



Six Months Ended September 30, 2019(FY2019) Result Briefing

November 19, 2019
GS Yuasa Corporation

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Six Months Ended September 30, 2019(FY2019) Results

1. Net Sales, Profits

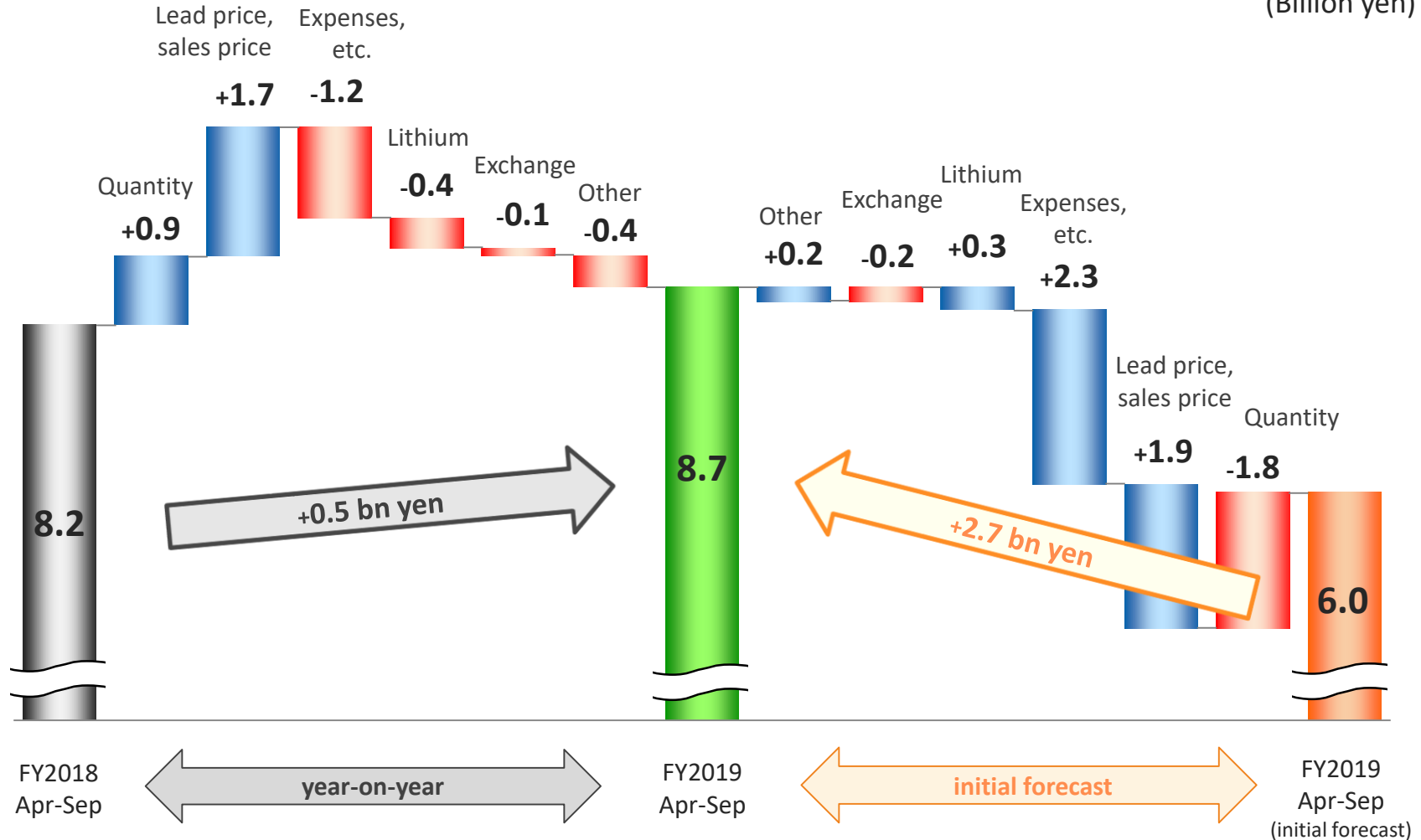
(Billion yen)

	FY2018 Apr-Sep	FY2019 Apr-Sep	Change	(YoY%)
Net Sales	195.4	190.4	-5.0	(-2.6%)
Operating income (Operating income ratio)	7.0 3.6%	7.5 4.0%	+0.5 +0.4P	(+8.5%)
Operating income before amortization of goodwill (Operating income ratio before amortization of goodwill)	8.2 4.2%	8.7 4.6%	+0.5 +0.4P	
Ordinary income	7.5	8.4	+0.9	(+12.4%)
Extraordinary income	0.2	2.3	+2.1	
Extraordinary loss	0.3	1.8	+1.5	
Profit before income taxes	7.5	8.9	+1.4	
Income taxes	2.7	2.8	+0.1	
Profit attributable to non-controlling interests	1.3	1.4	+0.1	
Profit attributable to owners of parent (Net profit ratio)	3.5 1.8%	4.8 2.5%	+1.3 +0.7P	(+38.2%)
Profit attributable to owners of parent before amortization of goodwill (Net profit ratio before amortization of goodwill)	4.8 2.4%	5.9 3.1%	+1.1 +0.7P	
Domestic lead price quote	¥310,600/t	¥276,200/t	-34,400/t	
LME	2,245US\$/t	1,958US\$/t	-287US\$/t	
Exchange rate	¥110.71/US\$	¥108.67/US\$	-¥2.04/US\$	

1. Net Sales, Profits

Factors for Operating Income Change (year-on-year / initial forecast comparison)

(Billion yen)



Note: Operating income is operating income before amortization of goodwill.

2. Segment Results

(Billion yen)

		FY2018 Apr-Sep		FY2019 Apr-Sep		Change	
		Net sales	Operating income (Op. income ratio: %)	Net sales	Operating income (Op. income ratio: %)	Net sales	Operating income (Op. income ratio: pp)
Automotive Battery	Japan	41.4	2.7 (6.4)	40.9	2.1 (5.1)	-0.5	-0.6 (-1.3)
	Overseas	87.5	4.7 (5.3)	81.7	4.9 (6.0)	-5.8	+0.2 (+0.7)
Industrial Battery and Power Supply		34.4	0.8 (2.2)	37.6	2.3 (6.2)	+3.2	+1.5 (+4.0)
Automotive Lithium-ion Battery		22.0	-0.3 (-1.3)	21.4	-0.7 (-3.4)	-0.6	-0.4 (-2.1)
Others		10.1	0.4 (4.4)	8.8	0.1 (1.0)	-1.3	-0.3 (-3.4)
Total		195.4	8.2 (4.2)	190.4	8.7 (4.6)	-5.0	+0.5 (+0.4)

Note1: Operating income is operating income before amortization of goodwill and operating income ratio is operating income ratio before amortization of goodwill.

Note2: From FY2019, some consolidated subsidiaries that were included in "Automotive Batteries-Overseas" have been reclassified to "Industrial Batteries and Power Supplies."

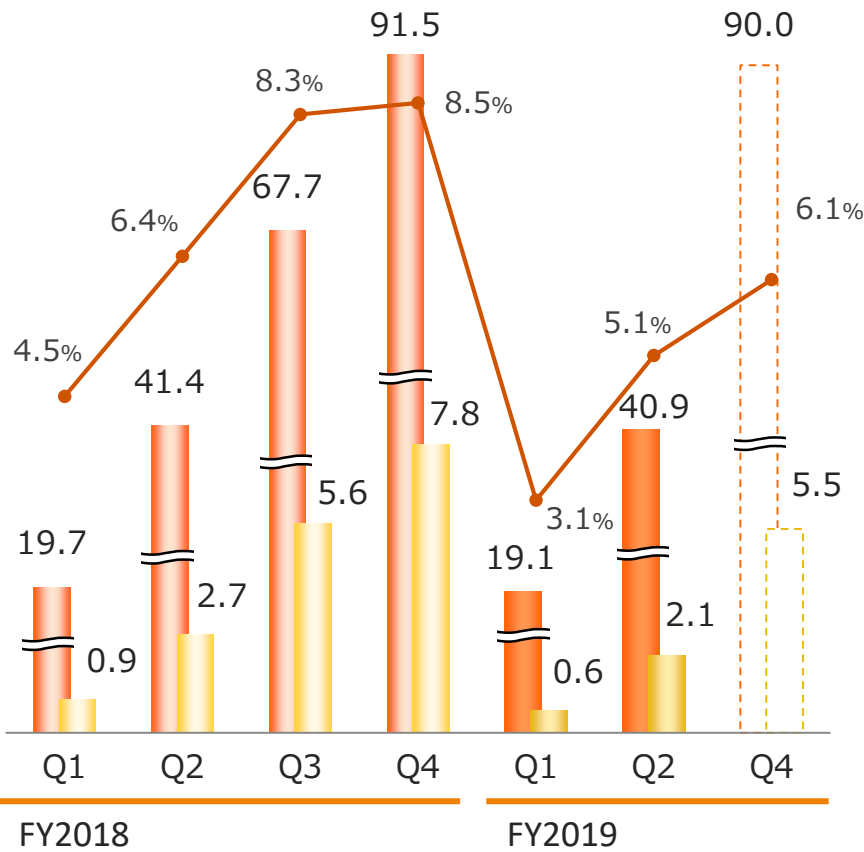
Segment information for FY2018 has been recast to conform to this revision.

