment subsidy for factory construction (less than or equal to 50% of the investment)
IRA (Inflation Reduction Act)	Battery Manufacturing	Batteries manufactured and packed in North American gets US$45/kWh in subsidy, plus 10% Tax Credit
	EV	Maximum subsidy US$7,500 per vehicle
	ESS	30% ITC · 10-year program till 2032

The Bipartisan Infrastructure Law Grants Subsidy to Build Battery Material Plants

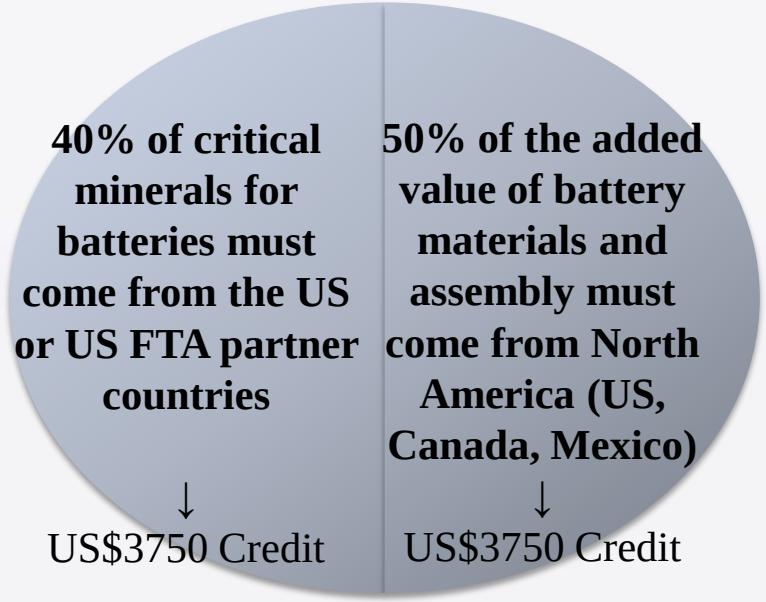
- The total subsidy is US$ 3 billion, including lithium battery materials such as lithium salts, cathode materials, anode materials, electrolytes, and separators.
- In October 2022, the first round of approval goes to 20 manufacturers, with a total of US$2.74 billion.



The IRA Promotes Localization of EV Supply Chain

- **2023/03/21, the NPRM published a list of eligible vehicles. This list will be continuously updated. Requirements were also established to the manufacturers—vehicles should undergo final assembly in North America, and the retail price must not exceed $80,000 for vans or SUVs, or $55,000 for other vehicles.**
- **The NPRM also explains how to meet requirements for critical minerals and battery materials. Vehicles must meet both the procurement requirements for critical minerals and battery materials to apply for a credit of US$7,500, and vehicles that meet one of the two requirements are eligible for a credit of US$3,750.**

2023/3/31
The U.S. Treasury announced stricter EV battery supply chain regulation to boycott Chinese-made car batteries.



Year	Applicable percentage of the value of the critical minerals	Applicable percentage of the value of the battery components
2023	40%	50%
2024	50%	60%
2025	60%	60%
2026	70%	70%
2027	80%	80%
2028	-	90%
2029	-	100%

Reference:https://home.treasury.gov/news/press-releases/jy1379

The U.S. Department of the Treasury released electric vehicle tax credit models on March 31st

- **The list includes only four American automotive brands: Tesla, Ford, General Motors, as well as Stellantis NV, the parent company of Jeep and Chrysler.**
- **Foreign automotive brands were all eliminated. American electric vehicle startups Rivian and Lucid are not on the list due to their high selling prices.**

	Full tax credit of $7,500	Half tax credit of $3,750 (due to battery not meeting the criteria)	Vehicle models that have lost eligibility for the tax credit
Models	1. Cadillac SUV Lyriq 2.GM Chevrolet Bolt EV/EUV 3.Part of Tesla Model 3 4. Part of Tesla Model Y 5.Ford E-Transit 6.Ford F-150 Lightning	1.Ford SUV Mustang Mach-E 2.Tesla Model 3（Rear Wheel Drive)	1.BMW 330e 2.BMW X5 xDrive45e 3. Hyundai Genesis Electrified GV70 4.Nissan Leaf 5.Rivian R1S and R1T 6.Ford ID.4

Model 3 RWD reduced the tax credit by $3,750

- Tesla CEO Musk initiated a price war in 2022, reducing prices six times in the United States, with an average reduction of over 10%. This move stimulated competitors to follow suit, resulting in a significant increase in electric vehicle sales.
- Lowering electric vehicle prices has forced manufacturers to reduce production costs. Given the rising prices of lithium, the future proportion of LFP (lithium iron phosphate) usage is expected to gradually increase to lower production costs.
- It's worth noting that only the Model 3 RWD version uses LFP batteries. However, since these LFP batteries are square-shaped and produced by CATL(Contemporary Amperex Technology Co. Limited) in China, they do not qualify for full federal tax credits.
- On the other hand, other Tesla models like the Model 3 and Model Y equipped with locally produced cylindrical lithium-ion batteries (NCA/NCM) continue to enjoy tax credit eligibility.

