

Business Strategy of Analog Semiconductor

July 7, 2021

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Focus on M&A in order to strengthen the earnings base by toughening the 8 spears

From the Investor Meeting Presentation on May 7, 2021

① Bearings

② Motors

③ Access products

④ Analog semiconductors

⑤ Sensors

⑥ Connectors/switches

⑦ Power supply components

⑧ Wireless/communications/software

Initiatives to make 8 spears stronger

Initiatives to increase 8 spears

QCDS + E = QCDSSE

From the Investor Meeting Presentation on May 7, 2021



Reducing our emissions + Help the world reduce emissions

Provide solutions to customers
Focus on **E** (Eco & Efficiency) with **INTEGRATION** and individual products

Bearings 	Motors 	Analog semi-conductors 	Connectors 	Power Supply components
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Example of reduction of emissions

1 million tons*



In accordance with guideline by Liaison Group of Japanese Electrical and Electronics Industries for Global Warming Prevention



Total reduction amount of CO₂ emissions with using our bearings in the server FAN motors during their product lifetime.

Our high-quality bearings greatly contribute to reducing CO₂ emissions!

*Calculation basis
Annual shipment volume of bearings for FAN: 700 million units (expected for FY3/21)
Number of bearings per one FAN: 2
Power consumption reduction per one FAN : 1.23 kWh/year (according to our research, compared with the FAN using bearings made by other company)
FAN Product Life: 5 years (24/7)
CO₂ emissions figures: 0.496 kg/kWh (from the Ministry of the Environment)

Review: Analog Semiconductor Business Strategy

Realize 100 billion yen in sales and a 20% operating margin ASAP

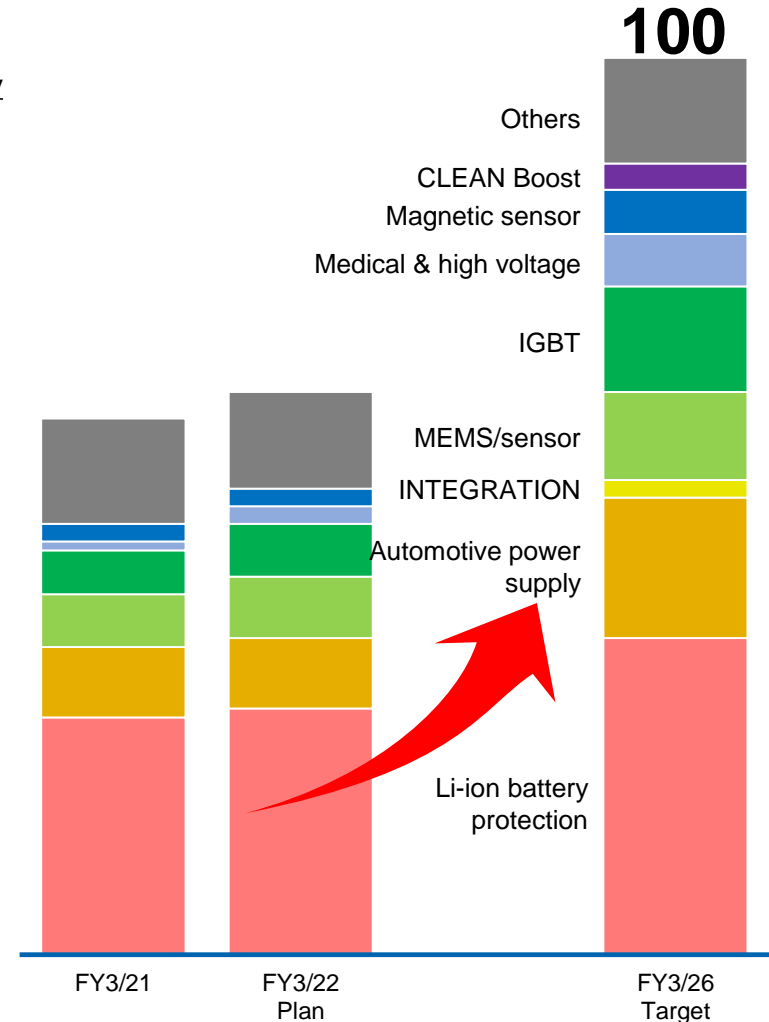
From the Investor Meeting Presentation on May 7, 2021