2. Segment Results (Automotive Battery (Japan))

Automotive Battery (Japan)

(Billion yen)

Net Sales, Operating income, Op. income ratio



FY2019 1H Sales Overview

- Sales of batteries for both new automobiles and replacement increased
- Sales of EN standard compliant lead-acid batteries for replacement showed signs of full scale
- Impact from selling price decline due to fall in lead prices

Main Profit Change Factors

Quantity	-0.1
Lead prices, sales prices	+0.4
Streamlining, expenses, etc.	-0.9

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

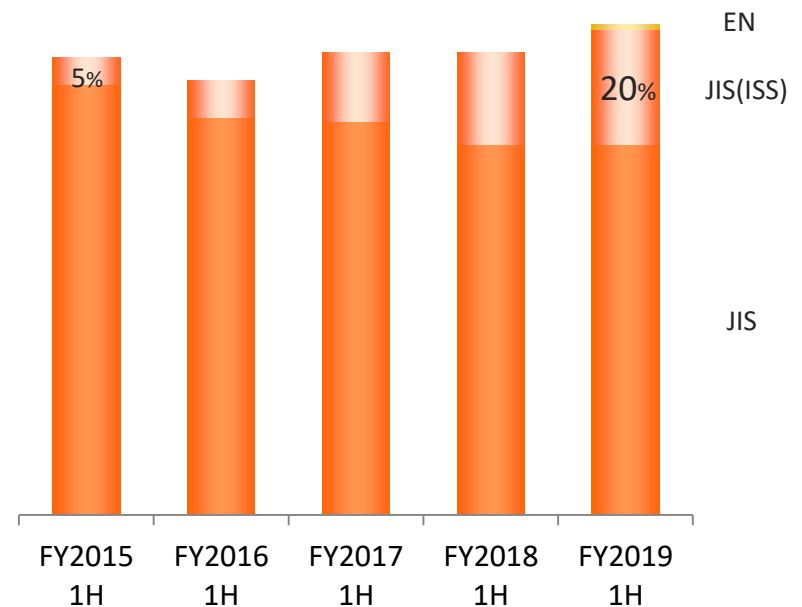
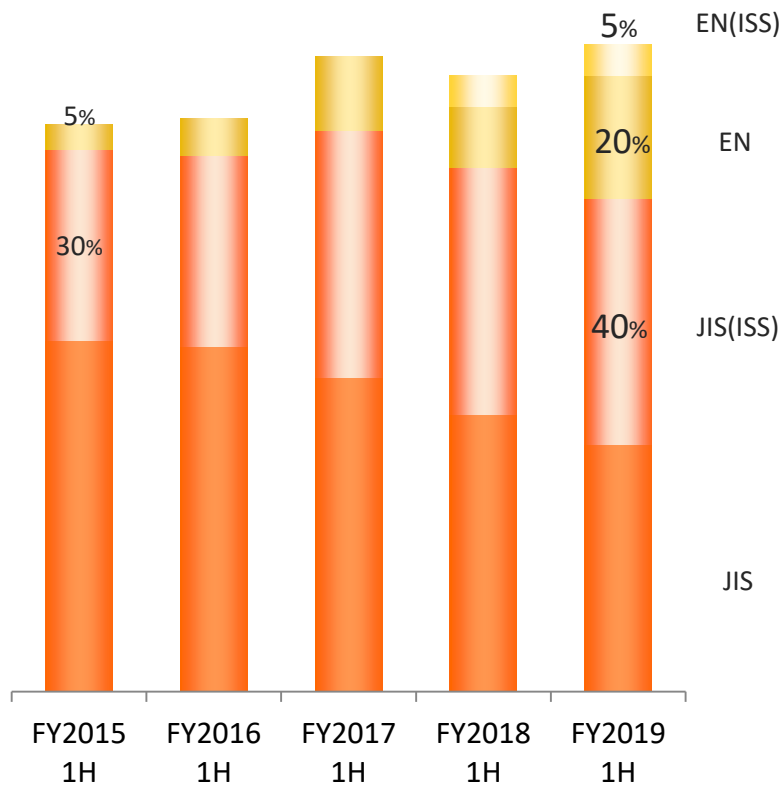
2. Segment Results (Automotive Battery (Japan))

New automobile and Replacement battery shipment ratio (quantity)



New automobile battery shipment ratio

Replacement battery Shipment ratio

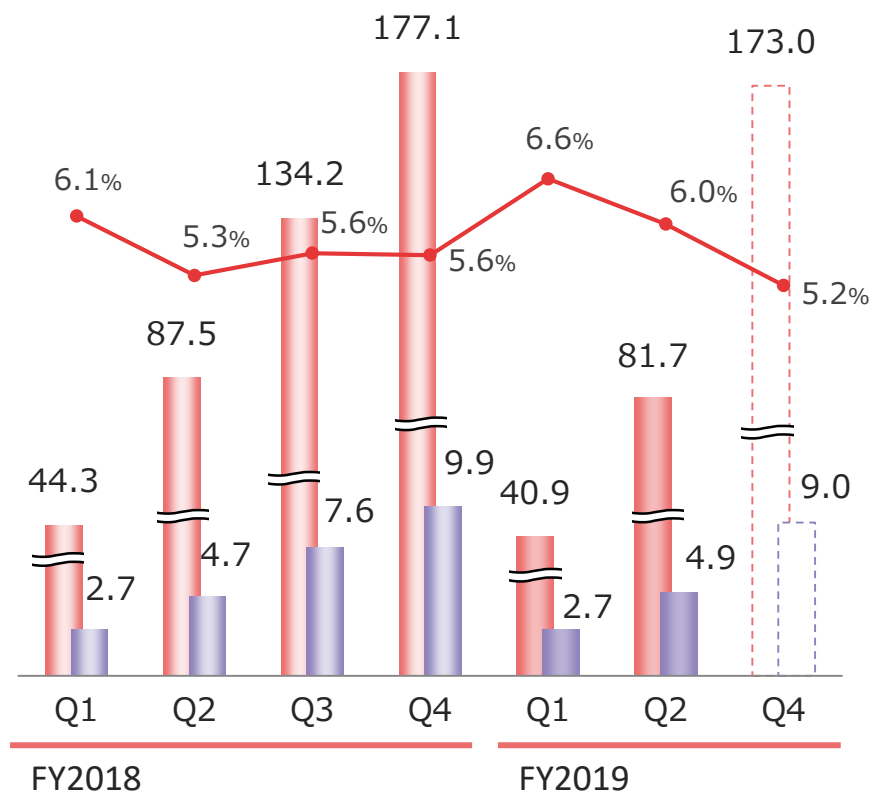


2. Segment Results (Automotive Battery (Overseas))

Automotive Battery (Overseas)

(Billion yen)

Net Sales, Operating income, Op. income ratio



FY2019 1H Sales Overview

- Sales volume of lead-acid storage batteries for automobiles declined in China due to worsening market conditions and increased mainly in Southeast Asia
- Sales of motorcycle lead-acid batteries declined in China and EU
- Impact from foreign currency translation due to the stronger yen

Main Profit Change Factors

Quantity	-0.3
Lead prices, sales prices	+0.9
Streamlining, expenses, etc.	-0.2
Exchange	-0.1

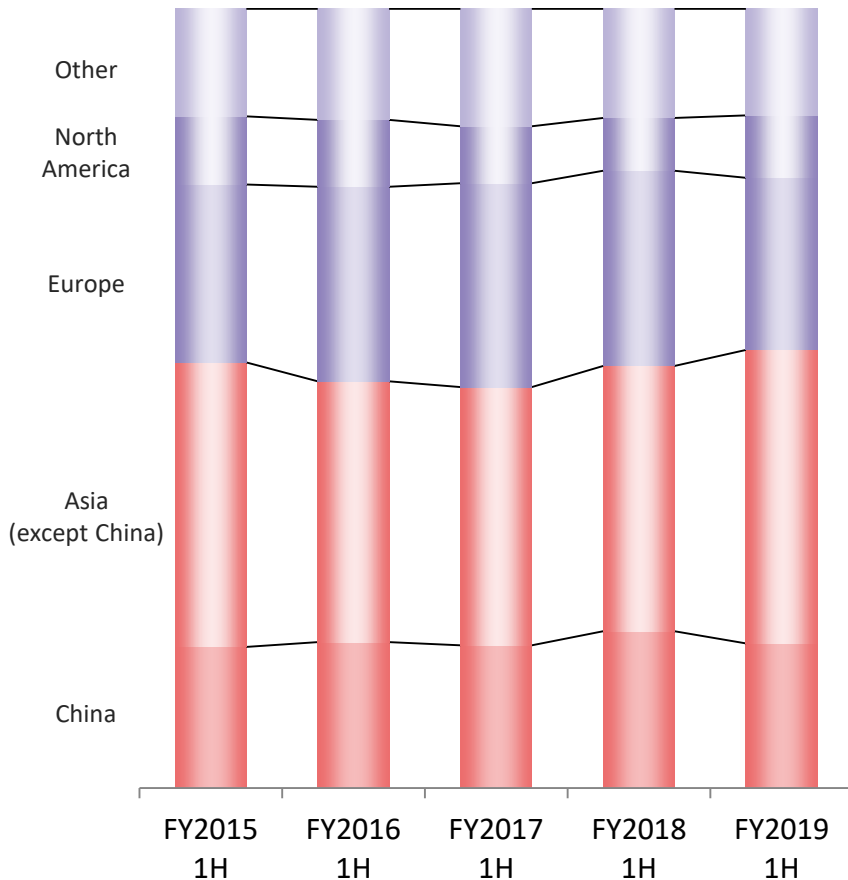
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2. Segment Results (Automotive Battery (Overseas))