Subsidies for Battery and ESS manufacturing

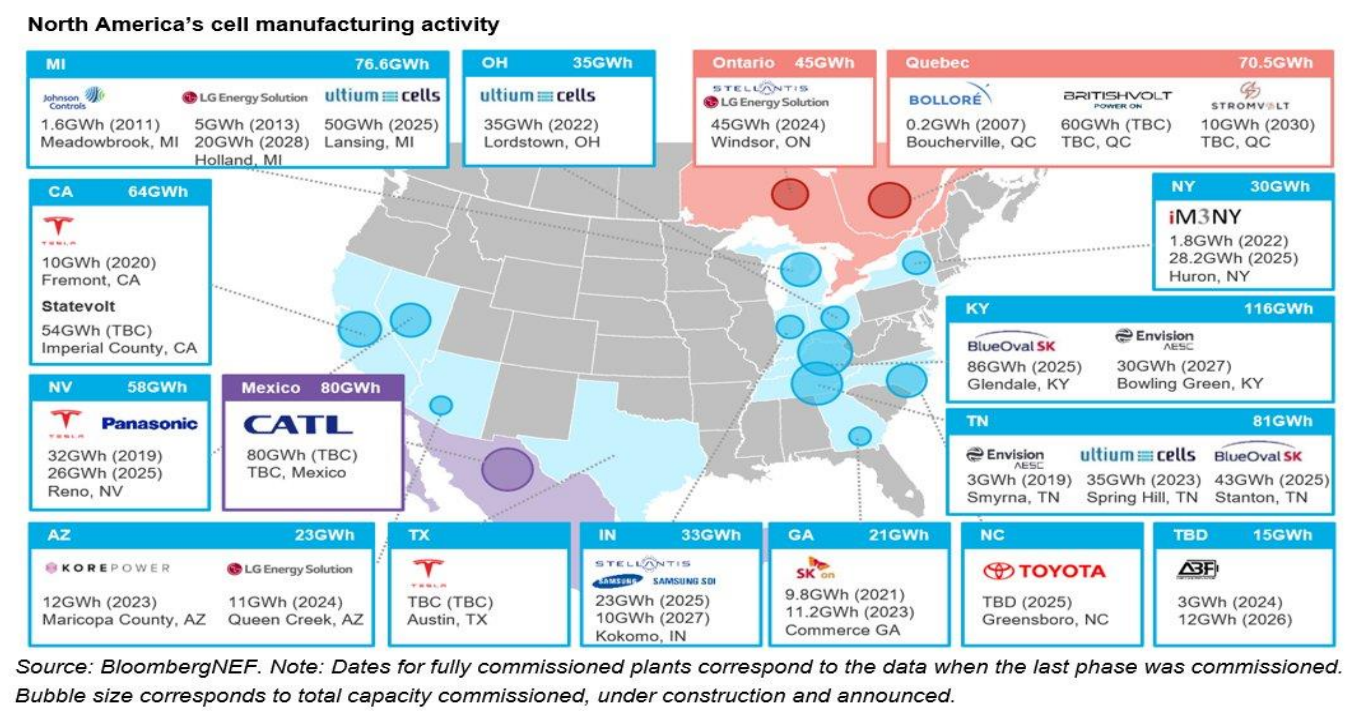
- **The IRA provides subsidies for battery manufacturers as follows (effective until 2032):**
  - **Battery cell manufacturing： US$ 35/kWh**
  - **Battery module manufacturing： US$ 10/kWh**
  - **Additionally, a 10% Investment Tax Credit (ITC) is provided to those complying with the requirements for critical minerals and the origin of positive and negative electrode materials.**
- **Under the Inflation Reduction Act, subsidies for energy storage system investors are enhanced: The Investment Tax Credit (ITC) for commercial and residential energy storage systems is increased to 30%, with an extended expiration date of at least 2032. Partial subsidies will be maintained from 2033 to 2035.**

ITC	ESS	2020	2021	2022	2023	2024	2025-2032	2033	2034	2035	2036
Before	Bussiness	26%	26%	26%	22%	10%	10%	10%	10%	10%	N/A
	Home	26%	26%	22%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
After	Bussiness	26%	26%	30%	30%	30%	30%	26%	22.5%	15%	N/A
	Home	26%	26%	30%	30%	30%	30%	26%	22%	N/A	N/A

Source：InfoLink

IRA incentivizes investment

- $28 billion has been pledged for new energy factories, with projected investments of $1.7 billion over the next decade.
- The demand for electric vehicles in North America is expanding, and many are following suit.
- North America is now home to 55 battery manufacturers with a combined capacity exceeding 813 GWh.
- The IRA Act may attract even more manufacturers to join the industry.



Source: BloombergNEF. Note: Dates for fully commissioned plants correspond to the data when the last phase was commissioned. Bubble size corresponds to total capacity commissioned, under construction and announced.

Aleees in America

- Aleees → ICL

  The factory in St. Louis

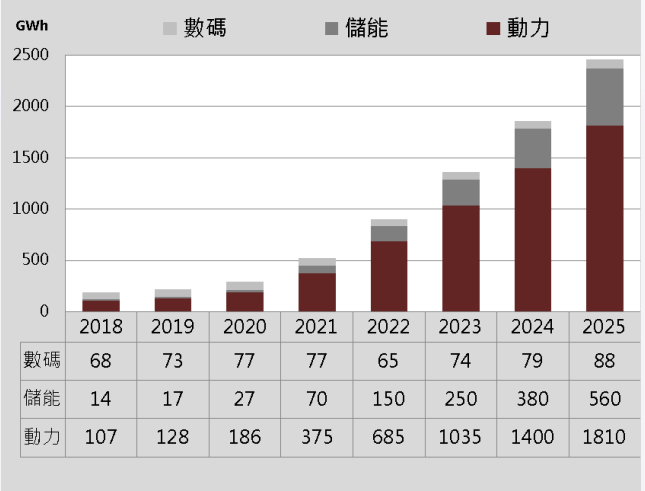
- Aleees → Freyr & Koch
  The factory in Georgia

- Aleees →Avenira
  The factory in Australia

The world shipped of Lithium Battery

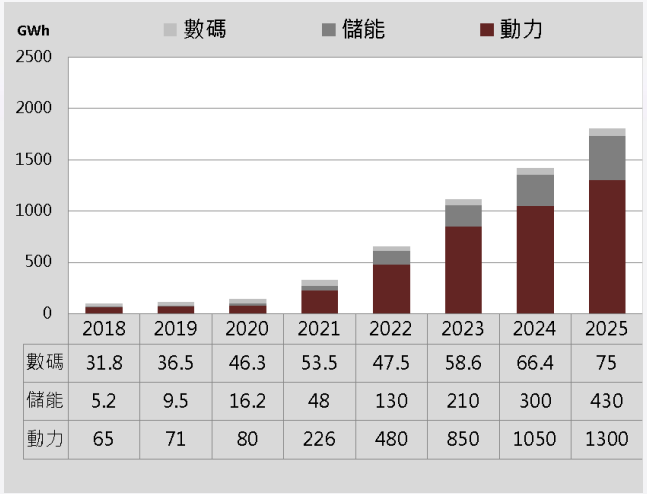
- In 2022, the global lithium battery shipment volume for the whole year reached 920 GWh, marking a 70% increase compared to 2021. Of this, China accounted for 658 GWh in shipments.
- The growth of the global lithium battery industry can be attributed primarily to two factors: (1) the expansion of the electric vehicle market and (2) the increased demand for energy storage batteries driven by wind and solar energy projects.
- It is anticipated that by 2025, global lithium battery shipments will reach 2,497 GWh, with the primary source of growth being the demand for power batteries.
- Lithium salt prices remain high, and lithium iron phosphate batteries (LFP) continue to offer a competitive advantage over ternary lithium batteries. In 2022, LFP held a 42% market share in the power battery segment, and it is expected to increase to 45% globally in 2023."

