



Aleees-KY(5227)

Corporate briefing

Advanced Lithium Electrochemistry (Cayman) Co., Ltd.

2025.10



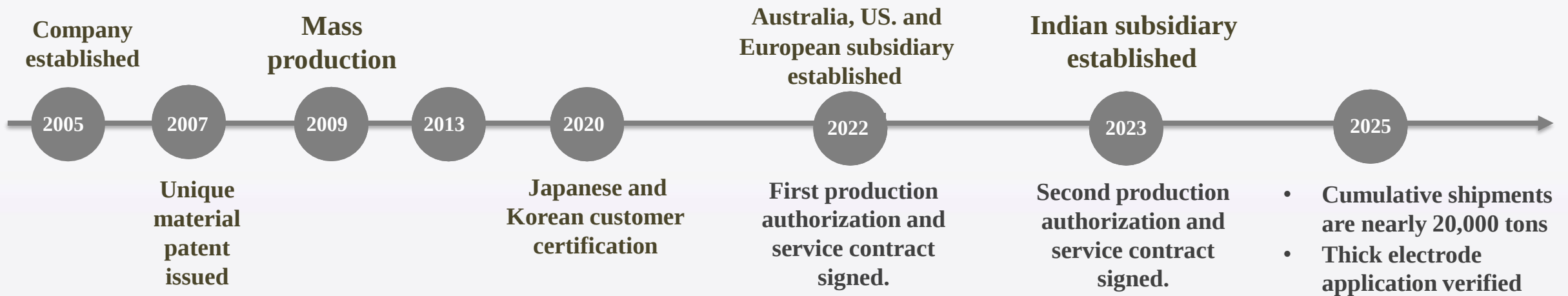
A Well-established LFP Company

- Aleees (TWSC: 5227), founded in 2005 with main office and factory located in Taiwan, is a lithium iron phosphate (LFP) cathode active material (CAM) manufacturer **with longest history as well as an IP licensor** in the world
- Aleees is also one of the **few companies outside Mainland China** with complete LFP battery material manufacturing technology. Our processes include in-house iron phosphate precursor synthesis making Aleees **independent from Chinese supply chain**. The production line is **in modular design, which could also use iron phosphate** from 3rd party as feedstock
- We own 160 exclusive patents worldwide, with clienteles including world-renowned energy storage battery and EV battery clientele across Europe, US, and Asia
- In the past 20 years, Aleees LFP CAM with yield rate of 97% has been shipped from our production plant in Taiwan to Asia, America, Europe and other markets, and verified by Kyocera, Toyota, Suzuki, LG Energy Solution, etc.
- Our non-toxic production process is **environmentally friendly**. We have obtained major international certifications including ISO9001, ISO14001, ISO14064, IATF 16949 and corporate social responsibility AA1000 and so on
- All Aleees products are **bespoke product** and will be produced in US, Europe, Australia and India. That would make global supply chain management easier. Licensees could build local supply chain and apply for local government subsidies
- We are cooperating with global clientele and partners to form the **Aleees Club**, aiming to establish a localized, integrated supply network of LFP lithium-ion battery materials, to strengthen the competitiveness of the local LFP battery supply chain in the world, and to build the value and eco-friendly future together



Aleees History

- Over the past 20 years, Aleees has become one of the most advanced LFP CAM manufacturer, holding over 160 self-developed global patents.
- Aleees is the only LFP CAM manufacturer outside of China and Over the past 20 years, we have accumulated extensive mass production experience, resulting in stable and reliable process capabilities. Our key processes consistently achieve a Cpk greater than 1.33, ensuring product quality and high yield



 **LG Energy Solution**

 **KYOCERA**

TOYOTA

 **ICL**

SUZUKI



Team Structure

R&D Team

Our R&D engineers work in 24-hour, two-shift rotations to develop new products with a globally leading cost-performance ratio.

Headcount

19

- Average Tenure: 9 years
- Senior Employees: 7
- Average Age: 38



Production Team

Composed of seasoned engineers and QC specialists, leverages their experience to achieve consistent quality and optimal production efficiency

Headcount

36

- Average Tenure: 13 years
- Senior Employees: 10
- Average Age: 40



Sales Team

Our sales professionals drive business growth and maintain client relationships across markets.

