

A stylized world map composed of a grid of small dots, rendered in shades of blue and teal, serving as a background for the top half of the slide.

Emerging onto a Still Wider Stage

Medium-term Management Plan

Ortus Stage 2



TAIYO NIPPON SAN SO
The Gas Professionals

* Ortus: A Latin word meaning “beginning and birth”

Agenda

- **Ortus Stage 1: Achievements and Challenges**
- **Changes in Environment Surrounding Industrial Gas Industry**
- **Ortus Stage 2**
 - **Basic Policies**
 - **Financial Targets**
 - **Safety & Quality**
 - **Compliance**
 - **Organization & Human Resource Policy**
 - **Key Strategies**



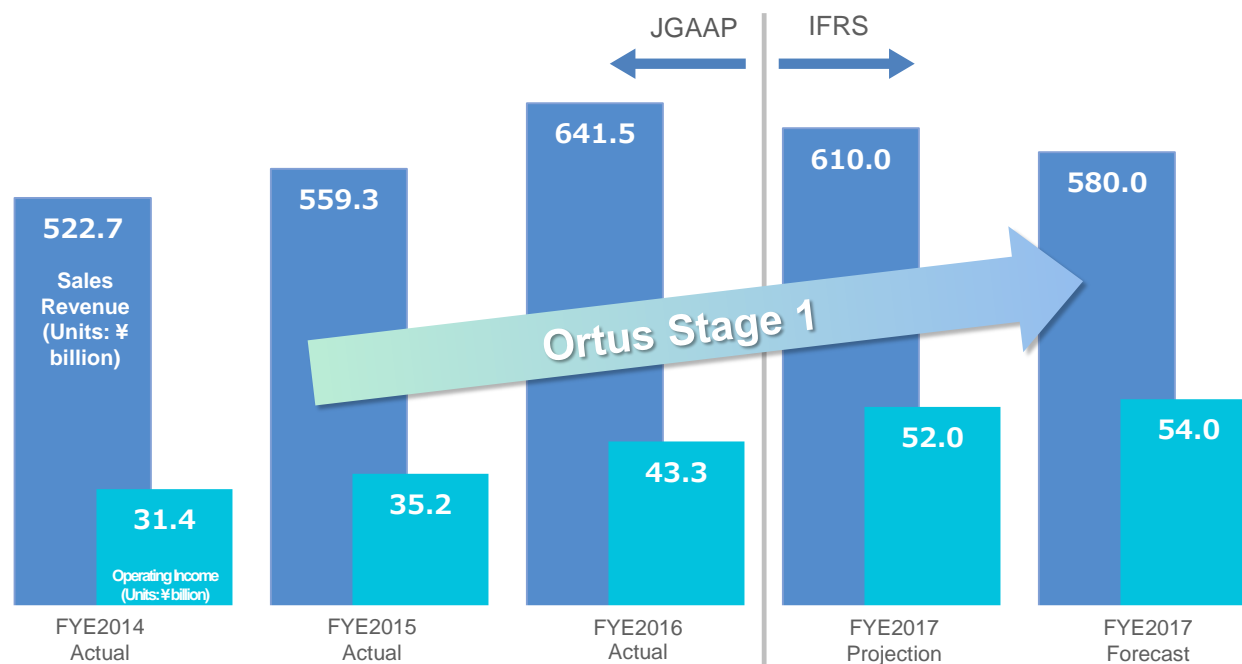
Ortus Stage 1

Achievements and Challenges



Ortus Stage 2

Business Results



JGAAP: Sales revenue IFRS: Revenue	522.7	559.3	641.5	610.0	580.0
JGAAP: Operating income IFRS: Core operating income	31.4	35.2	43.3	52.0	54.0
JGAAP: Operating income ratio IFRS: Core operating income ratio	6.0%	6.3%	6.8%	8.5%	9.3%
JGAAP: Overseas sales ratio IFRS: Overseas revenue ratio	31.4%	35.0%	44.4%	41.4%	40.5%
ROCE*	6.2%	6.2%	7.4%	8.6%	8.6%

* ROCE (Return on capital employed) = Core operating income / (Outstanding Interest-bearing Debt + Equity attributable to owners of parent)

* Core operating income: Numerical value calculated by subtracting losses (nonrecurring items*) produced by nonrecurring factors from operating income.

* Nonrecurring items are costs of structural reform (cost for withdrawal or downsizing business operations and special retirement allowances), losses caused by disasters or serious accidents, and other expenses (such as disposal of idling assets).

Issues

Key Strategies	Review of Ortus Stage 1	Result* (¥ billion)	Issues of Ortus Stage 2
Structural Reform	<ul style="list-style-type: none"> Implement early retirement program ◎ Shift human resources to growth market ◎ Restructuring of domestic group companies △ Optimize engineering function △ Strengthen supply chain network ○ Promote in-house shared service function △ 	5.9	<ul style="list-style-type: none"> Optimize engineering function Strengthen supply chain network Promote in-house shared service function Restructuring of group companies
Innovation	<ul style="list-style-type: none"> Development of new products via business development (H₂ stations & water-¹⁸O etc.) ◎ Open innovation ○ Strengthening collaboration with Mitsubishi Chemical Holdings Group ○ Global expansion of developed product ○ 	1.7	<ul style="list-style-type: none"> Development of new products via business development Open innovation Strengthening collaboration with Mitsubishi Chemical Holdings Group Global expansion of developed product Expansion of group products
Globalization	<ul style="list-style-type: none"> Expand overseas operations via strategic Investments ◎ Localization of overseas operations (establishment of regional holding companies) ○ Implement IFRS ◎ Cultivation of global human resources (trainee program) ○ 	1.7	<ul style="list-style-type: none"> Improve global management infrastructure Strengthen management system of overseas risks such as safety, quality and compliance Expand overseas operations via strategic investment Improvement of Asian performance Geographic expansion for new area
M&A	<ul style="list-style-type: none"> Implementation of overseas M&A (Air Liquide Hawaii, Air Liquide USA, RGP and Supagas Australia etc.) ◎ 	3.9	<ul style="list-style-type: none"> Globalization M&A Medical M&A Innovation M&A

* Changes in operating income from FYE2014.

