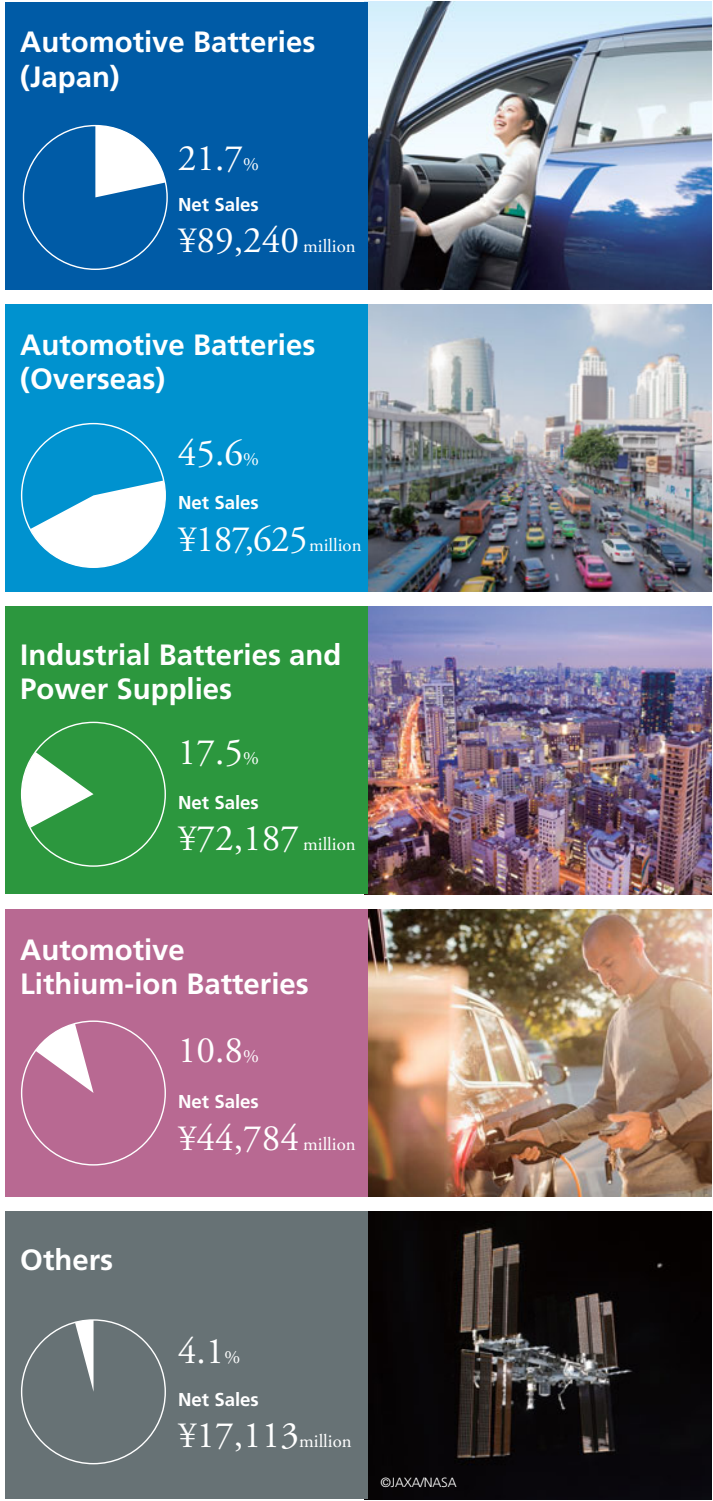


At a Glance

In fiscal 2017, we worked on developing new products and new technologies, boosting production capacity and actively expanding sales efforts to respond to market environment changes and the expansion of demand.

Business operation



Automotive Batteries (Japan)



Fiscal 2017 (fiscal year ended March 31, 2018)

Sales expand in keeping with rising demand for EN batteries* and storage batteries for use in cars with start-stop systems

In fiscal 2017, total domestic demand in the automotive battery market increased by about 3% over the previous year, mainly due to strong new car production figures. In this environment, domestic net sales of our automotive battery business were 89,240 million yen (up 21,642 million yen year on year), and operating income was 6,143 million yen (up 466 million yen year on year).

Major factors in the increase were a sales boost due to our acquisition of Panasonic's domestic lead-acid battery business, the fact that sales of EN batteries for new cars continued to be strong following on from the previous year, and an increase in sales of replacement lead-acid batteries for cars with start-stop systems. Profits increased despite the rise in the price of lead, our major raw material, due to the impact of the Panasonic acquisition.