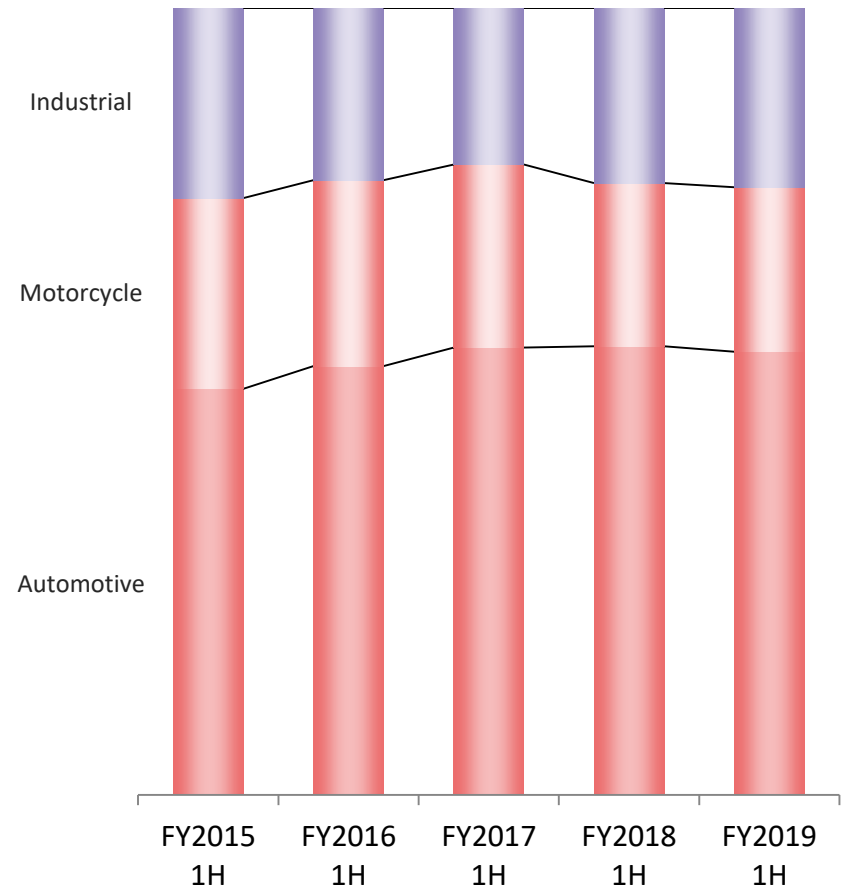
Sales by region and product category (include Industrial)



sales by region



sales by product category

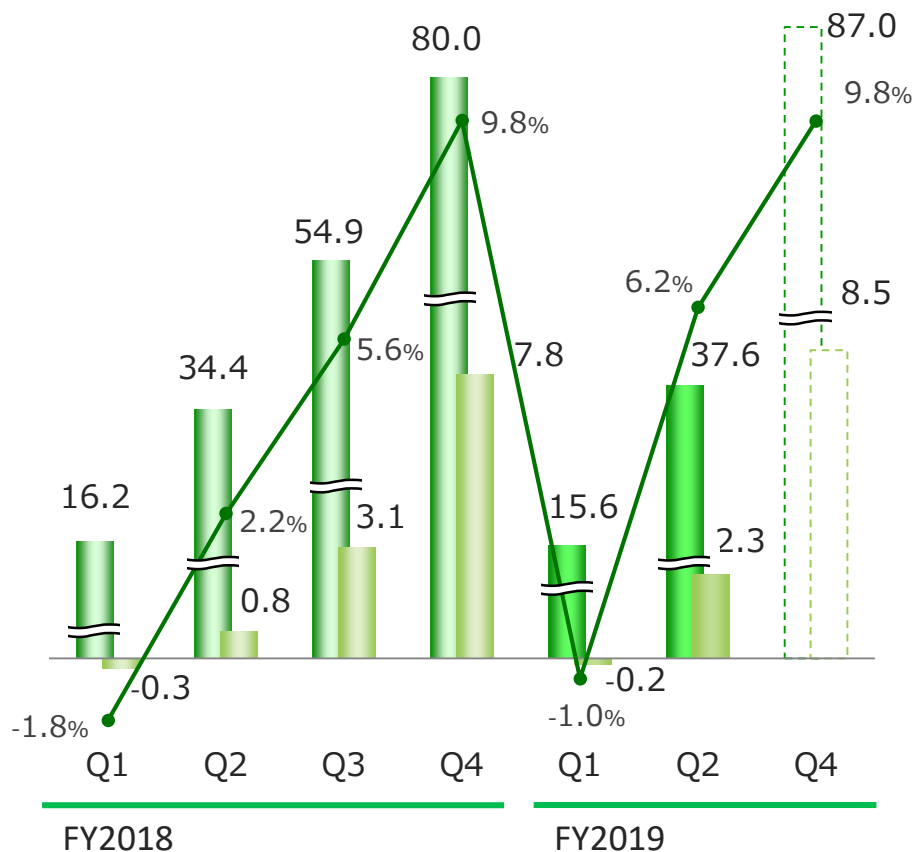


2. Segment Results (Industrial Battery and Power Supply)

Industrial Battery and Power Supply

(Billion yen)

Net Sales, Operating income, Op. income ratio



FY2019 1H Sales Overview

- Sales of mainstay industrial batteries and power supply systems were strong
- Sales of lighting equipment declined
- Impact from transfer of specialized equipment business (transferred in June 2018)

Main Profit Change Factors

Quantity	+1.3
Lead prices, sales prices	+0.3
Streamlining, expenses, etc.	-0.1

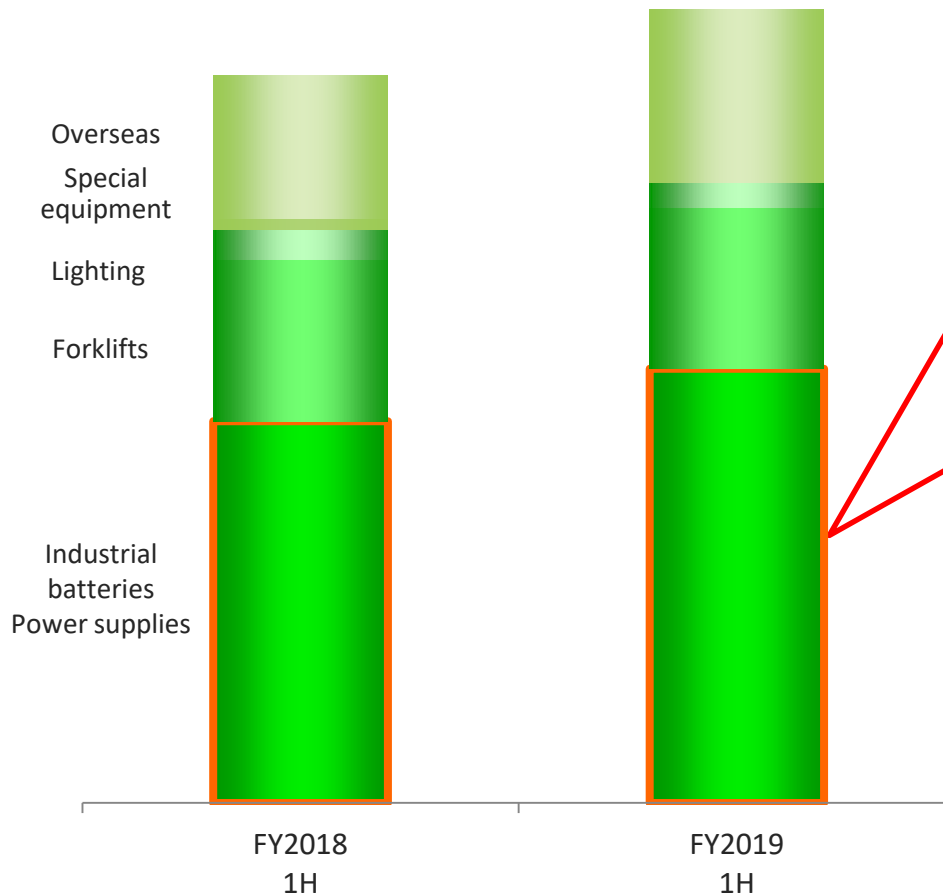
Note: From FY2019, some consolidated subsidiaries that were included in "Automotive Batteries-Overseas" have been reclassified to "Industrial Batteries and Power Supplies." Segment information for FY2018 has been recast to conform to this revision.