The world shipped of Li-ion Battery



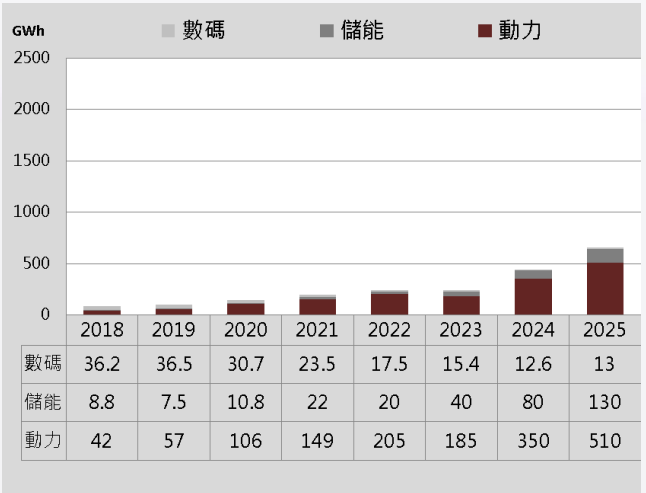
	2018	2019	2020	2021	2022	2023	2024	2025
數碼	68	73	77	77	65	74	79	88
儲能	14	17	27	70	150	250	380	560
動力	107	128	186	375	685	1035	1400	1810

China shipped of Li-ion Battery



	2018	2019	2020	2021	2022	2023	2024	2025
數碼	31.8	36.5	46.3	53.5	47.5	58.6	66.4	75
儲能	5.2	9.5	16.2	48	130	210	300	430
動力	65	71	80	226	480	850	1050	1300

Non-China shipped of Li-ion Battery



	2018	2019	2020	2021	2022	2023	2024	2025
數碼	36.2	36.5	30.7	23.5	17.5	15.4	12.6	13
儲能	8.8	7.5	10.8	22	20	40	80	130
動力	42	57	106	149	205	185	350	510

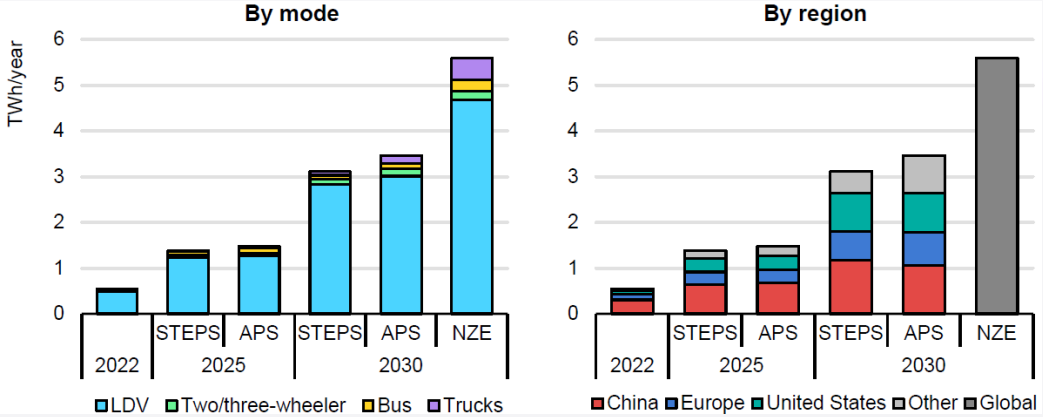
Source：GGII / Aleees · 2023.03

Note：The above figures do not include small-scale power batteries, such as those used in electric bicycles and power tools.

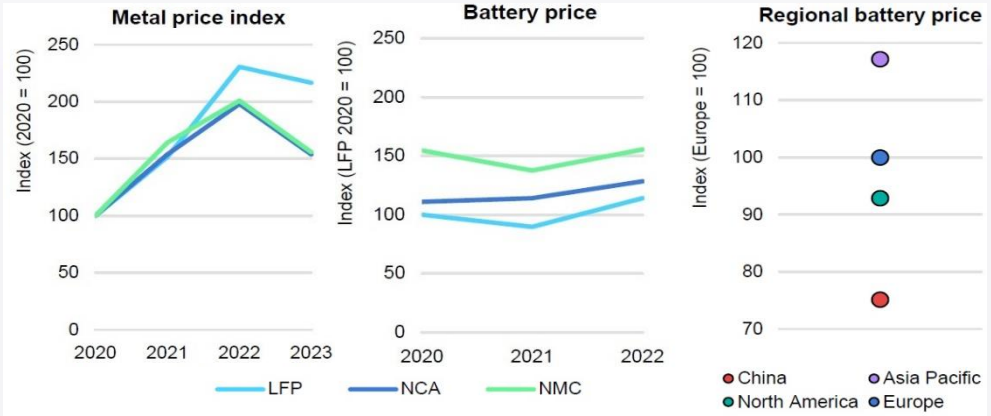
Global EV Battery Demand & Price

- China's electric vehicle (EV) battery demand was primarily driven by government policies, resulting in a higher EV penetration rate in China. In 2022, China accounted for approximately 55% of global market demand.
- In contrast, regions outside of China, such as Europe and the United States, currently have lower EV penetration rates. However, with policy support, it is projected that the EV penetration rate in Europe will increase from 20% to 60% between 2022 and 2030, and in the United States, it will increase from 10% to 50%. The growth in penetration rates in Europe and the United States is expected to drive an increase in battery demand. Furthermore, various countries' policies favor the establishment of local battery factories, and it is anticipated that from 2025 to 2030, China's market share in the global electric vehicle battery market will decrease from 55% to 35%.
- Key materials such as lithium, cobalt, and nickel have experienced significant price increases, leading to higher battery prices. Among these materials, LFP (lithium iron phosphate) has seen relatively larger price increases, but LFP remains comparatively affordable. Battery prices are lowest in the Chinese market, while prices in Japan and Korea are relatively higher.

2022-2030 **Global EV Battery Demand**



2020-2023 Battery Price



資料來源：IEA，Global EV Outlook 2023
註：STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario;
NZE = Net Zero Emissions by 2050 Scenario; LDV = light-duty vehicle

Three Application Scenarios of LFP

Estimated Global Lithium-Ion Battery Shipments and LFP Content:

- **Projected global LFP usage for 2022 is around 910,000 metric tons (685 GWh × 42% + 130 GWh × 98.4%) × 2,200 tons.**
- **Projected global LFP usage for 2025 is approximately 3 million metric tons (1,810 GWh × 45% + 560 GWh × 98.4%) × 2,200 tons**

