

ALUS was established in 1999 and has developed into a leading company in the field of aluminum extrusion materials and components.

We provide comprehensive services including aluminum alloy design, casting, mold design, extrusion, heat treatment, and precision machining (cutting, drawing, pressing, welding, surface treatment).

We will respond to changes in the mobility market and secure competitiveness to become a global company in the aluminum industry.

The commitment to "Quality First" shared by all ALUS employees drives innovation in the aluminum industry.

- CEO Jong Wook, Jeong-



2021.10 ~ 12 Head of Carbon Neutral Private R&D Council of
SMEs and Startups Ministry
2021.01 ~ 2022.06 President of Korea Aluminum Extrusion Association
2015.07 ~ Now CEO of ALUS Co., Ltd.
2018.01 ~ Now CEO of KOREAL Co., Ltd.
2010.02 ~ 2013.11 Samsung C&T Resource Manager

Hanyang University Ph.D. course in finance
KOREATECH Advanced Materials Science and Engineering (Master)
Duke University Economics (BS) , USA

MAIN PRODUCTS(Electric Vehicle Parts)



ALUS is a leading manufacturer of Battery Pack Case (BPC) parts that requires high-end extrusion materials and manufacturing technology. We are currently cooperating with top 5 major companies in Korea to develop new BPC.

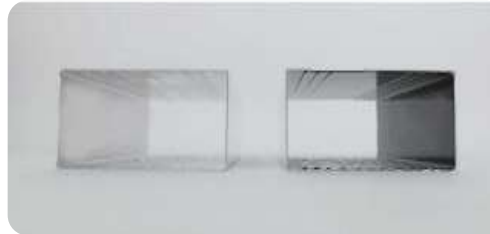


ALUS is mass-producing aluminum bumpers and seat rails, and is developing auto parts with H, D, and S companies.



ALUS focused on producing large quantities of aluminum materials for industrial and construction applications. This strategy allowed ALUS to grow rapidly in terms of revenue and market share.

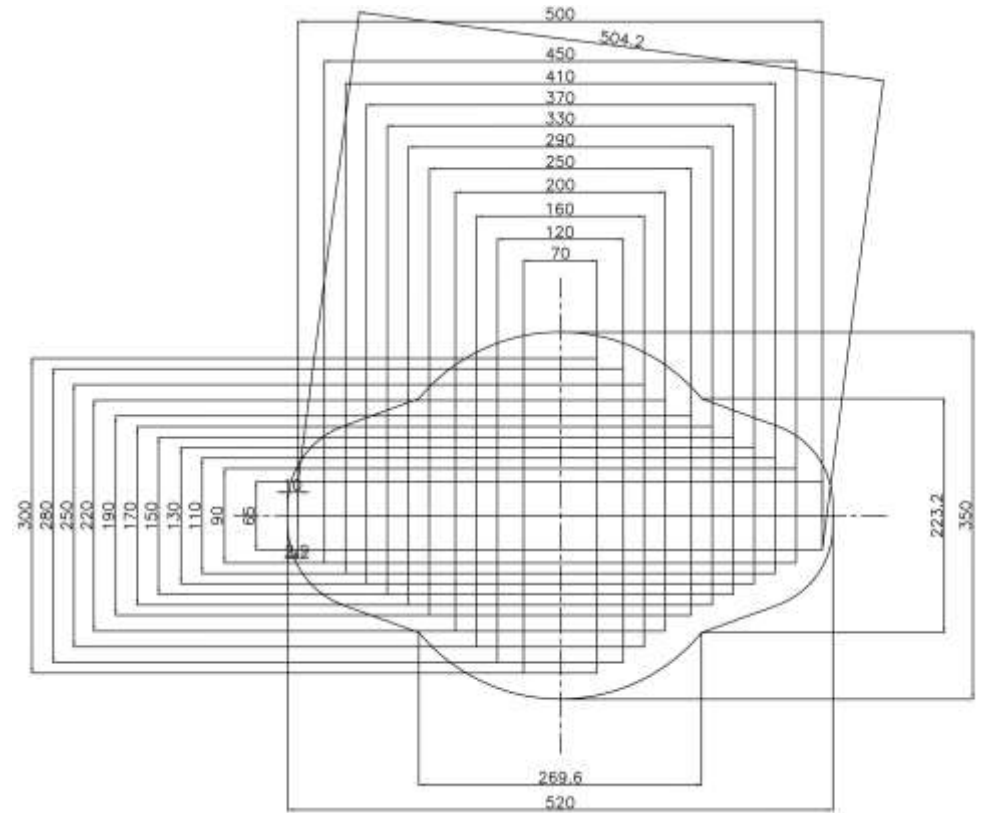
Battery Case



Industrial Products



Construction Materials



12 inch extrusion press product size

Aluminum billet casting process

Aluminum alloy molten metal control technology

(Securing melting temp., molten metal pretreatment technology for each alloy)

Melting



Melting(reflex furnace)



Electronic stir

Component analysis



Degassing



H₂ Analyzer
0.2cc/100g

Aluminum casting technology

(Optimization of casting / homogenization conditions for each alloy)

