Consolidated Business Performance for the First Two Quarters of the Fiscal Year Ending March 2013 (Fiscal 2013)

TAIYO NIPPON SANSO Corporation

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The Gas Professionals

Results Briefing - Content

1. Consolidated Business Performance for the First Two Quarters of FY2013
2. Management Policies and Priority Issues
3. Important Fields for Technology Development
4. Consolidated Full-Year Forecasts for FY2013

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Consolidated Business Performance for the First Two Quarters of FY2013

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Consolidated Business Performance for the First Two Quarters of FY 2013

Billions of yen

	Previous first two quarters Ratio to sales	Reporting first two quarters (Announced targets)	Reporting first two quarters (Results)	YoY change % change	Change from announced targets % change
Sales	234.7	228.0	228.2	-6.5 -2.8%	0.2 0.1%
Operating Income	15.7 6.7%	12.5 5.4%	12.5 5.5%	-3.2 -20.3%	0 0%
Recurring Income	16.0 6.8%	12.0 5. 3%	12.0 5.3%	-3.9 -24.8%	0 0%
Net Income	8.4 3.6%	-7.5 -3. 3%	-7.9 -3.5%	-16.3	-0.4

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Performance by Segment

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Performance by Segment in FY 2013

Billions of yen

	First two quarters of FY 2012		Margin	First two quarters of FY 2013		Margin
	Sales	Operating Income		Sales	Operating Income	
Industrial gases	144.6	11.1	7.7%	148.3	11.2	7.6%
Electronics	56.1	3.1	5.6%	46.1	- 0.6	-1.3%
Energy	17.7	0.6	3.7%	17.4	0.7	4.4%
Other	16.2	1.5	9.3%	16.3	1.7	10.8%
Adjustments		- 0.6			- 0.6	
Total	234.7	15.7	6.7%	228.2	12.5	5.5%

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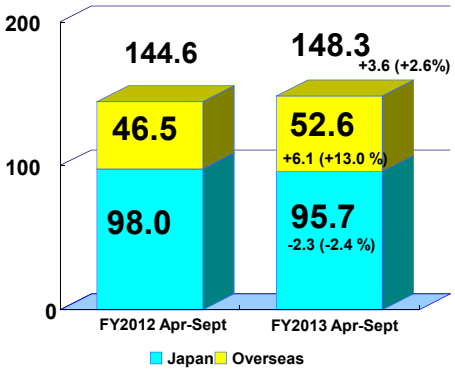
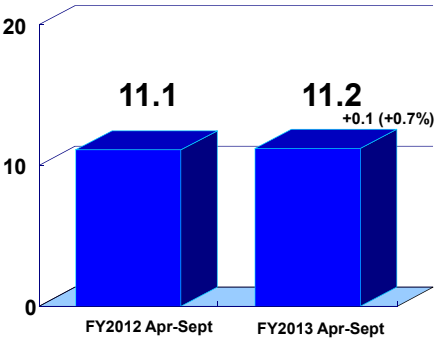
Industrial Gas-Related Businesses

Billions of yen

Sales



Operating Income



* The graph contains figures for both Japan and overseas sales.

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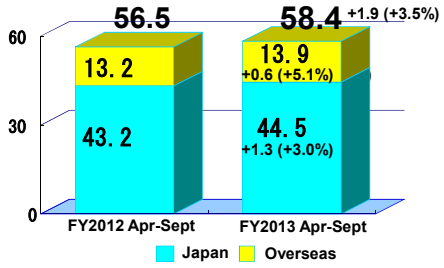
Major Industrial Gas-Related Businesses (Sales)

Separated Gases



≪Overseas≫

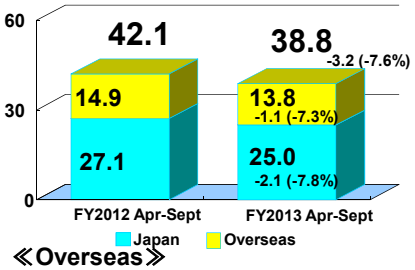
- ◆ Brisk nitrogen sales in North America

≪Japan≫

- ◆ Driven by strong auto production, nitrogen and oxygen sales increase
- ◆ Prices raised in Kanto region

Other Gases

Billions of yen



≪Overseas≫

- ◆ Sales of acetylene, for which there was special demand due to last year's carbide plant accident, were down in North America in FY 2013