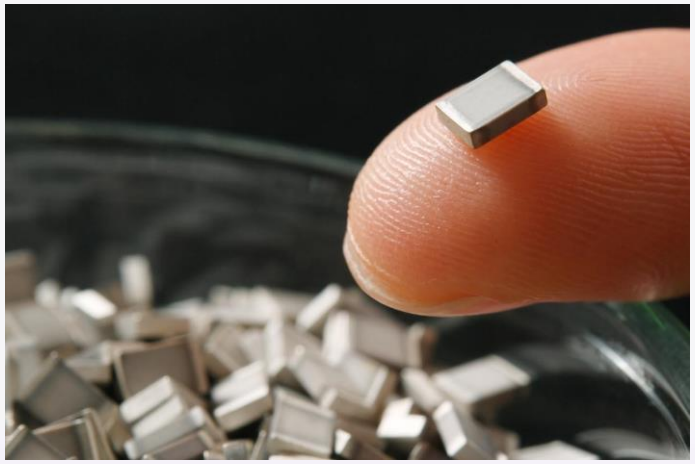
Source:GGII / Aleees · 2023.03

EV

- **Major automakers plan to use LFP for "standard range" vehicle models with a range of up to 500 kilometers.**

ESS

- **LFP is utilized in over 95% of the energy storage market.**

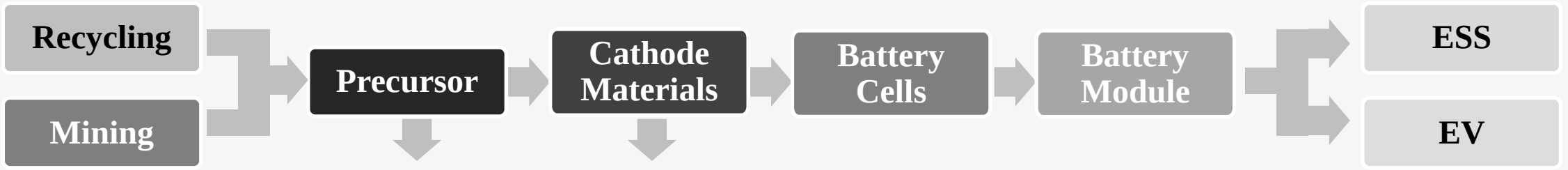


Solid-State and Semi-Solid-State Batteries

- **High-energy-density semi-solid-state and all-solid-state batteries contribute to the market share of LFP/LMFP materials.**

The scarcity of LFP battery material manufacturers outside of China

- Outside of China, there were 14 major lithium iron phosphate (LFP) producers with substantial production capabilities in 2010. Today, only two remain. Among the 12 companies that exited the market were significant players like BASF and Sony.
- An astounding 99% of global production capacity is now concentrated in China, fostering the growth of several thriving large-scale enterprises. Notably, companies like Dynanonic (SZ:300769) have flourished, boasting a market value of nearly 140 billion NTD.
- Survivors beyond China's borders include Taiwan's Aleees (TWSE: 5227) and Japan's Sumitomo Metal Mining (Tokyo: 5713)



Type of Manufacturer	LFP/LMFP	NCM
Precursor Manufacturing	95% of China's LFP material manufacturers lack precursor manufacturing capabilities.	China-based manufacturers control 70% of the global production of NCM precursor and its upstream raw materials.
Cathode Material Manufacturer	Aleees & Sumitomo possess full-process manufacturing capabilities from precursors to cathode materials.	Sumitomo Metal Mining, Nichia, Toda Kogyo, AGC Seimi, Chemical, L&F, EcoPro, Umicore, BASF, etc.

Part C

Aleees enters a new era in its LFP strategy

Advanced Lithium Electrochemistry (Cayman) Co., Ltd.

Aleees's Core Competitiveness

Innovations

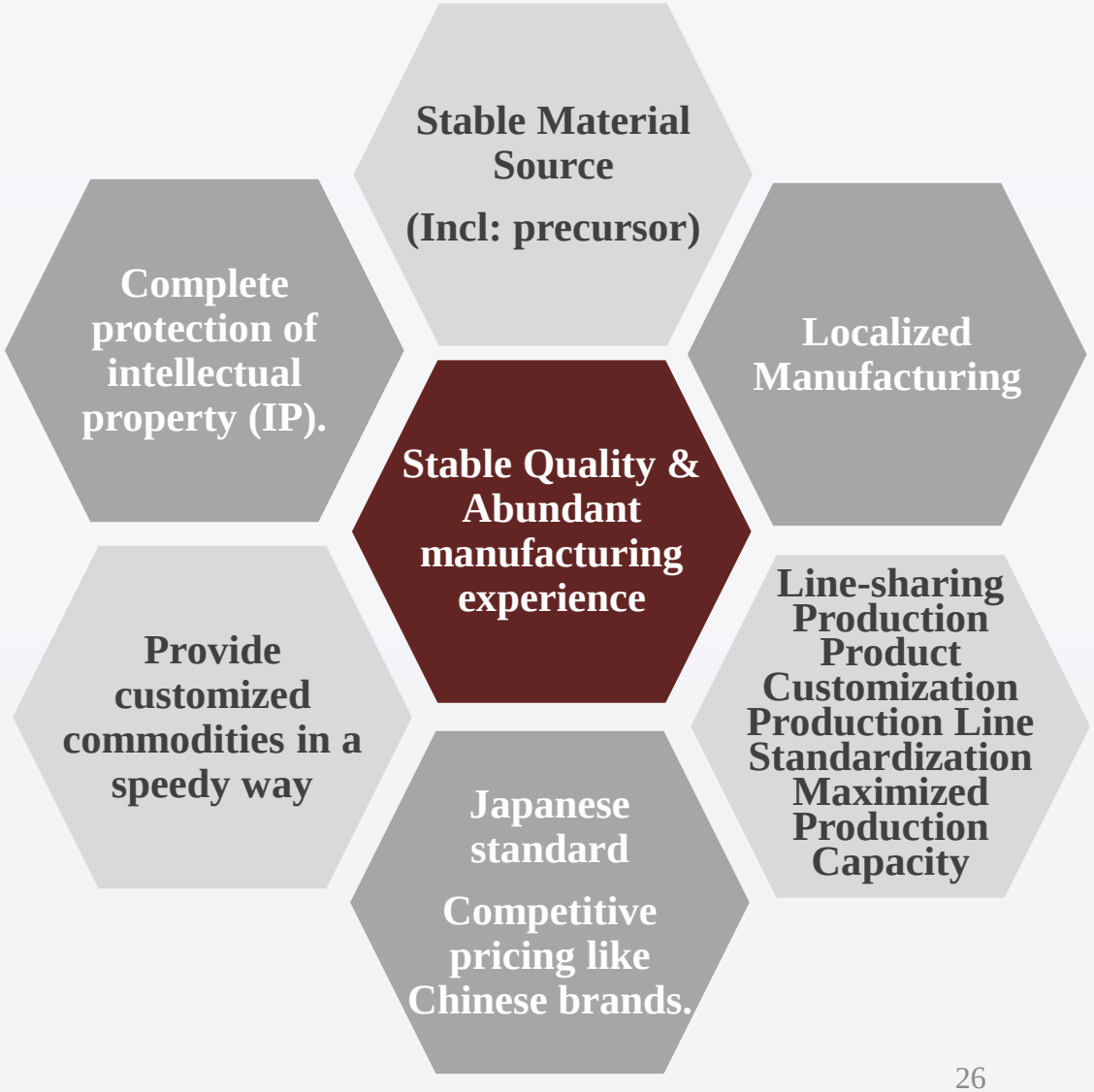
- **Unique nano co-crystal structure**
- **Double carbon layers technic**
- **Nano wet-process precursor technology is currently employed by only three companies: Aleees Electric, CATL, and Sumitomo Metal.**
- **3 major core technologies, safeguarded by over 130 global patents.**

