

Investors' Guide 2023



GS Yuasa Corporation
(TSE : 6674)



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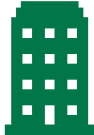
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1. About GS Yuasa



Corporate Profile



Corporate name	GS Yuasa Corporation
Establishment	April 1, 2004 *Japan Storage Battery (from 1917) and Yuasa Corporation (from 1918) had a corporate merger
Head office	1, Inobanba-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto
Capital stock	52.8 billion yen
Net sales (FY2022)	517.7 billion yen
Number of employee	Group Consolidated 14,317 (as of March 31,2023)
Listed-Financial Instruments Exchange	Tokyo Stock Exchange (TSE : 6674)



President **Osamu Murao**

Osamu Murao joined Japan Storage Battery (currently GS Yuasa) in April 1982. He was in charge of Quality Control, Technology, Industrial Batteries and Power Supplies business unit as a director in addition to his business experience in Manufacturing and Production Technology Departments. After being appointed as President of the Company in June 2015, he has been supervising the Group as CEO and guiding the business management, by directing the formulation of Mid-Term Management Plans and demonstrating leadership for accomplishing them.

Philosophy

Innovation and Growth

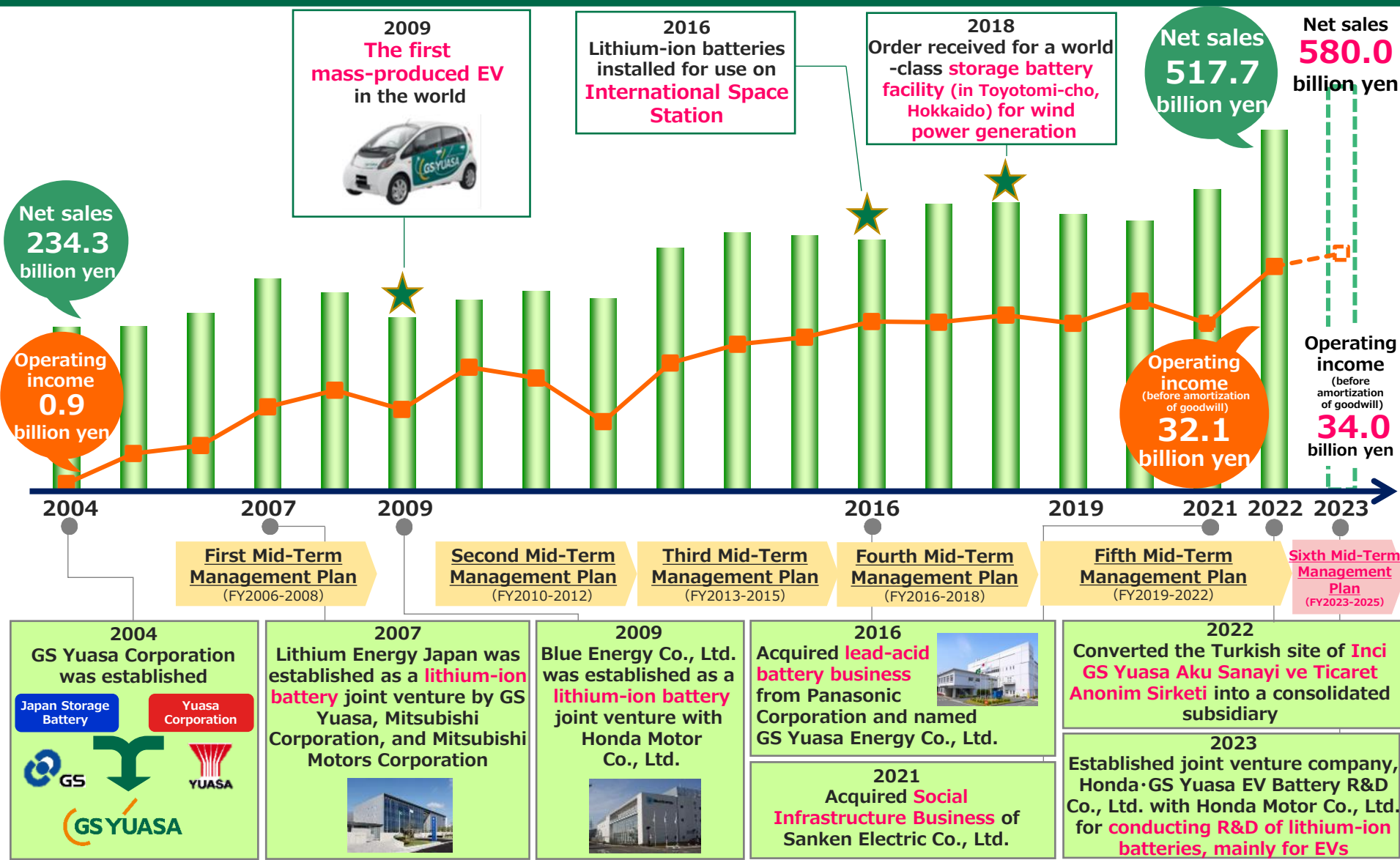
We are committed to people, society and the global environment through innovation and growth of our employees and business entities.