≪Japan≫

- ◆ In 1st half FY2012, some consolidated subsidiaries changed their accounting period, causing sales to increase
- ◆ Demand for carbon dioxide decreased

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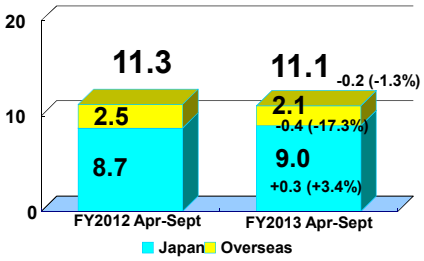
Major Industrial Gas-Related Businesses (Sales)

Gas-related Equipment, etc.



≪Overseas≫

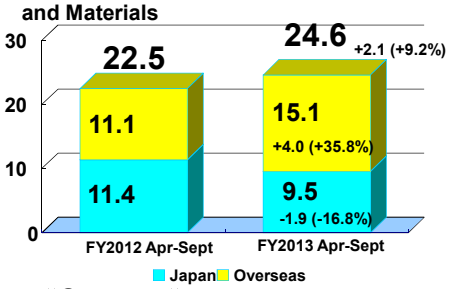
- In North America, sales of gas supply equipment, etc. decreased

≪Japan≫

- Sales of gas supply equipment and number of gas use equipment reconstruction projects increased

Cutting and Welding Equipment and Materials

Billions of yen



≪Overseas≫

- New consolidation effects
- Sales of hard goods strong in North America

≪Japan≫

- In 1st half FY2012, some consolidated subsidiaries changed their accounting period, causing sales to increase
- Welding material demand decreases

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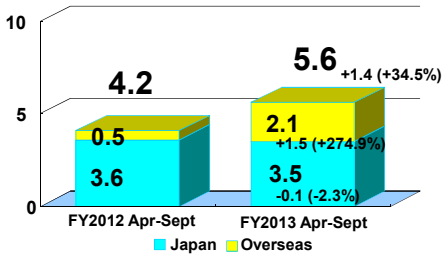
Major Industrial Gas-Related Businesses (Sales)

Plants and Machinery

Billions of yen



≪Japan・Overseas≫

- Large construction projects proceeding smoothly
- Decline in large projects in 1st half FY2013
- Space simulation chamber projects increased

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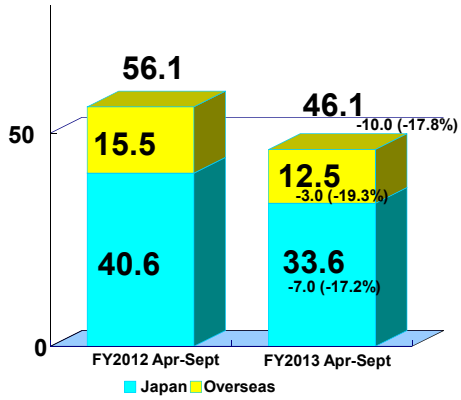
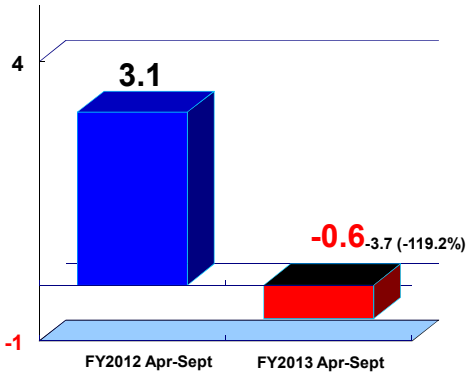
Electronics-Related Businesses

Billions of yen

Sales



Operating Income



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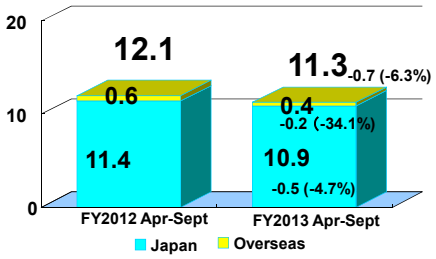
Major Electronics-Related Businesses (Sales)