Deep dive into core technologies and move ahead with developing 8 fields for semiconductors to achieve targets with niche and growth areas

Key Points

- Li-ion battery protection** Integrate technologies to secure overwhelming technological advantage in quick charging and become No. 1 in the industry
- Automotive power supply** Expand portfolio so sales keep pace with growing automotive market
- INTEGRATION** Combine ABLIC and MITSUMI technologies to enhance MinebeaMitsumi products
- MEMS/sensor** Leverage core ADC and MEMS technologies to boost high value-added product lineup
- IGBT** Shift focus of product development to high-end products for EVs to put the business on a growth trajectory and boost sales
- Medical & high voltage** Expand sales of ultrasonic diagnostic equipment with the industry's top $\pm 200V$ symmetric pulse technology
- Magnetic sensor** Focus on location sensing and current sensing to increase sales of motors, automotive devices, and industrial equipment
- CLEAN Boost** Develop environmental power generation brand and promote alliances with partner manufacturers to expand sales

Analog semiconductor Sales (Billions of yen)



**Expand analog semiconductor business
by strengthening both hardware and software,
and enhance INTEGRATION activities**



Hardware

Acquisition of 8-inch Fab

Business integration
with OMRON
MEMS R&D/Production
center

Software

Recruitment of engineers

Opened two new
development bases
in Gunma and Gifu

Successfully acquired an 8-inch wafer process factory in Japan, which had been considered extremely difficult!

Outline of Acquired Business

OMRON Yasu facility
Semiconductor and MEMS fabrication plant, and MEMS product development function

Including personnel and contracts

Acquisition of 8-inch front-end process



- Additional investment of ¥10 billion
- Develop our strengths as an IDM**

* Ministry of Economy, Trade and Industry Supply Chain Measures
** Integrated Device Manufacturer



Synergies in MEMS products

- Integration of production and product specifications
- Integration of MEMS development engineers

Cost synergies, including material purchasing

Rocket-start from the DAY1 of integration with accumulated PMI know-how!

Strengthen technology development team to deepen analog semiconductor technology and expand product lineup

Atsugi / Chitose (MITSUMI)

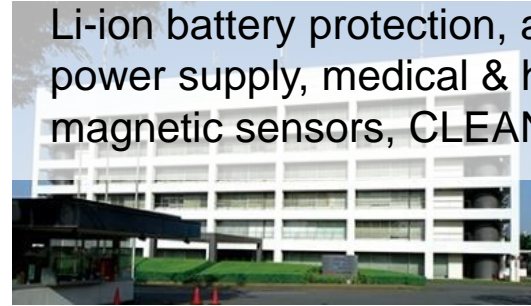
Li-ion battery protection, automotive power supply, MEMS custom sensor, IGBT



100
employees

Takatsuka (ABLIC)

Li-ion battery protection, automotive power supply, medical & high voltage, magnetic sensors, CLEAN Boost



100
employees

Yasu

Owns processing and peripheral technologies for analog ICs, **centered on MEMS related technologies**

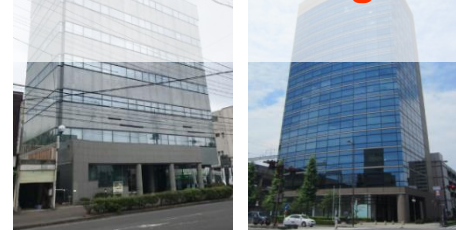


40
employees



Gunma / Gifu

Promoting **Motor Driver IC and Logic-Related Technologies**



Gunma (left)
Gifu (right)

60
employees



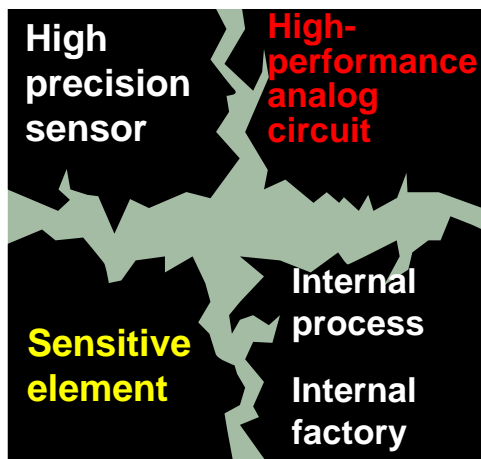
What is analog semiconductor ?