Changes in Environment Surrounding Industrial Gas Industry

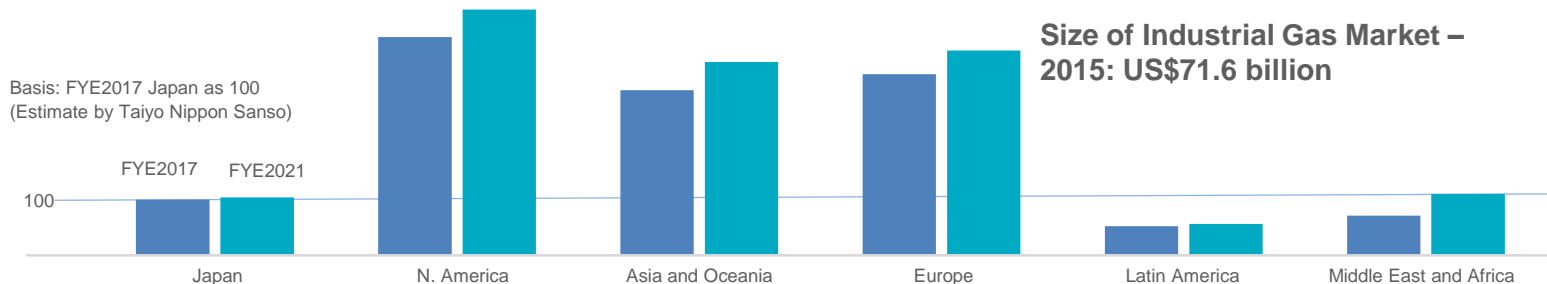


Ortus Stage 2

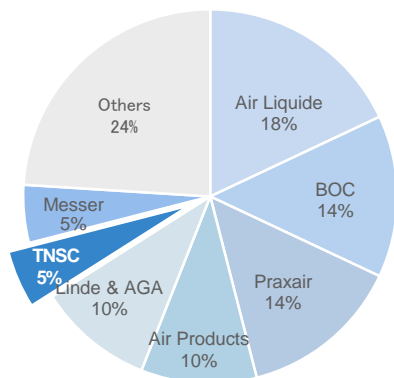
Changes in Environment Surrounding Industrial Gas Industry (Growth of Overseas Markets and Oligopolization)

Rapid strategy execution is indispensable in responding to overseas market growth and oligopolization

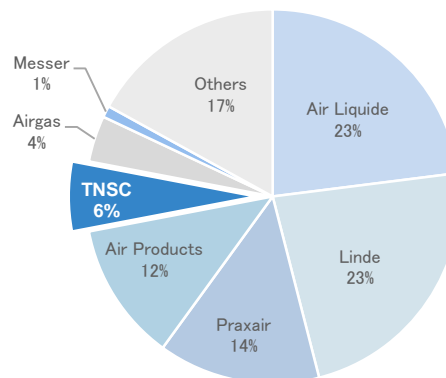
Industrial Gases (Market Size by Region)



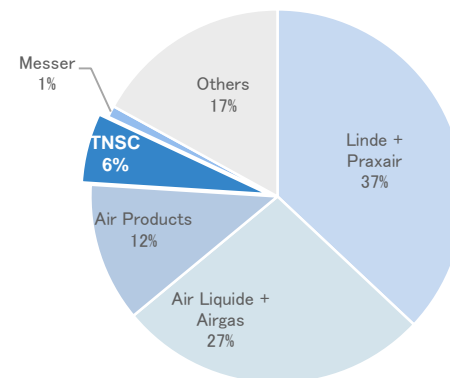
1990 share



2014 share



Share if integration is achieved



Source: Gas Diorama

* The share of Taiyo Nippon Sanso in 1990 is the simple sum of shares of Nippon Sanso, Taiyo Sanso and Toyo Sanso.

* Reflects the influence of the integration of Linde and Praxair and the integration of Air Liquide and Airgas.

The figure if integration is achieved represents a simple sum of 2014 actuals. Share fluctuation by sale of assets is not taken into account.



Ortus Stage 2

Basic Policies



Ortus Stage 2

Basic Policies

Domestic Gas Business Expansion

- Expansion in gas-related businesses such as gas equipment, in addition to the gas business
- Sustain growth of businesses in Japan (M&As inside Japan and changes to sales channels)

Strengthening Corporate Functions

- Implement human resource, information and finance strategies
- Strengthen corporate functions to provide stronger support to TNSC and group companies

Safety, Quality and Compliance

- Strengthen safety, quality and compliance efforts
- Strengthen collaboration with regional holding companies in overseas markets undergoing business expansion

Globalization

- Increase overseas M&A and capital investments
- Establishing new business

Accelerating R&D Strategy

- Accelerate R&D with open innovation
- Concentrate on prioritized development fields based on portfolio strategies
- Make a larger contribution toward TNSC profitability

Policy by Segment

Gas Business in Japan

Consolidating our No. 1 position in Japan by expanding gas and gas-related businesses and maximizing group synergy.

Gas Business in U.S.

Expansion of business areas, building depth of business in new business areas, and expansion of product groups through active capital investment and M&A.

Gas Business in Asia and Oceania

Business expansion by improving market share in new regions and business undertakings in unoccupied regions. Reinforcement of governance through regional holding companies.

Thermos and Other Businesses

Expansion of businesses in global regions by fully utilizing our brand power.



Ortus Stage 2

Financial Targets



Ortus Stage 2

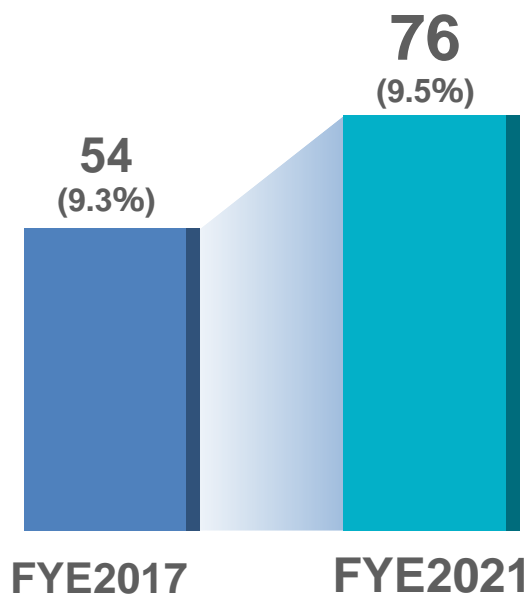
Financial Targets

	FYE2017 (Forecast)	FYE2021 (Projection)
Revenue	¥580 billion	¥800 billion
Core Operating Income	¥54 billion	¥76 billion
Core Operating Income Ratio	9.3%	9.5%
Overseas Revenue Ratio	40.5%	45.0%
ROCE	8.6%	9.0%