Our Policy on Sustainability Management

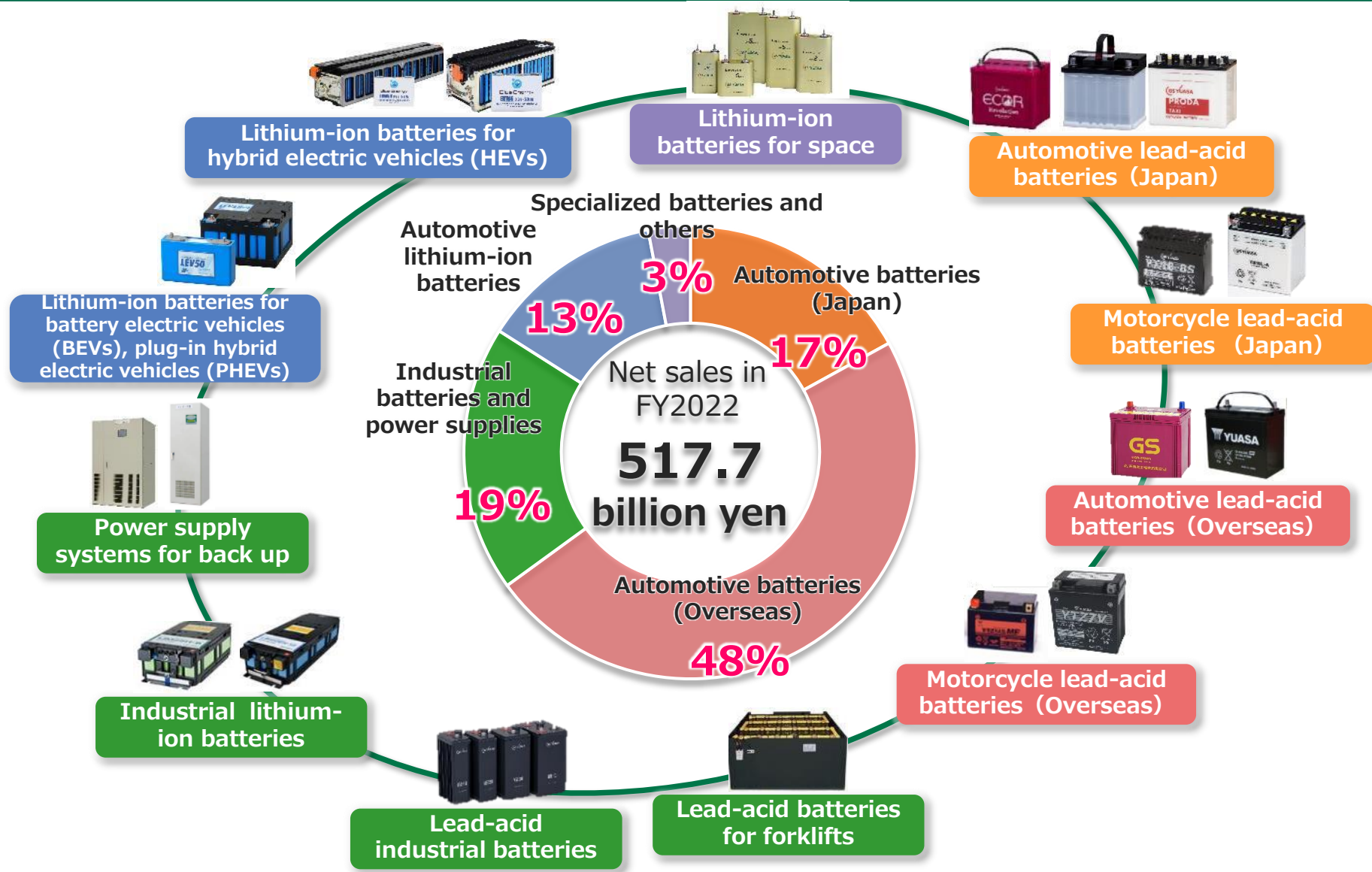
We are committed to utilizing advanced technologies developed in the field of stored energy solutions to deliver security and comfort to our customers around the globe, to make a real contribution to the global effort toward sustainability, and to grow corporate value.

History after Corporate Merger





Sales Composition by Business Segment and Main Products





Sales Composition by Region and List of Locations

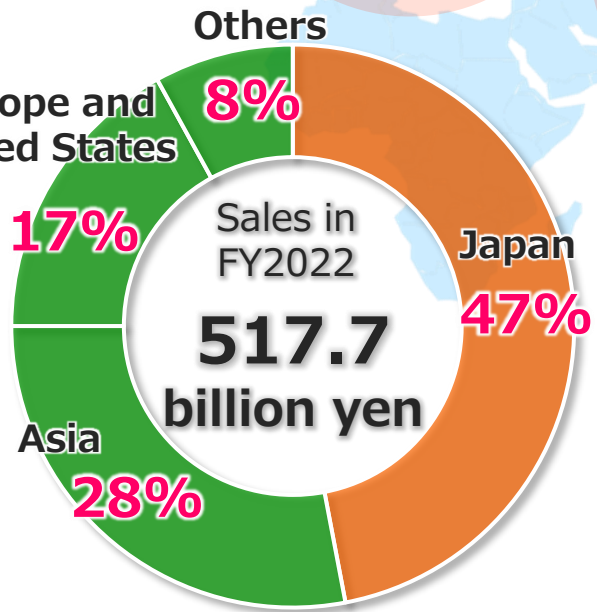


United States

Europe
 England, Italy, Spain, Germany, France, Hungary, Turkey

Asia
 Japan, China, Taiwan, Vietnam, Malaysia, India, Indonesia, Myanmar, Pakistan, Thailand

Others
 Australia
 New Zealand



We have business in 19 countries 37 sites mainly in Southeast Asia.

(as of March 2023)



1

Technology and Development

- ✓ Develop various products used for deep sea to space
- ✓ Provide products with high performance such as batteries for ISS vehicles
- ✓ Researched and developed lithium-ion batteries from 1980s and mass-produced lithium-ion batteries for EVs in the world for the first time in 2009



2

Brand Strength

- ✓ GS Yuasa brand boasts top-class domestic and global market share
- ✓ Customer base built by history of the company for over 100 years

3

Abundant Network

- ✓ More than 100 service locations throughout Japan (Industrial batteries and power supplies business)
- ✓ More than 4,000 dealers throughout Japan offer optimal battery solutions (Automotive batteries business)
- ✓ Global locations with a focus on Southeast Asia





Vision 2035 (Long Term Vision)



Vision of GS Yuasa in 2035

Based on the "Four Re's" formula, we strive for innovation in energy technology, endeavor to address the challenges facing society through the development of mobility and other public infrastructures, and seek to create comfortable living environments and play our part in the global effort toward sustainability.

