Nippon Shokubai Group

(Long-term Business Plan “Reborn Nippon Shokubai 2020”)

The 2nd Medium-term Business Plan “Reborn Nippon Shokubai 2020 NEXT”

President
Yujiro Goto

May 2017

Voluntary translation for readers’ convenience
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   “Reborn Nippon Shokubai 2020”

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   • Corporate Strategy
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   • Target for 2020

Explanation of acronyms

LTP : Long-term business plan
MTP : Medium-term business plan
AA : Acrylic Acid
SAP : Super Absorbent Polymer
EO : Ethylene Oxide

## Target for 2020

<table>
<thead>
<tr>
<th></th>
<th>Sales</th>
<th>Ordinary Income</th>
<th>ROA(^1)</th>
<th>Sales for New products(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target for FY2020 (LTP)</strong></td>
<td>500</td>
<td>50</td>
<td>9.5%</td>
<td>47</td>
</tr>
<tr>
<td><strong>Target for FY2016 (1st MTP)</strong></td>
<td>393</td>
<td>34</td>
<td>8.5%</td>
<td>29</td>
</tr>
</tbody>
</table>

1 Return on assets (ROA), ratio of ordinary income to total assets
2 Total sales of products launched within the last five years, excluding SAP

### Business Policies

- Safe, reliable production activities
- Highlighting profitability over sales

### Strategies

- Strengthening existing and core businesses
- Establishing new businesses and launching new products to the market quickly

Assumptions:
- Domestic naphtha price 65,000yen/kl,
- Exchange rate 100yen/US$, 130yen/EUR
2. Review of the 1st MTP (FY2014-2016)
2. Review of the 1st MTP (FY2014-2016)

**Trend of Financial Results** (Unit: billion yen)

- **Sales (MTP,LTP)**
- **Ordinary Income (MTP,LTP)**
- **Sales (Result)**
- **Ordinary Income (Result)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (MTP,LTP)</th>
<th>Ordinary Income (MTP,LTP)</th>
<th>Sales (Result)</th>
<th>Ordinary Income (Result)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>360</td>
<td>32</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>FY2015</td>
<td>375</td>
<td>34</td>
<td>34</td>
<td>50</td>
</tr>
<tr>
<td>FY2016</td>
<td>378</td>
<td>32</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>FY2020</td>
<td>393</td>
<td>32</td>
<td>294</td>
<td>500</td>
</tr>
</tbody>
</table>

- **ROA**
  - FY2014: 7.5% → 7.3%
  - FY2015: 8.2% → 8.3%
  - FY2016: 8.5% → 5.9%
  - FY2020: 9.5%

**FY2015**
- Achieved 1st MTP target profit a year ahead (the highest profit in our history)

**FY2016**
- Unachieved 1st MTP target profit (mainly due to the severe competition in SAP business)
- Delay launching new businesses
2. Review of the 1st MTP (FY2014-2020)

To establish the 2nd MTP (FY2017-2020);

- **Business environment has become severe** in SAP business etc. from FY2016 onward.

- We are still distant from the LTP’s target for 2020 “Reborn : Renovate our corporate culture from maintaining current status to challenging to the new stage”.

We should carry out both “Survival of SAP business” and “Launch of new business for our future key driver” in order to put us back on track for growth.

※ We are continuously making every effort to implement the preventive/corrective measures in order to **gain and maintain confidence of various stakeholders** as a chemical company.

< Our commitment that we added “NEXT” in the title >

1. To pursue over again the target for “Reborn Nippon Shokubai” in this period as the NEXT step of the 1st MTP (FY2014-2016).
2. To prospect further strong growth for NEXT 10 years in 2020 by achieving the 2nd MTP (FY2017-2020).
3. The 2nd MTP (FY2017-2020) :
Mission, Management Commitment and Corporate Credo

Nippon Shokubai Group Mission

TechnoAmenity

Providing affluence and comfort to people and society, with our unique technology

Management Commitment

We conduct all of our corporate activities based upon a deep respect for humanity.
We aim at coexisting with society, and working in harmony with the environment.
We pursue technologies that will create the future.
We act on the global stage.

Corporate Credo

Safety takes priority over production.
3. The 2nd MTP (FY2017-2020) : Vision for 2025

**Vision for 2025**

An innovative chemical company that provides new value for people’s lives

**Segment** : Existing businesses, such as EO, AA/SAP etc., will be strengthened more. Performance chemicals, new energy materials, health and medical materials and/or any other new businesses* will contribute more to corporate profit. As a result, these expected businesses will be expanded much more and be higher position in comparison to the existing businesses.

*New businesses : businesses in the market which we could not enter into yet, or businesses in the market which is not formed yet.