Headcount

7

- Average Tenure: 9 years
- Senior Employees: 2
- Average Age: 44



IP & Expertise: Powering Next-Gen LFP CAM Development

Patent

- Metal oxide addition
- Nano-sized LFP
- Double layer carbon coating

Know how

- Iron process
- Iron phosphate process
- Low Manufacturing cost

High Dt

- High tap density for spherical particles
- Dt = 1.7~1.9 g/cm³
- Surface area = 6.5 ~ 8.5 m²/g
- Carbon content = 0.9 ~ 1.1 %
- 0.1C Discharge = 160 ± 3 mAh/g

High P.D.

- High pallet density for pulverized particles
- P.D. = 2.76 g/cm³
- Surface area = 9.55 m²/g
- Carbon content = 1.27 %
- 0.1C Discharge = 158 mAh/g

Reliable process capabilities

- Offering Japanese-quality standards at Chinese manufacturing prices



Next-Generation High-Density LFP CAM

Items	Unit	M128
Surface area	m ² /g	9.55
Particle size (D10)	μm	0.46
Particle size (D50)	μm	2.37
Particle size (D95)	μm	8.32
Carbon	%	1.27
Moisture	ppm	-
Pellet Density	g/cm ³	2.76
Electrochemical Characterization		
1 st Charge@C/10	mAh/g	161
1 st Discharge@C/10	mAh/g	158
1 st Coulomb's efficiency	%	98.1
2 nd Charge@C/10	mAh/g	159
2 nd Discharge@C/10	mAh/g	160





Next-Generation High-Dt LFP CAM

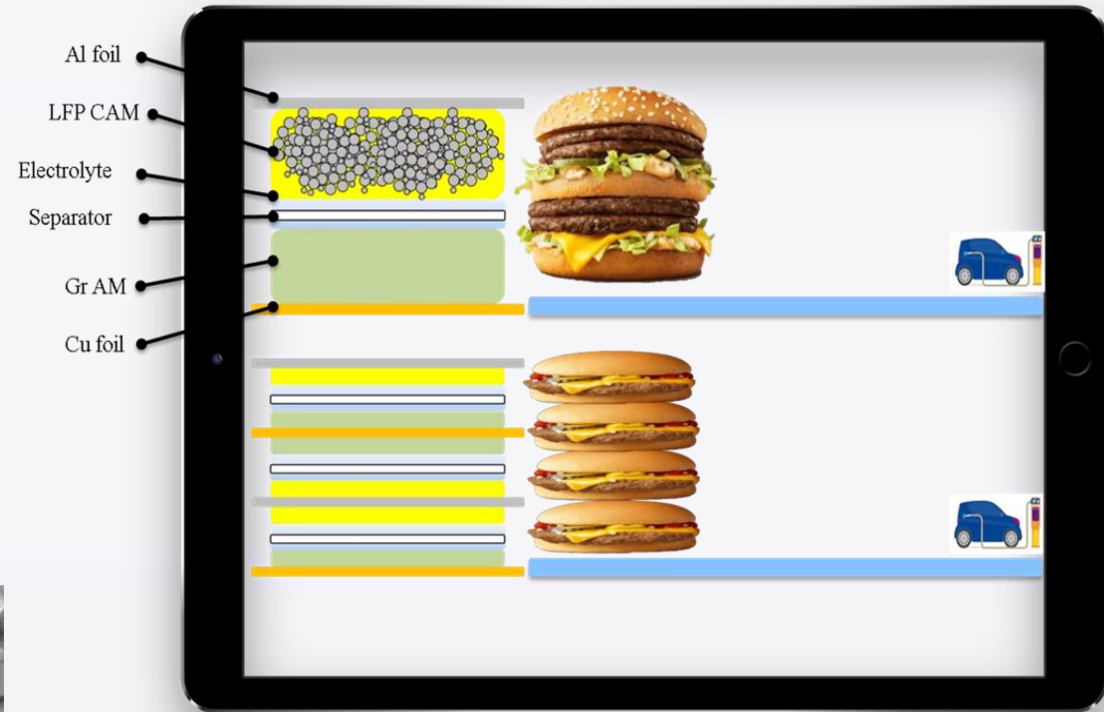
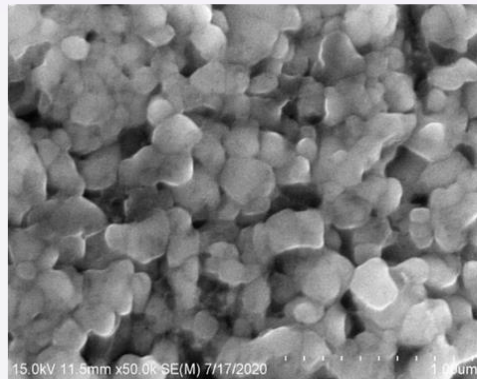
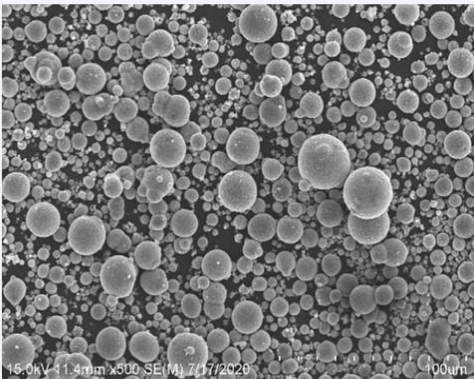
A20: Spherical product

