

IS Dongseo's
**Growth Strategy
for Waste Battery
Recycling**

BTS Technology Acquired in Europe



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2. About BTS technology
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The importance of the European market

01 02 03 04

- 1 EV demand in Europe
- 2 Expected EOLB stock
- 3 Major EV production regions
- 4 Necessity of localization strategy



1 The importance of the European market

EV demand in Europe

Expected EOLB stock

Major EV production regions

Necessity of localization strategy

- 2.6 million EVs sold in Europe (m/s 21.9%) in 2022

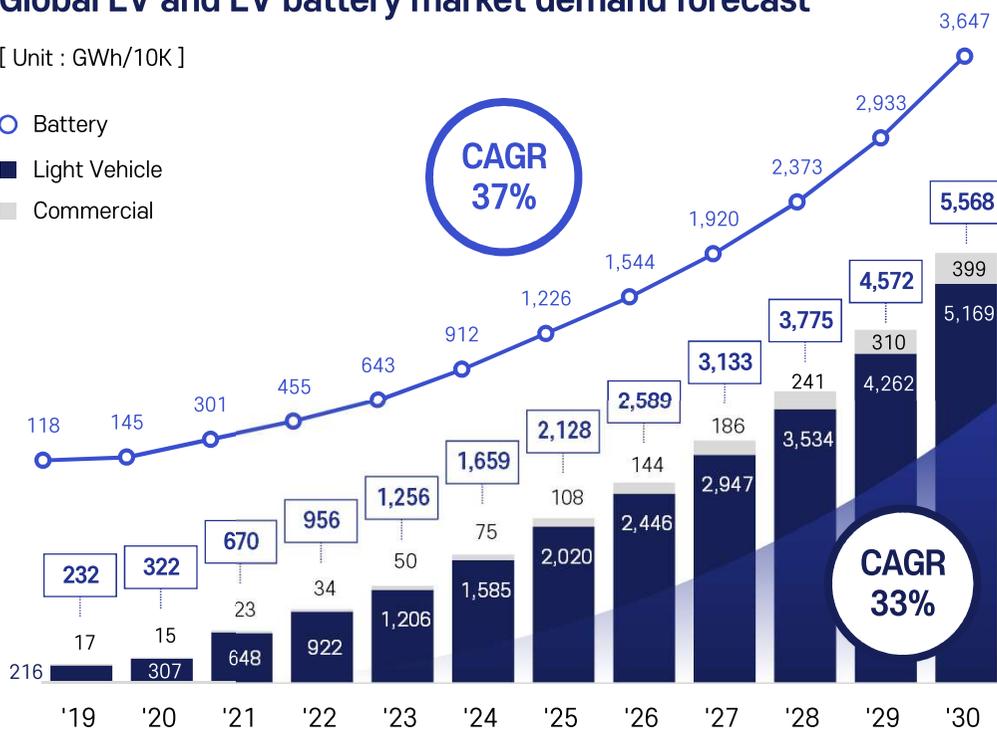


4.7 million units by 2025 (M/S 37%) → 9.8 million units by 2030 (M/S 69%) Demand expected
 ※ Total ban on internal combustion engine cars as of 2035

Global EV and EV battery market demand forecast

[Unit : GWh/10K]