Billions of yen

Separated Gases



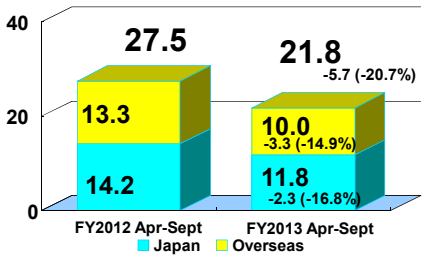
≪Overseas≫

◆ Nitrogen and Argon sales decrease in North America

≪Japan≫

◆ Argon sales decline on lower production of silicon wafers

Electronic Material Gases



≪Overseas≫

◆ Sales down after disposal of SDS business

≪Japan≫

◆ Sales volume and value decline on decreased production of semiconductors, LCD panels, and solar cells

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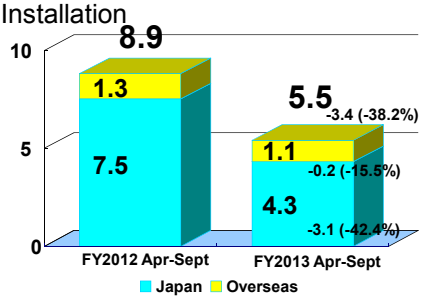
Major Electronics-Related Businesses (Sales)

Electronics Related Equipment and Installation



≪Overseas≫

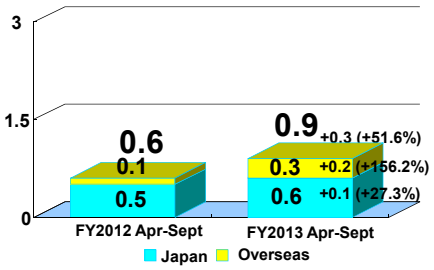
◆ Equipment projects in North America decrease

≪Japan≫

◆ Large equipment and installation projects drop sharply

MOCVD Equipment

Billions of yen



≪Overseas≫

◆ Delivery to Taiwan LED manufacturer

≪Japan≫

◆ Order from Japan LED manufacturer
◆ Received UR26K order for power semiconductors

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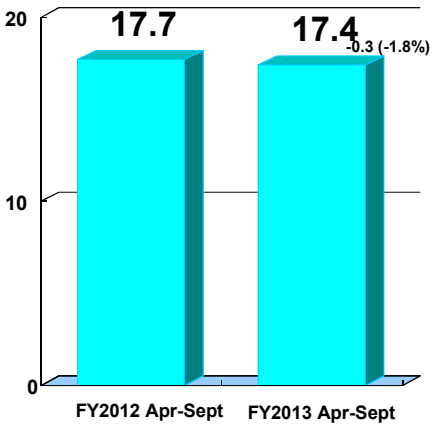
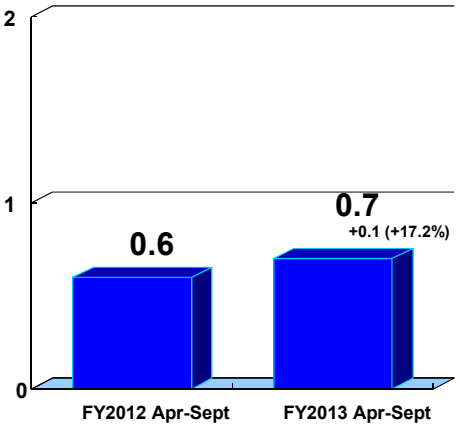
Energy-Related Businesses

Billions of yen

Sales



Operating Income



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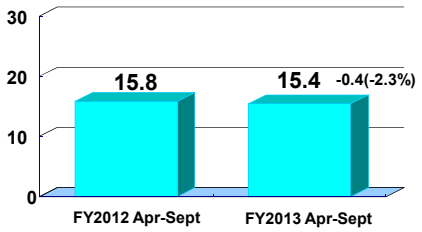
Major Energy-Related Businesses (Sales)

Billions of yen

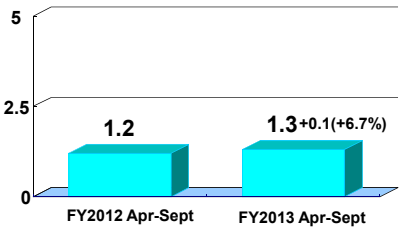
LP Gas



≪Japan≫

- Slight drop in order volume due to industrial demand decrease
- Slight drop in import costs

Equipment and Installation, etc.



