Evolving unique chemical company

Second Quarter, 2014 Financial Results

- Consolidated -

SHOWA DENKO K.K.

July 31, 2014

Saburo Muto, CFO

Performance forecast and other statements pertaining to the future as contained in this presentation are based on the information available as of today and assumptions as of today regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the economic conditions, costs of naphtha and other raw materials, demand for our products, market conditions, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.

Consolidated Companies

- Consolidated subsidiaries: 47
  (5 companies newly consolidated)

Shanghai Showa Chemicals Co., Ltd. (Chemicals Segment)
Zhejang Quzhou Juhua Showa Electronic Chemical Materials Co., Ltd. (Chemicals Segment)
Showa Denko Aluminum (Nantong) Co., Ltd. (Aluminum Segment)
Hanacans Joint Stock Company (Aluminum Segment)
BE International Corporation (Others)

- Equity method applied: 14
  (1 company excluded)

Tokyo Aluminum Wire Co., Ltd. (liquidated)

Selected Data

(Average figure)

	Jan.- Jun. 2013	Jan.- Jun. 2014	Increase
■Exchange rate:¥/US$	95.6	102.5	Yen depreciated by 6.9
■Domestic naphtha price: ¥/kl	64,650	70,950	6,300
■Aluminum			
LME price: US$/T	1,955	1,794	-162
Domestic market*: K¥/T	242	252	10

Exchange rate at 2013 year-end: ¥105.4/US$, at the end of June, 2014 ¥ 101.4 /US$
⇒Yen appreciated by ¥4.0/US$

*Domestic market: data from Nikkei

Summary

2013 (Jan.1 – Jun.30) vs. 2014 (Jan.1 – Jun.30)

(Unit: Billions of Yen)

	Jan.-Jun. 2013	Jan.-Jun. 2014	Increase
Net Sales	401.4	413.6	12.2
Operating Income	6.7	10.5	3.8
Non-operating income and expense	-1.3	-3.3	-2.0
Interest/Dividend income less expenses	-1.3	-1.0	0.3
Equity in earnings or losses of affiliates	-0.6	0.4	0.9
Foreign exchange gain or loss	1.3	-0.9	-2.2
Other	-0.8	-1.9	-1.1
Ordinary Income	5.4	7.2	1.8
Extraordinary Income	1.5	1.1	-0.4
Extraordinary Loss	-2.8	-5.8	-3.0
Income before income taxes and minority interests	4.1	2.5	-1.6
Income Taxes	-1.2	-5.4	-4.2
Income before minority interests	2.9	-2.9	-5.8
Minority Interests in income	-0.7	-0.5	0.2
Net Income	2.2	-3.4	-5.6

Extraordinary Profit/Loss

(Unit: Billions of Yen)

	Jan.-Jun. 2013	Jan.-Jun. 2014	Increase
■Extraordinary Profit	1.5	1.1	-0.4
●Gain on sales of investment securities	0.5	0.7	0.2
●Compensation for contract cancellation	0.8	-	-0.8
●Other	0.3	0.4	0.1
■Extraordinary Loss	-2.8	-5.8	-3.0
●Loss on sales and retirement of noncurrent assets	-0.6	-0.7	-0.1
●Loss on valuation of investment securities	-0.1	-4.0	-4.0
●Loss on restructuring of subsidiaries and affiliates	-1.4	-	1.4
●Other	-0.8	-1.0	-0.3
■Extraordinary Profit/Loss, Net	-1.3	-4.7	-3.4

Consolidated Sales by Segment

(Unit: Billions of Yen)

	Jan.-Jun. 2013	Jan.-Jun. 2014	Increase	
Petrochemicals	135.4	119.7	-15.7	【Olefins】sales decreased (shipment volumes down due to large-scale shutdown maintenance) 【Organic chemicals】sales increased (shipment volume of vinyl acetate, ethyl acetate up)
Chemicals	61.9	67.3	5.4	【Basic chemicals】sales increased (AN: market price up, Chloroprene rubber: shipment volumes up) 【Industrial gases】sales increased (shipment volumes up) 【Electronic chemicals】sales increased (shipment volumes up for Asian markets) 【Functional chemicals】sales increased (shipment volumes up)
Electronics	66.2	69.5	3.3	【HDs】sales slightly increased 【Compound semiconductors】sales increased (shipment volumes up) 【Rare earth】sales increased (shipment volumes up)
Inorganics	31.0	33.3	2.3	【Ceramics】sales increased (shipment volumes of abrasives up) 【Graphite electrodes】sales increased (shipment volumes up)
Aluminum	43.7	45.8	2.1	【High-purity foil for capacitors】sales increased (shipment volumes up) 【Aluminum specialty components】sales increased (shipment volumes for automotive applications up) 【Aluminum cans】sales slightly decreased
Others	82.3	99.3	17.0	【LIB materials】sales increased (shipment volumes for smartphones, tablets, and automobiles up) 【SHOKO Co., Ltd.】sales increased
Adjustment	-19.1	-21.5	-2.3	
Total	401.4	413.6	12.2	