One of the major initiatives in fiscal 2017 on the organizational side was the reorganization of the Group in April with the integration of domestic and overseas divisions, in order to establish a framework that provides a one-stop response to customers who operate on a global scale. With regard to development and sales, we released the new ECO.R Revolution product as part of our core model ECO.R series, in response to increasing demand for replacement batteries in cars with start-stop systems. In December we also restructured the ECO.RENJ series with EN batteries for Japanese car models, in view of the fact that car manufacturers with global procurement tended to equip more of their Japanese cars with batteries that correspond to the European Norm (EN) standards. We expanded our lineup to meet the demand for EN batteries that is expected to grow significantly in scale.

Fiscal 2018 (fiscal year ending March 31, 2019)

Responding to domestic demand with new products and new technologies also contributes to growth of overseas business

We expect the total demand in the automotive battery market in Japan to remain at about the same level as in the previous year. It is likely that the ratio of EN batteries for new cars and replacement batteries for cars with start-stop systems will further increase.

Under these circumstances, we will work to further strengthen our customer response that was enhanced through the unification of domestic and overseas divisions. In addition to continuing to promote sales of EN batteries to car manufacturers, we will also keep focusing on strengthening response to the rising demand for replacement batteries in cars with start-stop systems. Meanwhile, we will respond properly to fluctuations in the lead market.

We will also intensify collaboration with GS Yuasa Energy Co., Ltd. established after the acquisition of Panasonic Corporation's lead-acid battery business and we are looking into ways of optimizing its production system.

As a result of these initiatives, we are forecasting net sales of 94.0 billion yen (up 4,760 million year on year) and operating income of 6.2 billion yen (up 57 million yen year on year) for fiscal 2018.

* EN battery
A unified standard battery for 30 European countries belonging to the CEN (European Committee for Standardization), CENELEC (European Committee for Electrotechnical Standardization) and ETSI (European Telecommunications Standards Institute)

S

Strength

O

Opportunity

• Advanced development supported by collaboration with automakers

• Technologies accumulated over 100 years

• Full lineup of products, ranging from general to high-performance batteries of all sizes

• Disaster-ready production and supply system

Strengthen organizational cooperation between domestic and overseas units and build a more stable supply system.

W

Weakness

T

Threat

• Lower cost competitiveness

Strive to improve cost competitiveness by building an optimal production system and promoting rationalization.

• Increased number of cars with EN (European Norm) compliant batteries

• Increased demand for cars with start-stop systems

Strengthen cooperation with car manufacturers and pursue development ahead of competitors.

• Falling demand for automobiles in Japan due to demographic shift

• Entry of overseas battery manufacturers into the Japanese market

• Falling sales prices due to price competition

While aiming to establish an optimal production framework, we will also work with car manufacturers to promote product sales that meet the needs of each country.