≪Japan≫

- Inquires for GHP and "Ene-Farm" fuel cell co-generation systems increase due to concerns about electric power supply

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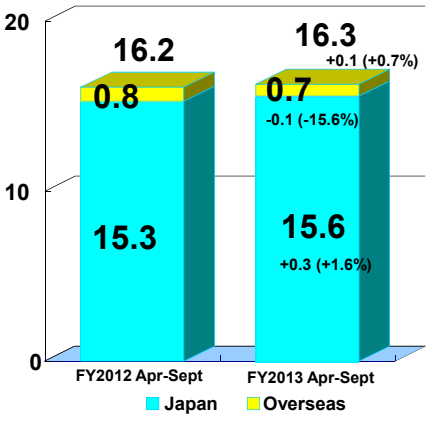
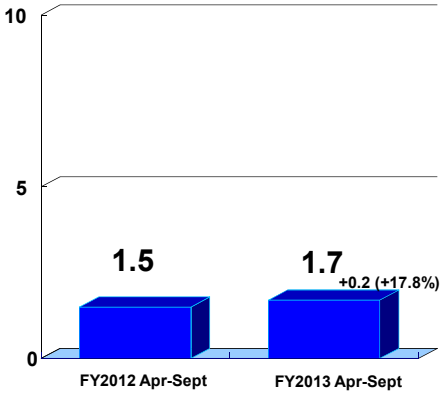
Other Businesses

Billions of yen

Sales



Operating Income



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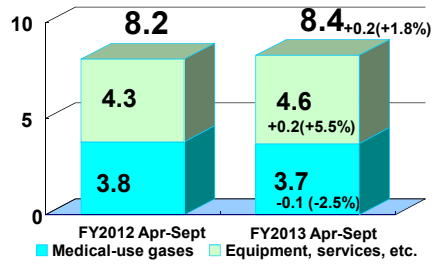
Major Other Businesses (Sales)

Medical Business

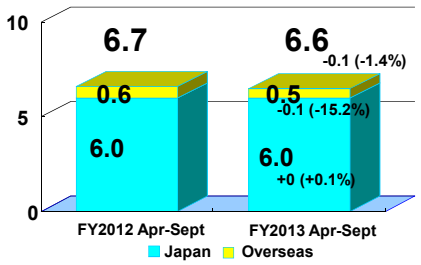


≪Japan≫

- Slight decrease in medical-use oxygen sales
- Medical-related equipment sales are strong
- Equipment for hospital sales are brisk

Thermos Business

Billions of yen



≪Overseas≫

- Sales company established in South Korea last year is not included in the scope of consolidation

≪Japan≫

- Demand flat for mainstay sport-use stainless steel vacuum insulated bottles

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Management Policies & Priority Issues

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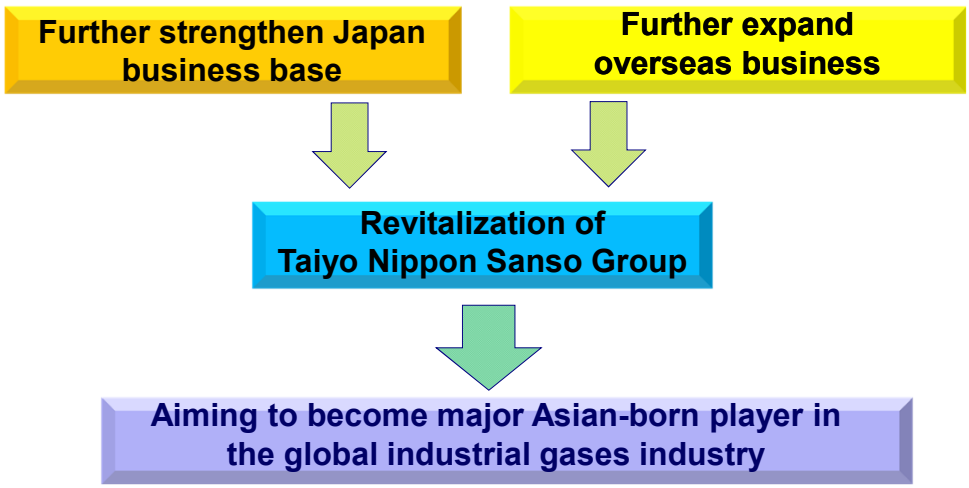
Management Policies