2. Segment Results (Industrial Battery and Power Supply)

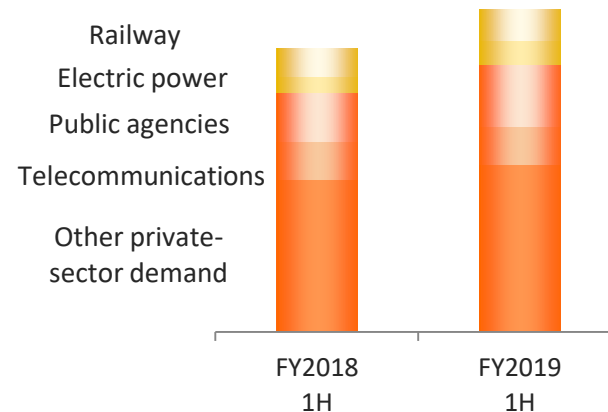
Sales by product category



Sales by product category



Sales by demand source

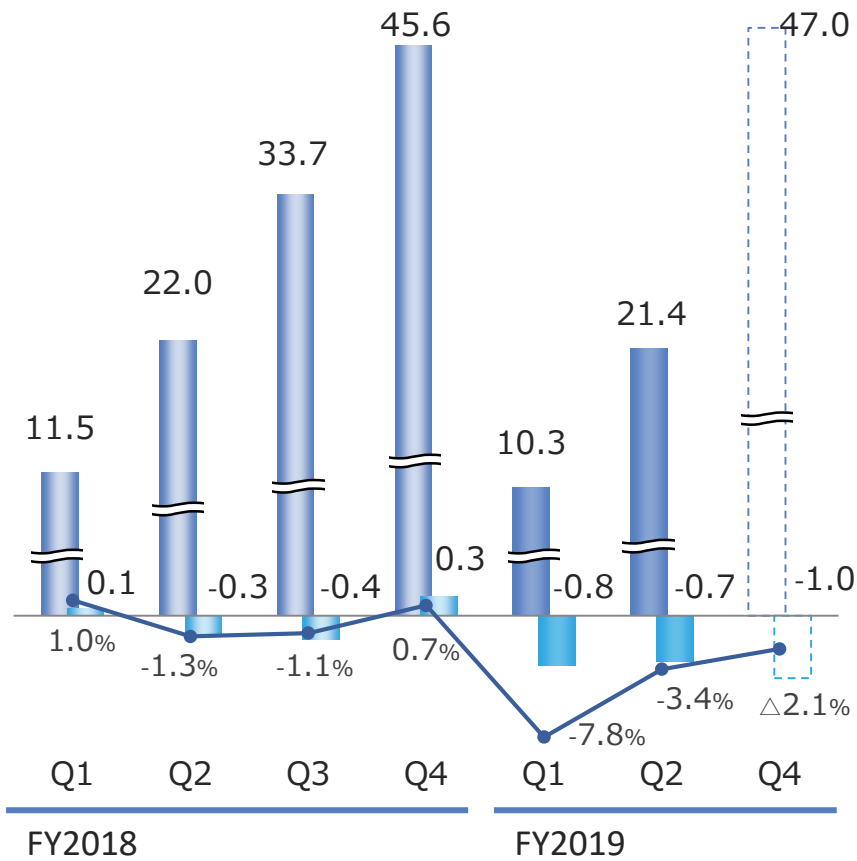


2. Segment Results (Automotive Lithium-ion Battery)

Automotive Lithium-ion Battery

(Billion yen)

Net Sales, Operating income, Op. income ratio



FY2019 1H Sales Overview

- [Lithium Energy Japan]
Sales of lithium-ion batteries for electric vehicles declined
- [Blue Energy]
Sales of lithium-ion batteries for hybrid vehicles stabilized

Main Profit Change Factors

Expenses incurred for startup of the Hungary plant

2. Segment Results (Automotive Lithium-ion Battery)

Operations launched at new GS Yuasa Hungary plant



Hungary Plant



Operations
launched in
Oct. 2019

GS Yuasa Hungary Ltd.

**Production capacity
(initial)**

500,000
units/year

*Lithium-ion battery cells
manufactured and exported
by Lithium Energy Japan

- Commenced shipment of 12V lithium-ion starter batteries to European automakers
- Currently responding to inquiries from multiple automakers



Future

European LiB production base to respond to shift to electric vehicles

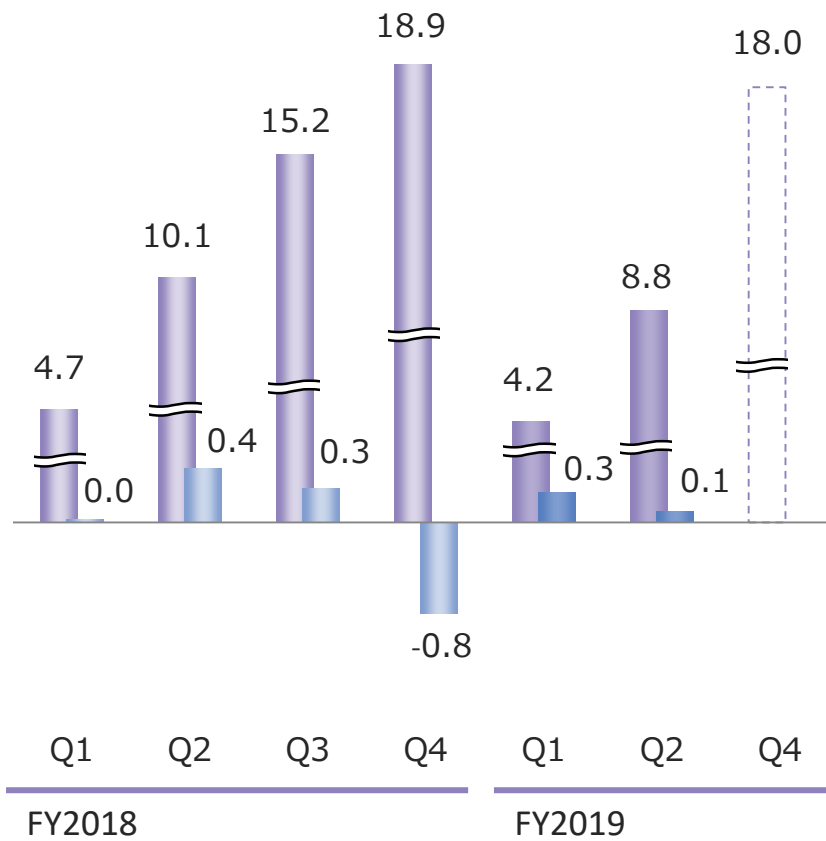
- Expand production capacity in stages
- Consider production of lithium-ion battery cells
- Expand to auxiliary batteries and backup batteries for self-driving vehicles

2. Segment Results (Others)

Others

(Billion yen)

Net Sales, Operating income



FY2019 1H Sales Overview

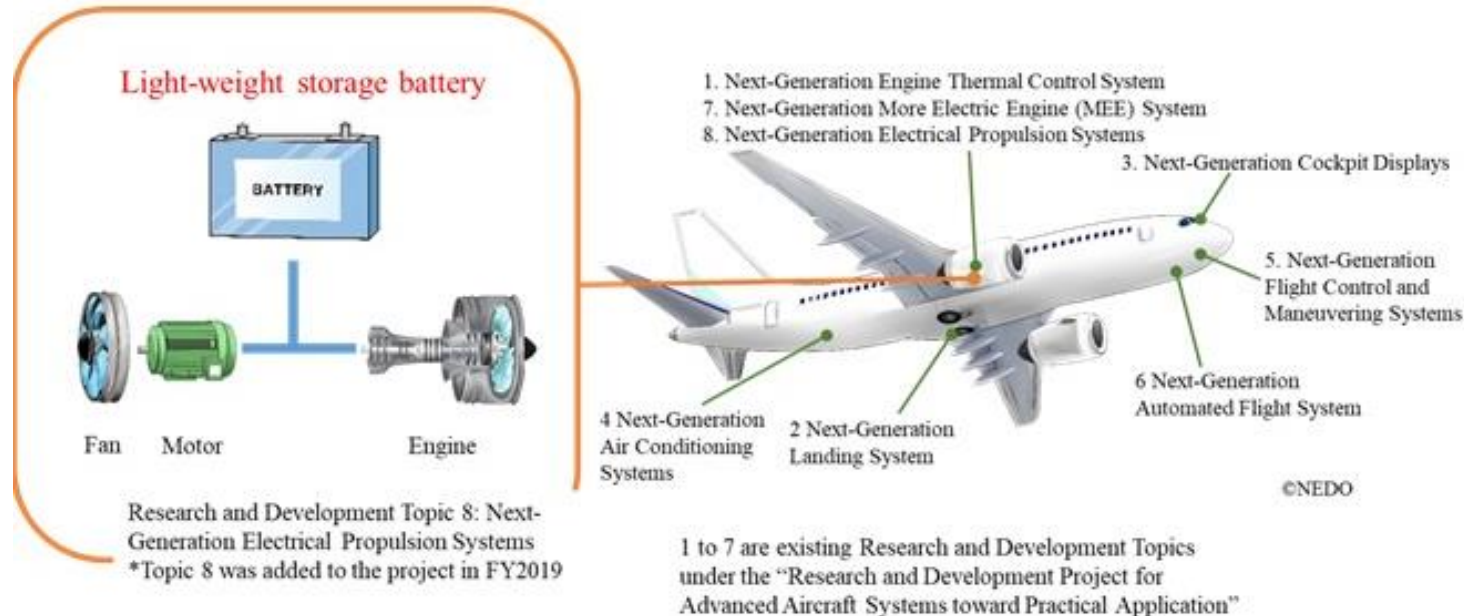
- Temporary production dip for some special-application batteries

Main Profit Change Factors

Increase in R&D expenses

2. Segment Results (Others)

GS Yuasa Selected for Advanced Aircraft System Commercialization Project



2019: Ministry of Economy, Trade and Industry and Boeing agree to cooperate on future aircraft technologies