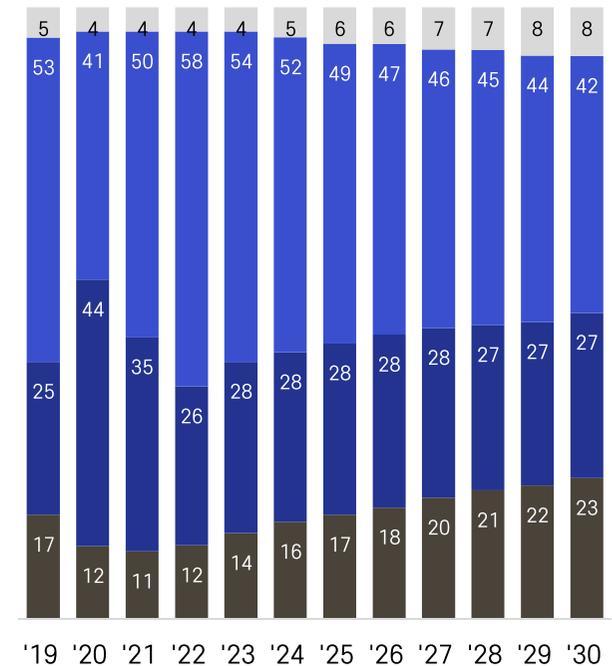
- Battery
- Light Vehicle
- Commercial



Regional forecast of global EV sales

[Unit : %]

- N/A
- EU
- CN
- Others



* Source : SNE Research

1 The importance of the European market

EV demand in Europe

Expected EoLB stock

Major EV production locations

Necessity of localization strategy