From the IR DAY Presentation
on Dec 3, 2020
Note: Partly updated

MinebeaMitsumi
Passion to Create Value through Difference

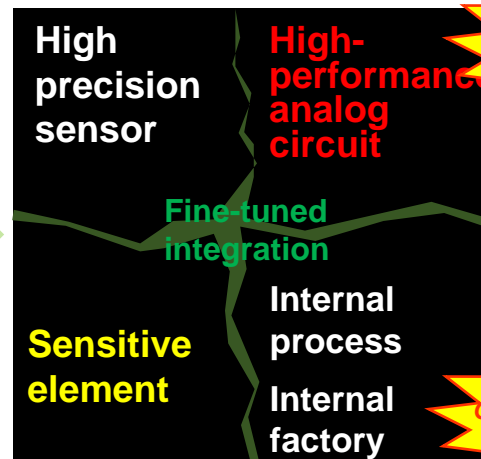
Analog semiconductor represents information as “lower” or “higher”, different from digital semiconductor that represents information with “0” or “1”.

To process various complex signals correctly,



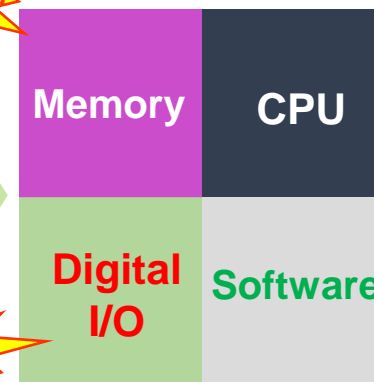
Expert skill
Minuteness Carefulness
On-site capability

Analog semiconductor
Integral architecture



Established Gunma and Gifu site
Acquired OMRON Yasu facility

Digital semiconductor
Modular architecture



Remarkably high performance technology and exceptional manufacturing method are required.

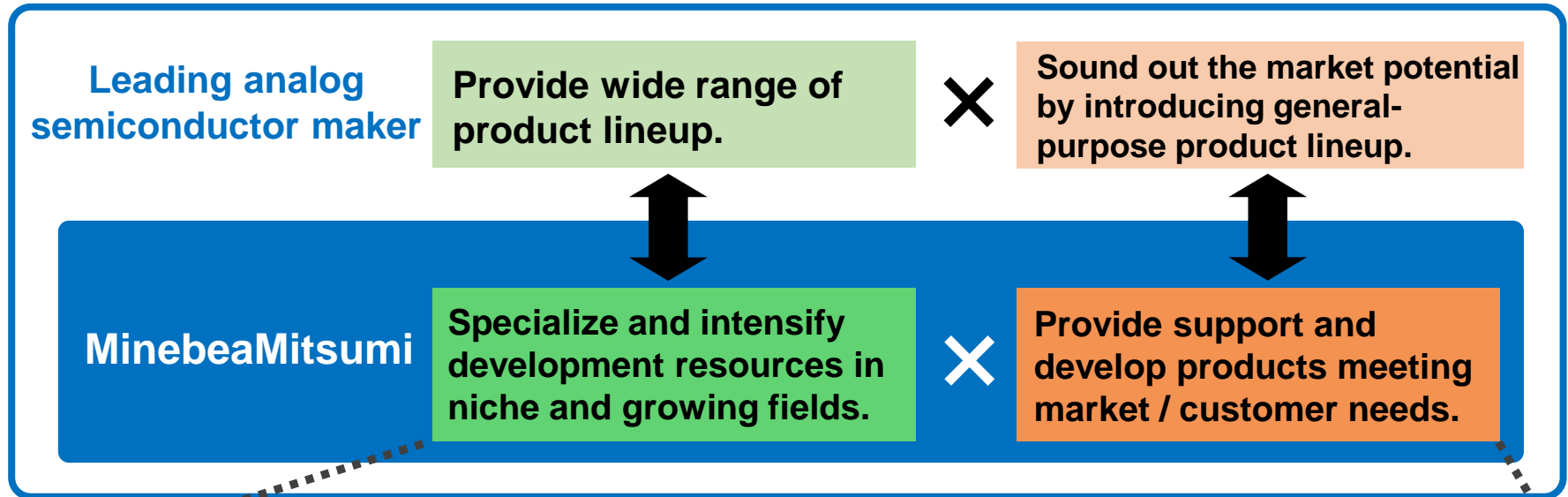
- Feature
- 1 High barrier to entry
 - 2 Hardly copied
 - 3 Technique achieved only by IDM maker