Continuous casting /cooling



Distribution



Billet

component analysis non-destructive testing



Component analysis



UT Testing



PT Testing

Homogenization

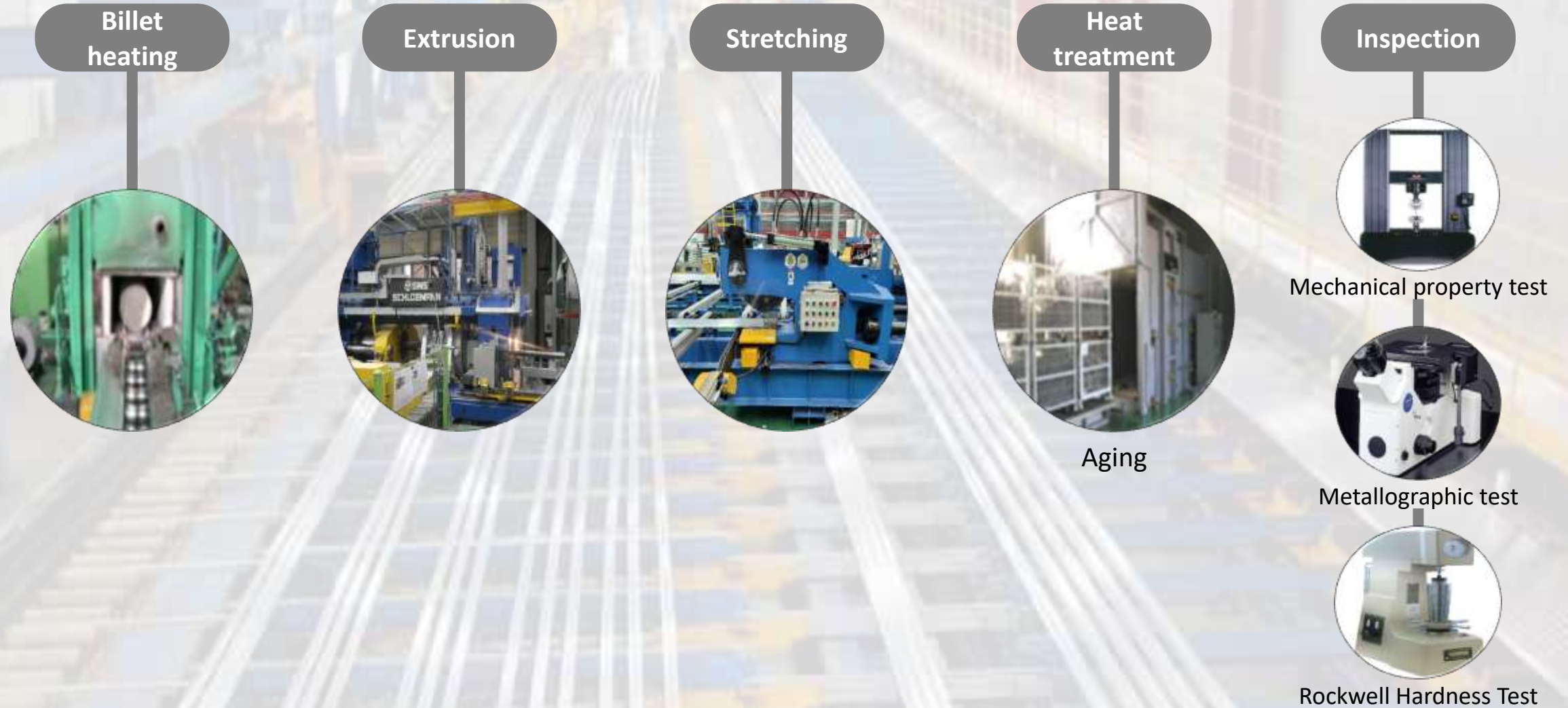


Homogenization

< 2 Melting furnaces(25t) in Cheonan Plant >

New melting/casting line to be completed in Jincheon plant in 4Q. 2024
for the production of **high-quality raw materials for automobiles parts**

Aluminum extrusion process



Aluminum is a lightweight metal that is strong and durable, making it a cost-effective and sustainable choice for automakers. The demand for aluminum body parts in the automotive industry is growing rapidly due to the increasing demand for lightweight vehicles.

Cutting



Cutting Machine

Machining



Compact MCT



Large Size MCT

Clean



Dry



Inspection
Checked Fixture



Assembly C/F



Large Size C/F



Compact SizeC/F

Assembly



Machining & Assembly



Welding & Assembly

Packaging



〈 Establishment of an integrated production line for EV parts at the 2nd factory 〉

Extrusion – Heat Treatment – Machining – Assembly – Inspection – Packing

ALUS offers aluminum surface treatment services (anodizing/powder coating)

AUTOMOBILE	 			
PRIMARY PARTNER	 			
Industrial and Construction			 	

Establishment of quality system for customer quality satisfaction by obtaining quality management system certification required for the automobile industry..