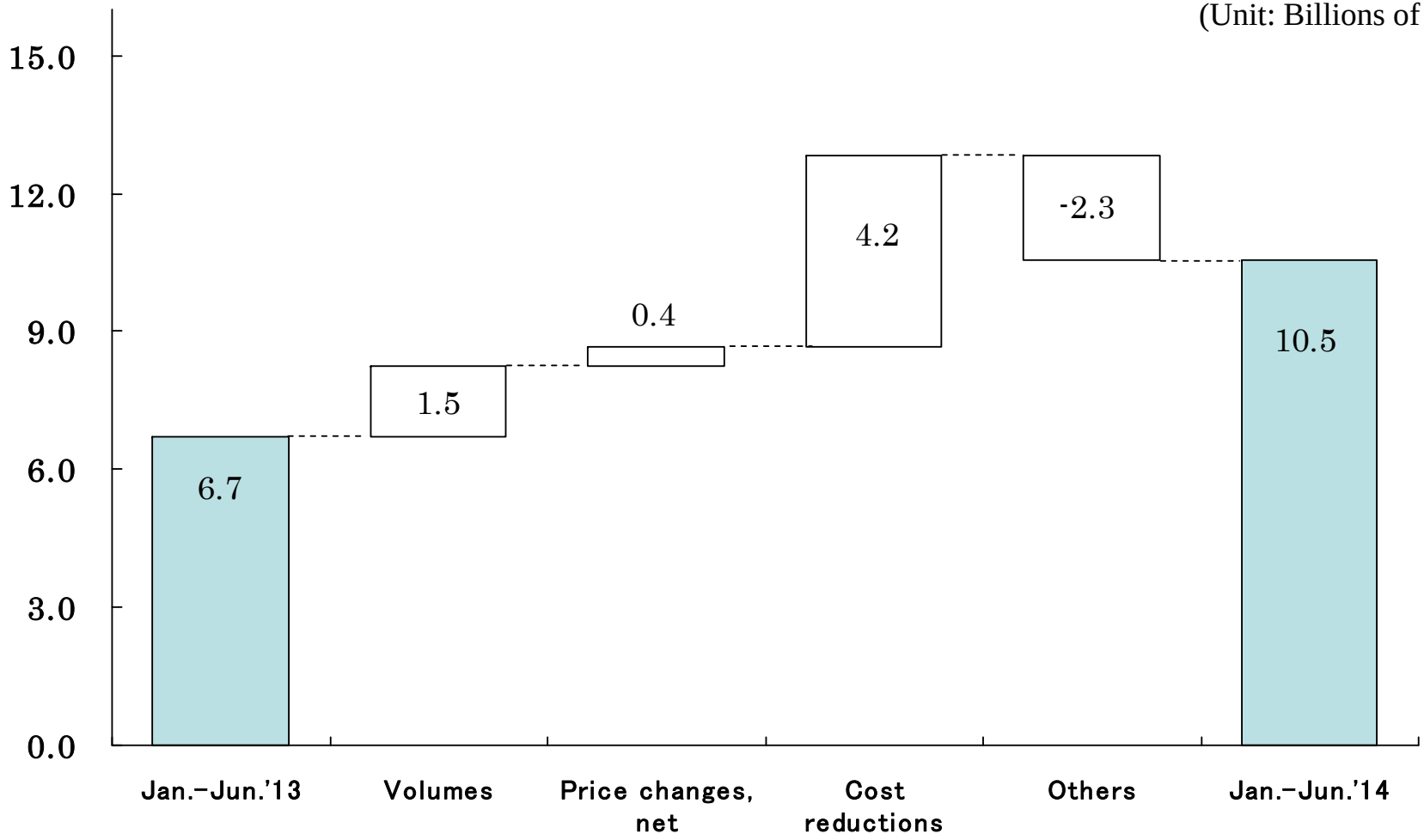
Consolidated Operating Income by Segment