※ IDM : Integrated Device Manufacturer

Since we are now in the digital era in which differentiation is difficult, superior analog technology will change the era.

Analog semiconductor offers us the best opportunity to exhibit **strength of Japan** and to **succeed at a world-class level**.

Develop products meeting customer needs. (Leading makers cannot do it.)



Focus on 8 business fields.

Business scale in 2025

- | | | | | | | | |
|---|--|--|---|---|--|--|--|
| <p>★</p> <p>1 34 billion yen</p> <p>Li-ion battery protection</p> <p>World's biggest share</p> | <p>★</p> <p>2 21 billion yen</p> <p>Automotive power supply</p> <p>High customer satisfaction !</p> | <p>8 billion yen</p> <p>3 4 billion yen</p> <p>Concurrent activity</p> <p>Expansion of own business</p> | <p>15 billion yen</p> <p>4 10 billion yen</p> <p>MEMS Custom sensor</p> <p>Industry's top performance!</p> | <p>★</p> <p>5 13 billion yen</p> <p>IGBT</p> <p>Full use of feature of our own factory</p> | <p>8 billion yen</p> <p>6 8 billion yen</p> <p>Medical & high voltage</p> <p>Improvement of ultrasonic diagnosis accuracy</p> | <p>★</p> <p>7 7 billion yen</p> <p>Magnetic sensor</p> <p>Innovation of motor technology!</p> | <p>★</p> <p>8 5 billion yen</p> <p>CLEAN Boost</p> <p>Innovation of IoT technology!</p> |
|---|--|--|---|---|--|--|--|

Basic management strategy: Fully use core technologies to expand sales and revenue by focusing on niche and growing fields.

Today, five fields with ★ mark will be explained.

Intensify core technology along with technological evolution of earphones and quick charge for smartphones.

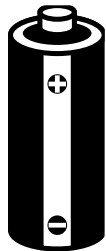
From the IR DAY Presentation on Dec 3, 2020
Note: Partly updated

Product strategy

1. Advanced development of battery protection IC along with evolution of battery quick charging technology
2. Contribution to technological innovation for TSW and IoT devices by pursuing technologies for low current consumption and miniaturization

Products for Li-ion battery

Protect batteries from abnormal current!
Ultra-high accuracy battery protection



Compatible with wide range of charging current

Charging IC

Battery protection IC

Safe and secure

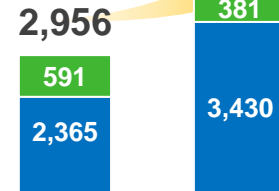
Improve battery life by accurate detection of remaining life!

Battery level monitoring IC

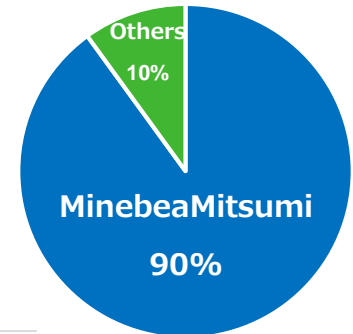
IC shipping qty.

Smartphone market

Unit: million pcs. **3,811**



▲ Shipping qty. of 1-cell protection IC (according to our research)



▲ Market share of 1-cell protection IC (according to our research)

Li-ion battery market



Total number of Li-ion batteries

8 billion cells in 2020 => 10.5 billion cells in 2025

Motor vehicle <Power supply IC, magnetic sensor IC>

Applications using automotive power supply IC and magnetic sensor IC are increasing!