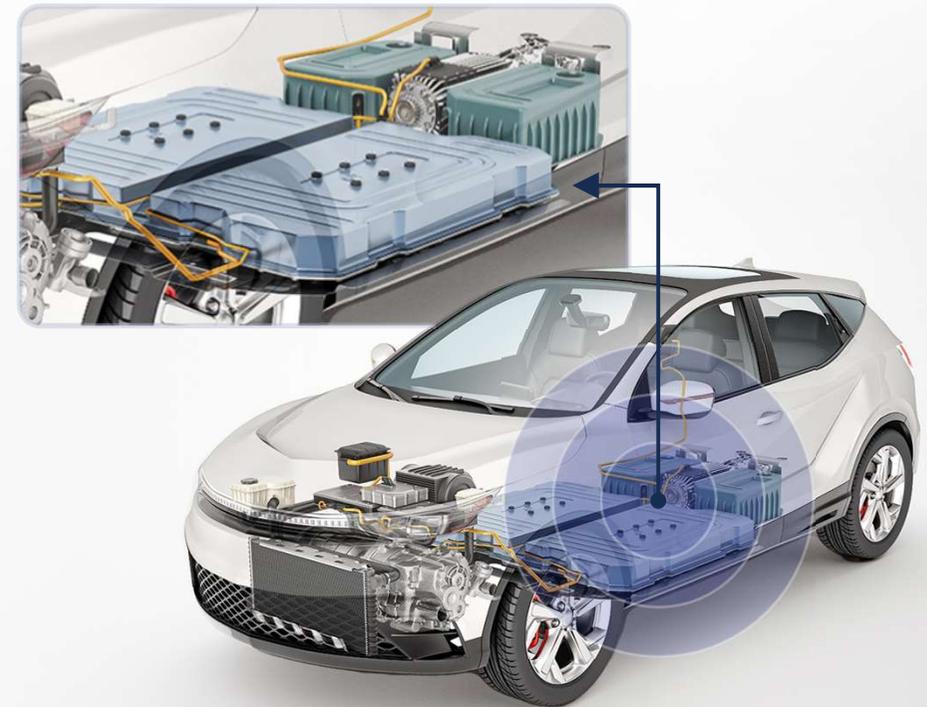
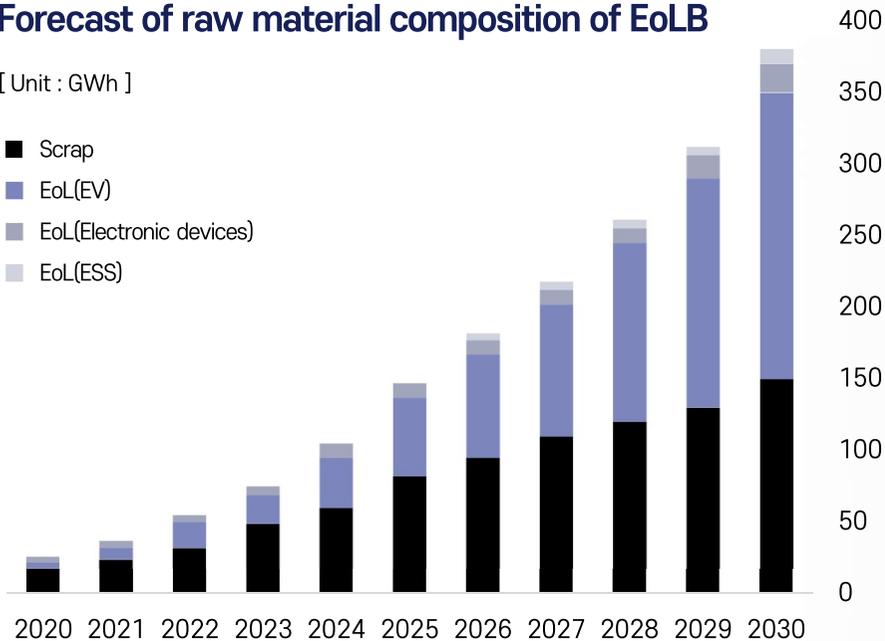
- The life cycle of EV batteries is expected to be 300,000 km on average
- Expected EV replacement demand is within 5 to 8 years based on the average annual usage of 30,000 to 50,000 kilometers in Europe
- More than 500,000 discarded batteries are expected to be generated in 2025 and beyond