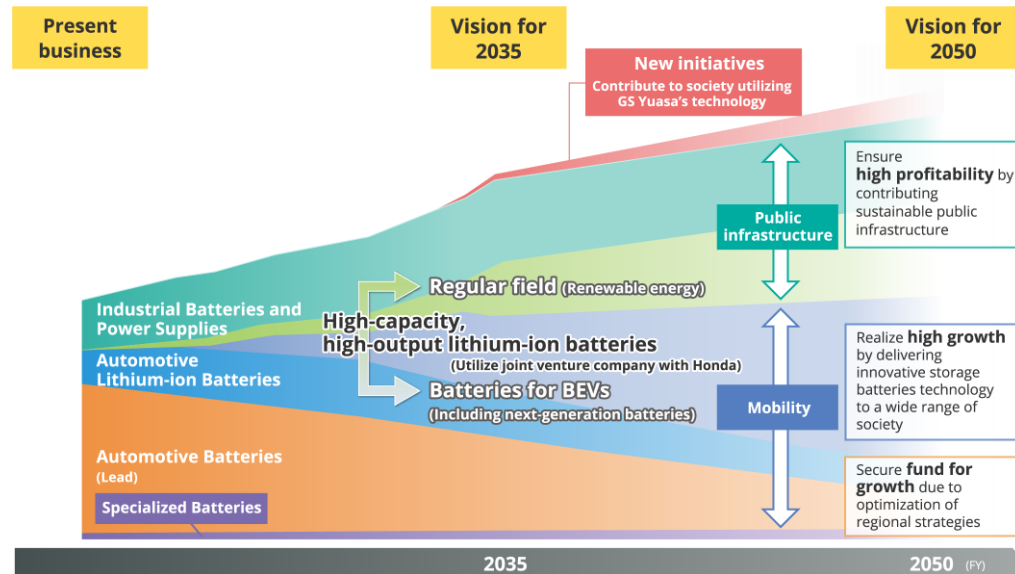
Vision 2035

- Reborn** A century on and still inspired anew every day by the GS Yuasa founding spirit.
- Renewable** Making a genuine contribution to carbon neutrality.
- Reliable** Committed to technical innovation and delivering solid, reliable energy.
- Respect** Earning the respect of the world through solid action toward achieving the SDGs.

Net sales target of Vision 2035

800.0 billion yen (FY2035)

<Image of growth toward achieving Vision 2035>



×

Supply lithium-ion batteries mainly for BEVs and also for HEVs, PHEVs, auxiliary and backup use by utilizing R&D results

Supply optimal batteries for a wide range of public infrastructures such as electric power, telecommunication and information by expanding presence in the regular field market

Contribute to solving social issues






Sixth Mid-Term Management Plan (FY2023-2025)



Policy

Positioning this period as one for laying the foundation for reform to realize the vision envisioned in Vision 2035, we will implement a variety of measures to reform our business structure.

Measures

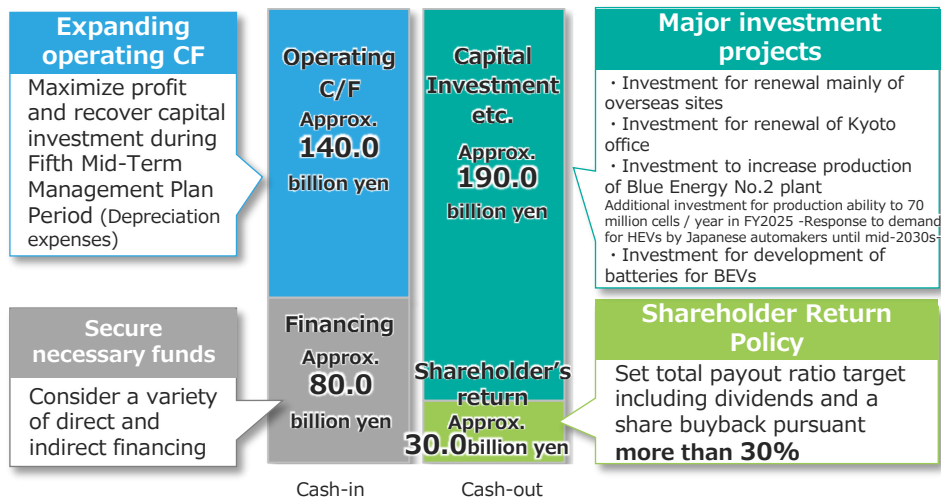
- | | | | |
|----------|---|---|--|
| 1 |  | Development of batteries for BEVs | <ul style="list-style-type: none"> ➤ Development of a high-capacity, high-output lithium-ion batteries by utilizing joint venture company with Honda ➤ Establishment of production and supply systems of batteries for BEVs to expand mobility and public infrastructure business |
| 2 |  | Reinforcement of earning capacity in existing business | <ul style="list-style-type: none"> ➤ Thorough value-added creation and improvement in profitability ➤ Maximization of profits due to unparalleled superiority in Industrial Batteries and Power Supplies Business in Japan ➤ Transformation of regional strategy, including review of business in China, maximization of profits by concentrating resources at main sites |
| 3 |  | DX / New business | <ul style="list-style-type: none"> ➤ DX promotion to enable business structure transformation ➤ Create new business that contribute to solving social issues |

Sixth Mid-Term Management Plan Target (FY2025)

Net Sales	610.0 billion yen or more
Operating Income (before the amortization of goodwill)	41.0 billion yen or more
ROE (Return on Equity)	8.0 % or more
ROIC (Return on Invested Capital)	10.0 % or more
Total Return Ratio	30.0 % or more

Notes:
 1. The above indicators are based on income before the amortization of goodwill (operating income and net income).
 2. Calculate as follows: Operating income before amortization of goodwill / Invested capital (fixed assets [excl. goodwill amortization] + working capital). Invested capital is the average of amount at beginning and end of term.

Capital Allocation



2. About Our Business

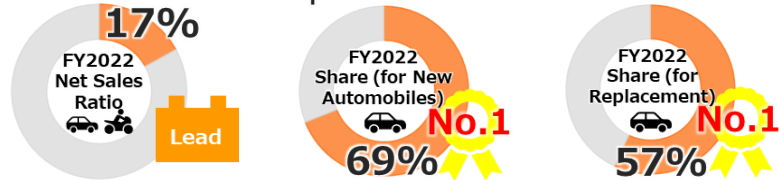


Overview of Automotive Batteries (Japan)