TOPICS

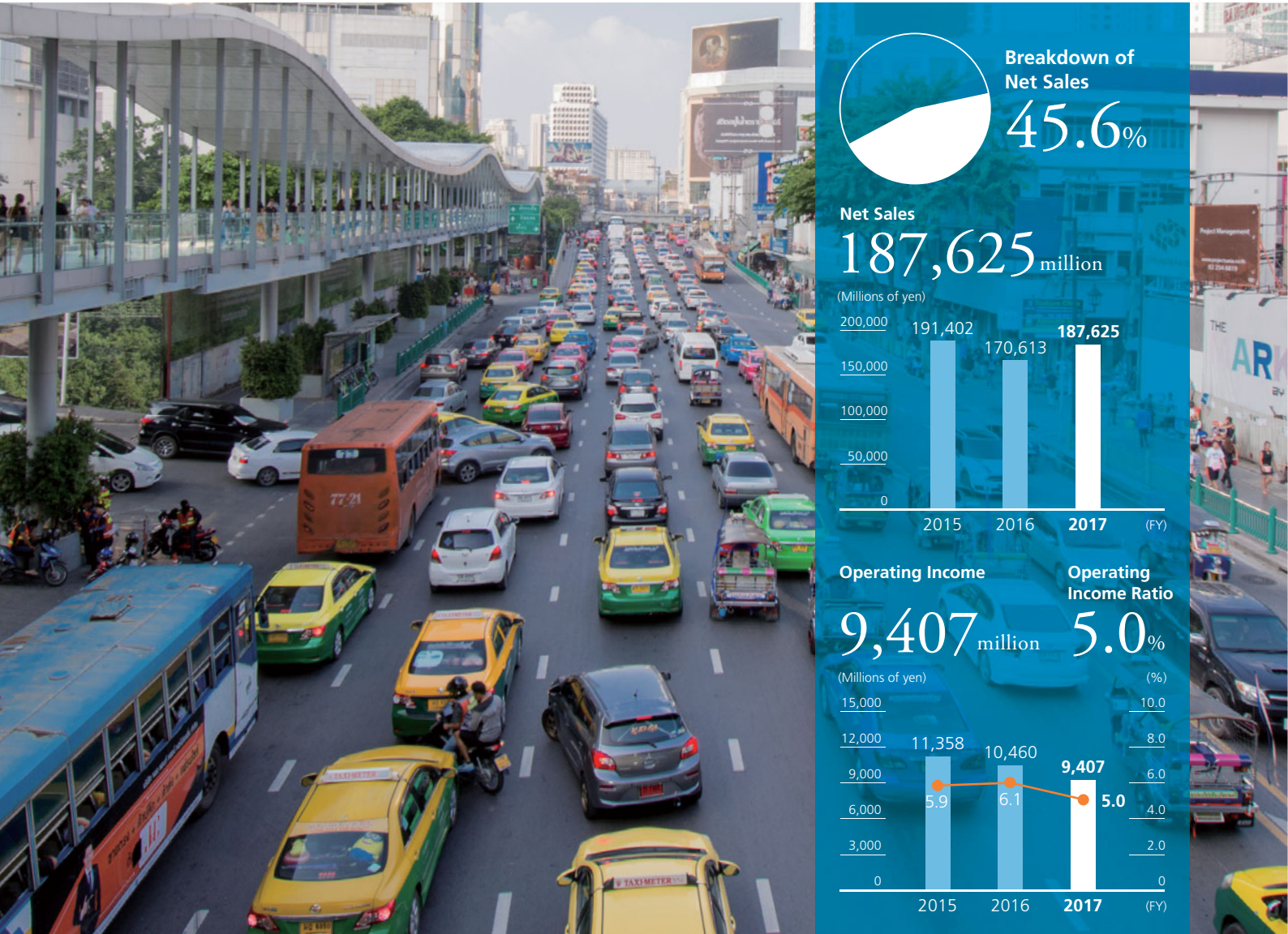
Expanded core model ECO.R lineup of replacement batteries

The ECO.R Revolution battery incorporates new technology which was developed based on collecting numerous used storage batteries from cars with start-stop systems and carefully analyzing their deterioration status. As a result, the idling stop performance life of the new battery model is over 200%* better than with conventional products. This means that the better fuel economy of such cars can be maintained until the end of the service life of the battery. We also revamped the ECO.R ENJ series of EN compliant batteries which are well suited to the Japanese climate and meet JIS safety requirements. The greatly expanded battery lineup is suitable not only for use as auxiliary batteries in hybrids but also as starter batteries for regular vehicles.

* As compared to the M-42 type



Automotive Batteries (Overseas)



Fiscal 2017 (fiscal year ended March 31, 2018)

Increased sales in Southeast Asia boost net sales

Overseas sales of our automotive battery business in fiscal 2017 totaled 187,625 million yen (up 17,012 million yen), and operating income decreased to 9,470 million yen (down 1,052 million yen year on year). The main reasons for the increase in net sales were increased sales in Southeast Asia, as well as the impact of the favorable yen exchange rate. Operating income decreased due to the impact of the soaring price of lead, our main raw material.

Main initiatives in fiscal 2017 in the field of automotive lead-acid batteries mainly for the European and Chinese markets were the development of lead-acid batteries for charge control vehicles and vehicles with start-stop systems produced and used overseas, and the start of selling new products in Turkey and China. In the field of lead-acid batteries for motorcycles, production of mid-sized motorcycles is expanding in Southeast Asia. In response, we expanded our lineup by embarking on the development and production of medium-capacity valve-regulated lead-acid batteries for such motorcycles, as well as the development of valve-regulated lead-acid batteries for commuter bikes and cars with start-stop systems in India. In the field of industrial lead-acid batteries, we established a production framework for Southeast Asia at the Vietnam factory and pushed ahead with the development of lead-acid batteries for battery-powered forklifts, for which global demand is on the rise.

In addition, by sharing manufacturing and sales know-how from Japan and examples of initiatives at overseas sites, we worked to improve profitability and strengthen our existing overseas sites.