High Dt. = 1.7~1.9 g/cm³

NMP & Water based dual Electrode Slurry system

Designed for thick electrode application

24 ppb metallic impurities control



Thick electrode is capable of accommodate more LFP CAM in a certain space.



Flexible General Line Delivering Profitability & Efficiency

Our innovative General Production Line is engineered for unparalleled flexibility and efficiency. This design allows us to:

1. Produce over 90% of global LFP CAM specifications on a single line. This versatility significantly broadens our product reach and market responsiveness.
2. Offer the strategic option to integrate in-house iron phosphate production. This vertical integration enhances supply chain control, optimizes raw material costs, and ensures consistent precursor quality.
3. Incorporate Aleees' proprietary patented processes directly into the general line's workflow. This ensures that every product benefits from our unique technological advantage.

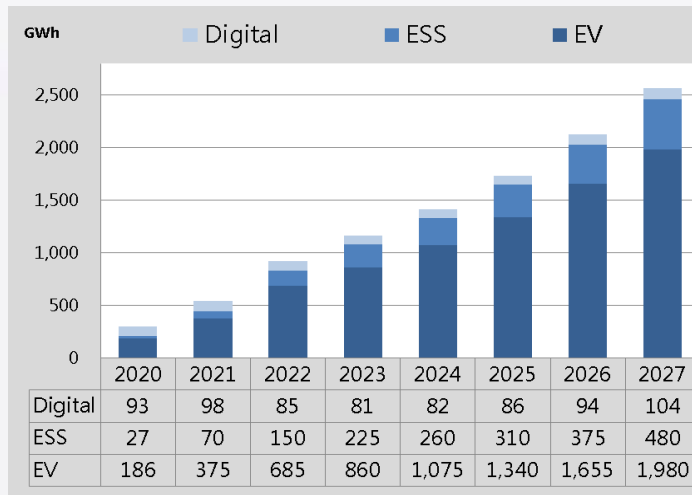
This adaptable and integrated approach not only maximizes production capabilities but also streamlines operations, leading to significant cost efficiencies and enhanced profitability.



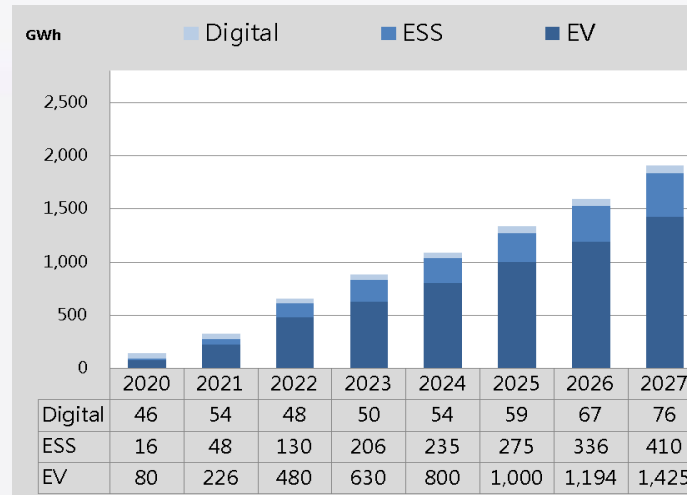
The world shipment of Lithium Battery

- In 2024, the global lithium battery shipment volume for the whole year reached 1,545 GWh, marking a 29% increase compared to 2023.
- 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 2027, global lithium battery shipments will reach 3,515 GWh, with the primary source of growth being the demand for power (EV and ESS) batteries
- Outside of China, the market is still predominantly dominated by ternary batteries. However, in China, due to the higher cost-effectiveness of LFP batteries compared to ternary batteries, LFP batteries accounted for 74% of lithium battery shipments in 2024.