Performance

- High gravimetric capacity: > 160 mAh/g
- High-rate capability: Cold start at -40 °C
- High energy density: Electrode compacting density > 2.5 g/cm3
- **Battery lifespan: > 10 years**

Quality

- Metal magnetism impurities content < **24 ppb**
- **IATF16949**
- VDA6.3 system
- Certified for GS Yuasa automotive products
- Certified for 24M energy storage products



Product table

Series		A & E series			M series			
Model		A14	A19	**E22 (LMFP)**	M23	M121	M18	M12
Product Features	Surface area (m^2/g)	11~15	6.5~8.5	24±2	11~15	11~15	8~12	10~14
	Particle size D50 (μm)	4~7	9~13 (4~7)	11±2	2~6	2~6	1~6	2~6
	Carbon content (%)	1.2~1.7	0.9~1.2	2.1±01	1.3~1.7	1.3~1.9	1.1~1.4	1.0~1.5
	0.1C discharge capacity (mAh/g)	160±3	≧156	145±3	160±3	153±3	≧156	155±3
	Rate capability	+++	+	++++	++	+	+	+
	Low Temp. Discharge	+++	+	++++	++	+	+	+
	Powder mechanical strength	+	+++	NA	NA	NA	NA	
	Electrode pressed density (g/cm^3)	2.0~2.1	2.0~2.4	1.8~2.0	2.0~2.4	2.0~2.4	2.0~2.4	
Particle morphology		Spherical			Pulverized			
Suggested Electrode Slurry system		NMP based	NMP based& Water based & Dry electrode	NMP based	NMP based	NMP based	Dual system: NMP & Water based	
Suggested applications		■ **Premium 12V car starter battery** ■ Idle-stop battery ■ Military, Space	■ **Low speed xEVs** ■ Standard 12V car starter battery ■ Energy storage ■ Blending with NCM(622)	■ Medium to Long range xEVs ■ Blending with ■ Ni-rich NCX	■ **Medium range xEVs** ■ **Stationary ESS** ■ Industry vehicle ■ Military、Space ■ Cold environment energy storage applications	■ **Medium range xEVs** ■ **Stationary ESS** ■ Industry vehicle ■ Military、Space		

Customer development status in 2023

- **LFP batteries are not standard products, and each customer typically requires 3-5 years for customization. The product lifecycle can extend up to 20 years.**
- **As of now, Aleees has a total of 48 valid customers, among which 12 have progressed to the stage nearing mass production (Phase 3 and Phase 4).**
- **In the United States, we have gained one additional large electric vehicle manufacturer. In Japan and Taiwan, one energy storage company has been added to each. In the Southeast Asian region, due to active expansion into the Indian market, we have acquired six new Indian clients. These clients span various end-use applications, including energy storage, electric vehicles, electric trucks, and solid-state batteries. Additionally, many of these clients are internationally renowned companies, and their end-user markets extend worldwide.**

Application In	2021	2022/05	2023/01	2023/09
ESS & EV	3	13	21	19
ESS only	9	8	5	14
EV only	5	20	12	13
ESS & Industrial Mobility	-	-	1	2
Total	17	41	39	48

Note: The company's customer verification process is divided into four phases, which are explained as follows:

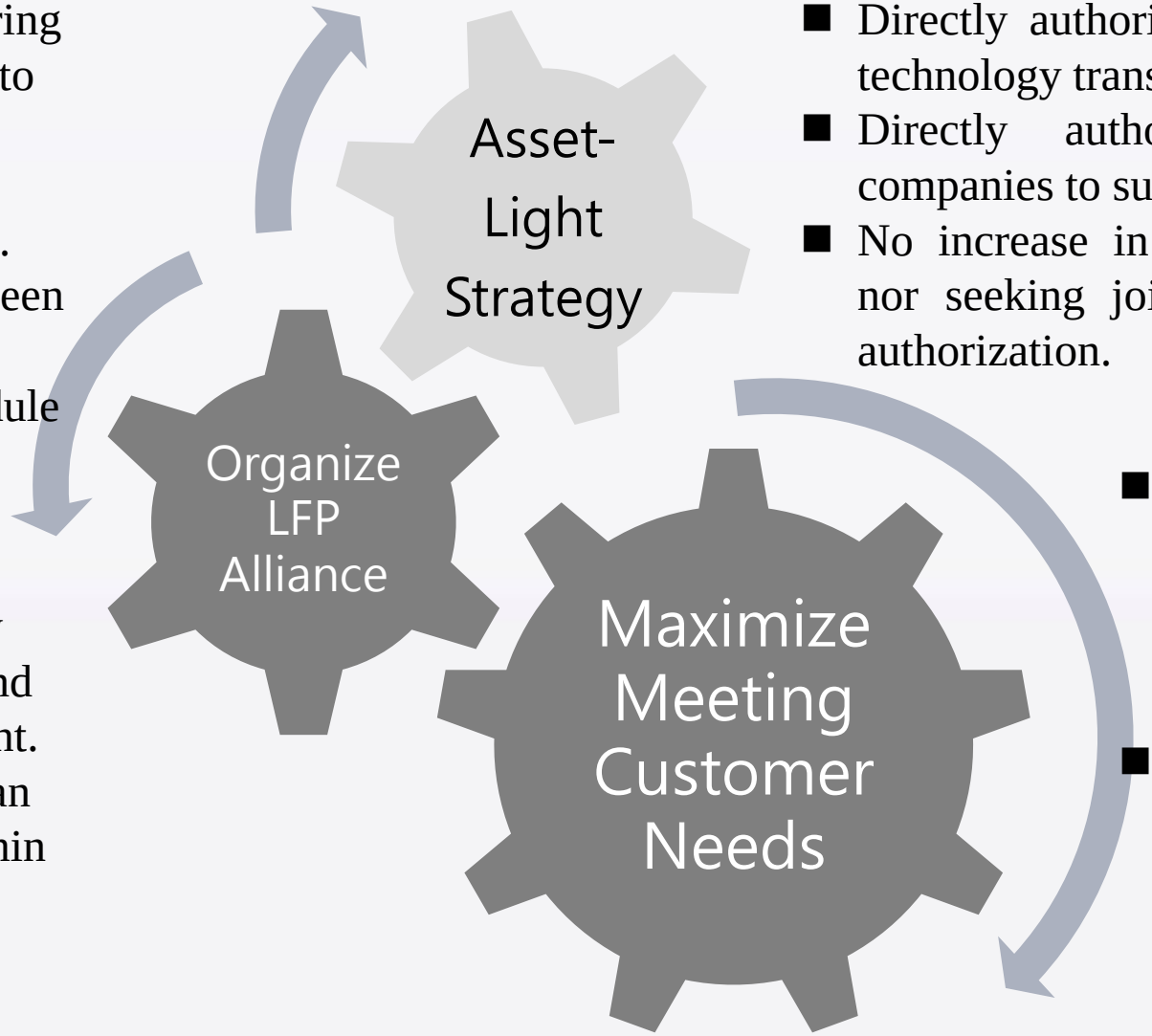
Phase 1 and Phase 2 customers are in the small-scale sample testing and laboratory production stage.