(Unit: Billions of Yen)

	Jan.-Jun. 2013	Jan.-Jun. 2014	Increase	
Petrochemicals	0.0	-1.9	-1.9	【Olefins】profit decreased (shipment volumes down due to shutdown maintenance) 【Organic chemicals】profit decreased (raw material costs up)
Chemicals	0.6	1.4	0.8	【Basic chemicals】profit decreased (raw material cost of ammonia up) 【Industrial gases】profit increased 【Electronic chemicals】profit increased 【Functional chemicals】profit decreased
Electronics	8.4	13.2	4.8	【HDs】profit increased 【Compound semiconductors】profit increased 【Rare earth】profit increased (shipment volumes up, adjustment loss in book value of inventory posted in 1st half, 2013)
Inorganics	-0.6	-0.8	-1.0	【Ceramics】profit increased (shipment volumes up) 【Graphite electrodes】profit decreased
Aluminum	2.9	1.8	-1.1	【High-purity foil for capacitors】profit decreased (raw material costs up) 【Aluminum specialty components】profit increased (shipment volumes up) 【Aluminum cans】profit decreased (raw material costs up)
Others	-0.9	0.3	1.2	【LIB materials】profit increased (shipment volumes up) 【SHOKO Co., Ltd.】profit increased
Adjustment	-3.5	-3.5	0.1	
Total	6.7	10.5	3.8	

Operating Income Breakdown by Factor

(Unit: Billions of Yen)



Consolidated Balance Sheet

(Unit: Billions of Yen)

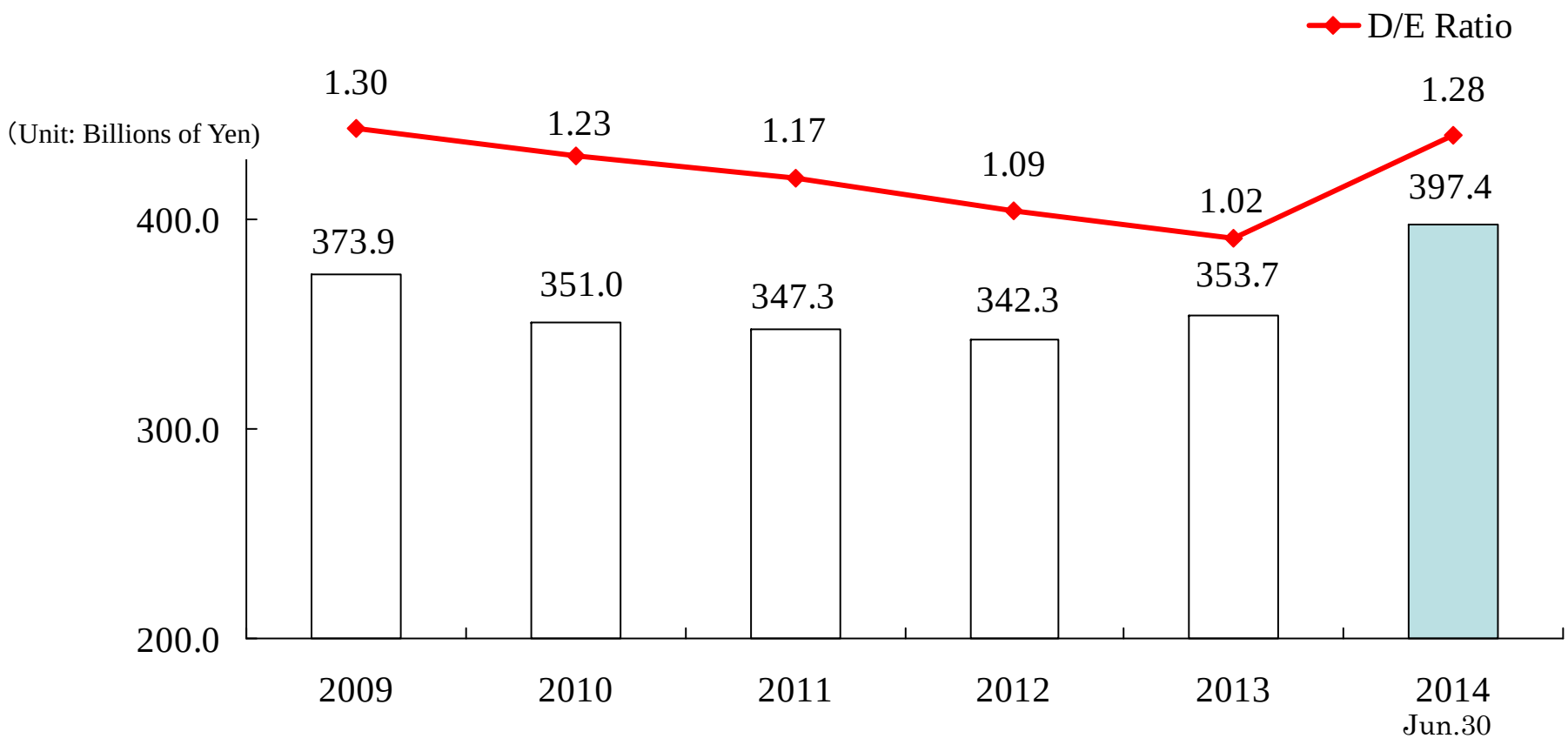
Assets	Dec.31, 2013	Jun.30, 2014	Increase	Liabilities and Shareholders' Equity	Dec.31, 2013	Jun.30, 2014	Increase