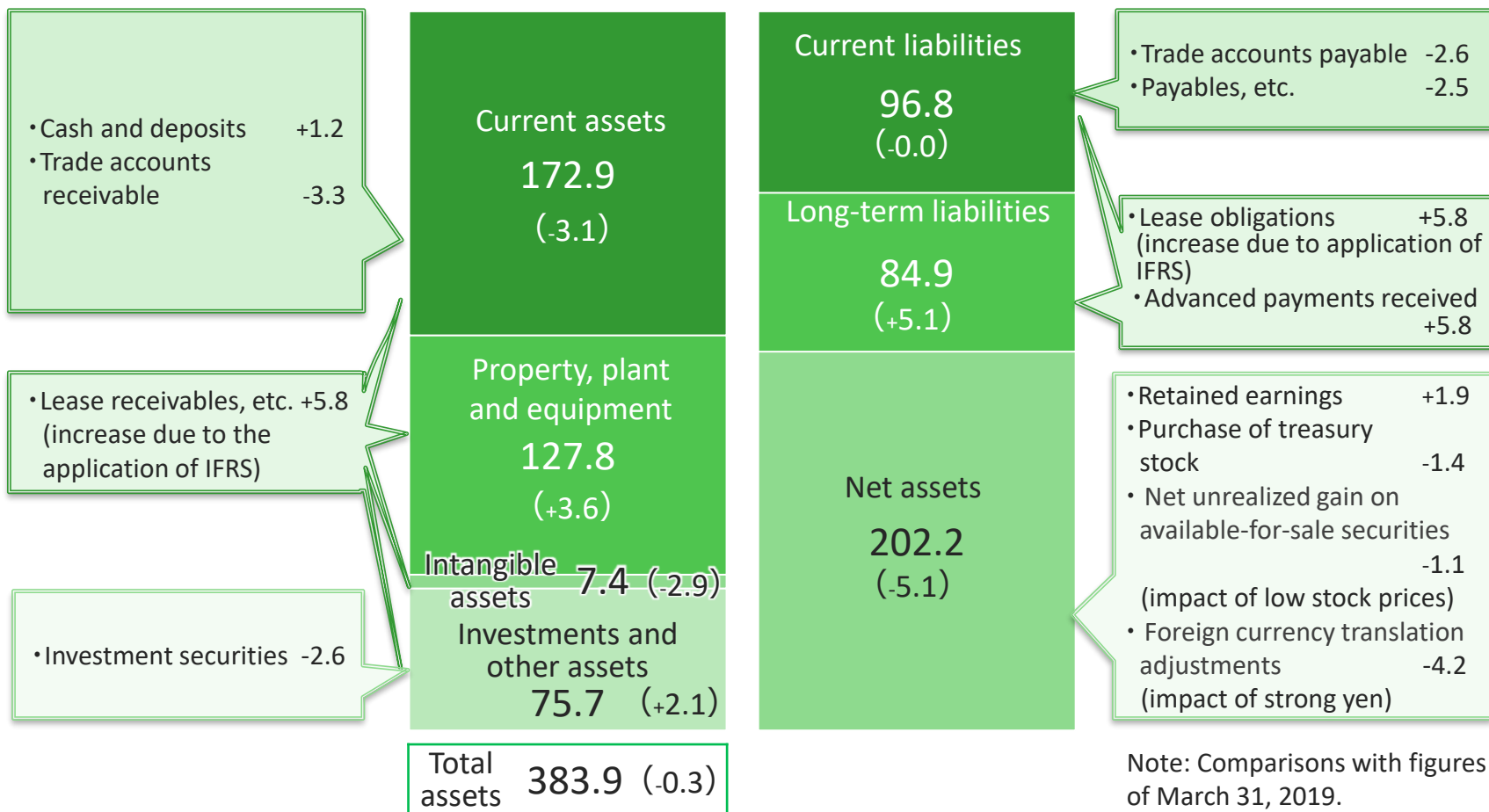
2030: Energy density target of 1000Wh/kg (per cell)

2019: Work on development of light-weight storage batteries begins as part of NEDO project

2011: Development of silicon-sulfur batteries begins

3. Balance Sheet

(Billion yen)



Note: Comparisons with figures as of March 31, 2019.

	3/31/2019	9/30/2019
Equity ratio	46.4%	45.2%
Interest-bearing debt	¥66.9bn	¥67.3bn

4. Capital Investment, Depreciation, R&D Costs

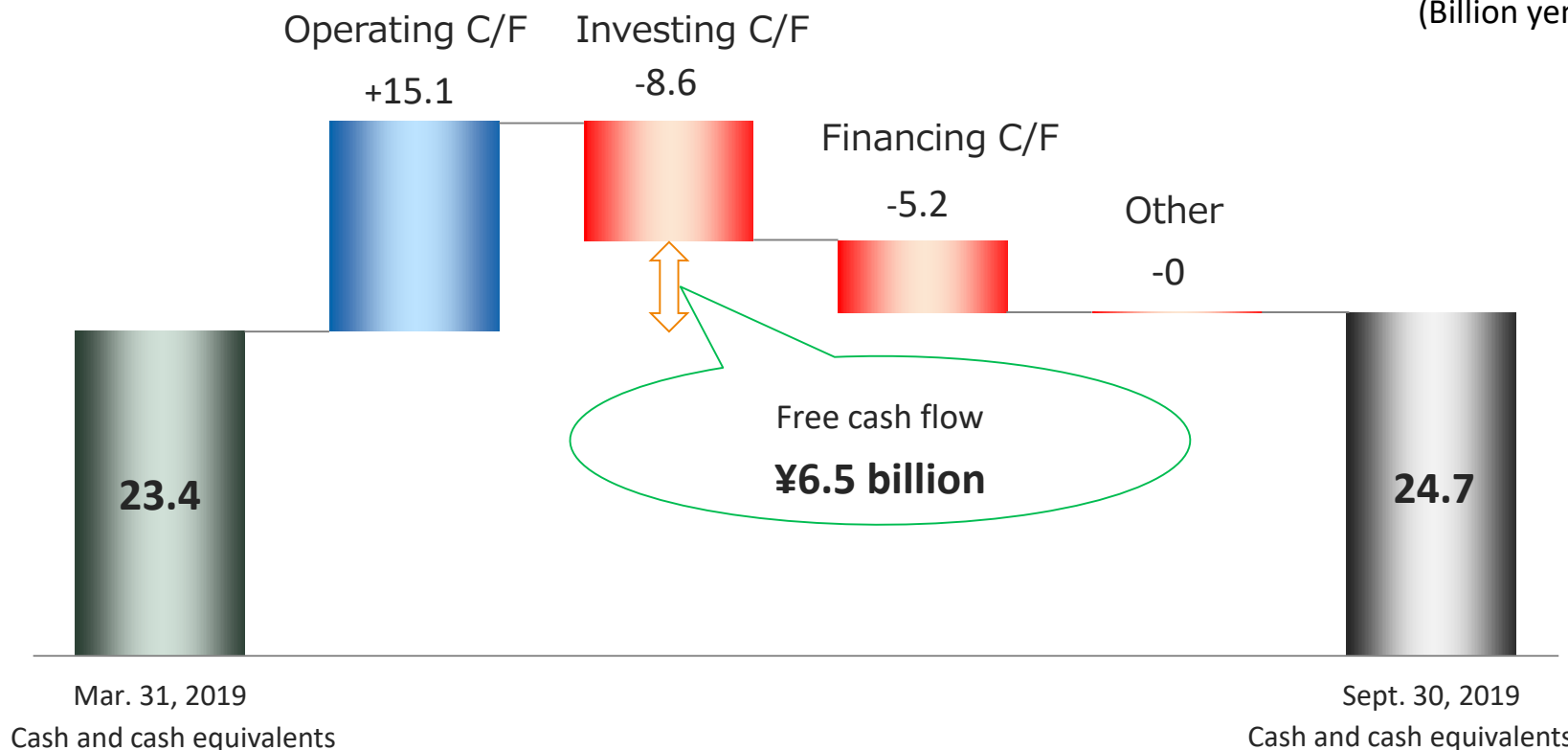
(Billion yen)

		FY2018 1H	FY2019 1H	FY2018 Full year	FY2019 Full year (Forecast)
Capital Investment		8.1	8.6	21.5	27.0
Automotive Battery	Japan	1.6	0.8	3.6	3.0
	Overseas	2.8	3.2	6.7	9.0
Industrial Battery and Power Supply		0.6	0.6	2.1	2.0
Automotive Lithium-ion Battery		1.9	2.8	5.2	7.0
Others		1.2	1.3	3.9	6.0
Depreciation		7.7	7.9	16.1	18.0
Automotive Lithium-ion Battery		2.2	1.5	4.3	4.0
R&D Expenses		4.4	4.8	9.9	11.0
(Ratio of R&D expenses to net sales)		2.2%	2.5%	2.4%	2.7%

Note: From FY2019, some consolidated subsidiaries that were included in “Automotive Batteries-Overseas” have been reclassified to “Industrial Batteries and Power Supplies.” Segment information for FY2018 has been recast to conform to this revision.

5. Cash Flow Statements

(Billion yen)



Highlights

- Operating C/F totaled ¥15.1 billion as a result of securing ¥18.3 billion in profit before amortization.
- Free C/F came to ¥6.5 billion. This was earmarked for funding of shareholder returns and building up cash on hand.
- As a result, the cash balance as of the end of the second quarter was ¥24.7 billion.