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Priority Issues

- Organizational restructuring centered on industrial gases and electronics-related businesses
- Expansion of overseas business including boosting the earning capacity of North American business
- Strengthen response capabilities of plant engineering
- New business creation to become new earnings pillar

Raise earnings by ¥5.0 billion over the short term

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Important Fields for Technology Development

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Important Fields for Technology Development

1. Plant Engineering
   - Technology introduction
2. Advanced Medical Treatment
   - Oxygen stable isotopes
   - Cryopreservation systems
3. Environment and Energy
   - Hydrogen filling stations
4. Electronics
   - Advanced MOCVD equipment - UR26K
5. Space Development
   - Space-simulation chambers

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1. Plant Engineering

＜Large air separation plants＞

(Overview)

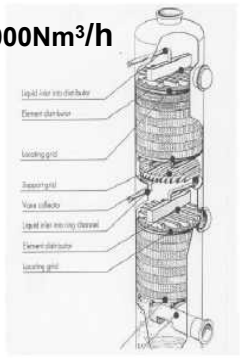
- **Cryogenic air separation plants have continued to be improved and upgraded over their 100-year history**
- **A recent major technological advancement is the reduction of the electric power consumption rate using large air separation plants and packed columns**
- **Boasts largest oxygen production volume in Japan at 65000Nm^3/h**

Oxygen Plant Progress Over Last 30 Years

Air separation plants	NR160	MG1520000	MG243000
Year launched	1974	1992	2001
Pre-treatment	Reversing Heat Exchange	MS adsorber	MS adsorber
Upper column /RAR column	Sieve Tray	Sieve Tray	Packed column
Condenser	TSCR	TSCR	DFR
Oxygen yield	88.0%	97.1%	99.5%
Nitrogen yield	24.0%	42.2%	68.5%
AR yield	35.0%	80.0%	87.0%
Unit power consumption*	100	97	84

* Unit power consumption are indexed with NR160 at 100.

Filling



Structure of Packet column

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1. Plant Engineering

＜LNG cold energy technology＞

(Overview)

- **Air separation plants, which produce liquefied oxygen and liquefied nitrogen, consume large amounts of electrical power in the liquefying process**
- **Air separation plant, which use LNG cold energy, can reduce electrical power consumption by about 50%**
- **Can handle a variety of LNG, from low pressure to high pressure**
- **World's number one delivery record of LNG cold energy air separation plants**

(Track record in LNG cold energy air separation plants)

- **Delivered Japan's first air separation plant to Yokohama in 1971**
- **Delivered 9 plants in Japan and 1 plant overseas**

Air separation plant (Chiba)

Air separation plant (Aichi)

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2. Advance Medical Treatment (oxygen stable isotopes)

＜Status＞

Demand for oxygen stable isotope Water-^{18}O, the raw material for medical PET diagnostic agents, is increasing

1. **Approved for use in PET diagnostics for Alzheimer's disease in April 2012 in U.S.**
2. **Existing use for diagnosing cancer is growing at an annual rate of 5-10%**

↓

The global market for 1. and 2. combined is expected to double in five years

＜TNSC's production capacity＞

- **Construction of plant with production capacity of 200kg/year is now underway within the Chiba Sanso Center's Sodegaura plant and is scheduled for completion in early 2013**
- **Combined with existing facilities (Goi plant of Chiba SC), we have an annual capacity of 300kg/year**
- **Additional plant expansion is now being studied**

Goi Plant

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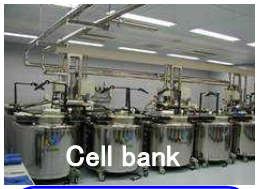
2. Advanced Medical Treatment (Cryopreservation)

Started with livestock breeding / Compact containers of 2L – 36L

Large container

Large preservation containers of 100L – 1000L for basic research



Centralized cell management with large-scale bio-resource preservation

CryoLibrary®

In regenerative medicine, cell management prevents the wrong cells (iPS cells, human cells, etc.) from being taken