Activities to Accomplish Financial Targets

FYE2021 Core Operating Income ¥76 billion

Core Operating Income
(Core Operating income ratio) (in ¥billion)

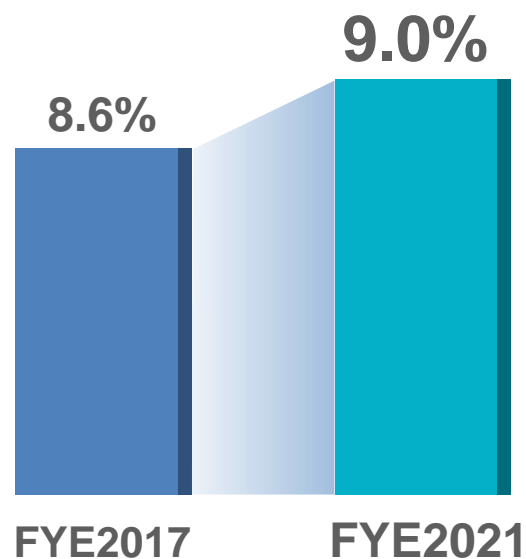


Measures for Expanding Core Operating Income

- Business expansion inside and outside of Japan
- Improvement in profitability by implementing structural reform

Improve ROCE to **9.0%**

ROCE (%)



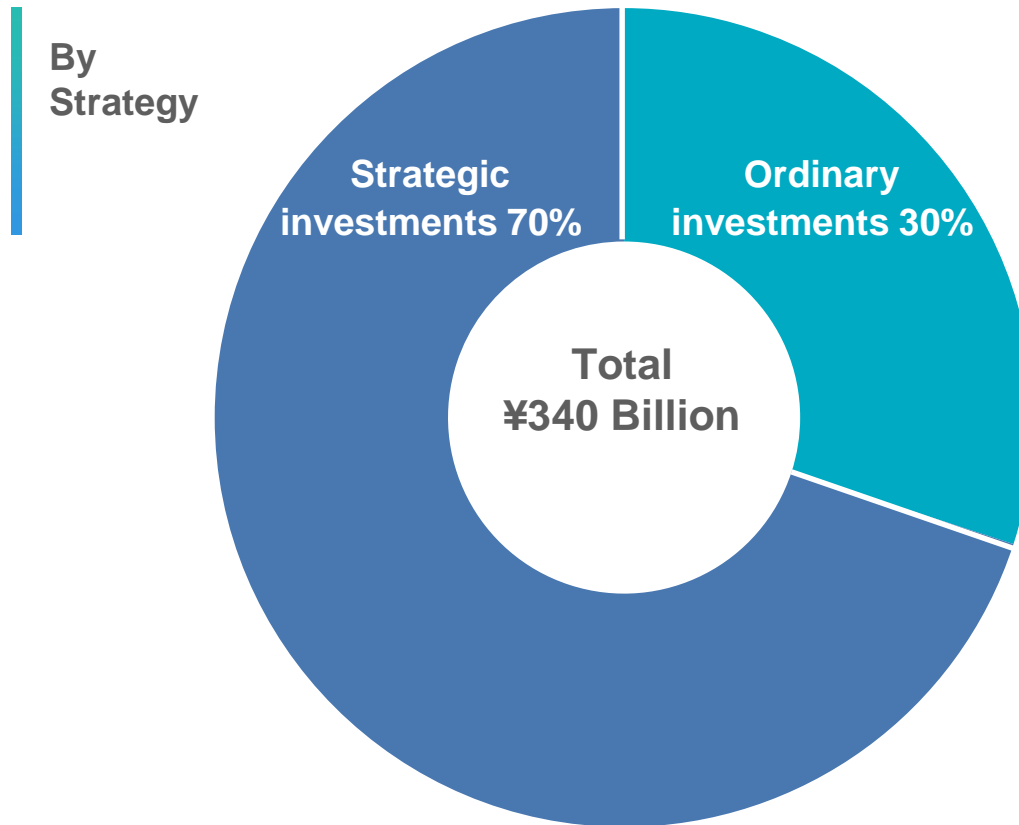
Measures for Improving ROCE

- Strengthening earning power
- Improving asset efficiency

Investment Plan

Investment of ¥340 billion over a period of four years

(Total projected value of operating cash flow over four years: ¥325 billion)



Allocating 70% of all investments to strategic investments while maintaining financial discipline (net D/E ratio [net debit equity ratio] and other indicators)



Ortus Stage 2

Safety & Quality



Ortus Stage 2

Safety & Quality

(Steady Implementation of Technical Risk Management)

Continue to improve technological capabilities and maintenance of vitality in Japan (TNSC, domestic affiliates)


- Reinforce safety capabilities (fostering a culture of safety)
- Enhance technical capabilities by human resource development and technology transfers (continuously fostering 'The Gas Professionals')
- Strengthen quality control
- Utilize group technology databases (technical data, intellectual property information, and work accident information, etc.)

▶ **“Establish facilities to teach potential hazards and the mastery of technology”
(Establish TNSC Technical Academy)**

Improve safety and technological capabilities overseas (Asia and Oceania)

- Expand technology and safety systems of regional holding companies
- Improve voluntary safety systems
- Enhance quality control (foster TNSC Group standard quality)
- Compiling and maintaining global standards (safety and quality), technical information, and education and training manuals)

Targeting “zero” work accidents and quality problems at each workplace



Ortus Stage 2

Compliance



Ortus Stage 2

Strengthening Compliance

Basic Policy

To strengthen the governance of the entire TNSC Group, enact compliance measures commensurate with each business risk, and promote the effective operation of the internal control system.

Action Plan

Establish compliance on a daily basis

- Continuously implement the compliance education system
- Ensure the effectiveness of the compliance promotion structure
- Regional monitoring by regional CCOs

Rigorous education about important themes

- Foster the TNSC Group Code of Conduct in group companies
- Education about important themes by regional CCOs based on the socio-economic environment, laws and regulations, of each region
- Regional CCOs thoroughly disseminate Global Code of Conduct within the region.