Fiscal 2018 (fiscal year ending March 31, 2019)

Meeting demand for start-stop system car lead-acid batteries while also exploring new business opportunities

In the field of automotive lead-acid batteries, we expect demand for batteries for cars with start-stop systems to expand, especially for new cars which is one of our areas of expertise in Europe and the ASEAN region. We will of course continue to pay attention to changes in demand trends due to the tightening of environmental regulations in Europe. With regard to motorcycle lead-acid batteries, demand is expected to keep rising in India.

Given these circumstances, we intend to firmly maintain our leading position in Asia as well as aiming for strong performance in the global market. In the field of automotive lead-acid batteries we will further enhance our production framework in China, Turkey and elsewhere. We are also preparing to establish ourselves in markets that are as yet new to us, such as Africa, the Middle East, the Commonwealth of Independent States (CIS), and East Europe. In the field of lead-acid batteries for motorcycles, we are strengthening our production framework to meet demand in the huge Indian market, and we are establishing a sales promotion structure for lead-acid batteries for cars with start-stop systems in the ASEAN region.

As a result of these initiatives, we are forecasting net sales of 220 billion yen (up 32.275 billion yen year on year) and operating income of 10.5 billion yen (up 1.093 billion yen year on year) for fiscal 2018.

- High market share and brand power
- Trusted by customers with regard to technology and quality
- Collecting and utilizing quality information
- Broad lineup covers a wide range from high-performance to lower priced products.

Further strengthen mutual supply cooperation and sharing of technical information among sites in Japan and overseas.

S
Strength

O
Opportunity

- Increased domestic and overseas demand for batteries designed for cars with start-stop systems
- Economic growth in developing nations such as India and the Mekong economic region
- Demands placed on storage batteries are changing

While boosting sales on the European market, we also expand our manufacturing capacities and sales in India.

- Low brand recognition in areas where we have a low market share
- Lower cost competitiveness

We will continue to introduce resources to areas with low market share (ASEAN countries without a GS Yuasa site, Africa, the Middle East, the Commonwealth of Independent States (CIS), East Europe and Latin America.).

W
Weakness

T
Threat

- Entry of overseas battery manufacturers into the Japanese market
- Falling sales prices due to price competition
- Stricter regulations for lead in Europe and North America
- Emergence of lithium-ion batteries as an alternative to lead-acid batteries

We will promote the introduction of new products and work to optimize the production framework.

TOPICS

Bolstering production capacities in response to rapid expansion of the Indian market

In order to respond to the expansion of worldwide demand for lead-acid batteries, we are not only building new plants in Turkey and China (see “Special Feature” on p. 27–28) but also increasing production capacity at existing plants.

The remarkable expansion of the Indian market is a case in point. In the near future, it is expected that its motorcycle market will become the world’s largest. In anticipation of this development, we began to establish a production framework for lead-acid batteries for motorcycles in India from early on and have been boosting its production capacity. By fiscal 2021 we intend to reach a production capacity of seven million units per year, which is about three times the current level and which should further enhance our market share.



Our Indian subsidiary Tata AutoComp GY Batteries Pvt. Ltd.

Industrial Batteries and Power Supplies



Fiscal 2017 (fiscal year ended March 31, 2018)

Decreased income and profit due to slow sales of industrial lead-acid batteries, higher lead prices, etc.

Net sales in our industrial battery and power supply business in fiscal 2017 totaled 72,187 million yen (a decrease of 578 million yen year on year), and operating income was 6,917 million yen (a decrease of 1,784 million yen year on year).

In addition to sluggish demand for replacement industrial lead-acid batteries, the volume of large-scale orders for industrial lithium-ion batteries hit a plateau. Sales of power conditioners for self-consumption type solar power generation equipment did not reach the planned levels, which also contributed to the decline in revenue.

By contrast, batteries for forklifts, automatic guided vehicles and other motor-driven vehicles reflected the solid rise in demand. In addition, efforts by the manufacturing and sales divisions to shorten lead times and enable a more flexible shipment response have helped us to capture demand with fast delivery times. On the development side, we expanded the lineup of power conditioners with storage batteries which contributed to our forward-looking performance on environment-related markets.

However, operating income was strongly affected by the drop in sales volume and by the pronounced rise in the price of lead, our major raw material.

Fiscal 2018 (fiscal year ending March 31, 2019)

Bolstering our lineup of market friendly products leads to increased sales of industrial lithium-ion batteries

The demand for batteries and power supply equipment to serve for power backup in social infrastructure applications, as well as the demand for lead-acid batteries for forklifts and similar remains strong. Among social infrastructure applications, we are seeing a shift away from conventional lead-acid batteries to Industrial lithium-ion batteries which require less space and offer superior charge/discharge performance. This trend can be expected to accelerate further in future.