High penetration of EVs in Europe leading to a rapid increase in end-of-life batteries (EoLB) due to the long driving distances (over 2 million EoLB expected after 2030)

Forecast of raw material composition of EoLB

[Unit : GWh]

- Scrap
- EoL(EV)
- EoL(Electronic devices)
- EoL(ESS)



* Source : Roland Berger, Kyobo Securities Research Center

1 The importance of the European market

EV demand in Europe

Expected EOLB stock

Major EV production regions

Necessity of localization strategy

Europe, especially Eastern Europe, as a major battery production base with abundant scraps (raw material for recycling)

■ EUROPEAN GIGAFACTORIES



1 The importance of the European market

| | | | |
|---------------------|---------------------|-----------------------------|---|
| EV demand in Europe | Expected EOLB stock | Major EV production regions | Necessity of localization strategy |
|---------------------|---------------------|-----------------------------|---|

Regulatory tightening in the Europe, such as the EU's Critical Raw Materials Act, is driving the need for local presence in Europe

■ Purpose

- To secure the stable supply of raw materials in the EU by reducing supply chain dependency on specific countries and increasing intra-EU investment

- 01 - Setting goals for strengthening the raw material value chain
- 02 - Sourcing raw materials
- 03 - Managing supply chain risk
- 04 - Including a sustainability strategy

■ Key takeaways - about recycling

- Set goals to strengthen regional strategic raw material supply chains and diversify import sources (guideline)
 - Extract 10%, process 40%, and recycle 15% from used raw materials by 2030
 - Diversify imports to avoid relying on a single third country for more than 65% of annual consumption
 - Strategic raw material list will be updated by forming a board of directors at a later date

■ Proposed battery regulations (announced in Jan 2023)

| | 2030 Jan and beyond | | | 2035 Jan and beyond | | |
|--|---------------------|--------|--------|---------------------|--------|--------|
| Recycled metals Minimum utilization | Lithium | Cobalt | Nickel | Lithium | Cobalt | Nickel |
| | 4% | 12% | 4% | 12% | 20% | 10% |
| | Before Jan 2026 | | | Before Jan 2030 | | |
| Recycling rate goal for battery | 65% | | | 70% | | |
| Recycling rate goal per material | Lithium | Cobalt | Nickel | Lithium | Cobalt | Nickel |
| | 35% | 90% | 90% | 70% | 95% | 95% |



About BTS technology

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- 1 Company overview
- 2 Business area
- 3 Battery Recycling Business
- 4 Waste business
- 5 New BTS Tech plant in Poland



2 About BTS technology

- Company overview
- Business area
- Battery Recycling Business
- Waste business
- New BTS Tech plant in Poland

