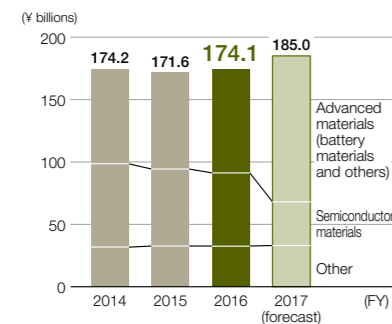


Materials Business

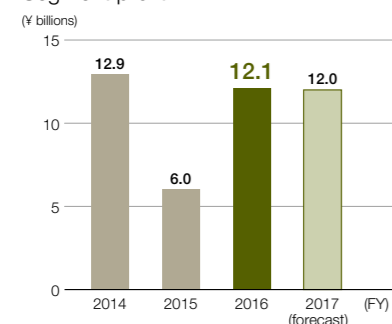
Since the 1960s, SMM has been leveraging the strengths of its mineral resources and smelting and refining businesses to develop its materials business. In recent years, we have been carrying out structural reform centered on advanced materials, and making battery and crystal materials the new pillars of the business. Going forward, we will focus on realizing a stable revenue base.

Net sales



In FY2016, production volume and sales volume increased year-on-year due to completion of investment in increasing battery and crystal materials production. In FY2017, we expect net sales to increase due to factors such as increased battery materials sales and powder materials market recovery, despite the decrease following our withdrawal from the lead frame business.

Segment profit



Segment profit increased year-on-year due to the effects of completion of investment in increasing battery and crystal materials production, and other factors.

Business environment and priority measures for the 2015 3-Year Business Plan

FY2016 saw a generally strong environment surrounding the electronics materials industry. Demand grew for electric vehicle (EV) battery components, an area SMM is focusing on, alongside the expansion of the EV market. Furthermore, although demand for SAW filters used in smartphones expanded due to the growth of multiband, high-speed communications, a decrease in smartphone production in China and other countries had an impact on the market. Demand for components for devices such as PCs and LCD televisions also fell.

Regarding our outlook for the business environment, we forecast continued growth in demand for battery materials. We also expect the demand for crystal materials for SAW filters to continue to grow, but factors that could contribute to a change are emerging, so we will keep a close watch on market movements and establish a production structure that enables a quick response.

In our materials business, profit contribution from expanded production of battery and crystal materials, and continuous creation and adaptation of next-generation products have been positioned as priority measures of our 15 3-Yr Business Plan.

FY2016 initiatives

We invested in increasing the production of battery materials at the Isoura Plant and Harima Refinery in response to growing demand, building a 1,850-ton monthly production structure. We also invested in increasing the production of crystal materials in a similar way, realizing a 300,000-piece monthly production structure. However, the sales volume of packaging materials decreased following a fall in demand. Furthermore, as part of further structural reform focused on market growth potential,

we also decided to withdraw from the lead frame business. As a result of these initiatives, the materials segment's net sales were ¥174.1 billion (up 1.5% compared to FY2015) and profits were ¥12.1 billion (up 102% compared to FY2015).

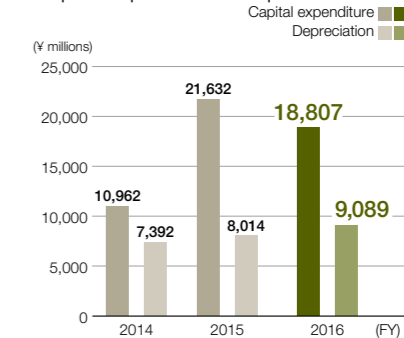
FY2017 priority measures and the outlook going forward

We will establish a battery materials production structure that will contribute to revenue by maintaining a full monthly production capacity of 1,850 tons. We also plan to continue investing to increase production, building a 4,550-ton monthly production structure in FY2018. We will enhance our 300,000 piece-per-month crystal material production structure, and will watch market movements while considering the next step, that of building a 400,000-piece monthly production structure. Furthermore, we will promote the optimization of our complete production structures for both battery and crystal materials by increasing efficiency, reducing costs, and other measures. Regarding the continuous creation and adaptation of next-generation products, priority measures in our 15 3-Yr Business Plan, we are strengthening marketing activities at the same time as collaborating with the Technology Division to advance research and development.

Regarding our withdrawal from the lead frame business, we have completed the transfer of our overseas business through sales to Chang Wah Electromaterials Inc. (Taiwan) in March 2017, and Jih Lin Technology Co., Ltd. (Taiwan) in June 2017.