Expand the compliance promotion system to group companies

- Develop a compliance system at all core group companies
- Conduct risk surveys and education programs at all group companies

Appointing group CCO and regional CCOs

- Appoint a group CCO as the officer responsible for promoting and implementing legal compliance within the entire group.
- Appoint regional CCOs and promote the establishment of a compliance structure within the region.
- Establish global committees of group CCO and regional CCOs

Establish compliance promotion systems at overseas bases

- Conduct risk surveys and education programs as regards country-specific risks
- Strengthen collaboration with regional holding companies
- Strengthen the human resources in the compliance divisions to reduce legal risk, enhance internal audits, and strengthen internal control
- Individual regions will set up whistle-blower systems

* CCOs is the abbreviation of Chief Compliance Officers.

Ortus Stage 2

**Organization &
Human Resource Policy**

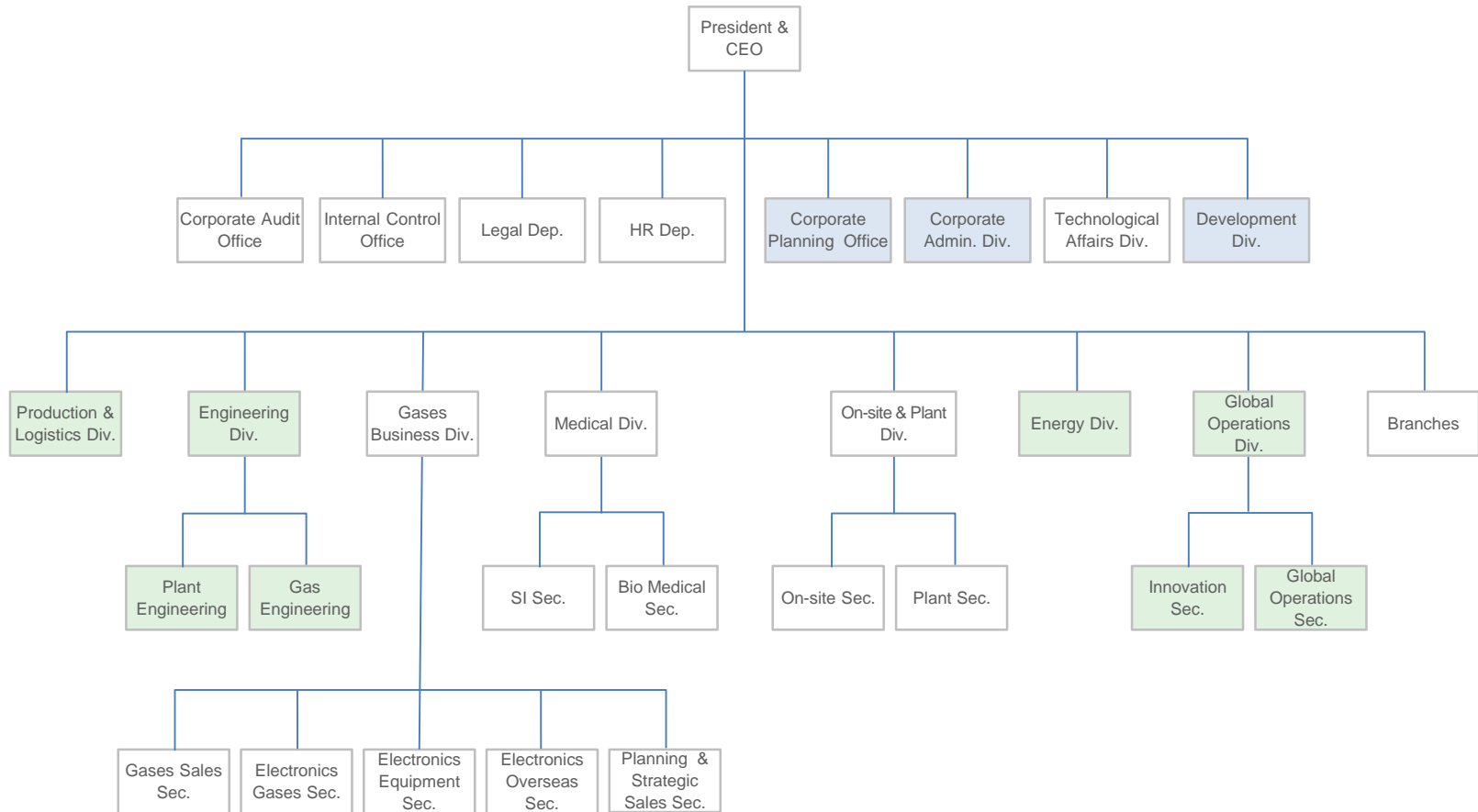


Ortus Stage 2

Reviewing the Organization [April 1, 2017]

Organization		Review Item
Corporate Divisions	Corporate Planning Office	To strengthen corporate strategy functions, the Corporate Planning Office will be newly organized by separating the Corporate Secretary and Corporate Planning Depts. from the Corporate Planning & Global Operations Div., and by merging the IT Dept., which is separated from the Corporate Administration Div.
	Corporate Administration Division	To strengthen corporate administration functions, the IT Dept. will be separated from the Corporate Administration Div., which will be merged with the PR and IR Depts. and Corporate Treasury Dept. separated from the Corporate Planning & Global Operations Div. The Corporate Treasury Dept. and Accounting Dept. will be merged into the Treasury & Accounting Dept.
	Development Division	To strengthen development functions, after separating the gas engineering function from the Development & Engineering Div., the division will be renamed the Development Div.
Business Divisions	Production and Logistics Division	To optimize industrial gas operations, the Production & Logistics Div. will be established to integrate the functions of the Gas Production Technology Dept. (On-site & Plant Div.), Product Planning & Operations Dept. (Gases Business Div.), and Logistics Center (Gases Business Div.).
	Engineering Division	To reinforce the functions of engineering organizations, the Engineering Div. will be established via integration of the plant engineering function (On-site & Plant Div.) and gas engineering function (Development & Engineering Div.).
	Energy Division	With our expansion of other energy products besides LP gases in response to energy liberalization, the LP Gases Div. will be renamed the Energy Div.
	Global Operations Division	To strengthen the function of global operations, the Global Operations Div. will be newly organized by merging the International Department, after separating it from the Corporate Planning & Global Operations Div., with the Global Innovation Div.