▲ IATF 16949



▲ ISO 9001



▲ ISO 14001

Established in 1999, Aluminum billet casting and extrusion production , Aluminum Parts for Electric Vehicle

Establish

14TH July. 1999

Field of business

Aluminum billet casting and extrusion,
Heat treatment , Machining , Assembly

Employees

91 (Cheonan Fac. 32, Jincheon Fac. 59)

Main Product

Electric Vehicle Parts (Battery Module / Pack Case)
Car body (Bumper,Side Sill, Etc.)
Aluminum Formwork, Scaffolding system
Industrial applications

Sales Amount

65 Million \$ (USD, end of 2022)

Quality System

ISO9001 , ISO14000 , IATF 16949, KS 6759

Building Area

1st : 11,670 m² , Plottage : 14,600 m²

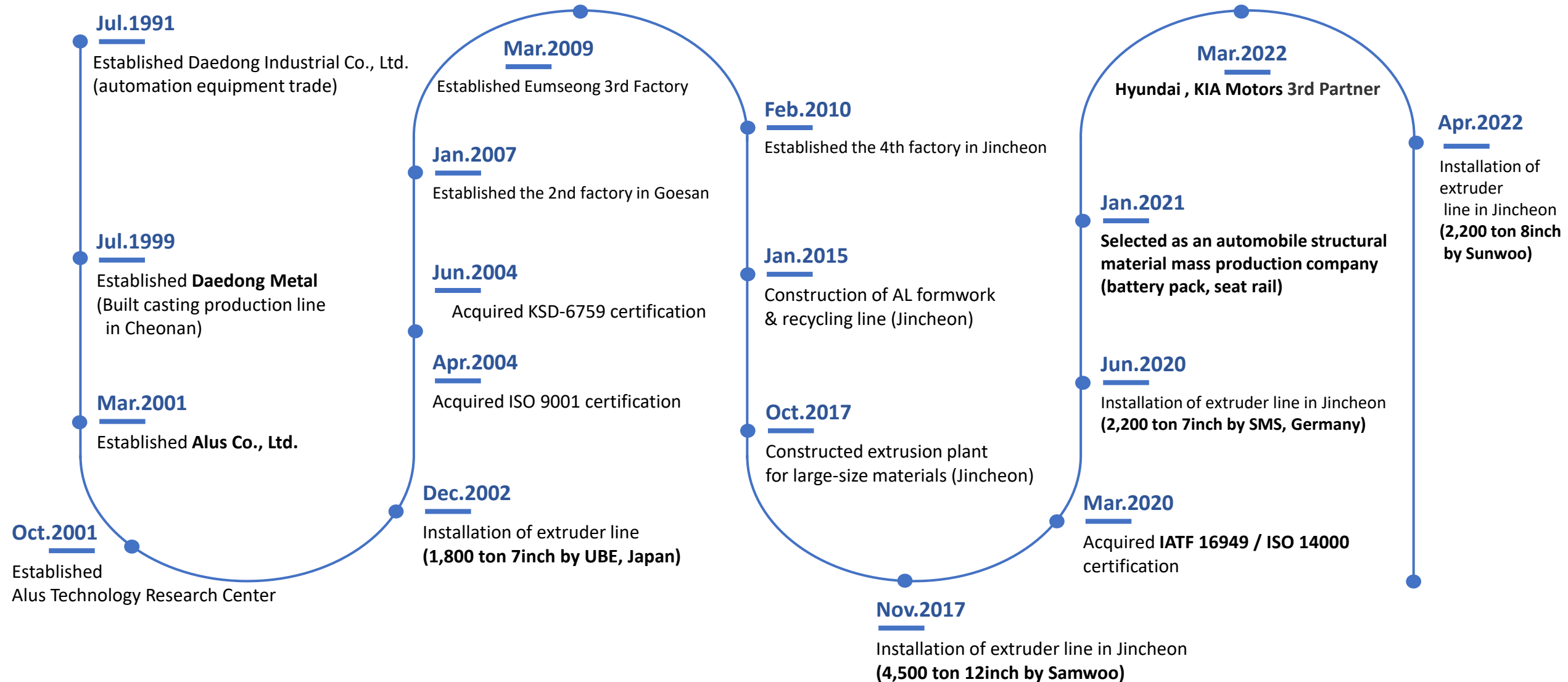
1st Factory

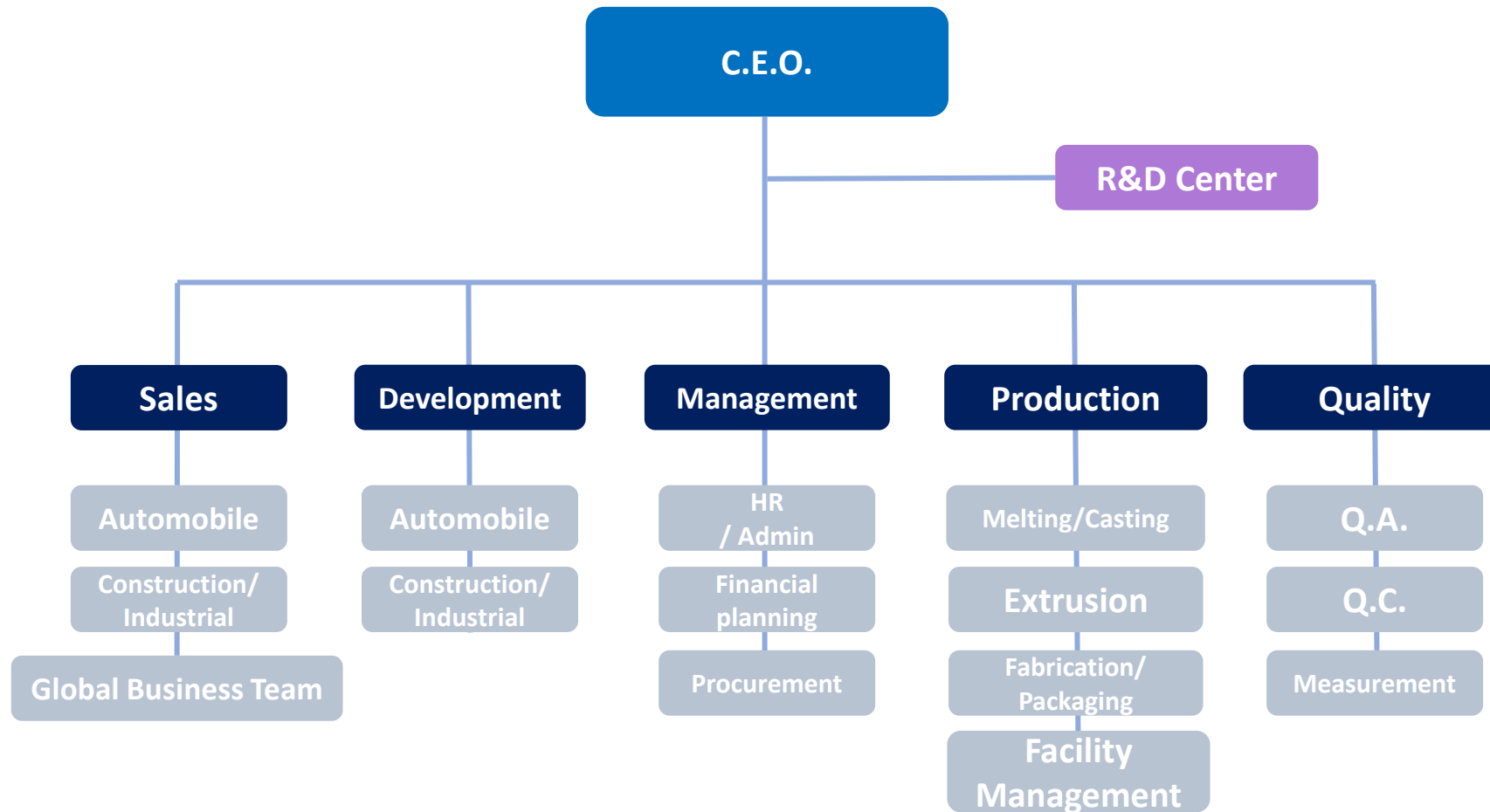
118, Susin-ro, Susin-myeon, Dongnam-gu,
Cheonan-si, Chungcheongnam-do, Republic of Korea

2st : 16,600 m² , Plottage : 66,120 m²

2nd Factory

274-8, Jingwang-ro, Iwol-myeon, Jincheon-gun,
Chungcheongbuk-do, Republic of Korea





Cheonan plant	Jincheon plant
32	59

Office staff	38
Production staff	53

Automobile organization

Quality	3
Sales	2
Develop.	4
Research	3
TOTAL	12

Investing in new facilities to secure its technological edge and produce metal products with greater precision and consistency. Expanding automotive extrusion parts business by adding four new extrusion lines to meet the growing demand for our products.

We believe that these investments will position us for long-term growth and make us a leader in the automotive industry.

Melting & Casting Line (Cheon-an Plant)

- 2 Melting furnaces(25t)
- 2 Casting Machines
- * New melting/casting line to be completed in Jincheon plant in 2024'