1972～ 1990～ 2008～

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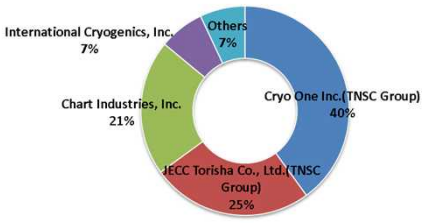
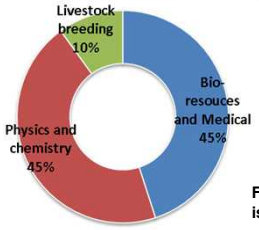
2. Advanced Medical Treatment (Cryopreservation)

Share of Japan market for liquid nitrogen cryopreservatic

Market share by manufacturer (value basis)



Market share by application (unit basis)



From Aug. 15, 2008 issue of Gas Review

Large cell bank system

A made-to-order medical project of BioBank Japan in The Institute of Medical Science, The University of Tokyo –
Serum refrigeration management system

[Facility size]

DR1000AT-type containers: 47 (1,000L containers)

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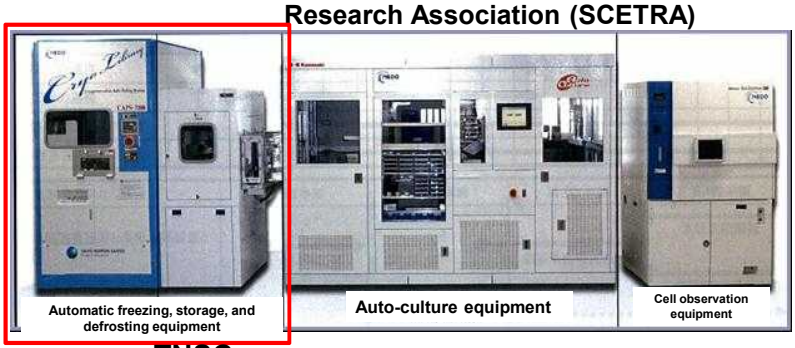
2. Advanced Medical Treatment (Cryopreservation)

A totally automated cryopreservation system for human iPS cells is now under development

京都大学 iPS細胞研究所 CiRA (サイラ)

Project control: Center for iPS Cell Research and Application (CiRA), Kyoto University

Project name: NEDO Evaluation-based Technology Development for Commercialization of Human Stem Cells
* Affiliated with Stem Cell Evaluation Technology Research Association (SCETRA)



TNSC

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3. Environment and Energy (Hydrogen filling stations)

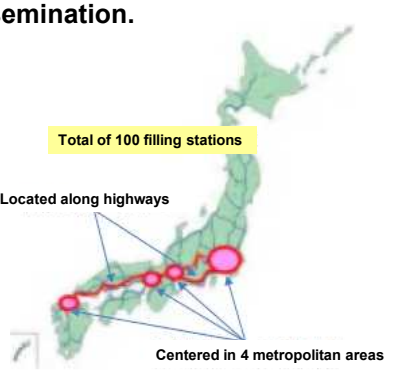
＜Japan＞

In preparation for the spread of hydrogen fuel cell-powered vehicles (FCVs) beginning in 2015, we are proceeding with our plan to set up hydrogen filling stations at 100 locations nationwide over a three-year period beginning from fiscal 2013.

The equipment costs of actual filling stations is expensive, so it is essential that we sharply lower costs to enable their wide dissemination.

＜TNSC's R&D＞

- Develop packaged hydrogen stations based on our own compact design
- Cut costs in half
- Begin sales from fiscal 2013 (planned)
- As a Japanese producer, gain a leading position in hydrogen filling station business



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3. Environment and Energy (Hydrogen filling stations)

＜Features of TNSC's packaged hydrogen stations＞

- User-friendly design in terms of performance, safety, operation, and maintenance
- Space-saving: Length: 7000mm Width: 2000mm Height: 2590mm （equivalent to 20 sq. ft. container)
- Fill pressure: Both 35MPa and 70MPa
- Fill speed: Hydrogen 5kg/3 min.
- Pre-cool: -40ºC
- Gas storage capacity: Largest in Japan (pressure reservoir: 93MPa, 255L x 4 tanks)

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4. Electronics (Advanced MOCVD)

UR26K large-diameter mass-production type MOCVD equipment

【 Features 】

➢6 inches x 10 wafers
or
8 inches x 6 wafers
↓
Largest treatable wafer surface in the world

➢ Efficiency: Highly efficient deposition process based on gas control technology