Organization



Human Resource Policy

Implementing Measures to Support Ortus Stage 2

- **Human resource development corresponding to globalization**
 - Formulating a succession plan for the global management of human resources
 - Hiring and fostering global human resources
 - Upgrading education and training programs
- **Allocation of staff to priority measures**
 - Development divisions, medical divisions, corporate divisions, etc.
- **Reforming work style and promoting diversity**
 - Effectively matching human resources and diversity
 - Programs for promoting employee wellness
 - Consider introducing flexible work (flextime, telework, etc.)

Ortus Stage 2

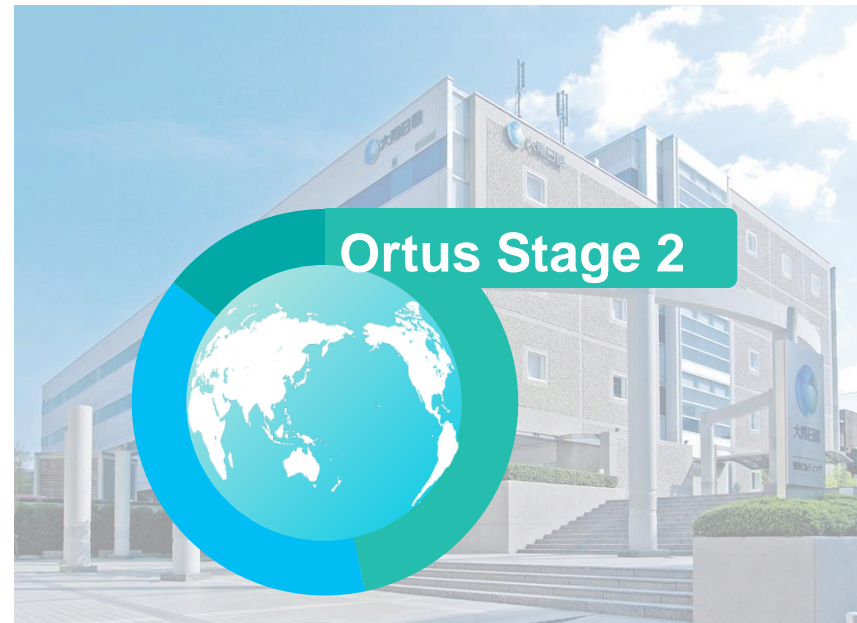
Key Strategies

- (1) Structural reform
- (2) Innovation
- (3) Globalization
- (4) M&A



Key Strategy 1

Structural Reform



Action Plan for Structural Reforms



Maximizing Group Power by Augmenting Collaboration

1 Strengthen collaboration in the sales and marketing functions

2 Integration of engineering functions

3 Integration of production & logistics

4 Promotion of shared services

Action Plan for Structural Reforms

1 Strengthen collaboration in the sales and marketing functions

Strengthen collaboration in the sales and marketing functions

- Maximizing the group power of Taiyo Nippon Sanso by stepping up collaboration in customer relations (CRM) among the group companies (TNSC, Nissan Tanaka, Nippon Ekitan, and Taiyo Nippon Sanso G&W).
→ Customer service beefed up by the group as one entity.
- Develop a total solutions business for the market and customers based on a more close-knit, cooperative group.

2 Integration of engineering functions

Reinforce functions of engineering organizations

- Unify the management of a wide variety of engineers and secure mobility and flexibility in response to changes in business conditions.
- Strengthen customer relations by unifying the group's elemental technologies and developing engineers with multi-skilled capabilities

* CRM: Customer Relationship Management

Action Plan for Structural Reforms

3 Integration of production & logistics

Optimization of industrial gas operations

- Optimizing industrial gas operation by integrating and operating the gas production technology department and logistics department.
- Management integration of bulk gas production facilities & Sanso centers to achieve higher efficiency and optimization.

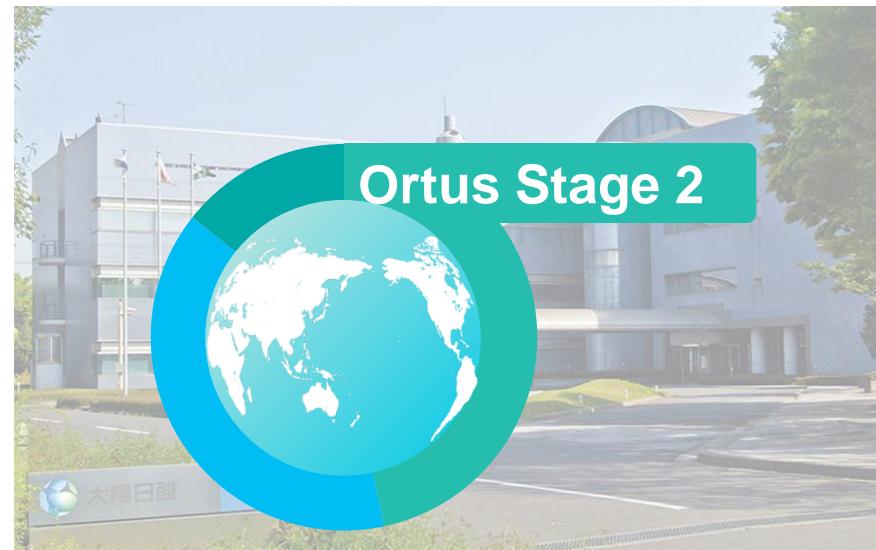
4 Promotion of shared services

Widen the target of shared services

- Promote shared services for all domestic subsidiaries to strengthen internal controls, ensure the quality of operations, and the efficiency and optimization of business.