6. Revision to Consolidated Results Forecast

(Billion yen)					
	FY2018 Actual	FY2019 Revised forecast	Change (Revised-Actual)	FY2019 Initial forecast	
Net sales	413.1	415.0	+1.9	430.0	
Operating income (Operating income ratio)	22.7 5.5%	20.0 4.8%	-2.7 -0.7P	20.0 4.7%	
Operating income before amortization of goodwill (Operating income ratio before amortization of goodwill)	25.1 6.1%	22.0 5.3%	-3.1 -0.8P	22.0 5.1%	
Ordinary income	24.7	22.0	-2.7	22.0	
Profit attributable to owners of parent (Net profit ratio)	13.5 3.3%	12.0 2.9%	-1.5 -0.4P	12.0 2.8%	
Profit attributable to owners of parent before amortization of goodwill (Net profit ratio before amortization of goodwill)	16.0 3.9%	14.5 3.5%	-1.5 -0.4P	14.5 3.4%	
Conditions	Domestic lead price quote	¥298,900/t	¥300,000/t	-	¥300,000/t
	LME	2,122US\$/t	2,100US\$/t	-	2,100US\$/t
	Exchange rate	¥111.07/US\$	¥110.0/US\$	-	¥110.0/US\$

Reasons for revision

- The forecast for net sales has been revised because overseas sales are expected to decline, primarily in China.
- Although operating income for the first half exceeded the initial forecast due to an increase in the Industrial Batteries and Power Supplies segment's profits accompanying a decline in the price of lead (a core raw material), the operating income forecast was left unchanged because the outlook is uncertain given the abovementioned expected decline in net sales and the current upward trend for raw materials prices.

6. Revision to Consolidated Results Forecast

		(Billion yen)							
		FY2018 Actual		FY2019 Revised Forecast		Change (Revised-Actual)		FY2019 Initial forecast	
		Net sales	Operating income (Op. income ratio: %)	Net sales	Operating income (Op. income ratio: %)	Net sales	Operating income (Op. income ratio: %)	Net sales	Operating income (Op. income ratio: %)
Automotive Battery	Japan	91.5	7.8 (8.5)	90.0	5.5 (6.1)	-1.5	-2.3 (-2.4)	90.0	6.0 (6.7)
	Overseas	177.1	9.9 (5.6)	173.0	9.0 (5.2)	-4.1	-0.9 (-0.4)	188.0	9.5 (5.1)
Industrial Battery and Power Supply		80.0	7.8 (9.8)	87.0	8.5 (9.8)	+7.0	+0.7 (-0.0)	87.0	7.5 (8.6)
Automotive Lithium-ion Battery		45.6	0.3 (0.7)	47.0	-1.0 (-2.1)	+1.4	-1.3 (-2.8)	47.0	-1.0 (-2.1)
Others		18.9	-0.8 (-4.0)	18.0	-	-0.9	-	18.0	-
Total		413.1	25.1 (6.1)	415.0	22.0 (5.3)	+1.9	-3.1 (-0.8)	430.0	22.0 (5.1)

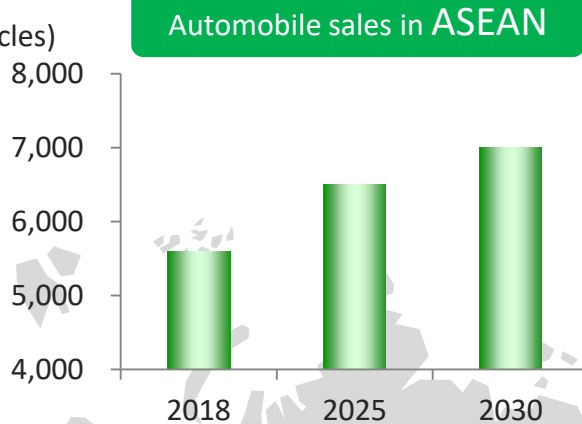
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Market Conditions for Overseas Business Segments and their Responses

1. Current Conditions in ASEAN Countries & Response

(thousand vehicles)



Note: Figures after FY2018 are estimates

Source: Fuji Keizai's Comprehensive Analysis of Hybrid/Electric Vehicle-Related Markets, 2017 edition

Opportunities

- With increasing motorization, new automobile sales and vehicle ownership rates are both increasing
- New motorcycle sales remain solid.

Risks

Intensifying competition with local manufacturers

Impacts

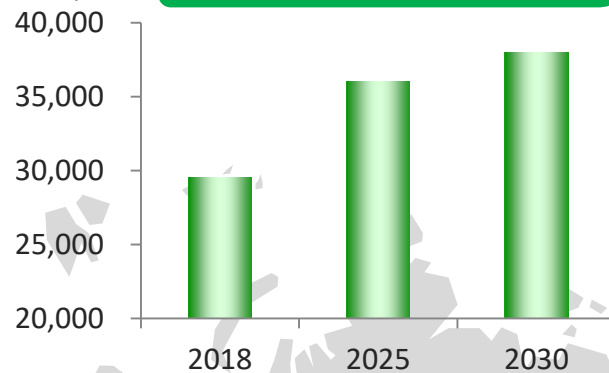
Declines in market share and selling prices

Response

- Develop products tailored to specific markets
- Expand sales in the replacement battery market by reducing lead times and offering sales rebates, etc.
- Expand sales in Myanmar and elsewhere in the Mekong subregion

2. Current Conditions in China & Response

(thousand vehicles)



Note: Figures after FY2018 are estimates

Source: Fuji Keizai's Comprehensive Analysis of Hybrid/Electric Vehicle-Related Markets, 2017 edition



Opportunities

New automobile sales to decline temporarily but are expected to increase in the medium to long term, and vehicles ownership rate to increase.

Risks

U.S.-China trade issues and popularization of electric vehicles

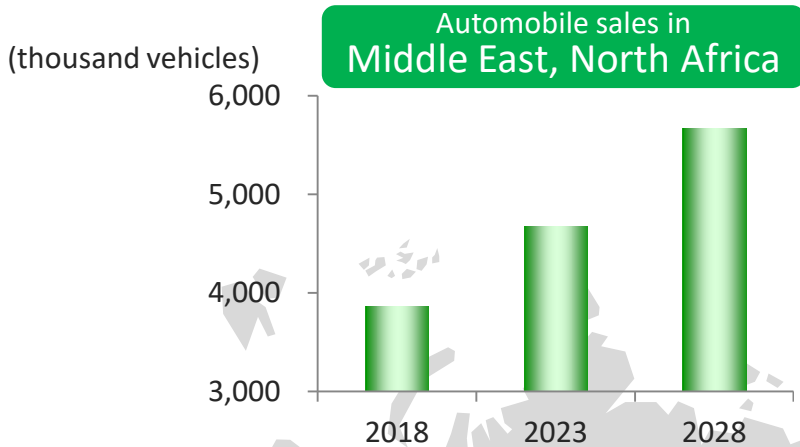
Impacts

- Stagnation of new car market and intensifying competition in the replacement battery market
- The impact of popularization of EVs is limited, as EVs also currently employ lead-acid batteries
- Increased number of start & stop vehicles in response to exhaust emission regulations

Response

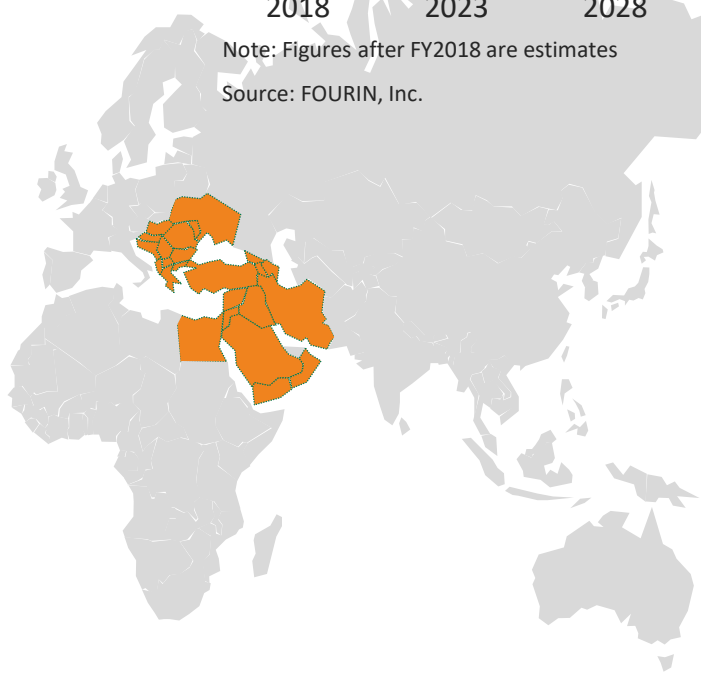
Expand sales of batteries for start & stop vehicles, which are high value added products, in both new car and replacement battery markets.

3. Current Conditions in Countries Neighboring Turkey & Response



Note: Figures after FY2018 are estimates

Source: FOURIN, Inc.