From the IR DAY Presentation
on Dec 3, 2020

**In-vehicle camera
market**

**FY25 266Mpcs
CAGR 11%**

TCU/V2X market

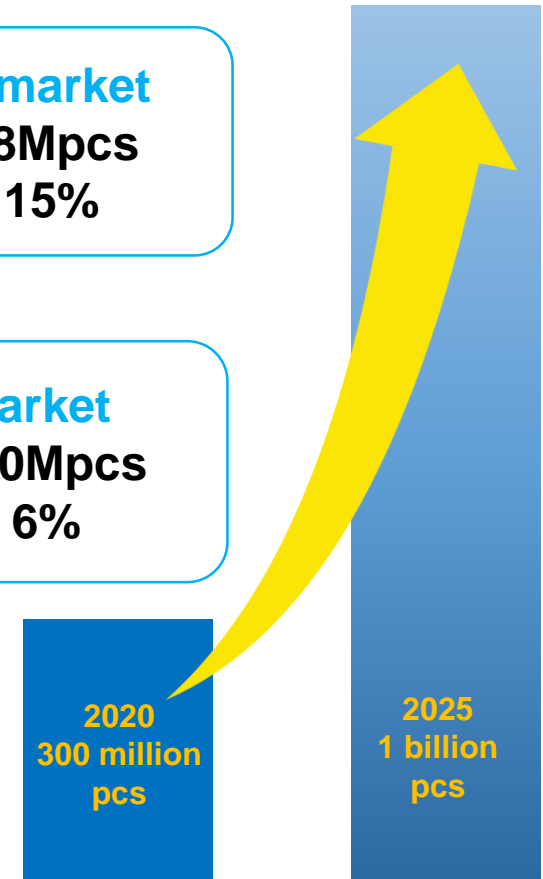
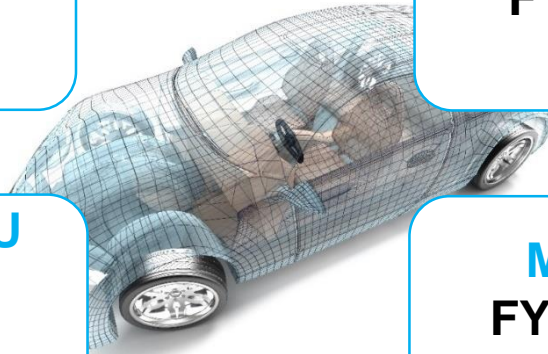
**FY25 108Mpcs
CAGR 15%**

**ADAS / autopilot ECU
market**

**FY25 112Mpcs
CAGR 6%**

Motor market

**FY25 4000Mpcs
CAGR 6%**



Shipping quantity

	Camera	ADAS/ECU	TCU/V2X	Motor
Automotive power supply IC	○	○	○	○
Magnetic sensor IC	-	-	-	○

Our power supply IC and magnetic sensor IC have already been used in many automotive applications.

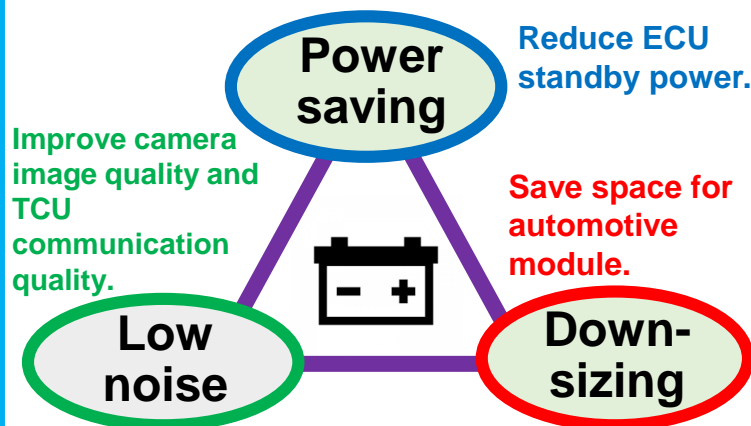
The shipping quantity of these ICs is 300 million in 2020 and the target quantity is 1 billion in 2025.

Expand high-value-added product lineup using our strength along with growth in automotive application market.

From the IR DAY Presentation on Dec 3, 2020

Strength of automotive power IC

Reset IC “starts a system safely!”
LDO/DC-DC converter does
“not shake power source!”