Key Strategy 2

Innovation



Action Plan for Innovation Strategies

Innovation: R&D



New product development

Create synergy with Mitsubishi Chemical Holdings along the theme of a harmonious relationship

Open innovation

Global expansion of existing businesses & newly developed products

Innovation: Engineering



Strengthen competitiveness of ASU

Strengthen capabilities of project proposal & management

Strengthen global engineering capabilities

Innovation: Sales Approaches



Upgrading service capability

Innovation of sales approaches for gas application

Import material gases from our overseas supply chain for the domestic market

Respond to gas needs of Mitsubishi Chemical Holdings

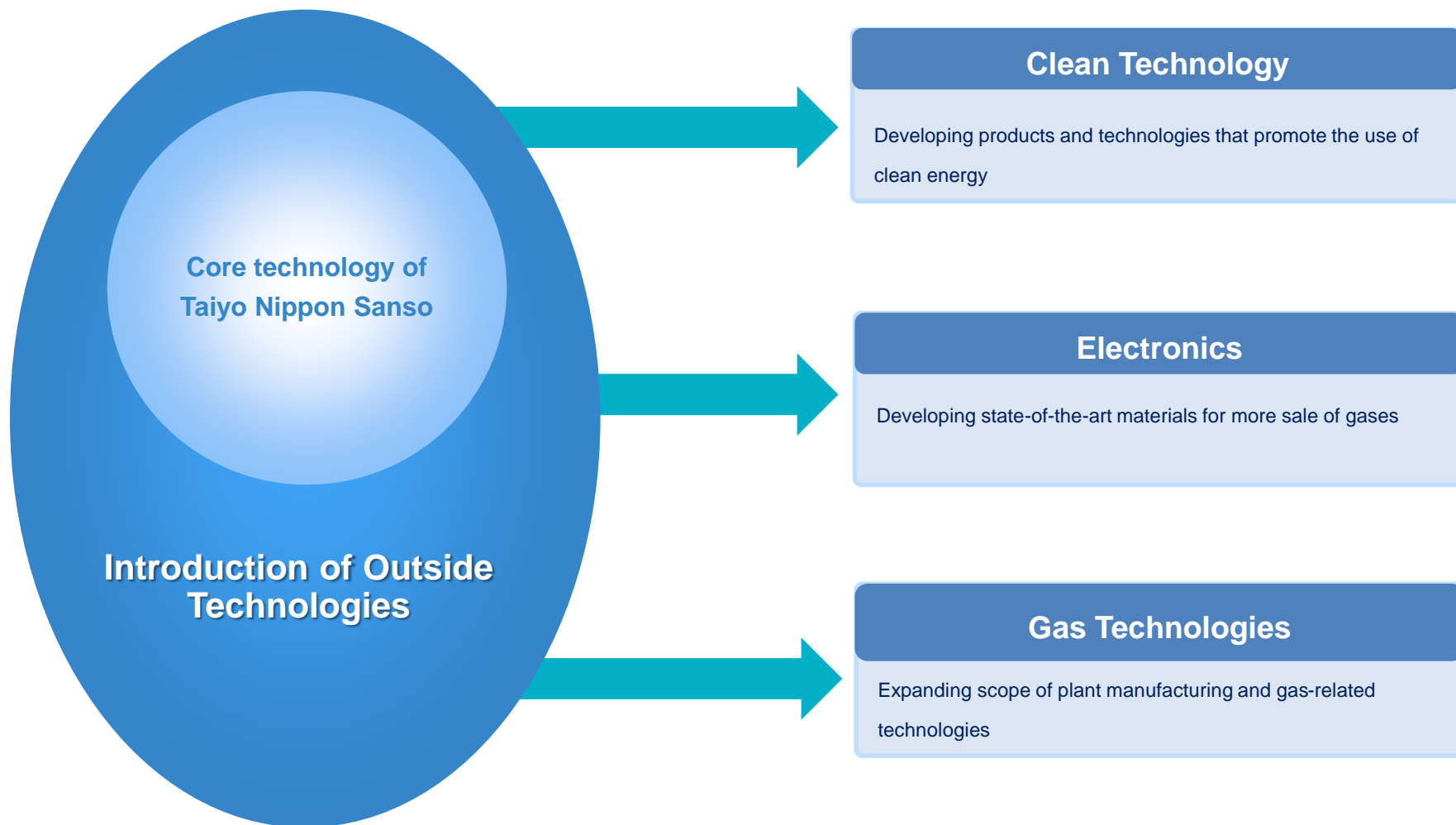
Innovation: Production & Logistics



Improve efficiency and cost reduction on a company-wide basis

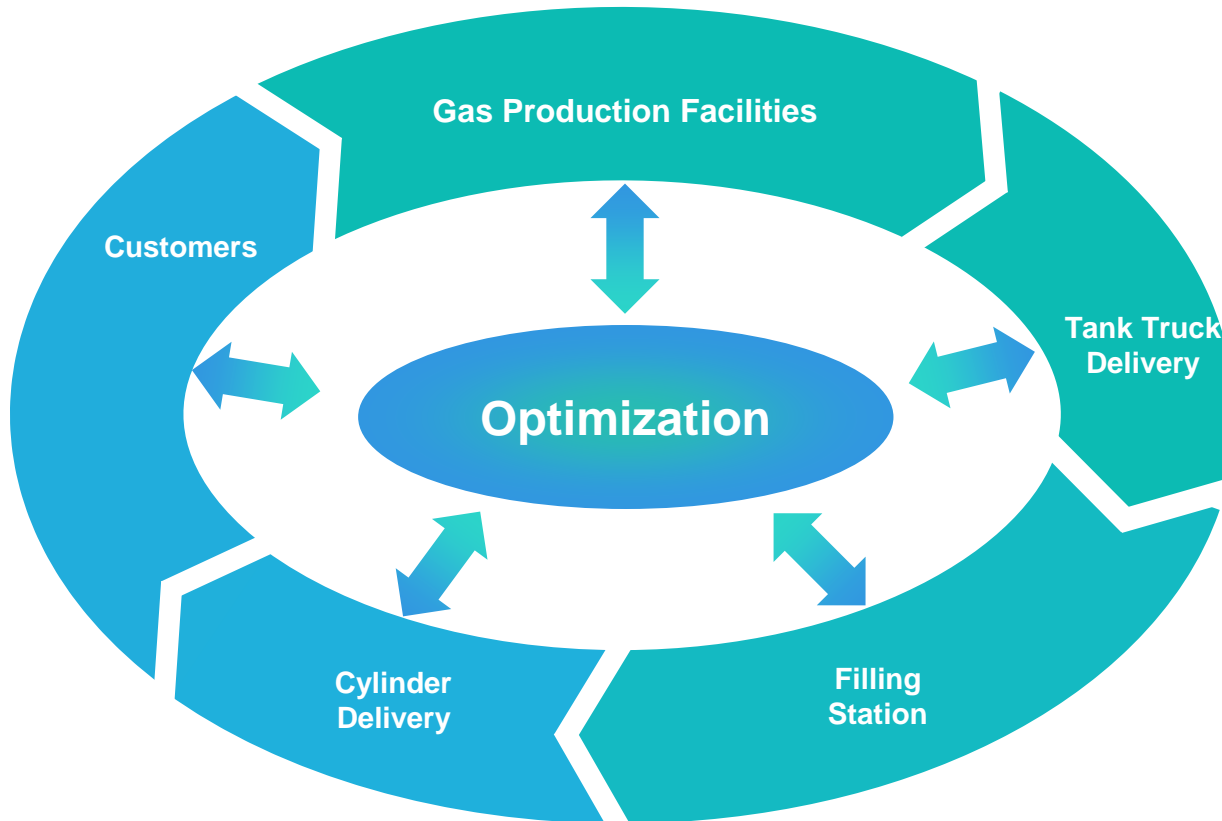
Improve transfer of in-house technologies and skills, such as in production