Phase 3 :Produce samples greater than 1000kg of consecutive 3 times

Phase 4 :Formal acquisition

Comprehensive Transformation into an LFP Intellectual Property Provider

- Aleees in Taiwan are pioneering customers and are dedicated to R&D for global customers.
- Establishing products IP and expanding the IP capabilities.
- Production verification has been achieved in the 2,500-ton foundational production module plant.
- Models with customer production certification are eligible for direct technology transfer, including product and process technology equipment.
- Battery client reevaluation can be rapidly accomplished within six months.



- Directly authorize lithium battery clients for technology transfer.
- Directly authorize specialized chemical companies to supply lithium battery clients
- No increase in self-owned factory capacity, nor seeking joint ventures in exchange for authorization.

- Our goal is to nurture 7 ~ 8 manufacturers with an annual production capacity of over 100,000 metric tons in the future.
- This aims to mitigate the significant business risk of excessive reliance by European, American, and Asian clients on foreign LFP sources.

Patent and Technology License Fee

Program	License Fee
Main contents	USD 5M (signing down payment in cash) +Running royalty (Payment of measurement per kg or sales amount of LFP or LMFP global production until 2041) If Licensee requests each additional product type license of manufacturing and technology , Aleees will charge additional USD 2M (payment in cash) for each product type.

Model A

Annual production quantity	Running royalty (USD)
Less than 30,000 MT	USD 0.5/ per kg
30,001 MT to 50,000 MT	USD 0.4/ per kg
More than 50,001 MT	USD 0.3/ per kg

Model B

Annual sales quantity	Running royalty (USD)
Less than 15,000 tons	2.0 % X Sales amount
15,001 tons to 30,000 tons	1.8% X Sales amount
30,001 tons 至 90,000 tons	1.6% X Sales amount
More than 90,001 tons	1.4% X Sales amount

Our Licensees Progress

NO	Licensees	Progress
1	Freyr	1. 2023.03：An environmental assessment report for the annual production of 20,000 to 60,000 tons of LFP cathode materials was submitted in Vaasa, Finland
2	ICL	1. 2023.08：Groundbreaking ceremony for the LFP cathode materials plant held in St. Louis 2. It is projected that the first phase of production, with an annual capacity of 15,000 tons of LFP cathode materials, will be completed by 2024. By 2025, the combined annual production capacity is expected to reach 30,000 tons of LFP cathode materials
3	Avenira	1. 2023.09：Signed a Production License and service contract with Avenira in Darwin。 2. It is projected that the first phase of production, with an annual capacity of 10,000 tons of LFP cathode materials, will be completed by 2026. By 2028, the combined annual production capacity is expected to reach 30,000 tons of LFP cathode materials

24M revolutionary semi-solid-state battery technology

24M revolutionary semi-solid-state battery technology

- Coating thick electrodes to increase energy density
- Solid-state batteries with no electrolyte layer offer "greater safety and longer cycle life."
- The production process requires only 5 steps (compared to the traditional 13 steps), significantly reducing production costs.
- The cost of battery cells is reduced by 25-40% compared to traditional batteries.
- The original 24M team comes from A123.
- 24M licenses technology to international companies for cell production
  Kyocera、Freyr、Koch、
  GPSC、Lucas TVS
- Aleees' LFP material is the optimal choice for 24M
  - ✓ Selling materials：Kyocera、GPSC、Lucas TVS
  - ✓ Licensees：Freyr(Subsidiary of Koch)

24M partners and investors

Industrial Investors		Financial Investors
Volkswagen/German (**VW acquired a 25% stake**)	ITOCHU/Japan	Charles River Ventures/America
KYOCERA/Japan	GPSC/Thailand	North Bridge Venture Partners/America
Fujifilm/Japan	Lucas TVS/India	SPARX/Japan
Freyr/Norway	KOCH/America	

Our Licensees： FREYR (NYSE: FREY)

Shareholders composition：

Name	%
Koch Industries Inc	8.23%
Tore Ivar Slettemoen	6.01%
Torstein Dale Sjøtveit	5.82%
Handelsbanken Fonder AB	4.16%
Encompass Capital Advisors LLC	3.89%
Daniel L. Barcelo	3.49%
Electron Capital Partners LLC	3.04%
Candlestick Capital Management LP	2.51%
Southpoint Capital Advisors LP	1.79%
BNP Paribas Asset Management UK Ltd.	1.56%

Market Focus:

- Primarily target the growing EV and ESS markets by utilizing low-cost hydro and wind energy, along with the licensed 24M semi-solid-state technology, to manufacture cost-effective and low-carbon footprint batteries.
- Plan to achieve 50 GWh production capacity by 2025, 100 GWh by 2028, and 200 GWh by 2030.