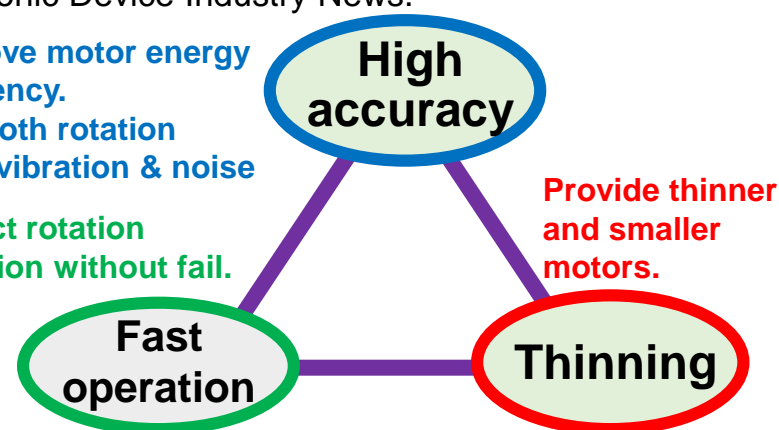
Strength of automotive magnetic sensor IC

“Revolutionize motors by accurate detection of rotation position!”
Won the “Semiconductor of the Year” Award held by the Electronic Device Industry News.

Improve motor energy efficiency.

- smooth rotation
- low vibration & noise

Detect rotation position without fail.



Strength of automotive IC

“High quality”

- **Technology acquired through nearly 30-year production experience**

Consistent quality system from development to manufacturing for zero defect

Received “Good quality” award from Company T

Received “Best quality” award from Company P

Designated as “Best supplier” for 4 years straight by Company D

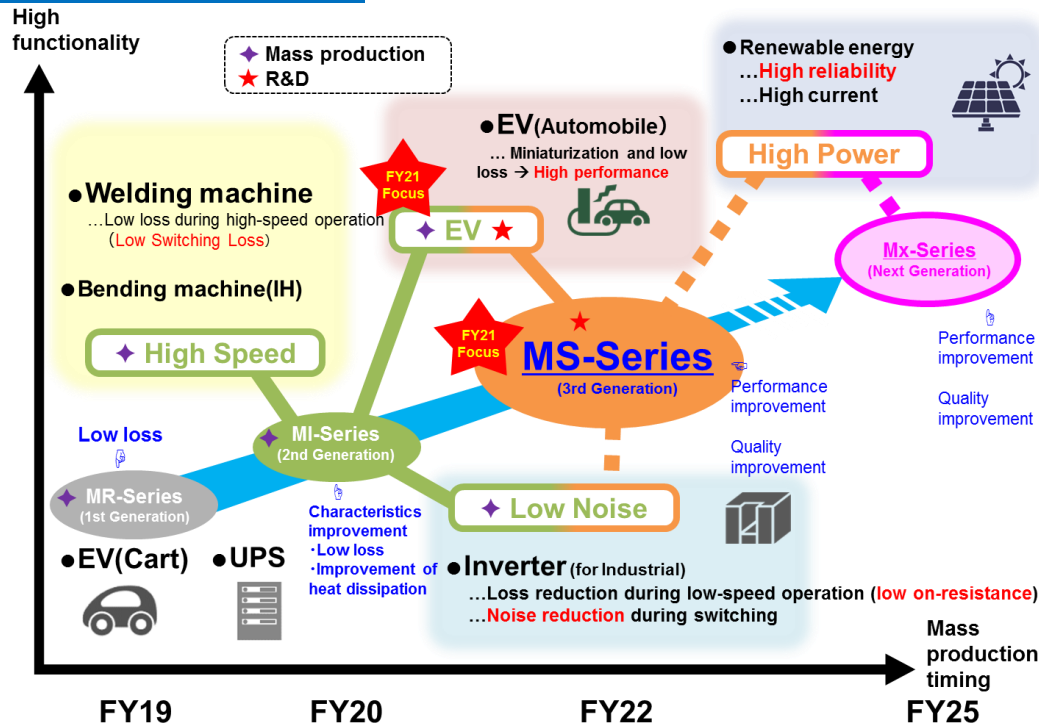
Expand characterized product lineup based on the trust from customers earned through our high performance and high quality products.