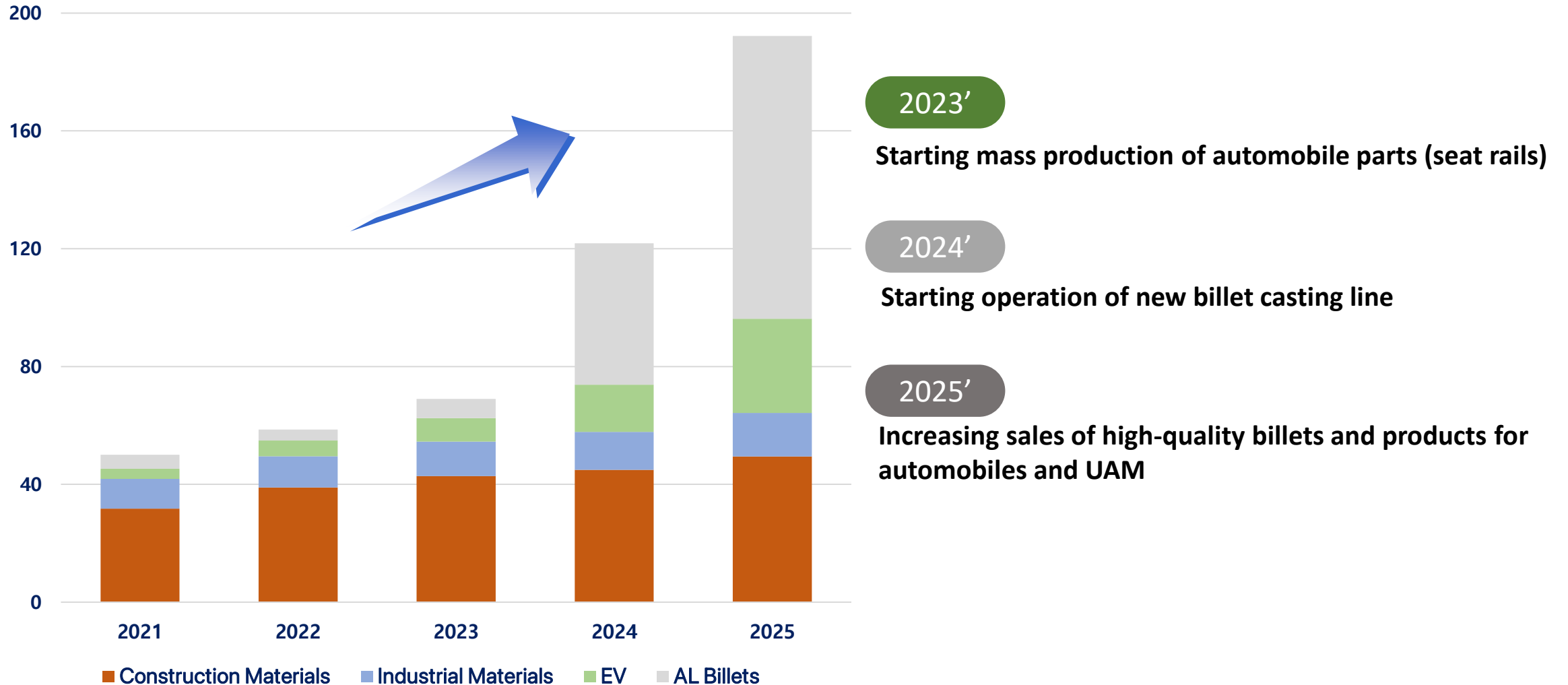


Extrusion & Machining Line (Jincheon plant)

- 4,500 ton [12 inch]
- 2,200 ton [8 inch]
- 2,200 ton [7 inch]
- 1,800 ton [7 inch]

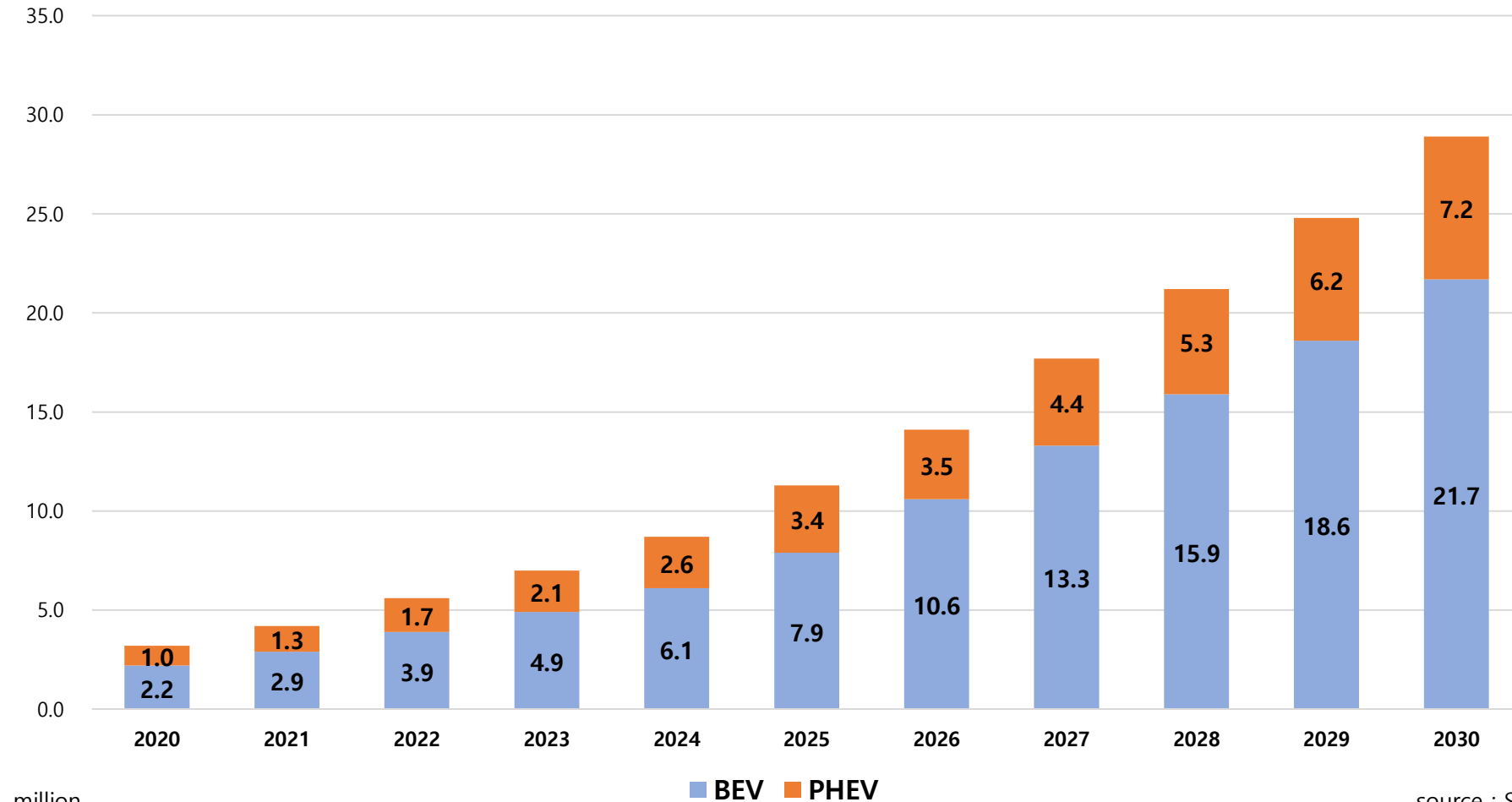


Expected sales



The global sales forecast for electric vehicles will grow rapidly, 11 to 14 million units in 2025' and 29 million to 31 million units in 2030'. Hyundai Motor's electric vehicle domestic sales was about 280,000 units in 2021'. Expected short of Aluminum parts supply due to a surge demand 1.7 million units in 2026'