The solar power generation market is also undergoing a major transformation, moving from the feed-in tariff system to self-consumption type solar power generation equipment. If this persists, stable demand can be expected to develop, regardless of factors such as subsidy schemes and the purchase price for power. In order to meet this demand, we are actively readying products such as power conditioners with storage batteries. We will also establish an overseas sales headquarters and strengthen overseas development of industrial lithium-ion batteries.

For improving profits, we will raise the price of lead-acid batteries, and we are building a business model that allows cost fluctuations in raw material, logistics etc. to be appropriately reflected in the selling price.

As a result of these initiatives, we are forecasting net sales of 75.5 billion yen (up 3.3 billion yen year on year) and operating income of 7.3 billion yen (up 400 million yen year on year) for fiscal 2018. Going forward, we will continue to steadily promote the expansion of our business domain through an evolved process of creating products and services with a clear focus on the next generation.

- High share of the industrial battery and power supply markets in Japan
- Stable brand awareness in Japan
- Strong reputation for reliability and a broad product lineup
- Extensive sales and service network

Establish a comprehensive structure that goes beyond products to encompass services as well.

S
Strength

- Growing use of renewable energy as society shifts to low-carbon power sources
- Increasing number of electric vehicles due to environmental regulations
- Advances in services from using the Internet of Things

Expand the industrial lithium-ion battery business through a commitment to renewable energy related demand, and enhance service sophistication by utilization of IoT and AI.

O
Opportunity

- Comparative slowness responding to global market trends
- Insufficient inter-group communication due to organizing divisional headquarters according to product lines

Promote active communication through integration of sales departments and promptly respond to changes in the global market.

W
Weakness

- Intensifying competition, especially for industrial lithium-ion batteries
- Rising prices for raw materials
- Fluctuations in exchange rates

Build a resilient business model that allows cost fluctuations in raw material, logistics, etc. to be appropriately reflected in the selling price and that is not unduly affected by external factors.