Opportunities

New automobile sales and car ownership increased in countries neighboring Turkey in the Middle East and North Africa accompanying economic growth

Risks

- Foreign exchange rate fluctuations and rising interest rates
- Geopolitical risks

Impacts

- Rising procurement costs for lead and other raw materials
- Rising financing costs
- Disruption to supply chains and impact on plant operations

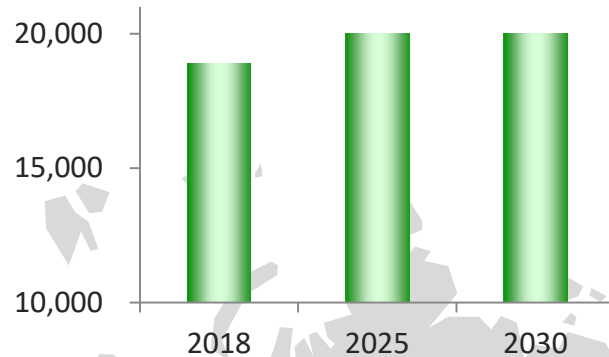
Response

- Expand export business targeting countries neighboring Turkey
- Reduce interest-bearing debts with completion of new plant investment cycle
- Consider BCP responsive to geopolitical risks

4. Current Conditions in EU & Response

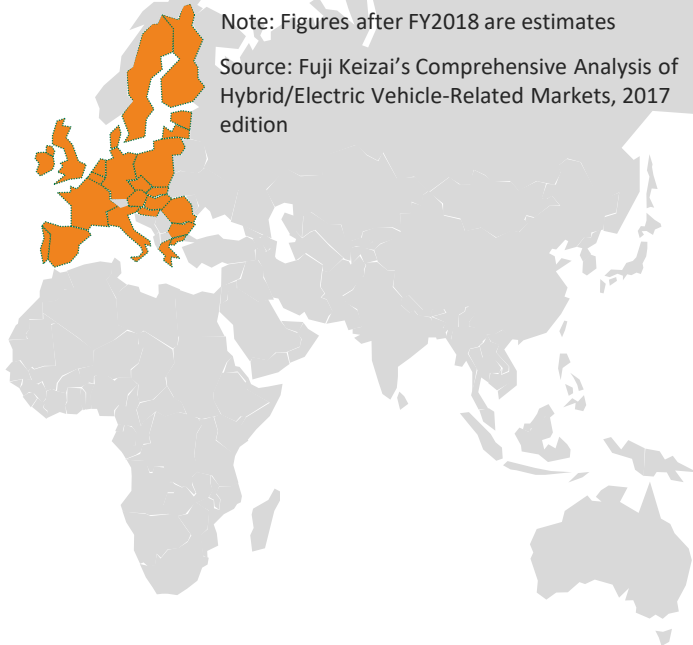
(thousand vehicles)

Automobile sales in Europe



Note: Figures after FY2018 are estimates

Source: Fuji Keizai's Comprehensive Analysis of Hybrid/Electric Vehicle-Related Markets, 2017 edition



Opportunities

- Stable demand for both automobile- and industrial-use lead-acid storage batteries
- European luxury automakers are adopting 12V LiBs

Risks

- **Brexit**
- **Decline in demand for lead-acid batteries for new vehicles**

Impacts

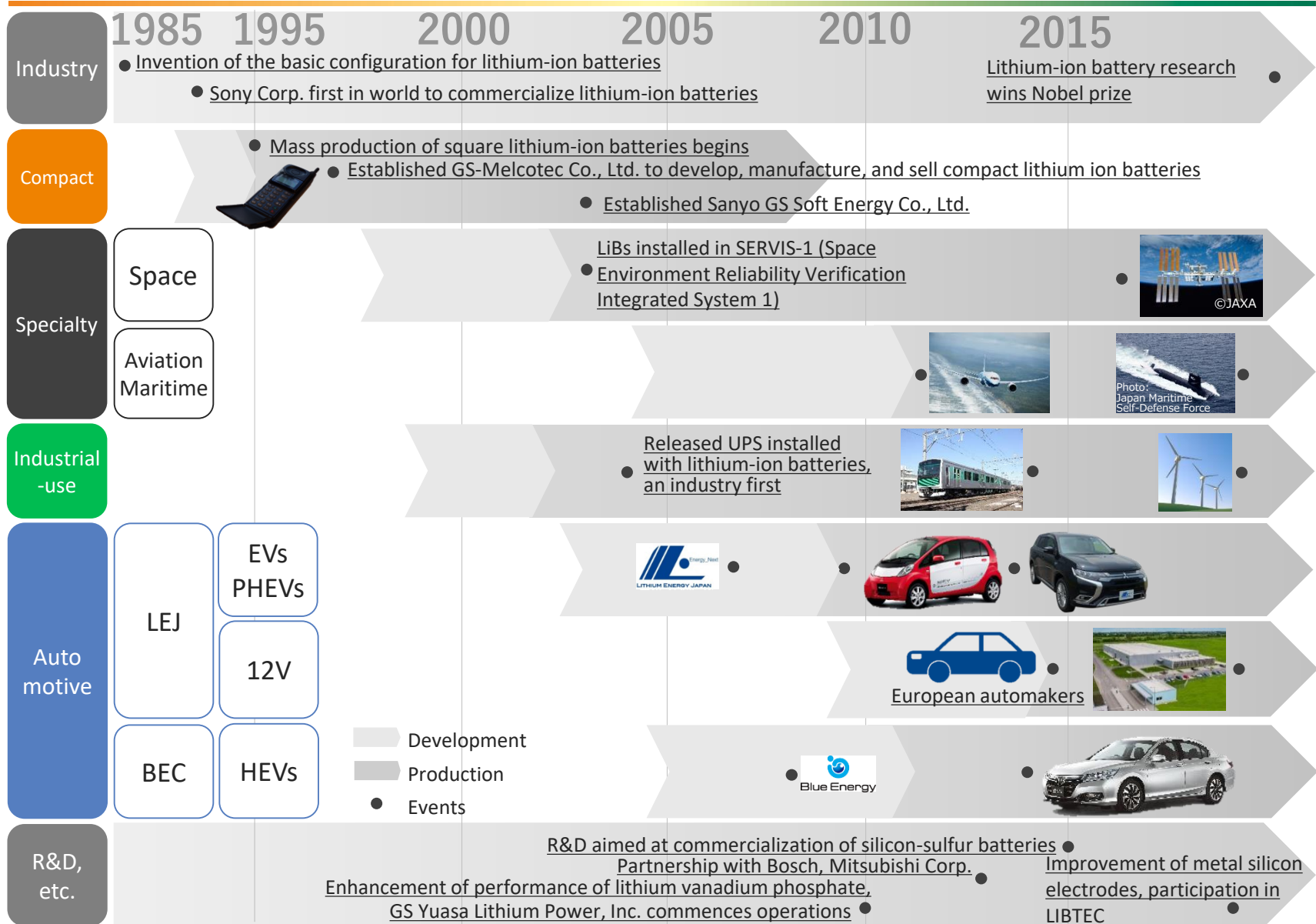
- Increased costs and lead time delays due to customs duties and customs clearance procedures
 - Lead-acid batteries for industrial use are produced in the U.K. and automotive lead-acid batteries are imported from Asia, and both are sold in the U.K. as well as on the European continent.
- The impact is minor for GS Yuasa, as the company supplies only a small volume of lead-acid storage batteries to European automakers

Response

- Change supply routes for products other than those produced in the U.K.
- Supply 12V LiBs from the new plant in Hungary



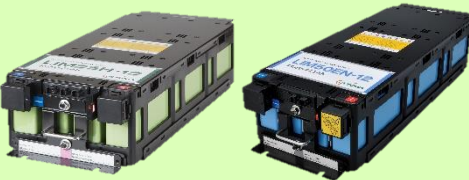

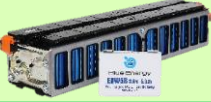

Lithium-ion Battery Innovations and Market Growth

1. History of Lithium-ion Batteries



 Development
 Production
 ● Events

2. Lithium-ion Battery Applications and Performance

	Applications	Products	Positive electrode material	Capacity (cell)
Compact	<ul style="list-style-type: none"> • Mobile phones • Laptops, etc. 		LCO	1 Ah or below
Specialty	<ul style="list-style-type: none"> • Space (satellites, rockets, etc.) • Aircraft • Underwater vehicles 		LCO	Varies according to application
Industrial -use	<ul style="list-style-type: none"> • Backup power sources • Renewable energy • Industrial vehicles (automatic guided vehicles, cranes, etc.) • Railways, etc. 		LMO LMO+NMC	25 to 50 Ah
Auto motive	<ul style="list-style-type: none"> • Electric vehicles • Plug-in hybrid electric vehicles 		LMO+NMC LFP	20 to 80Ah
	<ul style="list-style-type: none"> • Hybrid electric vehicles 		NMC	5Ah
	<ul style="list-style-type: none"> • Starter batteries (12V), etc. 		-	-

LCO: lithium cobalt oxide; LMO: lithium manganese oxide; NMC: ternary compound (nickel-manganese-cobalt); LFP: lithium iron phosphate

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.



Reference

External ratings

CSR evaluations

	ESG rating by MSCI (U.S.) *1	CSR assessment by Toyo Keizai Inc. *3				CSR assessment by EcoVadis (France) *4
		HR utilization	Environment	Corporate governance	Sociality	
2019	A *2	AA	AA	AA	AA	57 points (rank: silver)
2018	AA	AA	AA	AA	AA	50 points (rank: silver)
2017	AA	AA	AA	AA	AA	50 points (rank: silver)
2016	A	C	C	B	C	37 points (rank: bronze)

*1: ESG rating of MSCI (U.S.) is done by Japan ESG Select Leaders Index and is seven-grade evaluation of AAA, AA, A, BBB, BB, B and CCC.

*2: Rating was downgraded, as we were not able to disclose details about “revenue from clean technology products”, an evaluation criterion newly adopted by MSCI.

*3: Toyo Keizai Inc.’s CSR assessment is five-grade evaluation of AAA, AA, A, B and C.