EV Sales Outlook



source : SMR

Factory View



Location (Area)

118, Susin-ro, Susin-myeon, Dongnam-gu,
Cheonan-si, Chungcheongnam-do
(Land: 14,600m², Factory 11,670m²)

Establish

Jul. 1999

Capacity

Billet 36,000ton/year



274-8, Jingwang-ro, Iwol-myeon, Jincheon-
gun, Chungcheongbuk-do
(Land: 66,120m², Factory 16,600m²)

Nov. 2017

Extrusion 24,000ton/year
Billet 80,000ton/year (24'~)



**Projected
Plant site**

**Smart melting casting plant for
Carbon reduction**

Invest amount : 12 million \$ (USD)

Production capa. : 80,000 tons/year

Facility details

1. Melting Furnace

120ton fixed type - 1 unit,
40ton tilting type - 2 units

2. Homogenizing Furnace

50-ton continuous homogenizing
furnaces – 2 units

3. Refining facility

GBF tilting type - 3 units
ROTOR - 2 units

4. Agitator

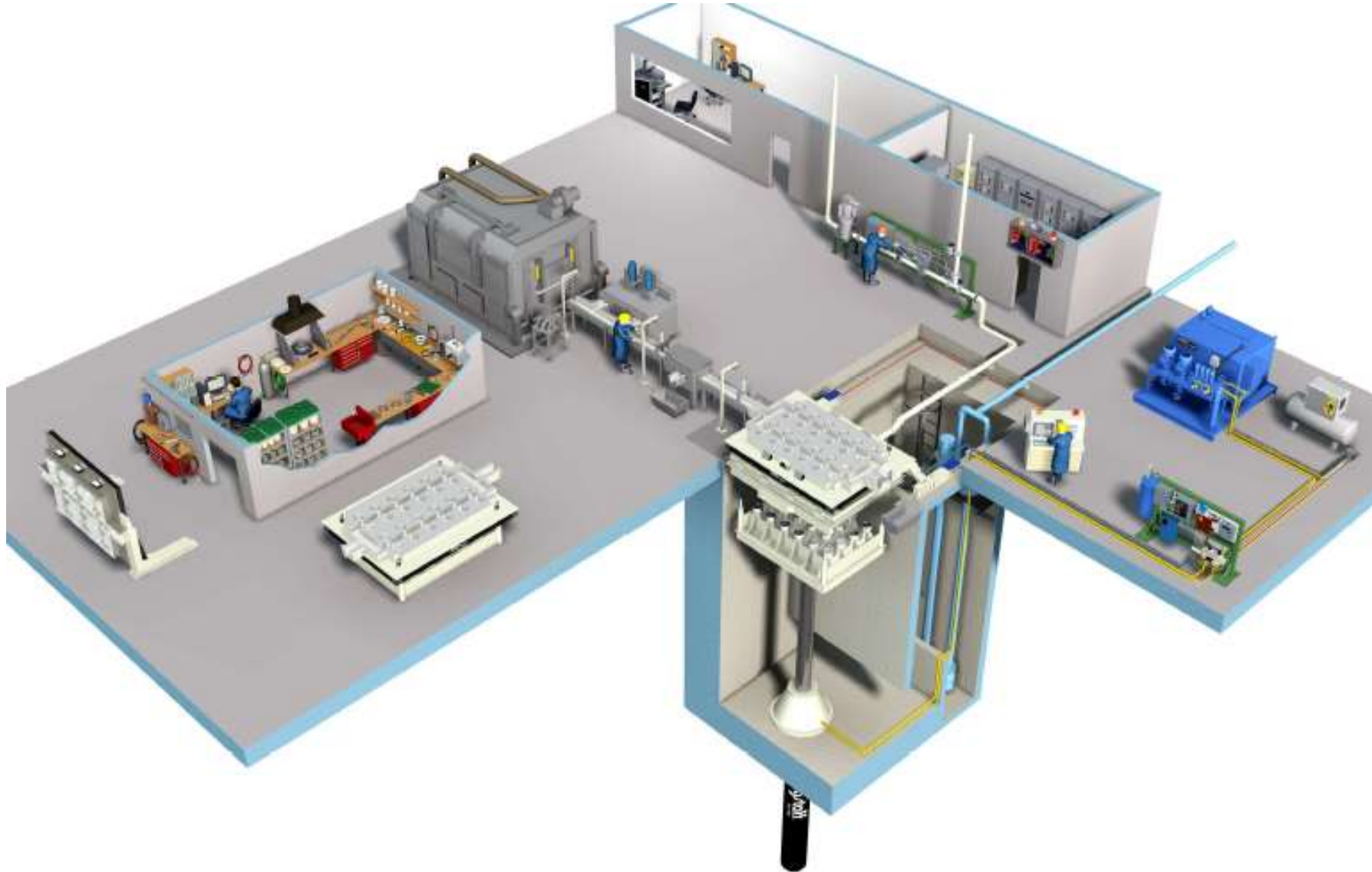
Metal Pump – 1 unit,
EMS – 1 unit

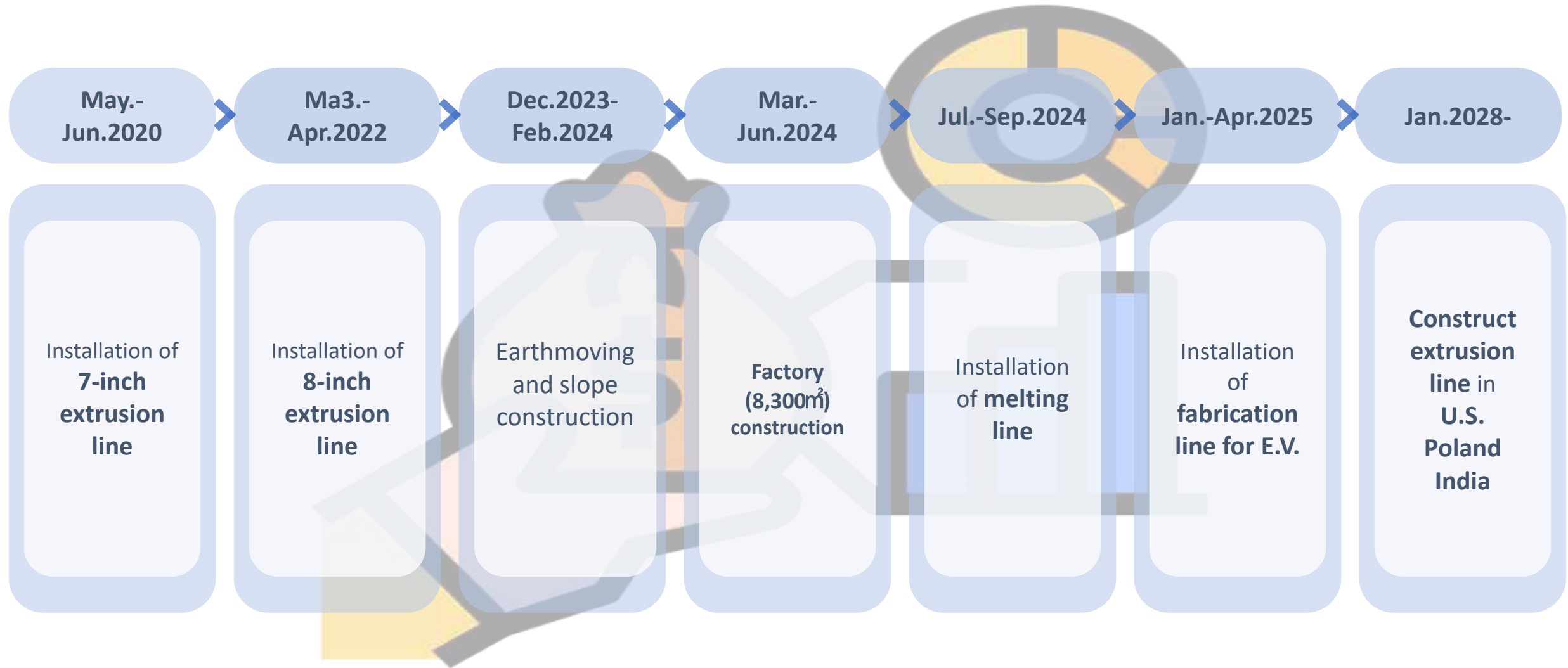
5. Measuring equipment

Ultrasonic flaw detector – 1unit

PLAN OF NEW MELTING & CASTING LINE

For new melting and casting facility, we will apply the best technology available in the market for melting/refining/casting facilities to improve productivity and quality.





ALUS secured various alloy technologies, optimized the extrusion mass production process, and secured automotive parts production capabilities through advanced research and development of aluminum material alloys to be applied to electric vehicle battery trays and extrusion production for 2 years (2020-2021).

In particular, ALUS focused on developing high-performance aluminum alloys with excellent strength, lightweight, and corrosion resistance for electric vehicle battery trays and extrusion production.



1. Developing a new plant to secure its competitiveness and sustainability in the aluminum industry.

A. Alloy Development for using more scraps

ALUS has developed a new crash alloy through alloy adjustment and heat treatment condition change. The alloy is utilizing scraps and has shown to be more effective at absorbing energy in a crash than traditional crash alloys.

B. Carbon Neutrality Process Development

ALUS is committed to reducing its carbon footprint and becoming a carbon neutral company. The company is developing a process suitable for carbon neutrality with the support of the Ministry of Strategy and Finance. This process will minimize carbon emissions and design high-efficiency processes.

C. New Plant Establishment

ALUS is considering external investment for the establishment of a new plant. The new plant will be used to produce the company's new crash alloy and other high-performance aluminum products. The estimated total investment for the new plant is USD 16 million. ALUS is in discussions with financial investors to secure the necessary funding.