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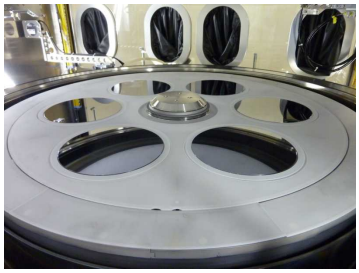
4. Electronics (Advanced MOCVD)

UR26K large-diameter mass-production type MOCVD equipment

(Orders)

- **From Japanese semiconductor manufacturers (for power devices)**
  ⇒ Delivered in 2012
- **From Nagoya Institute of Technology's Nitride Semiconductor Multi-Business Creation Center (Tentative name)**
  ⇒ Delivery scheduled for 2013

(Outlook)
Full scale demand for MOCVD equipment for power devices will start in 2014



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5. Space Development (Space-simulation chambers)

Satellite-related business

- ◆ When satellites are developed, earth-based testing in space simulation chambers is essential
- ◆ TNSC space simulation chambers were used in Japan's Hayabusa Space Project

Image provided by: JAXA 宇宙航空研究開発機構 Japan Aerospace Exploration Agency

Large-scale space simulation chambers

Used to test satellites

Small-scale space simulation chamber

Used to test satellite components, engine endurance, etc.

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5. Space Development (Space-simulation chambers)

◇Satellite business competition is intensifying in Japan and overseas
⇒ Space-simulation chamber competition is increasing

(Public/Private-sector institutions)

1. Large thermal vacuum space chambers	2
2. Large special space chambers	1
3. Mid-size thermal vacuum space chambers	1
4. Small thermal vacuum space chambers	3

(University-related)

1. Small- to mid-size space chambers	2

Estimated value (Japan): about ¥4.2 billion

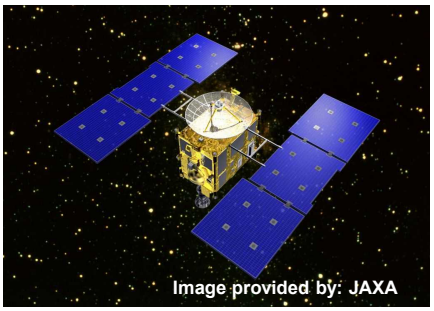
Overseas projects/for Southeast Asia

1. Large thermal vacuum space chambers
2. Small thermal vacuum space chambers

Estimated value (overseas): about ¥0.6 billion

≪Delivery Record≫

Total: 71 chambers (all in Japan)
Total value of orders: about ¥12 billion



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Consolidated Full-Term Forecasts for FY2013

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Consolidated Full-Term Forecasts for FY2013

Billions of yen

	FY2012 (Results)	FY2013 (Forecast)	Change (YoY)	% change (YoY)
Sales	477.4	474.0	-3.4	-0.7%
Operating Income	31.0 6.5%	26.3 5.5%	-4.7	-15.3%
Recurring Income	29.7 6.2%	24.3 5.1%	-5.4	-18.3%
Net Income	21.2 4.4%	0 0%	-21.2	-100.0%

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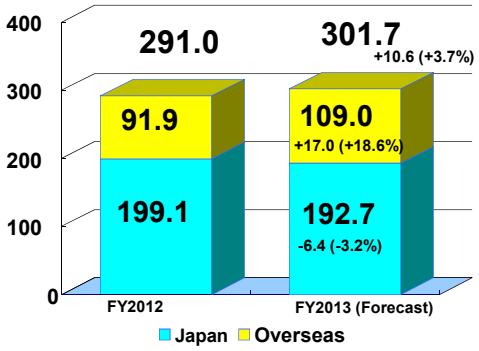
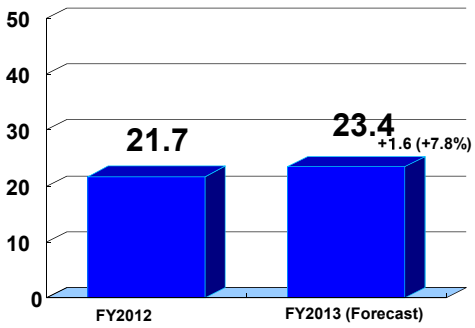
Industrial Gases Business Segment Forecasts for FY2013