Cash and deposits	68.2	54.9	-13.4	Notes and accounts payable	124.2	111.6	-12.6
Notes and accounts receivable	156.1	148.1	-8.0	Interest-bearing debt	353.7	397.4	43.7
Inventories	120.2	118.1	-2.1	Provision for retirement benefits	20.3	17.1	-3.2
Other current assets	30.1	34.4	4.3	Other liabilities	141.8	129.8	-12.0
Total Current Assets	374.6	355.5	-19.1	Total Liabilities	640.0	655.9	15.9
Buildings and structures	85.5	84.3	-1.2	Capital stock	140.6	140.6	-
Machinery and equipment	111.6	112.0	0.4	Capital surplus	62.2	62.2	0
Land	254.6	254.1	-0.5	Retained earnings	58.4	50.5	-7.9
Other tangible fixed assets	42.4	51.3	8.9	Treasury stock	-0.1	-0.2	0
Tangible Fixed Assets	494.1	501.7	7.6	Total Shareholders' equity	261.0	253.2	-7.9
Intangible Fixed Assets	11.0	14.6	3.7	Valuation difference on available-for-sale securities	5.8	5.9	0
Investments and other assets	106.1	94.7	-11.4	Foreign currency translation adjustment, Deferred hedge gains	6.4	3.4	-3.0
incl. investment securities	78.7	73.4	-5.3	Revaluation reserve for land	27.9	27.9	0
				Total accumulated other comprehensive income	40.2	37.2	-3.0
				Minority Interests	44.6	20.3	-24.3
Total fixed assets	611.2	611.0	-0.1	Total net assets	345.8	310.6	-35.2
Total Assets	**985.8**	**966.5**	**-19.3**	**Total Liabilities and Net Assets**	**985.8**	**966.5**	**-19.3**