**Area** : Accelerate business development continuously throughout the global market.

**Strength** : Employ our competencies in R&D, production technologies and marketing and maximize the synergy from such activities.
3. The 2nd MTP (FY2017-2020) : Business environment analysis toward 2025

Change in human and society

Global social issues
- Resource and energy
- Environment
- Food, water and population growth
- Health, comfort and improvement of QoL
- Innovation such as AI or IoT

Change in market needs
- Energy :
  - Energy-saving/-storage, shift to renewable energy
- Automotive :
  - Reduction of environmental burden, weight-saving
- Food, agriculture :
  - Increase of productivity and efficiency
- Medical materials, consumer goods :
  - Increase of function
- Electronic materials :
  - More functional materials
3. The 2nd MTP (FY2017-2020):
Corporate strategy

**Business Policies**
- Focusing on profitability over sales
- Safe, reliable production activities

**Priority challenge**
- Survival of SAP business
- Launch of new businesses in high-growth potential markets for our future key driver

**Basic Posture**
Create products and services which market needs, and provide the products and the services when market needs.

**Social issue**

**Market needs**

**TechnoAmenity**

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3. The 2nd MTP (FY2017-2020) :
Main policy

Policies to priority challenge

Strengthen competitiveness of SAP business
  • Improve profitability (Survival project)
  • Strengthen R&D

Accelerate creation of new businesses and products

Targeting sustainable growth

Develop an active corporate team and organization
Enhance the confidence of stakeholders
Strengthen Group management
3. The 2nd MTP (FY2017-2020) : Accelerate creation of new businesses and products

Considering potential market, familiarity to us and social issues, we chose 3 business sectors (8 business areas) as our new business field.

**Target sectors**

**ICT**
- Semiconductor
- Imaging

**Life Sciences**
- Medical materials
- Healthcare
- Cosmetics

**Energy & Environment**
- Mobility
- Energy conversion
- Water

Create new businesses with new technologies based on our core technologies

**Target**
- Enter into each sector with core product by 2020 (sales amount by 1 billion yen each)
- Establish business in each sector by 2025 (sales amount by 10 billion yen each)

*We promote O/I and M&A in order to achieve the target above.*
3. The 2nd MTP (FY2017-2020) : Accelerate creation of new businesses and products

Modification of R&D organization

To create innovative technologies and businesses focusing high-growth potential markets and sectors

[Basic posture]
Create products and services which market needs, and provide products and services when market needs

<Business div.>

Research dept. (70%)*
(in line with strategies of business div.)

<Innovation & business development div.>
Research center (30%)*

* Allocation ratio of research human resources (model)

To utilize the above for the shortening of commercialization period to create of new businesses and products

Technology management

Outside resources
M&A
Open innovation
3. The 2nd MTP (FY2017-2020) :
Target for 2020

Strategies by Business area

EO business :
We strengthen our competitiveness by structural reform of our EO plant such as partnership with other company.

Acrylic business :
We aim to be a leading global player in the acrylic monomer business by active sales and marketing.

SAP business :
We supply products with a high quality and competitive price to strategic-partner customers.

Performance chemicals business :
We expand sales of unique and functional products made from our specialty monomers and the derivatives with our particular technologies.

New energy materials/catalyst business :
We expand sales of various battery materials manufactured at competitive large-scale facility.

Health and Medical business :
We support drug development in peptide drugs, DDS and nucleic acid drug categories.

New businesses :
We establish a new business (model) in high-growth potential markets by the use of our strengths.
3. The 2nd MTP (FY2017-2020) : Target for 2020

**Management indexes and numerical targets**

**Sales**
400 billion yen
(Incl. new products* (39 billion) and new businesses (38 billion))

*Total sales of products launched within the last five years, excluding SAP

**Ordinary income**
40 billion yen

**ROA**
7.5%

**Assumptions**

<table>
<thead>
<tr>
<th></th>
<th>Domestic naphtha price</th>
<th>Exchange rate (US$)</th>
<th>Exchange rate (EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTP (FY2014-2020) (established in 2014)</td>
<td>65,000 yen/kl</td>
<td>100 yen</td>
<td>130 yen</td>
</tr>
<tr>
<td>2nd MTP (FY2017-2020)</td>
<td>42,000 yen/kl</td>
<td>110 yen</td>
<td>115 yen</td>
</tr>
</tbody>
</table>
3. The 2nd MTP (FY2017-2020) : Target for 2020

**Business portfolio**

**FY2016**  
Sales 294 billion yen

- Basic chemicals 54%  
- Functional chemicals 37%  
- Environment/catalyst 9%

**FY2020**  
Sales 400 billion yen

- Basic chemicals 32%  
- Functional chemicals 49%  
- Environment/catalyst 9%

**Breakdown for sales deviation**

- New business 10%  
- Basic chemicals 38 billion yen
- Functional chemicals 38 billion yen
- Environment/catalyst 11 billion yen

**+106 billion yen**

(New business includes health and medical business)
3. The 2nd MTP (FY2017-2020) : Target for 2020

**Management resources** *(4 years cumulative total)*

- **Capital investment**: 90 billion yen
- **Strategic investment**: 60 billion yen
- **R&D expenses**: 57 billion yen *(4-5% to sales)*
- **Employees as of the end of FY2020**: 4,600
  
  **Employees as of the end of FY2016**: 4,161
Notes to Readers

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