*4: EcoVadis (France) Total marks for CSR assessment is 100 points. The average score of the companies surveyed is 44.0 points. (As of February 2019)

Evaluation, certification and accreditation for GS Yuasa’s CSR-related efforts



- Selected as a certified company of the Company with Excellent Health Management 2018 –White 500- by the Ministry of Economy, trade and Industry



- Selected as a certified company of the Company with Excellent Health Management 2018 –White 500- by the Ministry of Economy, trade and Industry



- Received the highest rank “particularly excellent in terms of initiatives for employees’ health” from DBJ Employees’ Health Management Rating

ESG index with GS Yuasa

➤ MSCI Japan ESG Select Leaders Index



MSCI Japan ESG
Select Leaders Index

➤ FTSE4Good Index Series



FTSE4Good



FTSE Blossom
Japan

➤ FTSE Blossom Japan Index

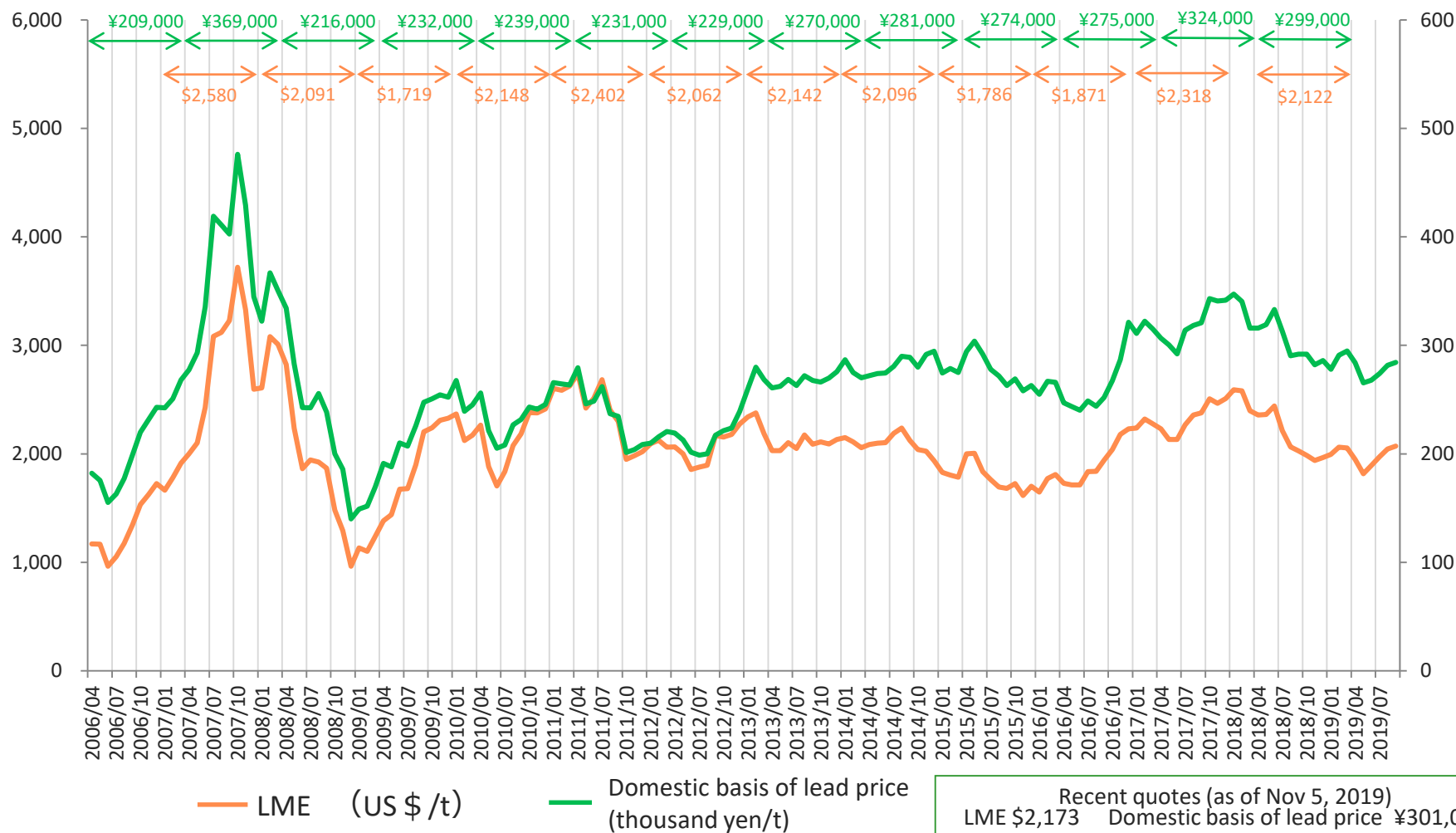
*1 The inclusion of GS Yuasa in any MSCI Index, and the use of MSCI logos, trademarks, service marks or Index names herein, do not constitute a sponsorship, endorsement or promotion of GS Yuasa by MSCI or any of its affiliates. The MSCI Indexes are the exclusive property of MSCI. MSCI and the MSCI Index names and logos are trademarks or service marks of MSCI or its affiliates.

*2 FTSE Russell (the trading name of FTSE International Limited and Frank Russell Company) confirms that GS Yuasa has been independently assessed according to the FTSE4Good and FTSE Blossom Japan criteria, and has satisfied the requirements to become a constituent of the FTSE4Good Index Series and FTSE Blossom Japan Index. Created by the global index provider FTSE Russell, the FTSE4Good Index Series and FTSE Blossom Japan Index is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE4Good and FTSE Blossom Japan indices are used by a wide variety of market participants to create and assess responsible investment funds and other products.

Raw Materials Prices

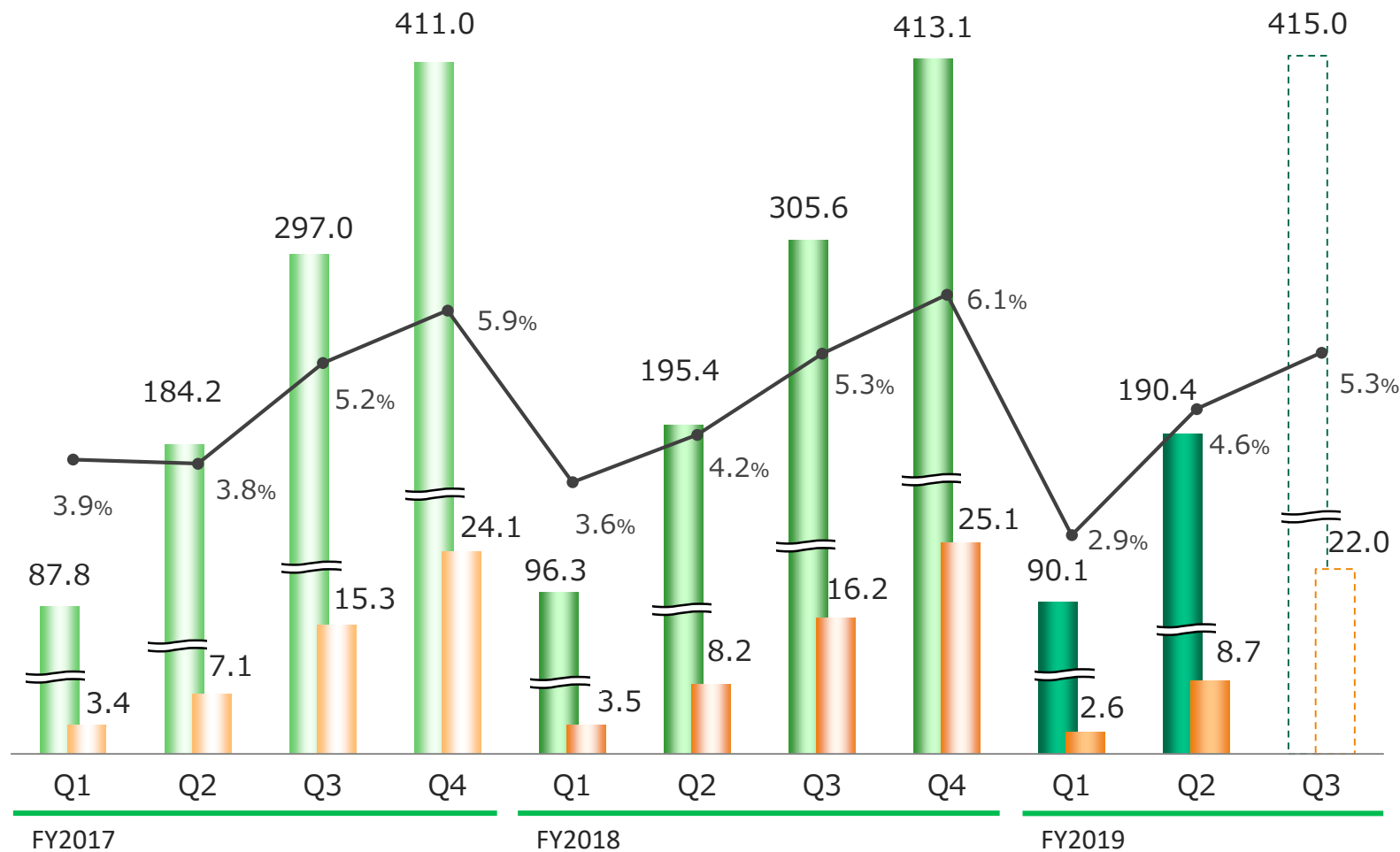
LME

Domestic basis
of lead price



Net sales, Operating income, Op. income ratio

(Billion yen)



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