Outline of Business

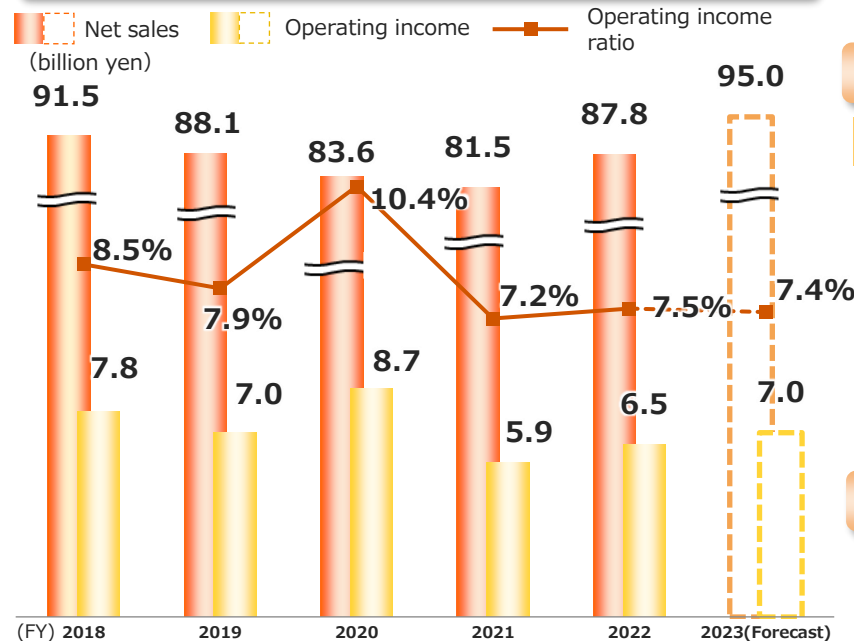
Manufacture and sales of automotive and motorcycle lead-acid batteries in Japan



Feature of Business

- Acquired lead-acid battery business from Panasonic Corporation (Current GS Yuasa Energy Co., Ltd.)
- There are two types of batteries; one for new vehicles and the other for replacement, and high profit margin for replacement batteries
- The demand period for replacement is from October to December and the demand rises in summer; extremely hot and winter; extremely cold
- Demand for EN (European Norm) batteries for new automobiles and replacement is increasing
- Demand of replacement of lead-acid batteries for ISS (Idling Stop Systems) vehicles is increasing
- Earnings affected by fluctuations in lead (Reflects to sales price constantly in new automobile batteries)

Net Sales, Operating Income and Ratio

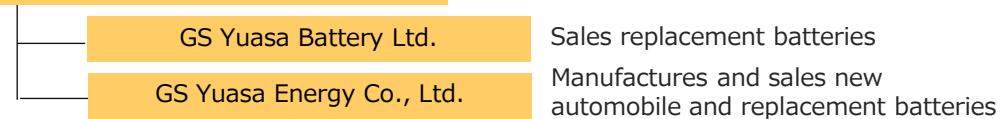


Note: Operating income is operating income before amortization of goodwill and Op. income ratio is Op. income ratio before amortization of goodwill.

Business Structure and Main Customers

Automotive Batteries (Japan)

<Group companies>



Purpose	Main Customers
New automobiles	Japanese car manufacturers
Replacement	Distributors (electrical device shops, etc.), Automobile accessory mass retailers, Automobile dealers, Oil refiners and sellers, etc.

Strategies

- Maintain high market share for new automobiles and replacement
- Improve profit ratio due to optimal price revision such as raw material prices



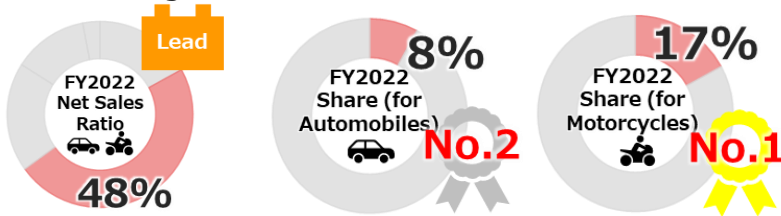
Overview of Automotive Batteries (Overseas)



Outline of Business

Manufacture and sales of automotive and motorcycle lead-acid batteries overseas

*Including industrial batteries



Feature of Business

- Approximately 50% of the Group's overseas net sales and especially Southeast Asia has high market share. The rest is about 30% in Europe, 10% in North America, and the remainder in other regions
- High ratio of both automotive and motorcycle replacement batteries (In China, high ratio of new automotive batteries)
- Impact of exchange is minimal due to local production and consumption
- Partial sales of industrial batteries (lead) is included (Backup batteries in Europe etc.)
- Converted the Turkish site into a consolidated subsidiary in May 2022
- Transferred 70% of equity interests in consolidated subsidiary in China in October 2023

Main Products by Region and Customers

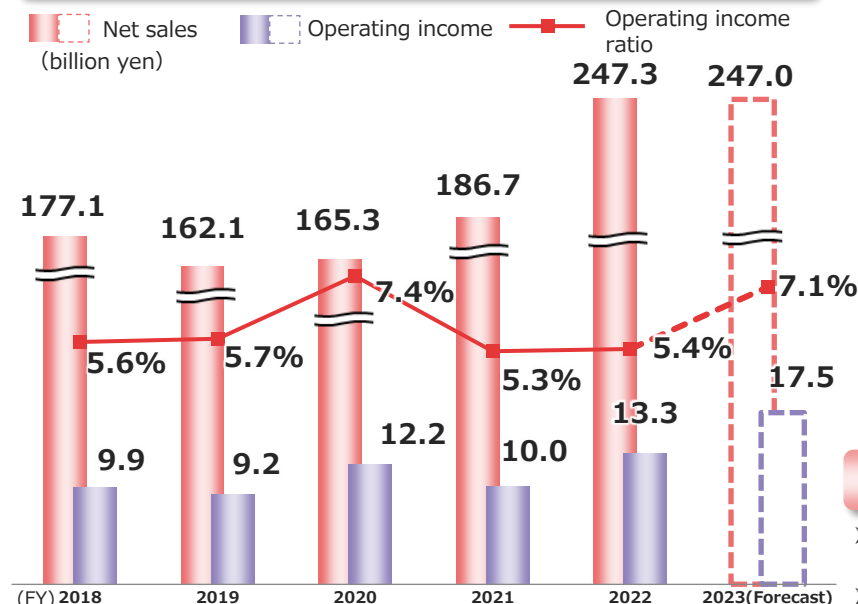
Region	Type	Automotive	Motorcycle	Industrial	Customers
ASEAN	New	■	■	■	For New automobiles : Japanese car manufacturers (mainly) For Replacement : Distributors, etc. *Depends on countries or region
	Replace	■	■	■	
China	New	■	■	■	
	Replace	■	■	■	
America	New	●	■	—	
	Replace	●	■	—	
Europe	New	●	●	■ (For backup and forklifts)	
	Replace	■	●	■	
Australia	New	■	—	●	
	Replace	■	●	●	

※ ■ : Region conducting manufacture and sales, ● : Region conducting only sales
 ※ Red : Main business, Blue : Semi-main business, Black : Not main business

Strategies

- Southeast Asia : Establish an optimal production system to maintain a high market share and improve profit margins
- Turkey : Stable supply to Europe, strengthen sales in the Middle and Near East and North Africa

Net Sales, Operating Income and Ratio

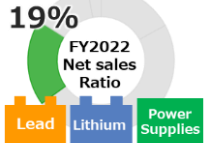


Note: Operating income is operating income before amortization of goodwill and Op. income ratio is Op. income ratio before amortization of goodwill.