T
Threat

TOPICS

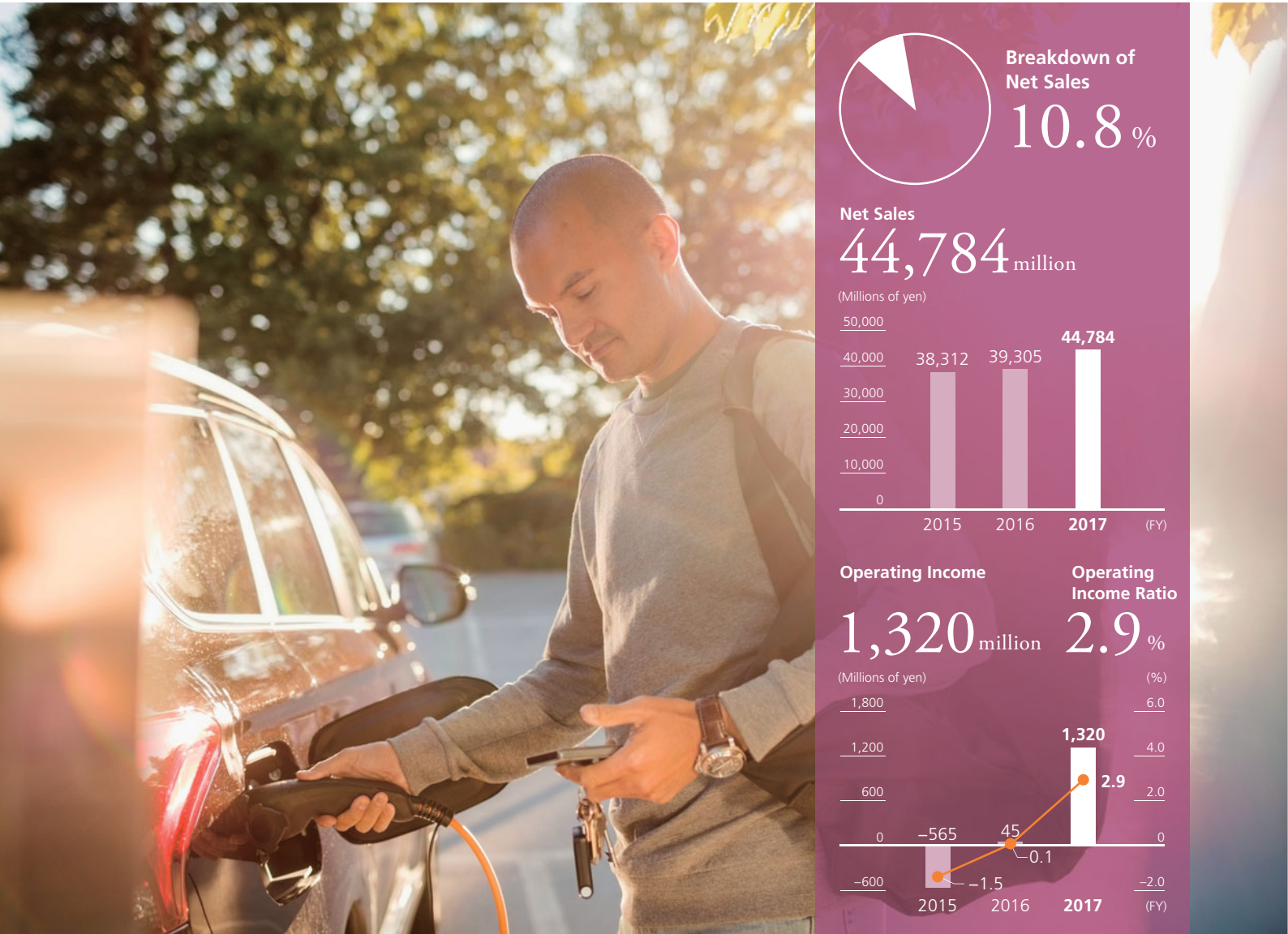
Initiatives in renewable energy

In recent years, the construction of wind power plants has been increasing in areas with good wind conditions, such as Hokkaido, Tohoku and Kyushu, and the demand for storage batteries as a means of stabilizing output fluctuations caused by natural conditions is increasing.

Therefore we are intensifying our sales efforts for storage systems using industrial lithium-ion batteries, targeting very large wind farms in particular. In addition to expanding our industrial lithium-ion battery business, we are also working on further elevating quality and ensuring cost competitiveness.



Automotive Lithium-ion Batteries



Fiscal 2017 (fiscal year ended March 31, 2018)

Achieve profit for the second consecutive year by proactively promoting sales expansion and cost reduction

Net sales of our automotive lithium-ion battery business in fiscal 2017 totaled 44,784 million yen (up 5,478 million yen year on year), and operating income was 1,320 million yen (up 1,274 million yen year on year). We remained in the black for two consecutive years, in spite of increased development costs and other factors.

The positive result was due in part to increased sales of lithium-ion batteries for plug-in hybrid electric vehicles (PHEVs) of domestic and European manufacturers by Lithium Energy Japan, and strong sales of car models for which Blue Energy Co., Ltd. is supplying lithium-ion batteries purpose-designed for hybrid electric vehicles (HEVs).

In fiscal 2017, the development division established a collaborative framework with related departments and continued to develop products for all types of eco-friendly vehicles. In the manufacturing division, we promoted cost reductions by reducing material costs and strengthening management of direct labor costs which contributed to the improvement of profitability.

In addition, we decided to build a factory in Hungary in order to produce lithium-ion starter batteries for cars, a product category where demand is expected to grow especially in Europe with its high awareness of environmental issues.

Fiscal 2018 (fiscal year ending March 31, 2019)

Promote the exploration of new markets to bolster revenue

The market for eco-friendly vehicles, electric vehicles and PHEVs will grow due to vehicle type regulations, but for the time being we are expecting HEVs with their excellent balance of environmental performance and price to remain a focal point.

In this climate, Blue Energy Co., Ltd. is responding flexibly to contacts from multiple automobile manufacturers. Lithium Energy Japan is building up production capacity for lithium-ion batteries (cells) to be used as starter batteries for cars. On the development side, we are boosting our technological strength through integration and unification, and we are pursuing research and development projects aimed at products with higher energy density. From the viewpoint of the resource depletion risk, we are also engaged in research on reuse and recycling of automotive lithium-ion batteries for other purposes, after they have reached the end of their initial service life.

As a result of these initiatives, we are forecasting net sales of 44.0 billion yen (down 784 million yen year on year) and operating income of 500 million yen (down 820 million yen year on year). Continuing to focus on quality, we will endeavor to strengthen cost control and production management and speed up investment recovery, as well as developing new markets in the automotive sector to secure profitability.

- Cutting-edge research and development
- Technologies for ensuring the safe design of high-capacity lithium-ion batteries
- Skilled human resources and business partners
- A 100-year history as a specialized manufacturer of storage batteries

Strengthen the research and development framework using our accumulated know-how, in order to accurately anticipate needs.