■ Company overview

| | |
|------------------------|---|
| Company name | BTS Technology |
| CEO | Lee Hyuk |
| Foundation | 2016 |
| Business place | Slovakia (H.Q), Poland, Hungary, etc. |
| Sales/operating income | 46.7 billion won / 5.8 billion won (2022) |
| Major clients | Company S, Company L, Company H, etc. |
| Business area | - Recycling of waste battery (process scraps and cells/modules) - Recycling of general waste |



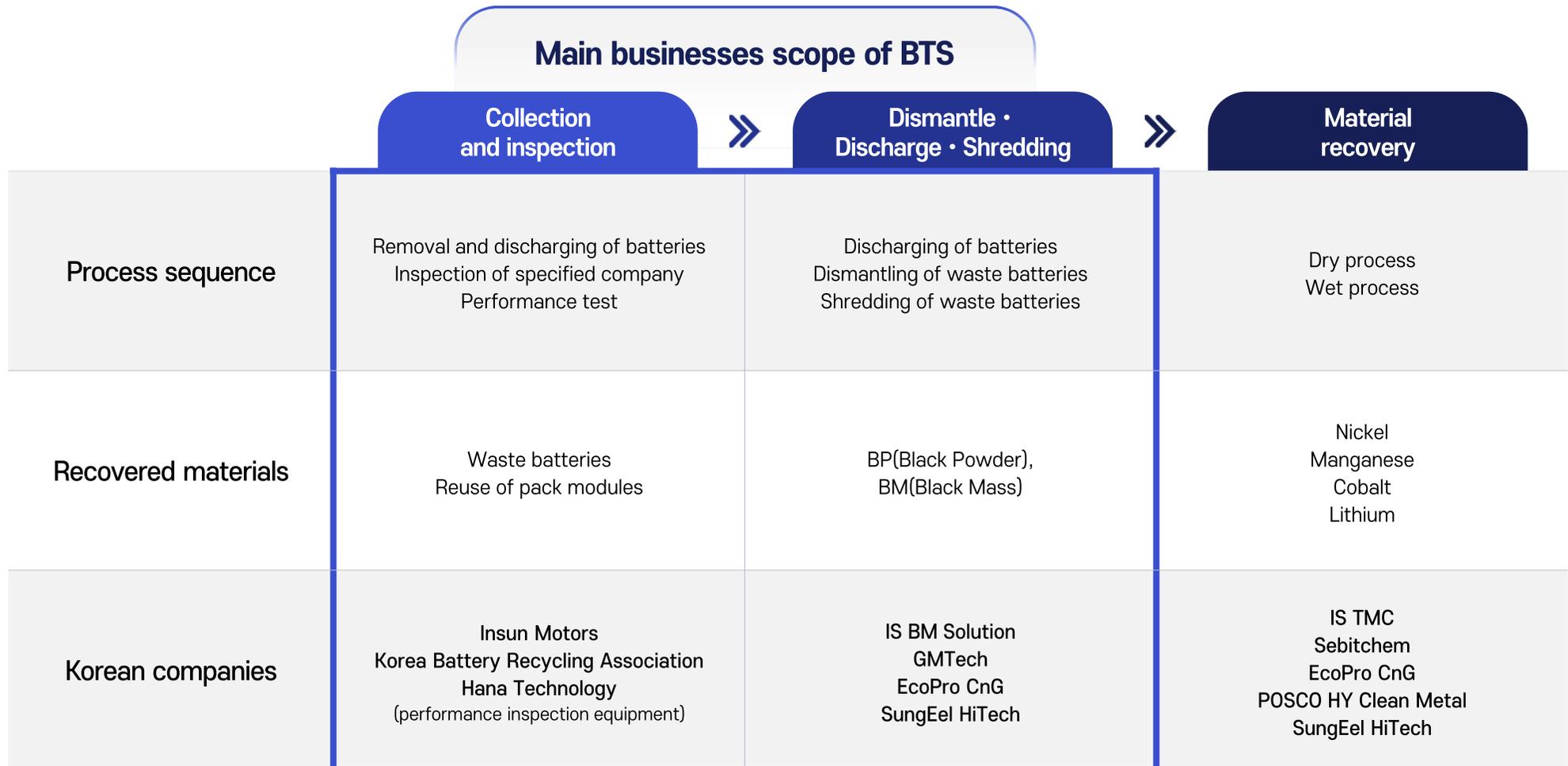
■ BTS business area

- General waste disposal business: customer in Europe
- Waste battery recycling business: Local secondary battery-related customers
 - EoLB anode and cathode business
 - EoLB cell/module processing business