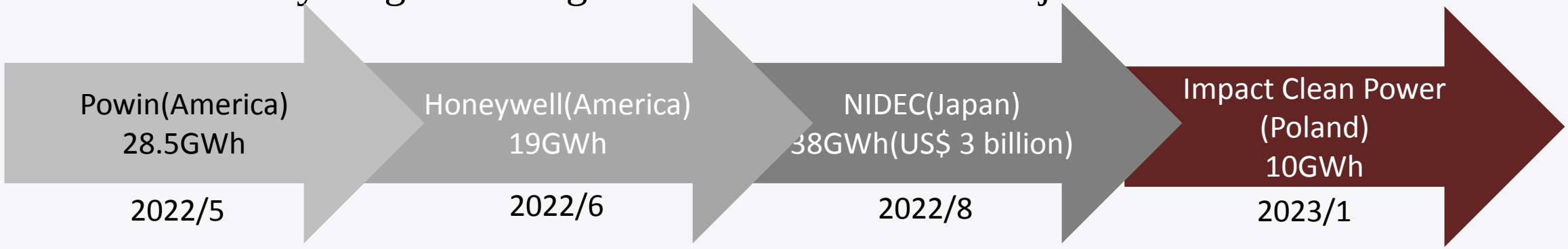
Simplified Balance Sheet：

Unit: in Thousands	2022	2021
Total Assets	**$827,698**	**$627,033**
Total Liabilities	**$107,571**	**$81,548**
Total Equity	**$720,127**	**$545,485**

	For the years ended December 31,	
	2022	2021
Operating expenses:		
General and administrative	$ 107,357	$ 61,755
Research and development	13,574	13,816
Share of net loss of equity method investee	1,557	62
Total operating expenses	122,488	75,633
Loss from operations	(122,488)	(75,633)
Other income (expense)	23,369	(17,745)
Loss before income taxes	(99,119)	(93,378)
Income tax expense	—	—
Net loss	(99,119)	(93,378)
Net loss attributable to non-controlling interests	328	—
Net loss attributable to ordinary shareholders	$ (98,791)	$ (93,378)

Our Licensees：FREYR (NYSE: FREY) (Cont'd)

■ FREYR Battery Targets Strategic Coalition with Four Major Global Partners



Giga Arctic:

- After obtaining the license for the M121 cathode material in 2022, is currently planning a joint venture with the Finnish Minerals Group in Vassa, Finland, to establish a 20,000 to 60,000-ton LFP material plant. FMG Group announced on February 16, 2023, that they have applied for an environmental impact assessment (EIA) for this plan.
- In Norway, a 29 GWh battery plant has secured a financial commitment of 16 billion euros from the Norwegian government
- In July 2023, the company received a 100 million euro grant from the European Union's Innovation Fund to support FREYR's Giga Arctic project
- They have already set up a verification line and are aiming to complete a fully automated production line by Q4 2023

Giga America:

- Freyr has purchased 369 acres of land in the Bridgeport Industrial Park, Georgia
- They are expecting to receive a total of $410 million in financial subsidies from the Georgia state government and Coweta County
- Equipment procurement is scheduled to begin in Q3 2023, with plant construction set to commence in Q4 2023. The construction is expected to be completed by 2026, with a production capacity of 38 GWh.
- The IRA provides an annual subsidy of $1.4 billion for this project.
- The net present value (NPV) of this investment is estimated to be $8 billion, with a substantial contribution of up to $3 billion from the IRA.

Our Licensees：FREYR (NYSE: FREY) (Cont'd)

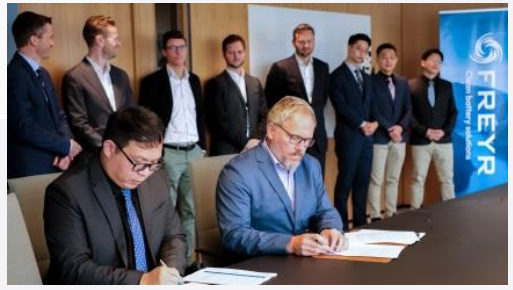
- Watch FREYR Battery's Capital Markets Day 2023
  https://www.freyrbattery.com/news/watch-freyr-batterys-capital-markets-day-2023

2023.05.30

2023.08.10

Our Licensees：FREYR (NYSE: FREY) (Cont'd)

Partner:



The news of U.S. Gigafactory:

- Freyr purchases land in Georgia for battery plant 11/14/22
- FREYR Battery Announces Plans for U.S. Gigafactory in Georgia 11/11/22
- FREYR and Koch Strategic Platforms to build 50 GWh battery plant 11/5/22
- Koch Strategic Platforms in JV to develop 50GWh battery cell factory in US 10/13/21

Customers:

- FREYR Battery Targets Strategic Coalition with Four Major Global Partners, includes Glencore Plc, Caterpillar Inc, Siemens AG, 和Nidec Corporation
- FREYR Battery signs 10 GWh plus battery agreement
- Battery startup Freyr signs $3 billion supply deal with Nidec
- FREYR secures 28.5GWh offtake deal with Powin Energy
- FREYR Battery expands gigafactory plan amid pledge of support from Norway's government

Our Licensees ：ICL (NYSE: ICL)

Shareholders composition ：

Name	%
Israel Corporation Ltd	44.0%
Migdal Markefet Pension & Provident Funds Ltd	5.77%
Harel Provident Funds Ltd	5.07%
Altshuler Shaham Provident Funds & Pension Ltd	4.76%
The Vanguard Group, Inc	1.34%
Excellence Investments Ltd	0.96%

Market Focus:

Industrial Products：

- Continuously benefiting from higher prices and long-term contracts
- With sales reaching 486 million, a YoY increase of 19%.
- EBITDA of 206 million+61%YoY

Phosphate Solution

- Both specialized commodities and general commodities have achieved their highest quarterly business performance on record.
- With sales reaching 915 million, a YoY increase of 57%.
- EBITDA of 315 million+137%YoY

Potash：

- Record-breaking quarterly price and production capacity.
- With sales reaching 951 million, a YoY increase of 150%.
- EBITDA of 616 million+ 670%YoY

Innovative Agricultural Solutions

- Currently achieving the highest quarterly sales and EBITDA records.
- With sales reaching 700 million, a YoY increase of 110%.
- EBITDA of 155 million +355%YoY

Project Gigafactory America

- Partner: Aleees
- Foucus on **EV** & **ESS** market
- ICL is investing $400 million to establish the United States' first large-scale LFP materials factory, planned to locate in St. Louis, Missouri.
- This initiative will benefit from a subsidy of $197 million through the U.S. Bipartisan Infrastructure Law.
- The first production line is projected to be completed by 2024, with an annual output of 15,000 metric tons.
- The second production line is anticipated to be finished by 2025, contributing to a total annual capacity of 30,000 metric tons.

Simplified Balance Sheet：

	For the Year Ended December 31,		
	2022	2021	2020
	US$ millions		
Sales	10,015	6,955	5,043
Gross profit	5,032	2,611	1,490
Operating income	3,516	1,210	202
Income before taxes on income	3,404	1,092	49
Net income attributable to the shareholders of the Company	2,159	783	11
Statements of Financial Position Data:			
Total assets	11,750	11,080	9,664
Total liabilities	6,037	6,344	5,576
Total equity	5,713	4,736	4,088

Our Licensees ：ICL (NYSE: ICL)

“Driving an electric vehicle is much better for the environment,” Granholm said. “We want to get the full supply chains here, and that includes responsible extraction of critical minerals in addition to finding alternatives to the critical minerals that are difficult to obtain in the United States.”