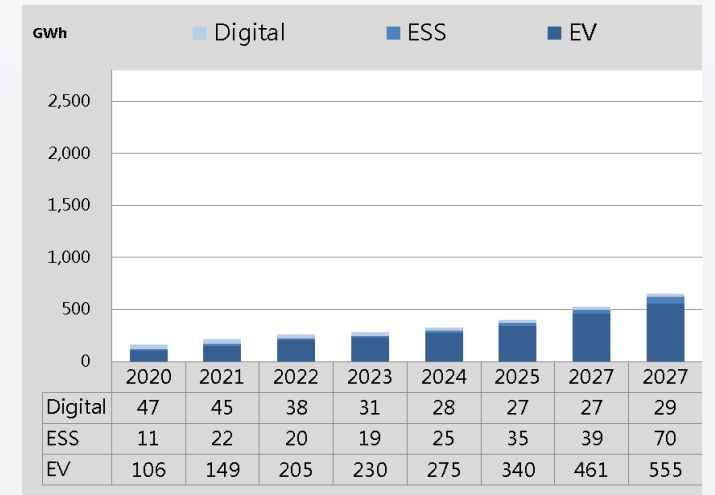
The world shipped of Li-ion Battery



China shipped of Li-ion Battery



Non-China shipped of Li-ion Battery





China - **Technology Control** - Restriction on the Export of Equipment and Technology with a pellet density of **2.58g/CC or Higher**

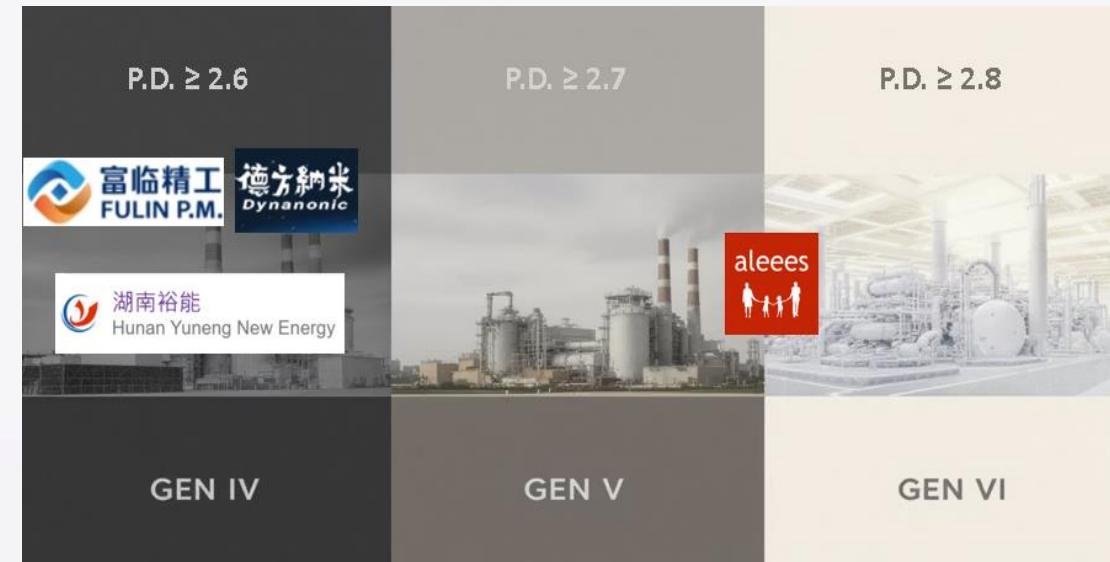
On July 15, 2025, the Chinese Ministry of Commerce and Ministry of Science and Technology jointly adjusted "**Catalogue of Technologies Prohibited or Restricted from Export**". Added battery cathode material preparation technologies, including those for LFP, LMFP and iron phosphate, to the restricted export list.