■ History

- 2023 • JV Plant to be completed and licensed in October 2023 (planned)
- 2022 • Approved to establish the BTS JV Plant in Poland
- 2021 • Selected as a cell/module processing company by Company L
- 2020 • Contracted with Company L for processing cathode material waste
- 2019 • Founded a corporation in Poland and contracted with Company L for cathode material waste disposal
- 2018 • Contracted with Company H waste disposal and founded a corporation in Hungary
- 2016 • Founded a corporation and contracted with Company S (Slovakia) for waste disposal

Value chain of waste battery



* Source : Korea Environmental Industry & Technology Institute, Eugene Investment & Securities, PwC Analysis

2 About BTS technology

Company overview

Business area

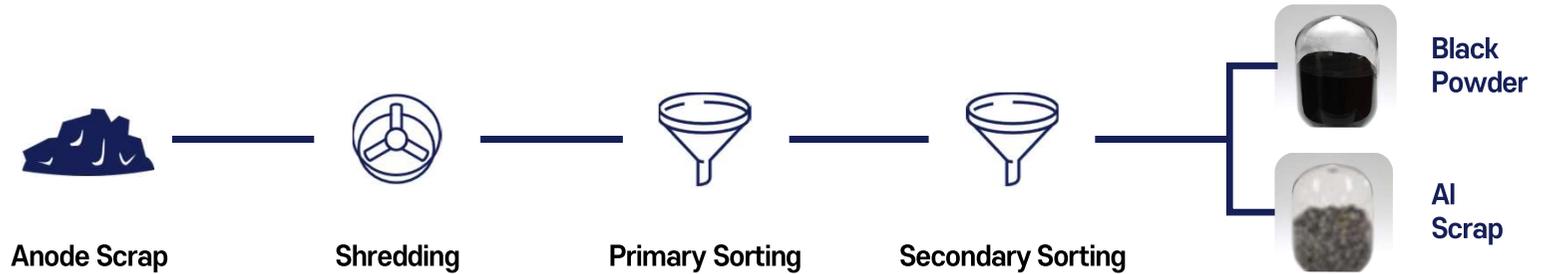
Battery Recycling Business

Waste business

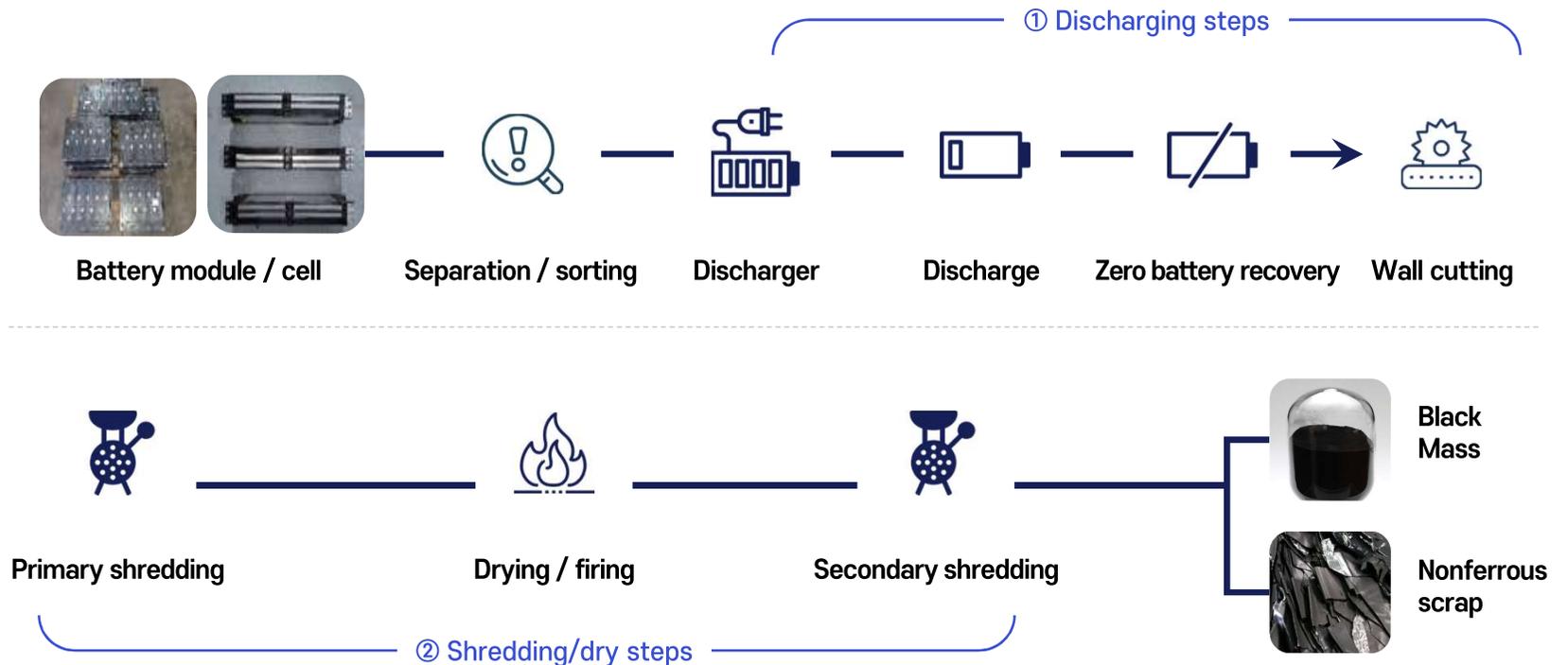
New BTS Tech plant in Poland

- Processing anode scrap and EoLB to produce black powder, black mass, and non-ferrous scraps