2. Emerging as a local supplier through entry into the US

A. Review of investment in the entire process from melt casting to extrusion and material processing lines

- Korean extrusion companies have not yet entered the US as manufacturers

B. Considering the difficulty of securing local manpower, review the facility with an automated line

- Process automation in progress through smart factory and AI consulting tasks

3. Development and mass production experience(BPC, BUMPER, SIDESILL, etc.) and a team composed of the best talent in the industry

A. Mass production of extrusions such as BPC from S company and large size BPC from D company in progress

- In order to prevent Hyundai and Kia motor lines from being stopped due to a fire at the primary company, we tried to mass-produce urgently, and the supply was completed without delay or quality problems

B. About 10 development projects of existing internal combustion engine car vendors that are newly entering the electric vehicle market are in progress at the same time

C. Recruitment of automobile experts by 8 in 2021 and 5 in 22

- Possible to respond through professional manpower from development to mass production through experience in developing various products

Securing alloy composition and physical properties through alloy design for cost reduction, performance improvement, and maximization of weight reduction

Development Alloy (existing alloy)		Temper condition	YS (MPa)	UTS (MPa)	El. (%)
Developed Alloy	A62	T5	260	280	10
General Alloy	6005	T5	240	260	8

- ❖ In the case of general 6005 material, its strength is weak and its use is limited for automotive structural materials.
- ❖ Compared to 6005, A62 has the same cost and extrusion productivity, so there is no increase in unit price and strength is improved by about 8% without deterioration in elongation
- ❖ Applicable items: battery pack structure, door frame, etc.

Development Alloy (existing alloy)		Temper condition	YS (MPa)	UTS (MPa)	El. (%)
Developed Alloy	E6082	T6	290	320	13
General Alloy	6082	T6	260	310	10

- ❖ General A6082 is currently used with 7H01 as a material for automobile bumpers 6082: MV, TMPE / 7H01: Genesis all models, Grandeur, etc.
- ❖ General A6082 is cheaper than 7H01, but its strength is weak, so the weight reduction effect is weak
- ❖ E6082 alloy can be replaced with the same productivity and unit price as used 6082

Aluminum Alloy (Chemical Composition Table)

Alloy	SPEC	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Cr+Mn		Other		Al
												Each	Total	
A6063	Min.	0.20				0.45								Remainder
	Max.	0.60	0.35	0.10	0.10	0.90	0.10	0.10	0.10			0.05	0.15	
A6061	Min.	0.40		0.15		0.80	0.04							Remainder
	Max.	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15			0.05	0.15	
A6082	Min.	0.70			0.40	0.60								Remainder
	Max.	1.30	0.50	0.10	1.00	1.20	0.25	0.20	0.10			0.05	0.15	
A6005	Min.	0.60				0.40								Remainder
	Max.	0.90	0.35	0.10	0.10	0.60	0.10	0.10	0.10			0.05	0.15	
A6N01	Min.	0.40				0.40								Remainder
	Max.	0.90	0.35	0.35	0.50	0.80	0.30	0.25	0.10			0.05	0.15	
6110A	Min.	0.70		0.30	0.30	0.70	0.05							Remainder
	Max.	1.10	0.50	0.80	0.90	1.10	0.25	0.20			0,20 Ti + Zr	0.05	0.15	
A7021	Min.					1.20		5.00						Remainder
	Max.	0.25	0.40	0.25	0.10	1.80	0.05	6.00	0.10		0,08-0,18 Zr	0.05	0.15	

Aluminum Alloy (Mechanical Property Table)

Alloy	Temper	Wall Thickness	Tensile Strength Mpa	Yield Strength Mpa	Elongation Rate	
					A50mm %	A %
A6063	T5	≤ 3	175 ↑	130 ↑	6 ↑	8 ↑
		$3 < t \leq 25$	160 ↑	110 ↑	5 ↑	7 ↑
	T6	≤ 10	215 ↑	170 ↑	6 ↑	8 ↑
		$10 < t \leq 25$	195 ↑	160 ↑	6 ↑	8 ↑
A6061	T4	≤ 25	180 ↑	110 ↑	13 ↑	15 ↑
	T6	≤ 5	260 ↑	240 ↑	7 ↑	9 ↑
		$5 < t \leq 25$	260 ↑	240 ↑	8 ↑	10 ↑
A6082	T5	≤ 5	270 ↑	230 ↑	8 ↑	6 ↑
	T6	≤ 5	290 ↑	250 ↑	8 ↑	6 ↑
		$5 < t \leq 25$	310 ↑	260 ↑	8 ↑	10 ↑
A6005	T6	≤ 5	255 ↑	215 ↑	6 ↑	8 ↑
		$5 < t \leq 15$	250 ↑	200 ↑	6 ↑	8 ↑
A6N01	T5	≤ 6	245 ↑	205 ↑	8 ↑	
		$6 < t \leq 12$	225 ↑	175 ↑	8 ↑	
	T6	≤ 6	265 ↑	235 ↑	8 ↑	
6110A	T6	25 ↓	380 ↑	360 ↑	10 ↑	8 ↑
A7021	T6	≤ 20	410 ↑	350 ↑	8 ↑	10 ↑



Innovator of Aluminum Industry

THANK YOU.

Location : o Cheonan : 31250) 118, Susin-ro, Susin-myeon, Dongnam-gu,
Cheonan-si, Chungcheongnam-do, KOREA

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