Open-innovation



Improve efficiency and cost reduction on a company-wide basis

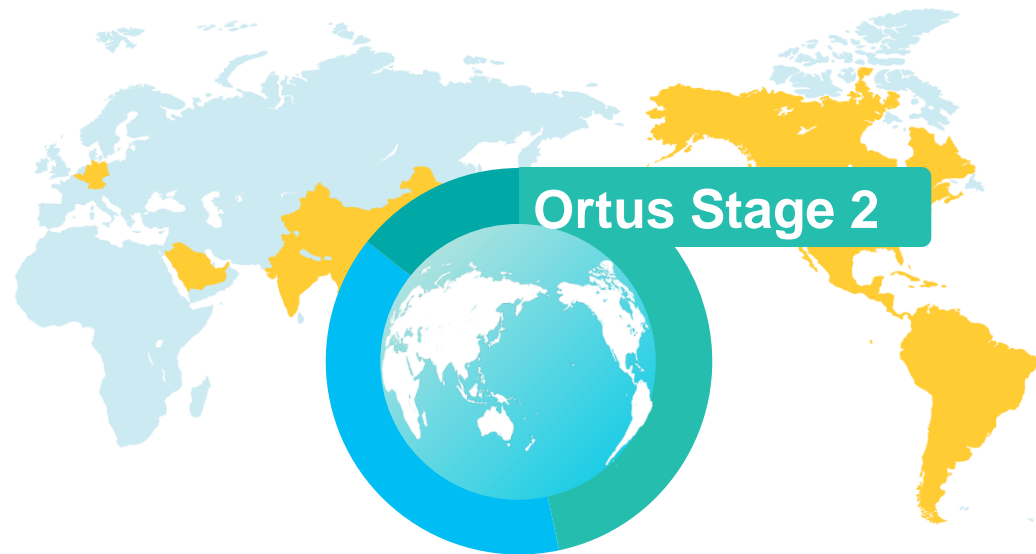
Reduce energy consumption through continuous effort as an energy-consuming industry



Optimize and maximize group operations

Key Strategy 3

Globalization



Basic Strategy

Basic Policy

- TNSC strives to enhance the functions of its global operations (Global Operations Div. and regional holding companies), and the cooperation among global operations and corporate functions, while strengthening cross-organizational management functions.
- By developing the Ortus Stage 1 strategy, TNSC intends to accelerate the implementation of geographical expansion and the improvement of profitability with aggressive investment activities.

Basic Strategy

Enhancement of Governance

Strengthen the function of the Global Operations

Adding a planning management function and a marketing function to the Global Operations Div. for reinforcement of the division.

Strengthen the function of regional holding companies

Further reinforcing the administrative and support functions of regional holding companies, which are part of the corporate functions in their regions, and to enhance the financial structures of these regional holding companies. Assign a group CCO as the officer responsible for promoting and implementing legal compliance within the entire group. Assign regional CCOs in regional holding companies and promote the establishment of a compliance structure within each region.

Growth Strategy

Expanding business areas

Expanding production and sales shares to gain a scale advantage by acquiring new sales channels and manufacturer positions.