Black powder production



Black mass production



2 About BTS technology

Company overview

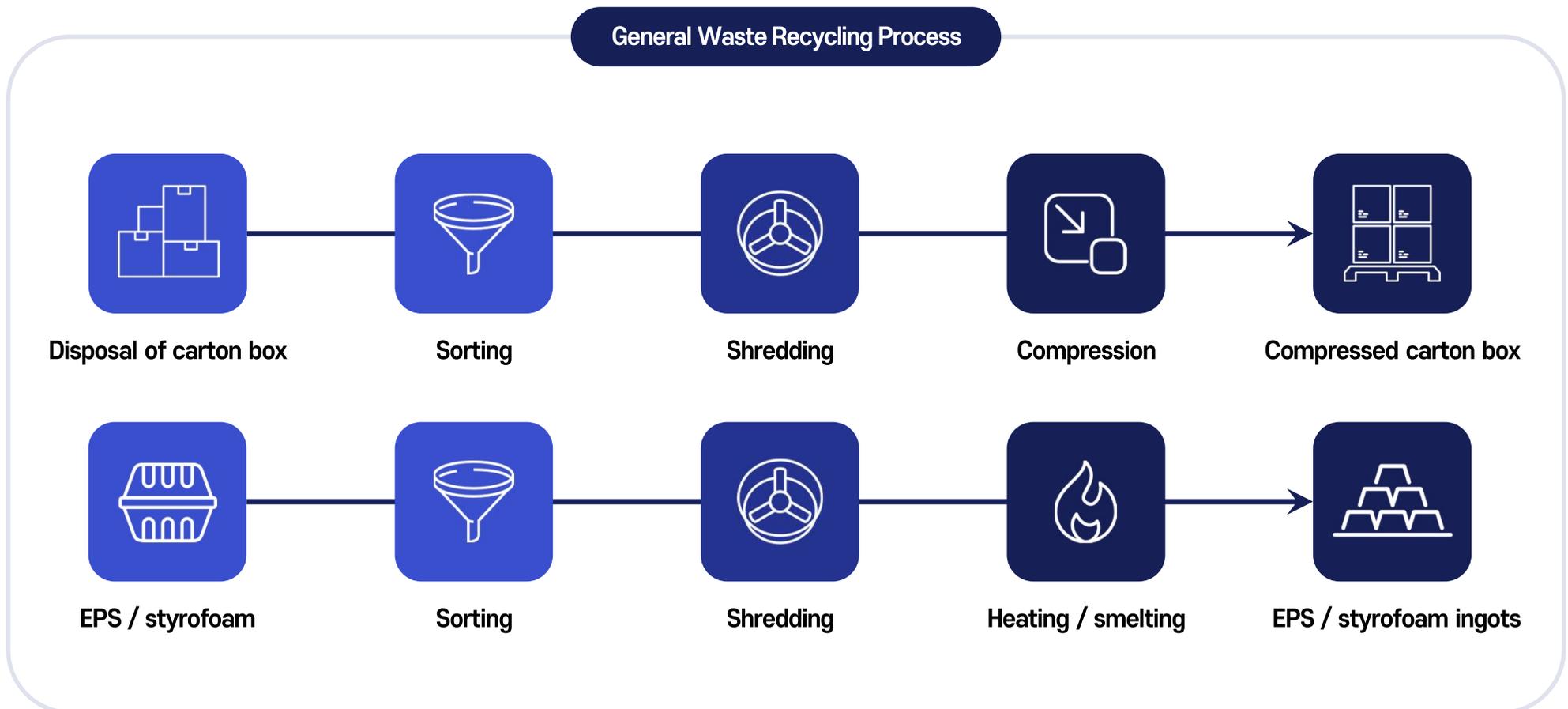
Business area

Battery Recycling Business

Waste business

New BTS Tech plant in Poland

- Disposes general waste of carton boxes, ESP, and styrofoam



Company overview

Business area

Battery Recycling Business

Waste business

New BTS Tech plant in Poland

The 1st Plant: 1 ha (10,000 m²)
Total land area: 5 ha (50,000 m²)

■ Pretreatment capacity

- New plant 1st: capacity of 1,000 tons per month and 12,000 tons per year (based on 1 shift)
 - ※ Capacity increases to 2,000 tons per month and 24,000 tons per year with 2 shifts

■ Plant layout

- H-1: battery pack dismantling line/module discharging line / BM product warehouse/receiving & shipping gate
- H-2: BM production line



Investment highlights

01 02 03 04

- 1 Entering Europe
- 2 Local Partnerships
- 3 Global Value Chain



3 Investment Highlights

Entering Europe

Local Partnerships

Global Value Chain

Taking a big leap forward to become a global battery recycler through the acquisition of BTS Technology

- Transitioning into a leading battery recycler in Europe through the acquisition of BTS Technology's European network, technology, and infrastructure
- Consists of local employees, gaining better insights into local conditions and addressing permission/approval issues with optimized HR management
- Plans to complete the cutting-edge plant (Poland) in 2023, built with more than 3 years of experience in operating local battery recycling facilities in Europe, and operate it in 2024



Acquisition of the quality local player helped us to **reduce 2 - 3 years of time needed to enter the European market directly and laying the groundwork to enter the market all at once**



12,000 ton

Pretreatment capacity per year

- The first cell / module-dedicated plant in Europe
- Processes 3 tons per hour (up to 24,000 ton/year)



50,000 m²

Waste treatment plants and sites

- In Poland but near German border
- Access to freeway, great location
- Can expand by 5 times the current size



Technology

In-house discharge / pretreatment equipment

- Design, manufacture, and use of own equipment
- Expertise in dismantling / discharging