S
Strength

O
Opportunity

- Widespread adoption of eco-friendly vehicles
 - Increasingly strict fuel consumption regulations
 - Growing market for industrial applications
- Cultivate new markets with GS Yuasa Hungary Ltd. as a future European site and strengthen the production system of the respective business companies.

- Business partners are needed for expanding operations due to insufficient capital.
- Lack of technologies for mass production
- Development of overseas markets (non-European)

Strengthen technology development framework to further improve manufacturing technology and manufacturing capabilities.

W
Weakness

T
Threat

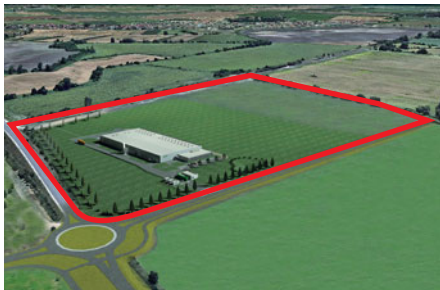
- Possibility of accidents at the production stage and accidents caused by unsafe or defective products
 - Depletion of raw materials and rising prices
 - Changing customer needs, competitors moving ahead
- Focus on strengthening research and development to enable raw materials cost reduction, realize horizontal deployment of productivity improvement activities and intensify research on reuse and recycling.

TOPICS

New lithium-ion battery plant in Hungary

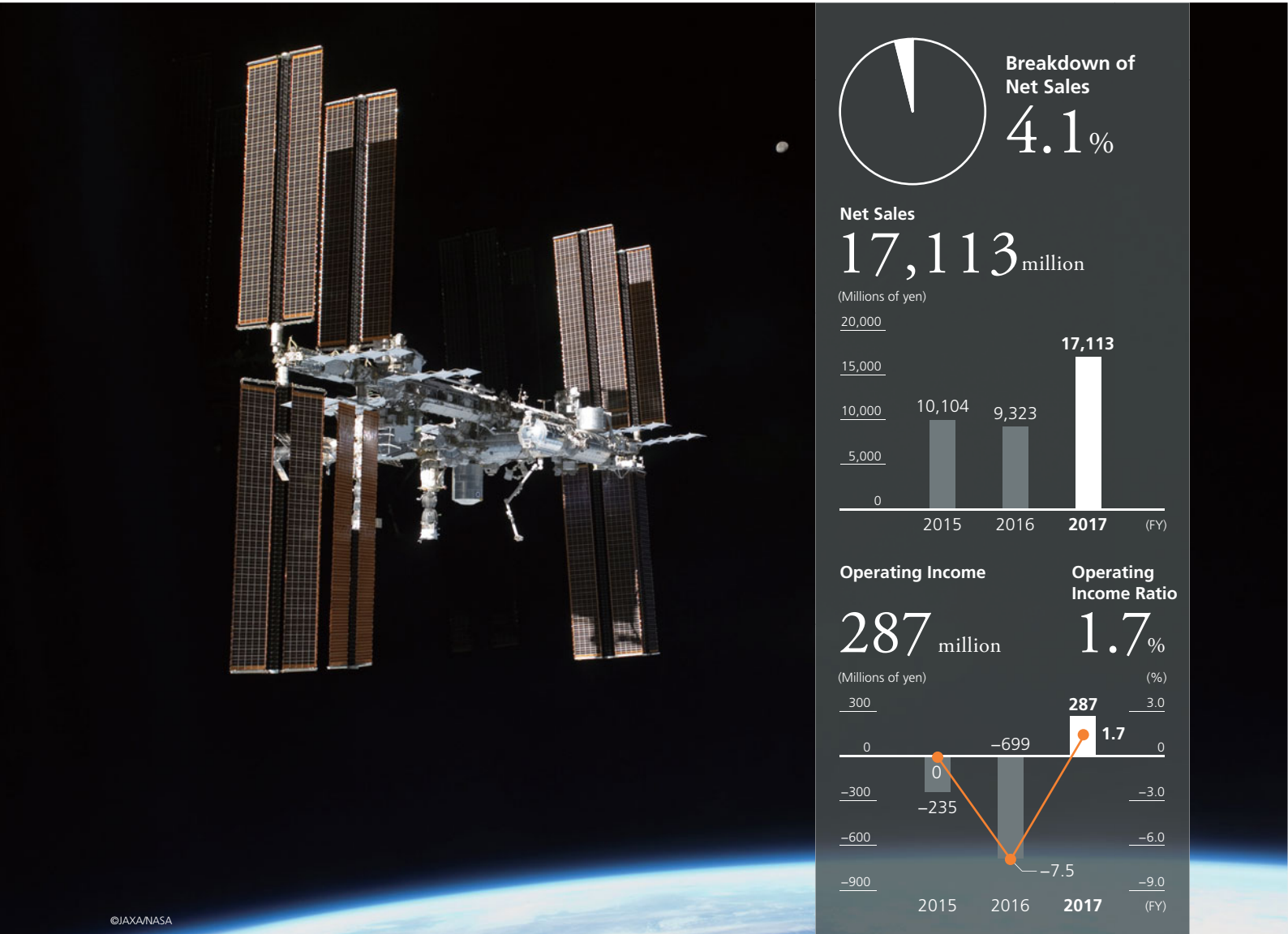
In October 2017, we established the wholly owned subsidiary GS Yuasa Hungary Ltd. in Miskolc, Hungary, where we are currently constructing a new plant for automotive lithium-ion batteries. For the time being, the plant will be using lithium-ion cells made in Japan to manufacture batteries, but we are also considering the production of lithium-ion cells at the plant in the future.