Outline of Business

Manufacture and sales of electric backup batteries or power supplies of public infrastructure, lead-acid batteries for forklifts and ESS for renewable energy



No.1 share in Japan
(Lead-acid batteries for backup power supplies and forklifts)

- High operating margin for backup applications because of one-stop service from design and manufacturing to construction and maintenance on a build-to-order basis
- Sales and profits tend to be concentrated in the 4Q (January-March) due to the large number of projects for national and local government offices
- Batteries for forklifts increase due to transition from engine types
- Acquired Social Infrastructure Business from Sanken Electric Co., Ltd. in May 2021
- Sales of regular field (For renewable energy) are increasing

Feature of Business

Main Products by Region and Customers

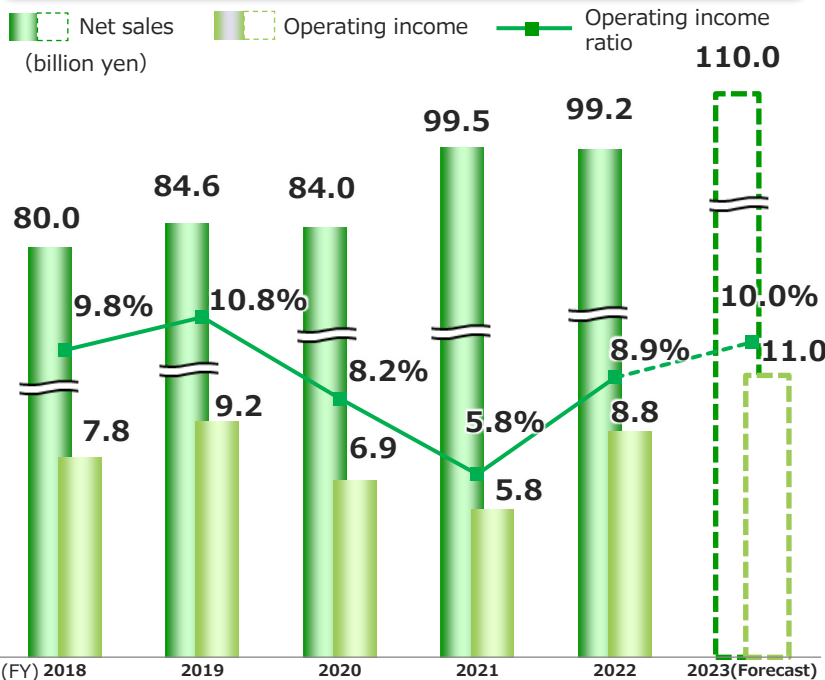
Purpose	Type	Customers
Emergency Field (For backup)	Lead-acid	Railway companies, electric companies, government administration office, telecommunication centers, etc. <small>*There are some cases we supply through retail stores, electric or communication equipment manufacturers, etc.</small>
	Lithium	
	Power supplies	
Regular Field (For renewable energy)	Lithium	Forklift manufacturers, retail stores, etc.
For forklifts	Lead-acid	

Countries/Region	For backup	For forklifts
Thailand	—	●
China	—	●
America	●	—

Strategies

- Emergency field (Japan) : Expand remote monitoring services and improve profitability
- Regular field : Respond to growing demand for renewable energy and develop as a pillar of the business
- Emergency field (Overseas) : Enhance competitiveness by expanding product lineup

Net Sales, Operating Income and Ratio

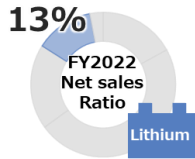


Overview of Automotive Lithium-ion Batteries



Outline of Business

Manufacture and sales of lithium-ion batteries for eco-friendly cars in Japan or overseas, manufacture industrial lithium-ion batteries



Adopted eco-friendly cars made in **Japanese popular car manufacturers**



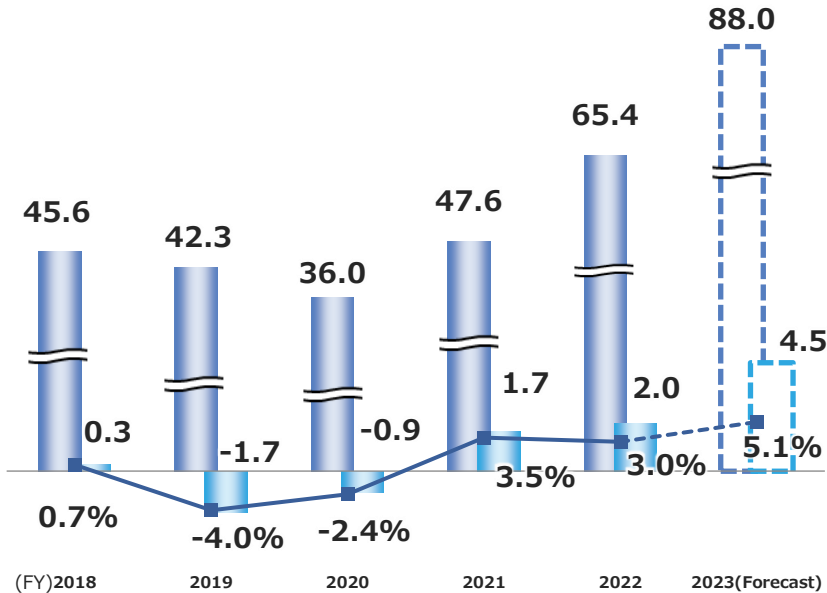
Toyota Motor Corporation "Harrier"

Feature of Business

- Batteries for hybrid electric vehicles (HEVs) : high input and output performance is required, for electric vehicles (EVs), for plug-in hybrid electric vehicles (PHEVs) : high energy density is required
- In principle, lithium-ion batteries are only for new vehicles, not for replacement because of their long lives
- Blue Energy No.2 plant started operation. Production capacity of batteries for HEVs will expand to 50 million cells / year (on second half of FY2022), 70 million cells / year (-FY2025)
- In August 2023, Honda and GS Yuasa established new joint venture company, Honda · GS Yuasa EV Battery R&D Co., Ltd. for conducting R&D of lithium-ion batteries, mainly for EVs