- M&A and large capital investments
- Creating group business synergy

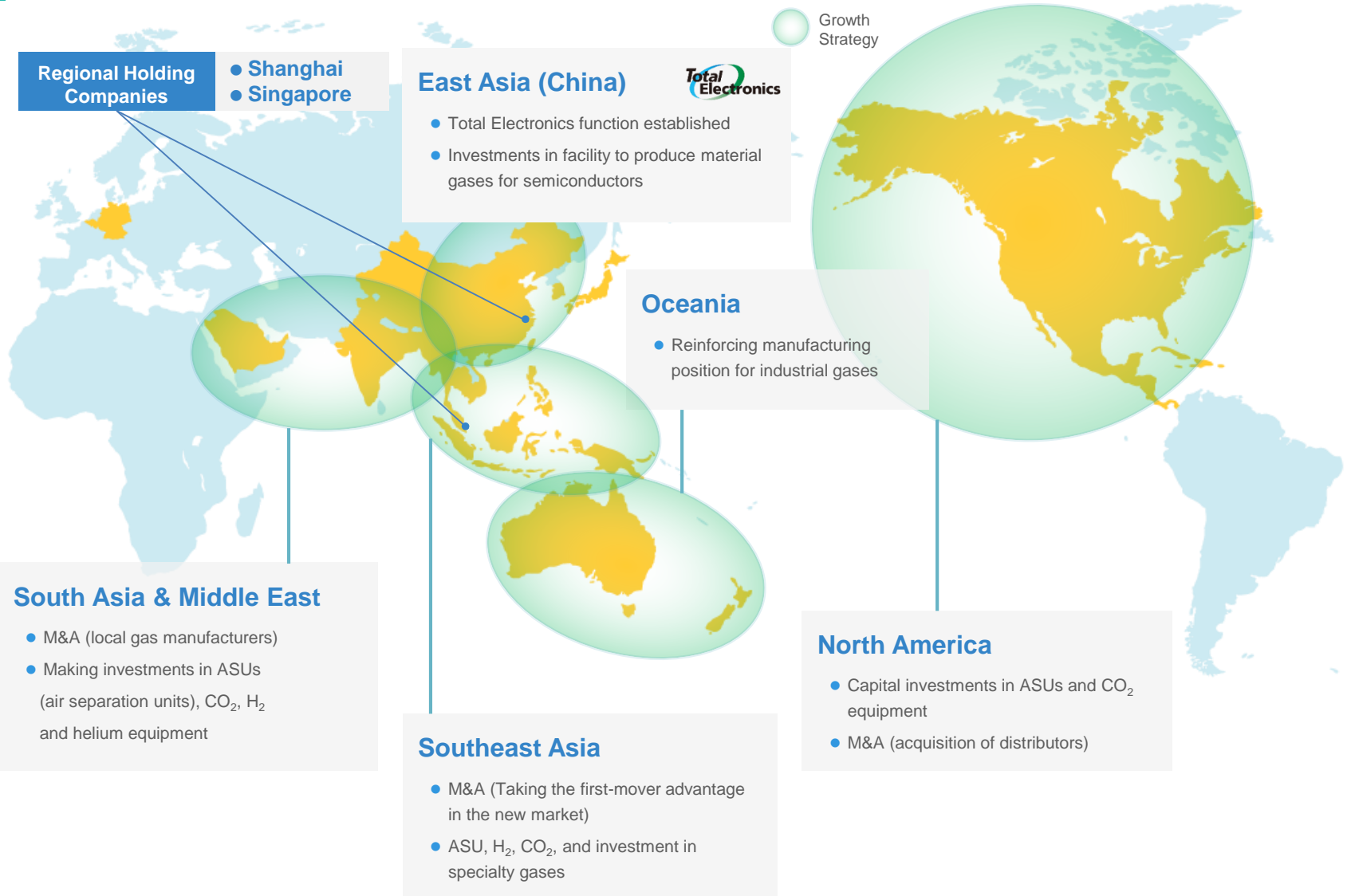
Total Electronics



Under the concept "Total Electronics," a global strategic customer management function will be created in China (Shanghai), where capital investments will be concentrated, to meet customer globalization trends in a flexible manner.

* CCOs is the abbreviation of Chief Compliance Officers.

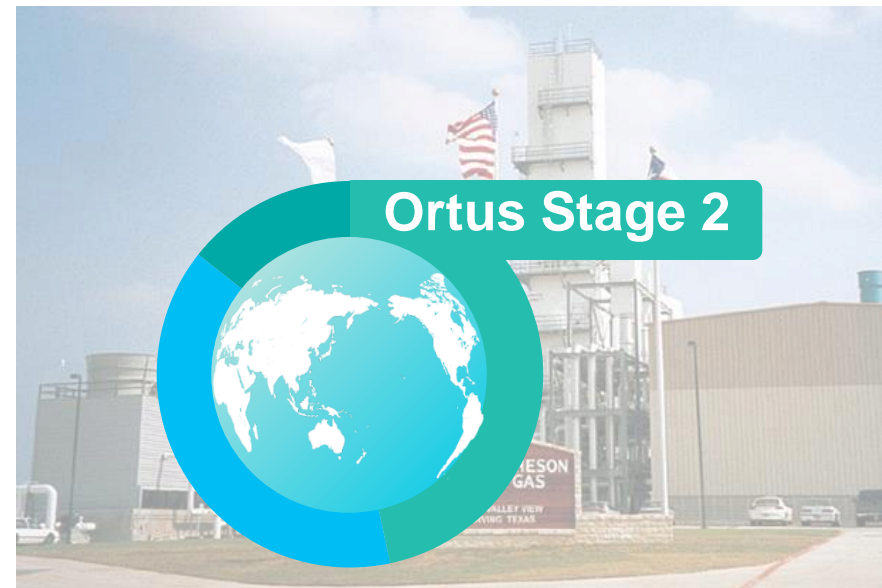
Enhancing Governance and Growth Strategy



* ASU: Air Separation Unit

Key Strategy 4

M&A



M&A Support Strategies

Expand Business Territory and Reinforce Operational Density

- Ensuring market presence
- Pursuing management efficiency

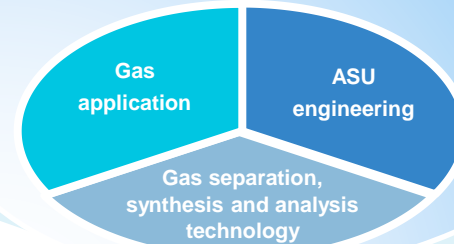


Acquiring New Products, Technologies and Supply Chains

M&A

[including open innovation]

- Clean technology
- Electronics
- Gas technology



Expansion of Medical Business

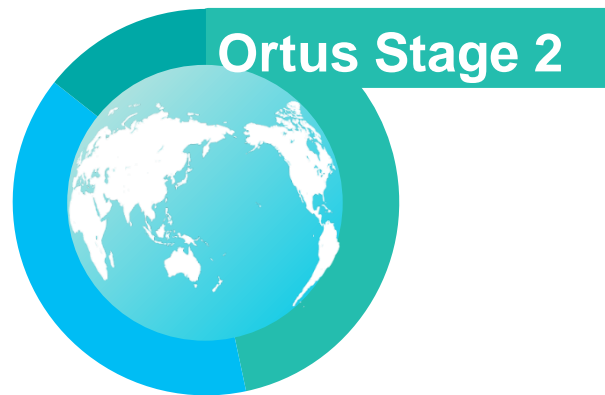
Existing Business Areas

M&A

- Medical gases
- Stable Isotopes
- Biotechnology
- Medical equipment
- Home healthcare
- Hospital facilities

* ASU: Air Separation Unit

Thank you



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- The information contained here is not disclosure information for securities trading. The accuracy and completeness of this information are not guaranteed.
- The briefing session and this material describe future plans and strategies, as well as forecasts and outlooks of business performance. These plans and strategies, as well as forecasts and outlooks, are made by Taiyo Nippon Sanso based on its judgments and estimations made in accordance with the information available at present. Actual performance will be subject to changes caused by a variety of risks and uncertainties (such as economic trends, market demand, exchange rates, taxation systems and various other systems and institutions, but not limited to them).
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