We have already secured a vast site of about 140,000 square meters, which provides the potential to develop the plant into a base for supplying batteries for various types of eco-friendly vehicles in Europe, where the tightening of environmental regulations is expected to result in a considerable rise in demand.



New plant site of GS Yuasa Hungary Ltd.

Others



Fiscal 2017 (fiscal year ended March 31, 2018)

Started mass-production of the world’s first submarine lithium-ion battery, achieving higher sales and profits

Net sales from our other business operations in fiscal 2017 totaled 17,113 million yen (up 7,790 million yen year on year), and operating income was 287 million yen (up 987 million yen year on year).

The main reason for the substantial increase in revenue is that mass production of lithium-ion batteries for submarines has been readied and launched in this term. Increased demand for replacement aircraft batteries overseas and shipments of batteries for deep water rescue vessels were further contributing factors.

In addition, our space lithium-ion batteries were adopted for the Michibiki 2 which plays a central role in Japan’s quasi-zenith satellite system, as well as for the Michibiki 3 and 4 satellites. We focused on research and development to provide the level of technical performance and quality that can withstand the harsh conditions that exist in environments such as the deep sea and space. Our intensive sales promotion activities to the respective markets have also borne fruit. On the other hand, soaring raw material prices have put a damper on business performance.

With regard to profits, in addition to the increase in sales, we recorded a substantial increase in operating income as a result of the decrease in administrative department expenses which has a company-wide effect.

Fiscal 2018 (fiscal year ending March 31, 2019)

Forecast of decreased income and profit due to change in sales composition ratio

Defense spending shows an increasing trend, and we expect stable demand for products of our Group as well. We will work to stabilize our existing business operations and promote intensive efforts to further expand growth.

In fiscal 2018, we will begin to ship the world’s first lithium-ion batteries for submarines. In addition, we will focus on research and development of various products including satellite batteries with high energy density, and we will continue to work on improving our production systems to ensure stable quality.

As a result of these initiatives, we are forecasting net sales of 17.0 billion yen (down 613 million yen year on year). Operating income is expected to drop, mainly due to a change in sales composition ratio. Company-wide expenses are also expected to rise.

- Advanced capabilities in and close cooperation between manufacturing, development, engineering and sales operations
 - Safe, reliable and high-quality products
 - Group-wide use of the latest technologies that have high barriers to entry
 - Extensive experience in specialized applications
- Stabilize production and quality, and work on product development, including the planting of technology seeds for the next generation.

S
Strength

O
Opportunity

- Growing requirement for high-capacity lithium-ion batteries
 - Increasing demand for lithium-ion batteries for submarines
 - Increasing demand for aircraft lithium-ion batteries
 - Japan’s easing of restrictions on exporting arms
- Realize a stable mass production system and work to strengthen sales promotion activities and export business based on thorough market analysis.

- Weak brand presence outside Japan
 - Large investments needed for R&D and facilities
- Review sales framework for facilitating overseas expansion.

W
Weakness

T
Threat

- Depletion and rising prices for raw materials
 - Intensifying competition with rival companies
 - Commoditization of lithium-ion batteries
- In response to the sharp rise in raw material prices, we aim to secure appropriate volumes and have begun efforts to hedge risk.

TOPICS

Michibiki 2 utilizes lithium-ion batteries of our Group

Following the currently operating Michibiki (first quasi-zenith satellite), the GS Yuasa Group’s space lithium-ion batteries were also installed in the Michibiki 2 satellite. Satellites are becoming important also as tools for a new social infrastructure, performing tasks such as data acquisition, communications etc. Related demand in this area is expected to rise in future.



The first quasi-zenith satellite Michibiki