Net Sales, Operating Income and Ratio

Net sales (billion yen) Operating income (billion yen) Operating income ratio



Business Structure and Main Customers

Automotive Lithium-ion Batteries

<Group companies>

Blue Energy Co., Ltd. (BEC)	Joint venture company 51% owned by GS Yuasa and 49% owned by Honda Motor Co., Ltd.
Lithium Energy Japan Ltd. (LEJ)	Joint venture was dissolved by February 2024 and continue business at GS Yuasa from FY2024
GS Yuasa Hungary Ltd. (GYHU)	The company 100% owned by GS Yuasa

Company	Purpose	Customers
BEC	For HEVs	Honda Motor Co., Ltd. and Toyota Motor Corporation
LEJ	For BEVs · PHEVs	Mitsubishi Motors Corporation
	For industrial	Internal Sales(Industrial Batteries and Power Supplies Division)
GYHU	For starting(12V)	Car manufacturers in Europe

Strategies

- For HEVs : Respond to increased demand by expanding production capacity
- For PHEVs : Strengthen production system
- For BEVs : Strengthen development system, aim for production capacity target exceed 20 GWh/year (in FY2035)

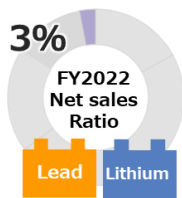


Overview of Specialized Batteries and Others



Outline of Business

Manufacture and sales of batteries for special applications such as batteries for ISS, aircrafts, submarines or satellites



Adopted to extreme environments **from deep sea to outer space**



ISS (International Space Station)

Feature of Business

- Batteries are used in special environmental fields such as space, aircraft or deep sea therefore products with high performance and high quality are required
- Demand for replacement lithium-ion batteries for aircraft is increasing
- We have various types of batteries : high density lead-acid or lithium-ion batteries, thermal batteries, high density primary lithium-ion batteries or sea batteries and others
- Segment loss may occur because the results include corporate expenses (labor cost, R&D cost, capital investment, etc.)

Business Structure

Specialized Batteries and Others

<Group companies>

GS Yuasa Technology Ltd.

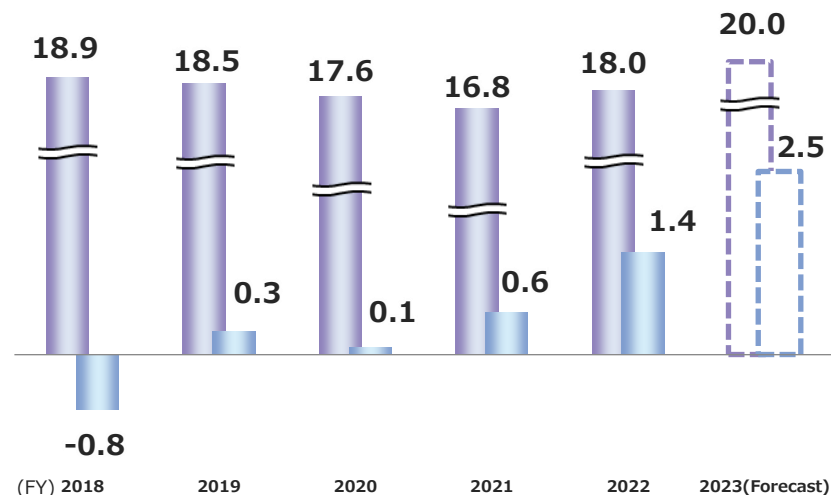
Manufacture and sales special batteries for outer space etc.

Strategies

- For defense applications : Improve profitability and stable supply of lithium-ion batteries for submarines
- For aircrafts : Response to increasing demand and expand sales by developing new products and acquiring new customers
- For satellites : Develop increased production systems and expand sales

Net Sales, Operating Income and Ratio

Net sales (billion yen) Operating income (billion yen)





Research & Development -Initiatives for Next-Generation Batteries-



<Issues regarding current lithium-ion batteries>

Resource depletion

Energy density

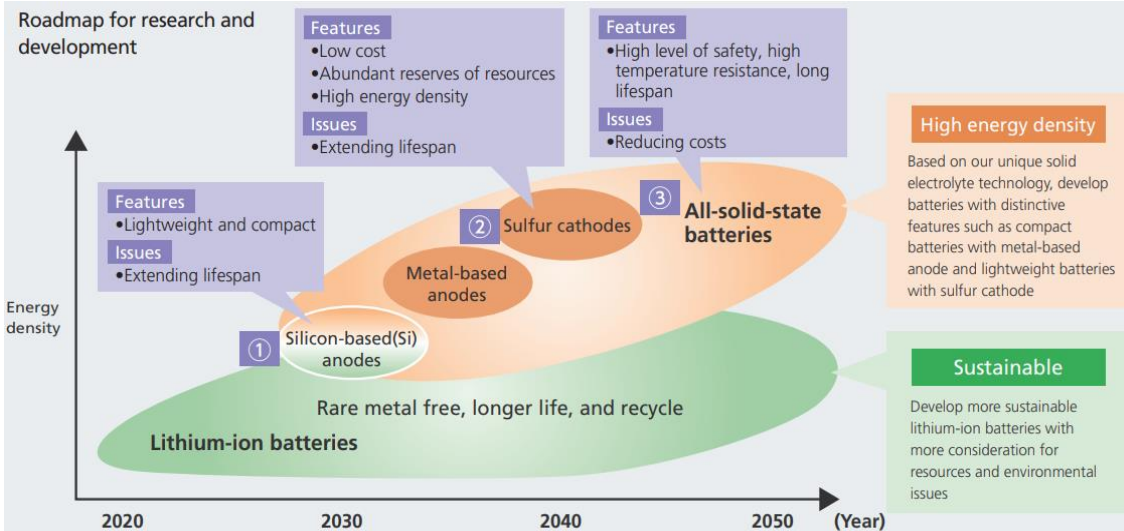
Lifespan

Safety

Current lithium-ion batteries have various issues :
Since rare metals such as cobalt and lithium are used as raw materials, there is a possibility that supply shortages will occur if demand rises sharply in the future; Since the electrolytes used in current lithium-ion batteries are flammable, flame-retardant or non-combustible electrolytes are being sought.