Expand our sales along with evolution of automotive applications and increased number of parts.

Product strategy

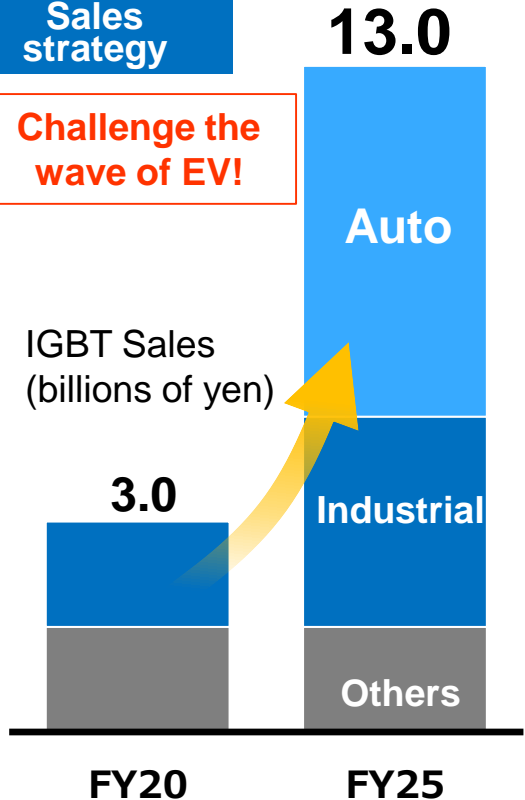
1. Business development specializing in chip business -focusing on Greater China market-
2. Contributing to technological innovation in power equipment by minimizing loss, high speed, and high breakdown resistance
3. 8-inch new Fab to expand sales and automotive products

Product roadmap



Sales strategy

Challenge the wave of EV!



Contribute to carbon neutral through efficiency improvement and energy conservation

2020 3 billion yen → 2025 13 billion yen

What is CLEAN-Boost® Technology?

Technology to accumulate and boost small amounts of energy (1 μ W) up to 30,000 times (30 mW) to enable wireless transmission, using **ultra-low power consumption (SOI technology)** * SOI: Silicon on Insulator

* Received IEEE Award in 2019 for related technology.

From the IR DAY Presentation on Dec 3, 2020

Realize
“battery-less”
wireless sensor.

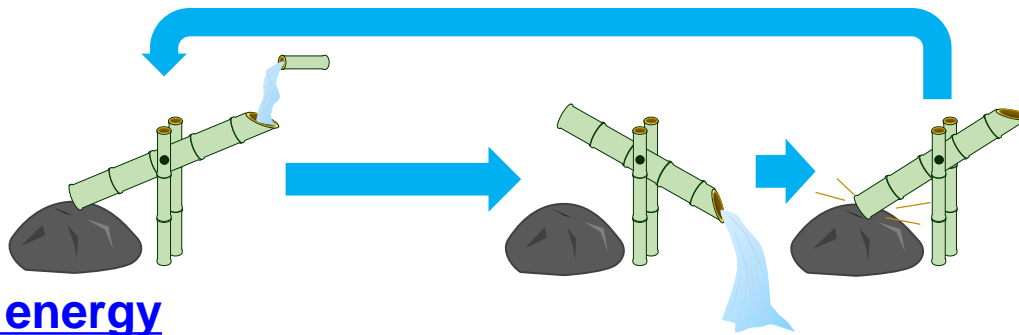
CLEAN-Boost® Technology

Store small amounts of energy and discharge it through wireless transmission.

Image

Accumulate small amounts of water and emit a sound like “Shishi-odoshi”.

Accumulate natural force and earth force without leak to use them effectively.