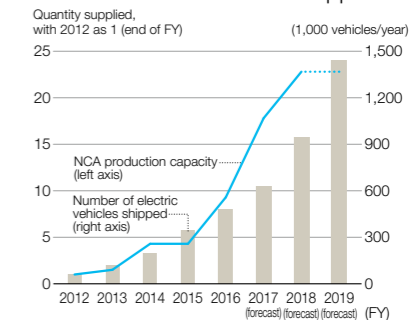
With respect to FY2017 segment performance, we are expecting net sales of ¥185.0 billion (up 6% compared to FY2016) and profits of ¥12.0 billion (down 1% compared to FY2016) where the decrease in earnings due to our withdrawal from the lead frame business will be offset by the enhancement of our battery materials business.

Capital expenditure / depreciation



SMM and Sumiko Energy Materials Co., Ltd., have increased their production capacity for battery materials. Furthermore, Sumiko Kunitomi Denshi Co., Ltd., has also increased production capacity for lithium tantalate substrate and other materials for SAW filters.

NCA production capacity and number of electric vehicles shipped



Source of EV shipped units: B3 Report

It is forecast that demand for electric vehicles will grow significantly going forward. SMM is increasing production of NCA, a cathode material, in accordance with this growth.

Harumasa Kurokawa

Director,
Senior Managing Executive Officer,
General Manager of Materials Div.

Topic Establishing a production structure for increasing battery material production in line with growing demand for electric vehicles

In our battery materials business, we increased production in response to a rise in demand. In 2014, we decided to increase our production structure for lithium nickel oxide (NCA), primarily used as cathode material in batteries for electric vehicles (EV), from 850 tons/month to 1,850 tons/month. We also launched a new business site with the start of operations at the Sumiko Energy Materials Co., Ltd. Naraha Plant in Naraha, Futaba County, Fukushima Prefecture, and achieved the 1,850-ton monthly production structure in 2016.

Following this, in October 2016, we decided to further increase our production to a 3,550-ton monthly production structure and the precursor processing equipment that makes up the upstream process is currently being installed at Harima Refinery. At Harima

Refinery, we are also increasing production of nickel sulfate as a raw material, and there will be various advantages from installing the process at the same site such as technological collaboration and reduced logistics costs. Installation is progressing with the aim of completion in early 2018.

Then, in July 2017, we decided to further increase our production to a 4,550-ton monthly production structure. This will enhance the capabilities of the Isoura Plant and it is scheduled for completion in mid-2018.

The demand for EVs is growing rapidly, and the key to their becoming mainstream will be increasing the distance they can cover on one charge, and cathode materials play a major role in this. Going forward, we will continue to further develop this technology, and contribute to environmentally-friendly vehicles by providing high-performance products.



The Harima Refinery. A new battery materials precursor production plant is under construction.

Strengths of the materials business and activities that support growth potential

Strength 1 Rolling out products leveraging core technologies

SMM is building a profitable product portfolio leveraging its core technologies, while dedicating effort to products in fields with growing demand—fields related to the environment and energy, as well as information communications. When formulating strategies, we consider how each product fits into the overarching strategy for the materials business, and then make decisions for each business domain.

Strength 2 Relationships with market-leading customers

We take information provided by customers and connect it to making even better products by reflecting it in quality improvements. Collaboration with customer R&D departments, SMM's smelting and refining business, and others, enables us to produce a stable supply of products that meet customer needs.

Strength 3 Co-existence with local communities

We are working to maintain employment levels and moving forward with restructuring our business by shifting to growth products and adopting new business projects at each business site in balance with securing profitability for the materials business.

Strong face-to-face relationships with customers enables a stable supply of products and leads to next-generation product development

Fully understanding what the customer wants in materials

Materials business products are supplied primarily to customers in the electronic components industry, where they are processed into components which are incorporated into electronic devices such as smartphones, electric vehicles, and other products and delivered to the businesses and consumers that are the end users. The daily evolution of the final products is seen in the increasing sophistication of smart phones and improving performance of EVs, but the connection to these finished products lies not with SMM, but with our customers. Therefore, to conduct our business we need to communicate closely with these customers, gain a full understanding of how upcoming products will differ from current ones and what functions and materials are needed to achieve this, and develop the next generation of materials.

An example of this is in our battery materials business where SMM sends not only the sales representative, but also production-related engineers and battery R&D personnel for frequent discussions with our customer's production engineers and R&D personnel. Also, in addition to visiting customers, we



also invite customers to view SMM's processes and consider matters together.

Regular face-to-face meetings and conversations enable us to collect a broad range of information, such as the specifications and time frames required to develop next-generation products. It also helps us to see things from the customer's perspective, and we also get suggestions on making our work processes more efficient.

The materials business is building close relationships with customers to ensure stable product sales and keep us responsive to the next generation of products.



(Top) Sumiko Energy Materials Co., Ltd., an NCA production site, and (bottom) research and development on fundamental technology related to battery materials at Battery Research Laboratories

SMM products in daily life