GS Yuasa's Initiatives

Roadmap for research and development



① Silicon-based (Si) anode batteries

By developing technologies that achieve both high energy density and long service life, demonstrated high energy density of **400 Wh/kg**, which exceeds that of conventional lithium-ion batteries



② Sulfur cathode batteries

Successfully completed **verification testing of a 400 Wh/kg-class lithium-sulfur battery** in "Research and Development Project for Advanced Aircraft Systems toward Practical Application" of NEDO



③ All-solid-state batteries

• Developed a **nitrogen-containing sulfide solid electrolyte** with boosted ionic conductivity and water-resistance as a key material for the commercialization of all-solid-state batteries

• Conducting joint research with Osaka Metropolitan University on development of **next-generation storage batteries and next-generation motors, a technology proposal for the NEDO Green Innovation Fund** (the selected research topic: "Next-Generation Storage Battery and Motor Development")

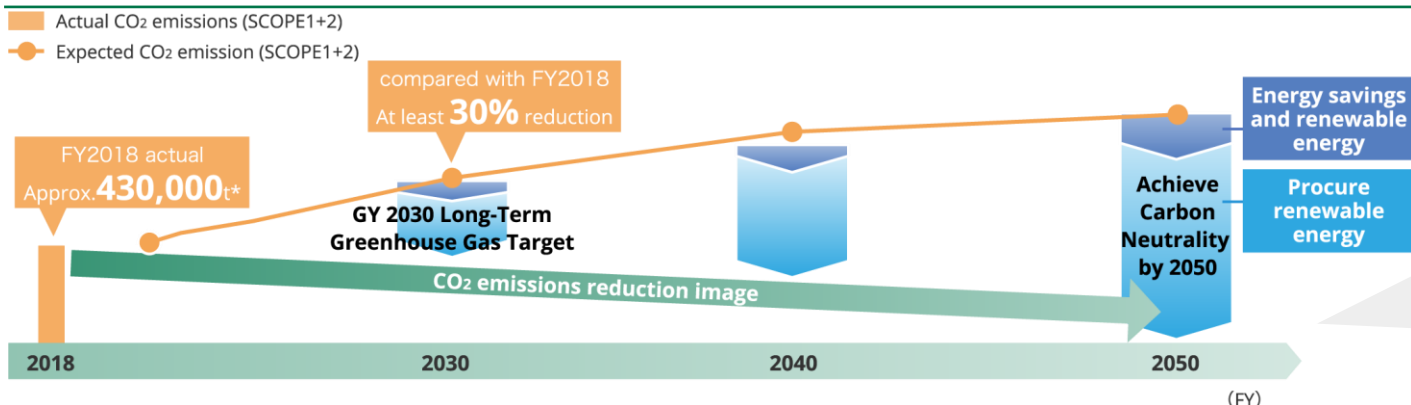
Advanced solid-state battery development items

- Development of a solid electrolyte that combines high ionic conductivity with superior water resistance
- Development of high-capacity cathode with low cobalt content
- Development of anode with high capacity and long-life performance
- Development of cell design and manufacturing processes that facilitate mass production

3. ESG Initiatives



GY 2050 Carbon Neutrality Target

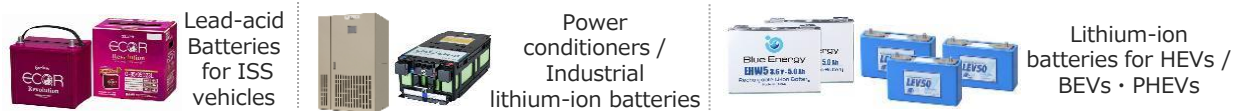


Efforts Through Achieving Carbon Neutrality

- Promote energy-saving measures
- Promote of generating renewable energy
- Procure renewable energy

Contribute to Reducing CO₂ Emission by Products of the GS Yuasa Group

<Examples of environmentally considered products of GS Yuasa>



Contribute to reducing CO₂ emission by products of the GS Yuasa Group

At least **8 million t** (FY2021)

Mid-term Environmental Goal (FY2025)

	FY2025 Target	FY2022 Result		FY2025 Target	FY2022 Result
CO ₂ emissions	Compared to fiscal 2018 Reduce by at least 15.0%	Compared to fiscal 2018 14.8% reduction	Water consumption	Compared to fiscal 2018 Reduce by at least 15.0%	Compared to fiscal 2018 15.6% reduction
Percentage of environmentally considered products in total sales of all products	45.0% or more	36.4%	Ratio of recycled lead used as lead raw materials in lead-acid batteries	70.0% or more	52.9%

*Since the medium-term environmental goals within our Fifth Mid-Term Management Plan which ended in fiscal 2022 had been set under the scope of application before this review (old standards), the calculation results found through the old standards were used to evaluate the goal achievement status.



Human Capital Strategies

Promotion of DE&I (Diversity Equity & Inclusion)

Building of flexible and robust human resources and organization

Linkage with management strategy




Switch to HR portfolio in line with business division policies

Building of setup toward optimization of corporate value


- Enhancement of employee engagement
- Fostering of autonomous-minded HR
- Introduction of in-house recruitment schemes

Initiatives to Promote DE&I

■ Key indicator concerning the promoting women's empowerment

	FY2025 Target	FY2022 Result
 Ratio of women among new graduates recruited for career-track positions	At least 30.0% each year	21.2%
 Percentage of women among workers	17.0% or more	14.7%
 Men's rate of taking childcare leave	100.0%	45.4%

■ Employment rate of people with disabilities

	FY2025 Target	FY2022 Result
 Employment rate of people with disabilities*	2.67% or more	2.52%

*As of April 1st, 2023

■ Initiatives to improve engagement

In fiscal 2021, the Group introduced **mentality management diagnosis** to measure employees' mental health and engagement (enthusiasm for work and for the organization)