2022/5	2022/10	2023/2	2023/8
Our company, acting on behalf of its subsidiary, Aleees Co., Ltd. (TW), announces the formal signing of a memorandum of understanding (MOU) for official collaboration with ICL.	The U.S. government announces a total investment of $400 million in ICL's LFP project, receiving a total subsidy of $197 million.	Both parties have officially authorized and signed the contract.	Groundbreaking ceremony held at St. Louis, Missouri.

Our Licensees ：ICL (NYSE: ICL) (Cont’d)

News：

ICL to Lead Efforts in U.S. to Develop Sustainable Supply Chain for Energy Storage Solutions, with $400 Million Investment in New Lithium Iron Phosphate Manufacturing Capabilities

ICL to Lead Efforts in U.S. to Develop Sustainable Supply Chain for Energy Storage Solutions, with $400 Million Investment in New Lithium Iron Phosphate Manufacturing Capabilities | Business Wire

Energy secretary touts plan to produce electric vehicle component in St. Louis

https://www.stltoday.com/news/local/business/energy-secretary-touts-plan-to-produce-electric-vehicle-component-in-st-louis/article_e49ebdf6-3615-11ee-94c1-933cd2d0f630.html

US energy secretary lauds $400M St. Louis battery factory in efforts against climate change (Photos)

https://www.bizjournals.com/stlouis/news/2023/08/08/energy-secretary-lauds-battery-factory-st-louis.html

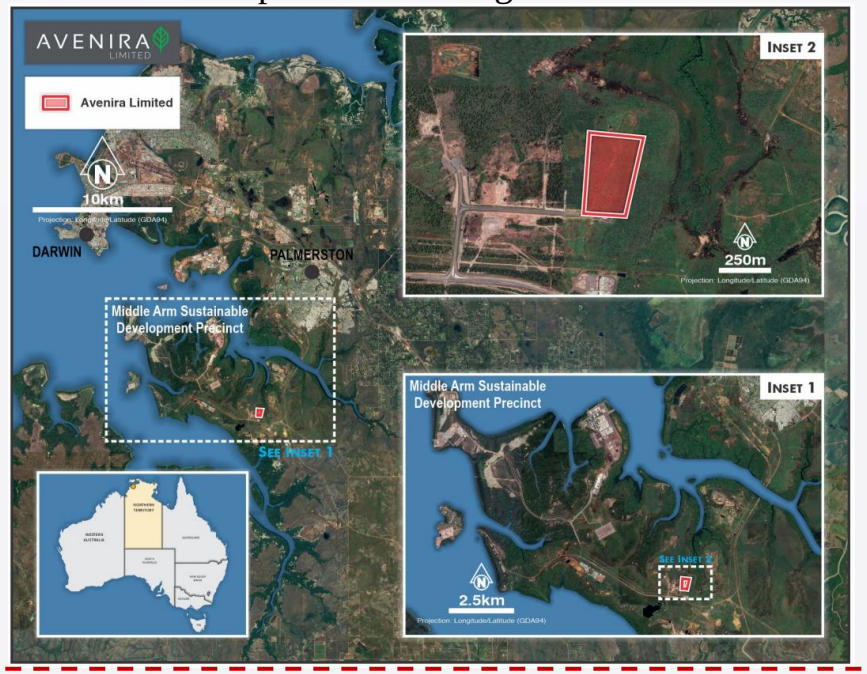
Our Licensees ：Avenira (ASX: AEV)

Company Profile：

- Avenira is a battery cathode and fertilizer focused project developer, aiming to supply premium quality products into the electric vehicle, agricultural and industrial chemical markets.
- The Wonarah Project is one of the largest high-grade Phosphate rock deposits in Australia. Feedstock from the Wonarah Phosphate Project will enable the production and sale of THREE highly valuable product streams:
  - ✓ Fertiliser markets
  - ✓ Thermal Grade Phosphoric Acid (TPA)
  - ✓ LFP Cathode Active Material (LFP)LFP
- The materials for LFP include lithium, phosphoric acid, and iron. Australia supplies approximately 50% of the world's Lithium。Avenira has the capability to develop phosphate and possesses rights for phosphate mining. Additionally, it can source lithium locally, providing a significant cost advantage.
- It is projected that the first phase of production, with an annual capacity of 10,000 tons of LFP cathode materials, will be completed by 2026. By 2028, the combined annual production capacity is expected to reach 30,000 tons of LFP cathode materials

Northern Territory & MASDP：

- The Northern Territory, also known as the Northern Territory of Australia or simply the NT, is an autonomous territory of Australia. Its capital city is Darwin, and it one of excellent harbors in the northern of Australia.
- The Northern Territory government has provided a 9-hectare land lease to ensure Avenira's requirements for building an LFP plant are met. This LFP plant will be constructed in the Middle Arm Sustainable Development Precinct (MASDP), which is approximately a 30-minute drive from the central business district of Darwin. MASDP is a government-developed industrial and commercial mixed-use area with convenient transportation and logistics infrastructure.



The Long-Term Strategy

Batter Structure

Material	Cost %
Cathode	45%
Anode	10%
Electrolyte	10%
Separator	10%
Others	25%

Source：Fubon / Aleees

Integrating the IP platform and customers to create maximum profit together

Commercialize

Transitioning laboratory technologies into scalable, commercializable solutions

Customers

18 years of manufacturing experience, commercializing technologies for over 40 international customers

Co-operation

Established strong collaborative networks with lithium battery experts, research institutions, and academic organizations

License experience

Successfully licensed IP and technology to international clients and gained recognition from American and Japanese automotive manufacturers

The Long-Term Strategy

Platform of Battery materials patent

Source of technology：

- Individuals
- R&D Institutions
- Academic Institutions
- Startups
- Enterprises

Aleees integrates various patents from different units and commercializes them to meet end customers

We will expand into patents for anode, cathode, electrolyte and separator, covering a wide range of battery material patents. We will commercialize the patented content to satisfy end customers

Flexible production verification line

Aleees

License

Licensees
who interested manufacturing battery materials

Collaborating with customers to develop products

SELL

Manufacturing by Licensees to meet customer demands

Satisfy Customers

More than 40 international customers worldwide, and the number is continuously increasing

End users：

1.EV

2.ESS

3.Mobile/NB

4.Airplane

5.Army

6.Medical

THANK YOU