Total Assets
Interest-bearing Debt and D/E ratio

(Unit: Billions of Yen)

	Dec.31, 2013	Jun.30, 2014	Increase/ decrease
● **Total assets**	985.8	966.5	-19.3
● **Interest-bearing debt**	353.7	397.4	43.7
● **Debt/Equity ratio**	1.02times	1.28times	0.26p
● **Stockholders' Equity ratio**	30.6%	30.0%	-0.6p

Interest-bearing Debt



Equity ratio	25.5%	26.1%	26.8 %	29.2%	30.6%	30.0%

Consolidated Cash Flows

(Unit: Billions of Yen)

	2013 Jan.-Jun.	2014 Jan.-Jun.	Increase
●CF from Operating Activities	17.1	11.3	-5.8
●CF from Investing Activities	-27.3	-30.6	-3.3
●Free CF	-10.3	-19.3	-9.0
●CF from Financing Activities	8.2	6.2	-2.0
●Others	3.2	-1.5	-4.7
Increase of cash and equivalents	1.1	-14.6	-15.7

Selected Data (Consolidated)

(Unit: Billions of Yen)

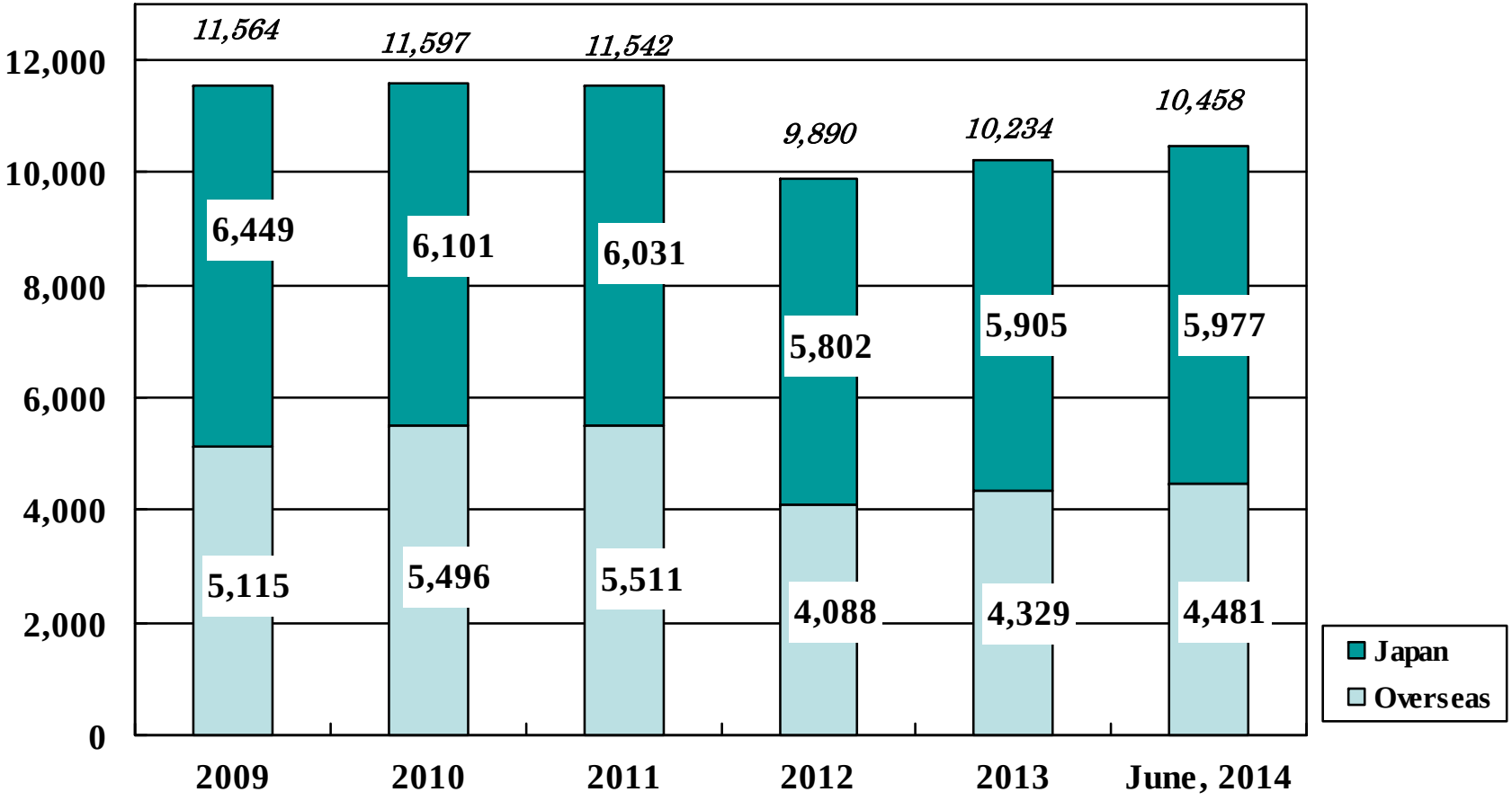
	Jan.-Jun. 2013	Jan.-Jun. 2014	Increase
● Interest/dividend income less interest expenses	-1.3	-1.0	0.3
● Capital expenditures	20.0	25.1	5.1
● Depreciation and amortization	20.3	19.7	-0.6
● R&D expenditures	10.0	9.8	-0.2
● Number of employees	10,397	10,458	61
● Total employment cost	36.1	36.5	0.4

Capital expenditures/ Depreciation by Segment

(Unit: Billions of Yen)

	Jan.-Jun. 2013		Jan.-Jun. 2014		Increase	
	Capital expenditures	Depreciation	Capital expenditures	Depreciation	Capital expenditures	Depreciation
Petrochemicals	1.1	3.2	3.5	3.2	2.4	-0.1
Chemicals	3.5	3.7	3.9	3.8	0.4	0
Electronics	3.0	7.6	3.1	6.4	0.1	-1.2
Inorganics	7.4	1.5	7.8	1.7	0.4	0.2
Aluminum	2.8	2.1	4.0	2.4	1.1	0.3
Others	2.2	2.1	2.9	2.3	0.7	0.1
Total	20.0	20.3	25.1	19.7	5.1	-0.6