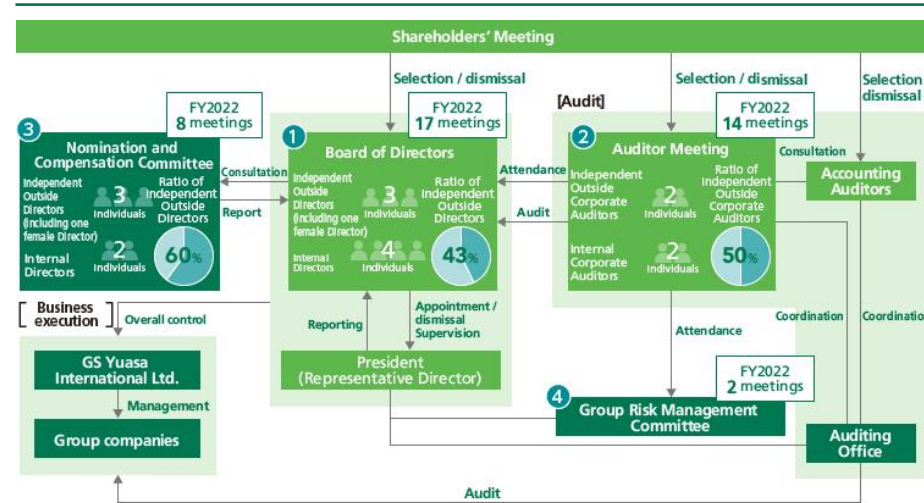
▶ Measure the conditions of employees and the organization once a year, promoting the PDCA cycle for organizational improvement activities

Important management indexes of mentality management diagnosis (deviation value)	FY2025 Target	FY2022 Result
Employee engagement	53.9	49.0
Stress response	53.0	49.7
Work engagement	53.9	50.0
Mental toughness level	54.0	50.4

*1 Results for GS Yuasa International Ltd., including employees seconded to other companies and excluding employees seconded from other companies. *2 Target figures are the top levels in the industry (manufacturing companies with 3,000 or more employees). *3 This index correlates both stress response and engagement.



Corporate Governance Structure (FY2023)



<Skills matrix of directors and auditors>

Name	Position or responsibility	Knowledge and experience expected by GS Yuasa Corporation								Nomination and compensation committee
		Corporate / business management	Financial accounting	Legal affairs Risk management	IT Digitalization	Global	Manufacturing Development	Marketing Sales	ESG	
Osamu Murao	President Chief executive officer (CEO)	●		●			●			■
Masahiro Shibutani	Vice President	●	●			●			●	■
Kazuhiro Fukuoka	Director	●		●	●				●	
Hiroaki Matsushima	Director Chief financial officer (CFO)	●	●		●				●	
Ikuo Otani	Director Outside Independent	●	●	●					●	(Chairperson)
Takayoshi Matsumaga	Director Outside Independent	●				●	●		●	■
Yoshiko Nonogaki	Director Outside Independent	●				●		●	●	■
Akio Furukawa	Corporate Auditor (Full-time)	●				●		●		
Masaya Nakagawa	Corporate Auditor (Full-time)	●				●		●		
Tsukasa Fujii	Director Outside Independent		●	●					●	
Akira Tsujuchi	Director Outside Independent		●	●					●	

Efforts to Strengthen Corporate Governance

- Implement of **training for executives** for fostering of next-generation management
<Theme of training in FY2022> Purpose-driven management and implementation of sustainable management
- **Reinforcement of structures for reporting** by internal auditing divisions
- Appoint **female outside director** and enhance diversity

Remuneration of Directors

<Composition of GS Yuasa Corporation's director remuneration>

Internal Directors	Basic remuneration 80%	Short-term performance-linked remuneration 10%	Medium-to long-term performance-linked remuneration 10%
Outside Directors	Basic remuneration 100%		
Corporate Auditors	Basic remuneration 100%		

*The figure is hypothetical with percentages calculated based on results for fiscal 2022 and may change due to variations in consolidated performance and other factors.

Cross-shareholding

Possession of the shares of business partners and others can be expected to help maintain medium- to long-term relations, expand business, and promote synergy. Accordingly, every year the Board of Directors examines the rationale behind the holdings of specific shares. If it is decided that there is no rationale for holding them, efforts are made to reduce them. In fiscal 2022, the Company sold a portion of its cross-shareholdings in accordance with these policies.



Q1. <Automotive Batteries> Please tell us the quantity ratio of new automotive batteries and replacement batteries.

A1. In Japan, the quantity ratio is approximately 1:1 (It depends on fiscal year). We don't disclose the overseas ratio because it depends on region.

Q2. <Automotive Batteries> Is there possibility that lead-acid batteries will not be used due to electrification?

A2. Lead-acid battery is definitely installed one per one electric vehicle such as EV or HEV. The use is for memory backup of car navigation while parking. Another use is for auxiliary equipment such as applying small current for door opening and closing and starting systems. We consider that lead-acid batteries will be used for starting systems because lithium-ion battery has extremely high voltage and it may be dangerous to stand by constantly.

Q3. <Automotive Batteries (Overseas)> Please tell us the sales ratio by region.

A3. Approximately, ASEAN : 40%, Europe : 30%, China : 10%, North America : 10%, the rest : other region (FY2022 result, it depends on fiscal year).

Q4. <Industrial Batteries and Power Supplies> Please tell us the composition of net sales by product type.

A4. Approximately the use for backup for telecommunications or public infrastructure equipment : 50%, for forklifts : 20%, overseas : 30% (It depends on fiscal year).

Q5. <Automotive Lithium-ion Batteries> Please tell us the strategy toward electrification from now on.

A5. We predict that HEVs will be the mainstream of electrification through the mid-2030s, and that EVs will come into the mainstream after that. Going forward, we expect to expand our annual production capacity of lithium-ion batteries for HEVs to 70 million cells in FY2025 to steadily meet demand from new car manufacturers. Regarding lithium-ion batteries for BEVs, we establish joint venture company, Honda · GS Yuasa EV Battery R&D Co., Ltd. with Honda for conducting R&D on high-capacity, high-output lithium-ion batteries with the aim of strengthening R&D and establishing an efficient production system.

Q6. <Automotive Lithium-ion Batteries> Please tell us net sales and operating income of LEJ and BEC.

A6. LEJ : Net sales was 21.1 billion yen and operating income was 1.6 billion yen, BEC : Net sales was 43.5 billion yen and operating income was 3.6 billion yen (FY2022 result).

Q7. <Others> What is the policy of shareholders return?

A7. We recognize the most important issue of management is return to shareholders, therefore, our target of total return ratio remains more than 30%.

Although this document has been prepared with information believed to be correct, GS Yuasa Corporation does not guarantee the accuracy or the completeness of such information. Also, the information herein contains forward-looking statements regarding the Company's plans, outlooks, strategies and results for the future. All the forward-looking statements are based on judgments derived from information available to the Company at the time of release. Certain risks and uncertainties could cause the Company's actual results to differ materially from any projections presented herein.



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