SDG s 7: Energy

Earth-friendly energy without use / replacement of batteries



Natural energy

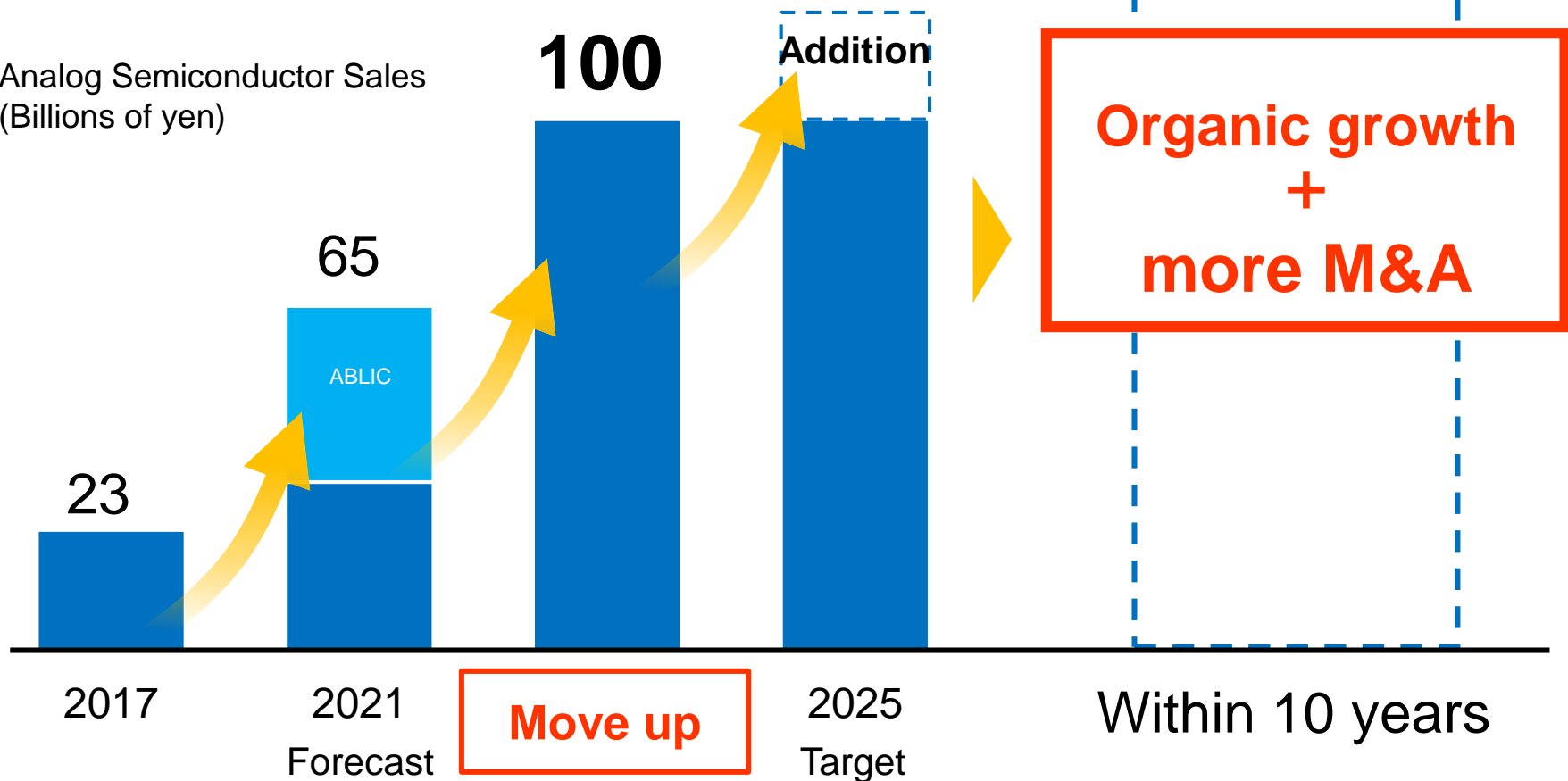
temperature, water droplet, light, vibration, etc.

Accumulate energy without leak.

Instantaneously discharge at the start of communication.

**Aiming to move up the target of
“¥100 billion sales in the next four years”**

Analog Semiconductor Sales
(Billions of yen)





Any statements in this presentation which are not historical are future projections based on certain assumptions and executive judgments drawn from currently available information.

Please note that actual performance may vary significantly from any particular projection due to various factors.

Factors affecting our actual performance include but are not limited to: (i) changes in economic conditions or demand trends related to MinebeaMitsumi's business operations; (ii) fluctuation of foreign exchange rates or interest rates; and (iii) our ability to continue R&D, manufacturing and marketing in a timely manner in the electronics business sector, where technological innovations are rapid and new products are launched continuously.

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