Billions of yen

Sales



Operating Income



*The above sales graph is divided into Japan and Overseas sales

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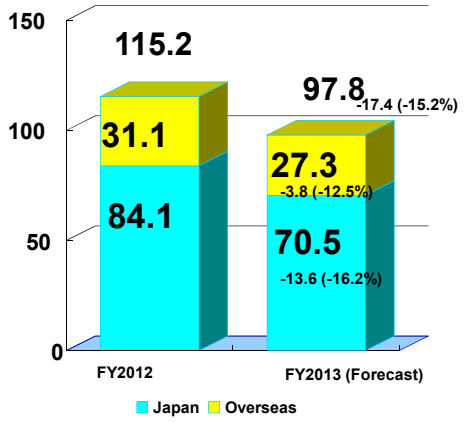
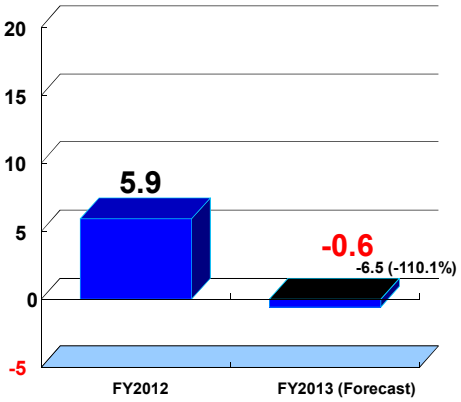
Electronics Business Segment Forecasts for FY2013

Billions of yen

Sales



Operating Income



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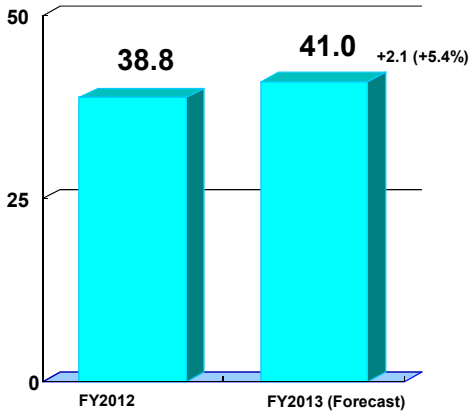
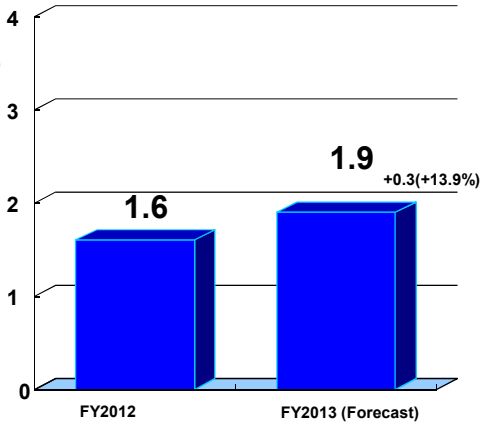
Energy Business Segment Forecasts for FY2013

Billions of yen

Sales



Operating Income



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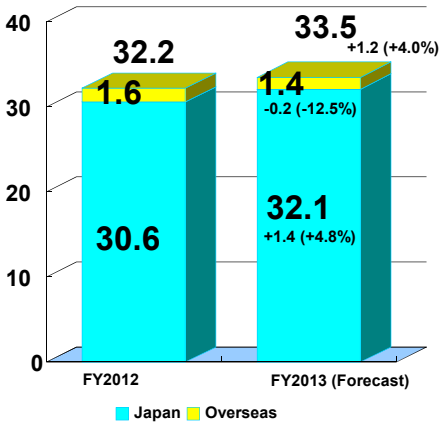
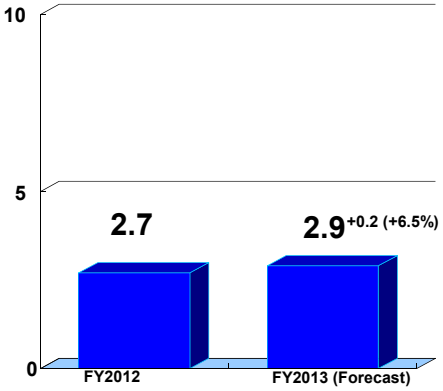
Other Businesses Segment Forecasts for FY2013

Billions of yen

Sales



Operating Income



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