3 Investment Highlights

Entering Europe

Local Partnerships

Global Value Chain

Maximizing synergies through local partnerships in Europe

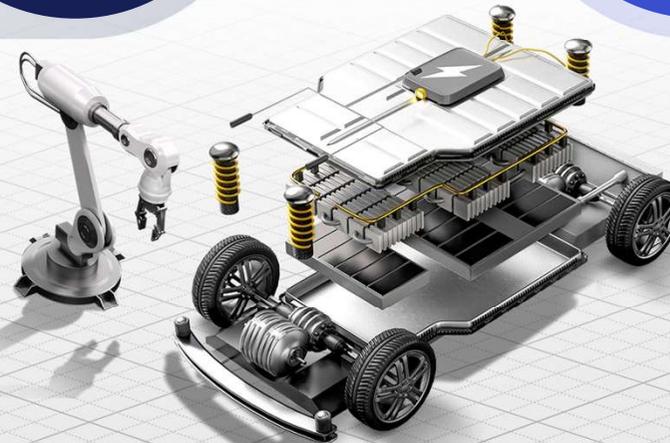
- Leveraging BTS's expertise in battery recycling and local marketing capabilities
- Getting valuable information about expandable business sites and permission / approval tips from the local partner
- Fully cooperating with battery manufacturers and automotive OEMs



BTS



Saker



Driving rapid expansion in Europe through the synergies between the two companies

3 Investment Highlights

Entering Europe

Local Partnerships

Global Value Chain

Building a global value chain beyond the domestic market

- Positioning as a leader in the European EoLB market by running the first cell/module-dedicated battery recycling facility in Europe
- Expanding scrapped car business model of Insun Motors into global markets beyond Europe
- Completing the global value chain that includes IS TMC based on raw materials secured both domestically and internationally



IS Dongseo's domestic and global capacity

01 02 03 04



4 IS Dongseo's domestic and global capacity and expansion strategy

Global expansion status

Current status of IS Dongseo's new waste battery recycling business in the overseas market



Korea

- Establishment of Insun Motors (Goyang, Icheon) - IS BMS (Hwaseong) - IS TMC (Gumi)
- Development of a 99,000 m² production base in Ochang Technopolis Industrial Complex in Cheongju

Europe

- Operation and expansion of a factory in Poland
→ Will expand across Europe (e.g., Slovakia, Hungary, Germany)
- Establishment of partnerships with a battery manufacturer in Europe
- Cooperation with automotive OEMs in Europe to establish a waste battery collection network

North America

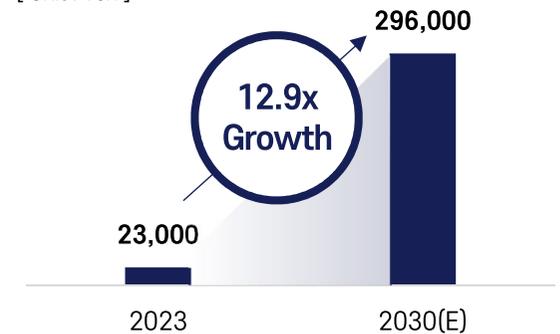
- Equity investment in a North American battery recycler
- Considering making direct entries into NA based on European expansion experience

Indonesia

- Signed a contract with a battery manufacturer
- Processing anode scraps through our local partner

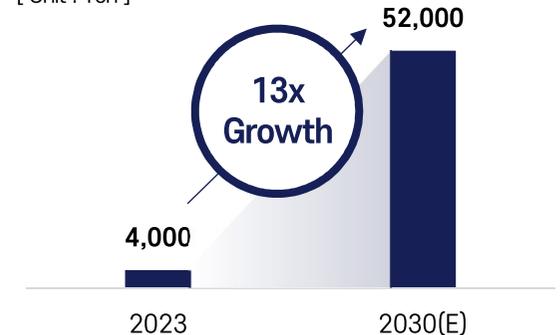
Pretreatment capacity expansion plan

[Unit : Ton]



Posttreatment capacity expansion plan

[Unit : Ton]





2023 INVESTOR RELATIONS

BTS Technology Acquired in Europe

—
THANK YOU

