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Energy Storage Devices and Systems

Basic Policies of the 2018 Medium-term Management Plan

Establish presence in global markets through increased scale

Strengths

- Business foundation in the lead-acid battery market, where there is an entry barrier for new manufacturers
- A wide array of material technologies

Weaknesses

- Failure to fully reap M&A synergies

Opportunities

- Needs in key industries such as tele-communications and automotive industries
- Rising interest for the renewable energy

Threats

- Possibility of global M&As
- Post-lead-acid batteries

M&A/Alliance strategies

The Energy Storage Devices and Systems Business will focus on “global growth (increase production sites and sales offices)” and will put business in Europe and ASEAN on track.

ROIC (FY2017)

1.5% (FY2018 Target: 10%)

ROIC remained at a low level in fiscal year 2017, reflecting business expansion through M&A and the effect of rising lead prices

In fiscal year 2018, we plan to reap M&A synergies while rationalizing operations.

TSB

TSB operates an automotive and industrial lead-acid battery business, mainly in Southeast Asia. It has an extensive product lineup and sales network, and commands large shares of the Thailand and Southeast Asia markets with its well-known “3K” brand.

HCTD

Hitachi Chemical Asia (Thailand) Co.,Ltd.

FET

FIAMM Energy Technology S.p.A.

HCEN

Hitachi Chemical Energy Technology Co.,Ltd.

Fiscal Year 2017 Progress

The basic policy of the Energy Storage Systems Business is to “establish a presence in global markets through increased scale.” By fiscal 2017, we had successfully acquired a global network of manufacturing bases, brands and business flow in Europe and ASEAN through M&A.

In fiscal 2017, we acquired shares in TSB, a Thailand battery manufacturer, laying the foundations to strengthen our automotive and lead-acid storage battery business for industrial use in Southeast Asia. Meanwhile, in the domestic automotive battery business, we were able to expand sales of ISS-equipped vehicle batteries. We put in place a framework that will enable us to demonstrate synergies with TSB, HCTD, FET and HCEN over the globe including Japan. We completed the “Smart Community Demonstration Project in the Federal Republic of Germany” held in the German city of Speyer as one of NEDO (New Energy and Industrial Technology Development Organization)’s demonstration projects in Europe. We demonstrated that our integrated system improved the self-consumption rate of electricity produced by photovoltaic panels and also helped reduce CO₂ emissions.

However, the effects of rising prices for lead raw materials and the appreciation of the Taiwan dollar led to lower profitability. To address this, we worked on building a business base that is less sensitive to raw material prices, especially lead prices.

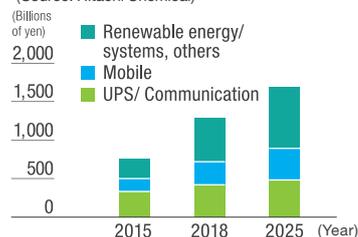
Key Measures for Fiscal Year 2018

Capturing demand in growth areas of industrial use business

In our global operations, we will reap synergies with HCEN and FET and pursue initiatives to increase profitability. We will also increase sales of next-generation monitoring system operated by storage batteries (Gen.2.0) to customers such as data centers and telecommunication base stations. In capacitors business, we will put the transition to high performance capacitors on track, continuing to focus on medical, social infrastructure and energy fields.

We will also invest resources into new batteries such as nickel-zinc batteries as an alternative to lead-acid batteries, to meet new market needs.

Forecast market for industrial batteries
(Source: Hitachi Chemical)