Any overseas transfer of these technologies through trade, investment, or technological cooperation will require a government license.

The control primarily targeted high pellet density.

The control standards:

- Powder pellet density ≥ 2.58 g/cc under 220 MPa
- 0.1C reversible capacity ≥ 160 mAh/g
- Initial Coulombic efficiency $\geq 97\%$



https://fms.mofcom.gov.cn/zcfg/jsjckzcfg/art/2025/art_ba35a101c22c4f6e844f749cb0a98552.html

Export controls on items related to lithium batteries and artificial graphite anode materials (2025.10.9)

In accordance with the relevant provisions of the Export Control Law of the People's Republic of China, the Foreign Trade Law of the People's Republic of China, the Customs Law of the People's Republic of China, and the Regulations of the People's Republic of China on Export Control of Dual-Use Items, and to safeguard national security and interests and fulfill international obligations such as non-proliferation, with the approval of the State Council, it has been decided to impose export controls on the following items:

I. Lithium Battery-Related Items

(I) 3A001 Rechargeable and rechargeable lithium-ion batteries (including cells and battery packs) with a gravimetric energy density greater than or equal to 300 Wh/kg (reference tariff number: 85076000).

(II) 3B901.a. Equipment for manufacturing rechargeable and rechargeable lithium-ion batteries:

1. Winding machine (reference tariff number: 84798999)
2. Laminating machine (reference tariff number: 84798999)
3. Liquid filling machine (reference tariff number: 84798999)
4. Hot press
5. Chemical separation system;
6. Separation cabinet

(III) 3E901.a. Technology for producing items controlled by 3A001.

II. Cathode Material-Related Items

Export controls on items related to lithium batteries and artificial graphite anode materials (2025.10.9)

(I) 3C901.a.1. Lithium iron phosphate cathode materials with a compacted density greater than or equal to 2.5 g/cm^3 and a gram capacity greater than or equal to 156 mAh/g (reference tariff number: 28429040).

(II) 3C901.a.2. Precursor-Related Items for Ternary Cathode Materials:

a. Nickel-cobalt-manganese hydroxide (reference tariff number: 28539030);

b. Nickel-cobalt-aluminum hydroxide (reference tariff number: 28539050).

(III) 3C901.a.3. Lithium-rich manganese-based cathode materials.

(IV) 3B901.b. Equipment for manufacturing rechargeable lithium-ion battery cathode materials:

1. Roller kilns;

2. High-speed mixer;

3. Sand mill;

4. Air jet mill

III. Items Related to Graphite Anode Materials

(I) 3C901.b.1. Artificial graphite anode materials.

(II) 3C902.b.2. Anode materials mixed with artificial graphite and natural graphite.

(III) 3B901.c.1. Granulation equipment for producing graphite anode materials:

a. Vertical granulation kettles with a granulation volume of 5 m^3 or greater;

b. Continuous granulation kettles with a granulation volume of 5 m^3 or greater.

(IV) 3B901.c.2. Graphitization equipment for producing graphite anode materials:



Export controls on items related to lithium batteries and artificial graphite anode materials (2025.10.9)

- a. Box furnaces;
 - b. Acheson furnaces;
 - c. Internal series furnaces;
 - d. Continuous graphitization furnaces.
- (V) 3B901.c.3. Coating and modification equipment used to produce graphite anode materials:
- a. Fusion coating equipment with a volume greater than 300 L;
 - b. Spray drying equipment with a volume greater than 60 m³;
 - c. Chemical vapor deposition (CVD) rotary kilns with a barrel diameter greater than 0.5 m.
- (VI) 3E901.b. Processes and technologies used to produce graphite anode materials:
- 1. Granulation process;
 - 2. Continuous graphitization technology;
 - 3. Liquid phase coating technology.

Export operators shall be responsible for the authenticity of goods declared for customs clearance and strengthen the identification of export items. For controlled items, the declaration form must indicate "dual-use item" and list the dual-use item export control code. For non-controlled items with similar parameters, indicators, and performance, the declaration form must indicate "not controlled item" and list the specific parameters and indicators. If there are doubts about the completeness, accuracy, or authenticity of the information submitted above, customs will challenge it in accordance with the law. Export goods will not be released during the challenge period.

This announcement will take effect on November 8, 2025. The "Export Control List of Dual-Use Items of the People's Republic of China" will be updated simultaneously.