Outputs and Strategies of the 2018 Medium-term Management Plan

FY2017 Progress	Initiatives for FY2018	Goals for FY2018
Overall <ul style="list-style-type: none"> Increased business scale in Europe and ASEAN through M&A (Outside Japan revenue ratio 60%) Promoted to establish a business foundation that is less susceptible to influences from fluctuations in raw material prices Insufficient synergy effect 	<ul style="list-style-type: none"> Increase the profitability of TSB and FET by demonstrating synergies (improved manufacturing, etc.) Assess the development of lithium-ion batteries and new batteries through a project framework 	Regional strategies Manufacturing synergy (Optimization of bases) Put the new industrial and automotive battery businesses in Europe and ASEAN into on track Sales strategies Sales synergy Utilize branding and maximize cross-selling Product strategies Development synergy (High value-added products) <ul style="list-style-type: none"> Industrial: Development of new products that generate synergy Automotive: Expansion of our ISS batteries in Europe Capacitors: Shift to high-performance products
Industrial batteries <ul style="list-style-type: none"> Increased sales in the areas of mobile devices and UPS/telecommunications Launched a monitoring system of battery conditions (current, voltage, temp. etc.) 	<ul style="list-style-type: none"> Strengthen the global supply system Shift to maintenance services through the monitoring system 	
Automotive batteries <ul style="list-style-type: none"> ASEAN: acquisition of new sales channels/brands Achievement of the target of high performance batteries for ISS vehicles 	<ul style="list-style-type: none"> TSB: Appropriate pricing and transfer of Japanese manufacturing technology FET: Expand our market share in Europe by sharing the Company's ISS technology 	
Capacitors <ul style="list-style-type: none"> Continuation of product shift through the shift of resources to high functional products 	<ul style="list-style-type: none"> Put the shift to high performance capacitors on track (continue focusing on medical, social infrastructure and energy fields) 	

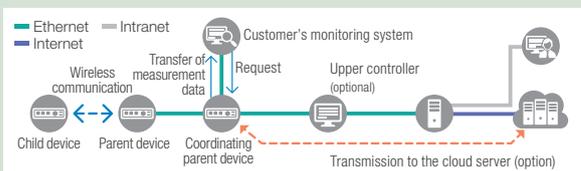
Goals for the 10-year Strategy

To become one of the global top three manufacturers of automotive and industrial batteries and capacitors

Storage Battery Monitoring System

This system enables users to quickly know any battery problems in important facilities such as telecommunication base stations and to reduce maintenance man-hours. Hitachi Chemical began increasing sales of the system to data centers in fiscal 2016 and has introduced a new product (Gen2.0) in fiscal 2018. The characteristics of the new product compared to the conventional product (Gen 1.0) are as follows.

- Enables measurement of the capacity of lead-acid storage batteries for telecommunications and UPS in cells (in 2V cells)
- Improves frequency change function in the event of communication difficulties and otherwise improves the reliability of wireless communication



Capture global demand in automotive battery business

To enable us to demonstrate Group synergy, we will take advantage of FET's sales networks and brand strength in Europe, while at the same time seeking to expand our share of the European market by rolling out our environmentally friendly ISS battery technologies to meet strong demand for environmentally friendly products. We will also introduce the Group's manufacturing technologies to TSB and seek to improve its business performance in line with market expansion in the ASEAN region.

Meanwhile, Hitachi Chemical will work on expanding sales of European Norm (EN) batteries as well as ISS batteries.

Product examples

Tuflong G3

ISS vehicles are rapidly expanding, especially in Japan and Europe. Hitachi Chemical's Tuflong G3 battery for ISS vehicles won the Nippon Brand Award category in the 14th 'CHO' MONODZUKURI Innovative Parts and Components Awards in November 2017, in recognition of its durability that helps improve fuel economy and reduce CO₂ emissions. Tuflong G3 also won the METI Minister's Award in the 17th GSC Awards in June 2018.

'CHO' MONODZUKURI Innovative Parts and Components Awards

These awards are presented by MONODZUKURI Nippon Conference and Nikkan Kogyo Shimbum, Ltd. to enterprises whose parts play a significant role in supporting Japanese industry and society, with the spotlight directed on parts and members playing a behind-the-scenes role as a source of manufacturing competitiveness

GSC Awards - METI Minister's Award

Awarded by Japan Association for Chemical Innovation (JACI) to individuals and organizations that make an outstanding contribution to green sustainability chemistry (GSC). The METI Minister's Award is awarded to individuals and organizations that have contributed to the development of industrial technology.



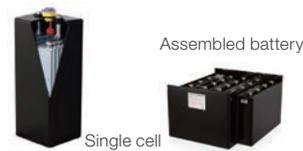
Major Products

NEDO European Verification Projects
 Hitachi Chemical is participating in three NEDO verification projects in Europe. One such project, a demonstration project conducted in the Germany city of Speyer, was completed in fiscal year 2017. This project used a hybrid storage system combining lithium-ion batteries and lead-acid batteries.



Forklift batteries

We will roll out our forklift battery technology that has been tried and tested in Japan to TSB. We will gradually start production of new batteries with better low temperature performance and battery life than TSB's conventional products.



Top Message

At a Glance

Our Strategy

Our Initiatives