Total number of employees and breakdown by location



Japan	55.8%	52.6%	52.3%	58.7%	57.7%	57.2%
Overseas	44.2%	47.4%	47.7%	41.3%	42.3%	42.8%

2014 Forecast

(Unit: Billions of Yen except Cash dividends per Share and Net income per Share)

	2013	2014 Revised Forecast*	Increase	2014 Initial Forecast**	Increase (against initial)
Net Sales	848.1	895.0	46.9	890.0	5.0
Operating Income	26.0	32.0	6.0	32.0	0.0
Interest/dividend income less interest expenses	-2.5	-6.0	-3.5	-7.0	1.0
Ordinary Income	23.5	26.0	2.5	25.0	1.0
Extraordinary Profit	6.3	-15.0	-15.6	-8.0	-7.0
Extraordinary Loss	-5.7				
Net Income	9.1	7.0	-2.1	12.0	-5.0
Net Income per Share	¥6.06	¥4.68	¥-1.38	¥8.20	¥3.53
Cash dividends per Share	¥3.00	¥3.00 (planned)	-	¥3.00 (planned)	–

* 2014 Forecast was revised on July 31, 2014.
**2014 Initial forecast was announced on Feb. 13, 2014.

Consolidated Net Sales by Segment, 2014 Forecast

(Unit: Billions of Yen)

	2013	2014 Revised Forecast*	Increase	2014 Initial Forecast**	Increase (against initial)
Petrochemicals	286.7	286.0	-0.7	267.0	19.0
Chemicals	130.7	143.0	12.3	143.0	0.0
Electronics	136.5	138.0	1.5	147.0	-9.0
Inorganics	65.9	68.0	2.1	71.0	-3.0
Aluminum	90.4	104.0	13.6	114.0	-10.0
Others	176.5	202.0	25.5	195.0	7.0
Adjustment	-38.7	-46.0	-7.3	-47.0	1.0
Total	848.1	895.0	46.9	890	5.0

* 2014 Forecast was revised on July 31, 2014.
**2014 Initial forecast was announced on Feb. 13, 2014.

Consolidated Operating Income by Segment, 2014 Forecast

(Unit: Billions of Yen)

	2013	2014 Revised Forecast*	Increase	2014 Initial Forecast**	Increase (against initial)
Petrochemicals	4.4	2.5	-1.9	1.0	1.5
Chemicals	2.6	6.0	3.4	6.5	-0.5
Electronics	21.9	26.0	4.1	25.0	1.0
Inorganics	-0.8	0.0	0.8	0.0	0.0
Aluminum	5.8	4.0	-1.8	6.0	-2.0
Others	-0.6	1.5	2.1	1.5	0.0
Adjustment	-7.3	-8.0	-0.7	-8.0	0.0
Total	26.0	32.0	6.0	32.0	0.0

*2014 Forecast was revised on July 31, 2014.
**2014 Initial forecast was announced on Feb. 13, 2014.

Selected Data, Forecast

(Unit: Billions of Yen)

	2013 Actual	2014 Revised Forecast*	Increase
●Interest-bearing debt at year end	353.7	380.0	26.3
●Interest/dividend income less interest expenses	-2.8	-3.0	-0.2
●R&D expenditures	20.4	20.0	-0.4
●Number of employees	10,234	10,751	517
●Total employment cost	70.2	73.4	3.2
●Exchange rate: ¥/US$	1H 95.6 2H 99.7	1H 102.5 2H 102.0	1H 6.9 2H 2.3
●Domestic naphtha price: ¥/kl	1H 64,650 2H 65,850	1H 70,950 2H 69,900	1H 6,300 2H 4,050
●Aluminum LME price: US$/T	1H 1,955 2H 1,820	1H 1,794 2H 1,850	1H -161 2H 30

* 2013 Forecast was revised on July 29, 2013.

Capital expenditures/Depreciation Forecast by Segment for 2014

(Unit: Billions of Yen)

	2013 Actual		2014 Revised forecast		Increase		2014 Initial forecast	
	Capital expenditures	Depreciation	Capital expenditures	Depreciation	Capital expenditures	Depreciation	Capital expenditures	Depreciation
Petrochemicals	2.9	6.4	4.7	6.6	1.8	0.2	4.4	6.6
Chemicals	6.7	7.3	8.8	7.4	2.0	0.1	9.1	7.3
Electronics	6.1	14.2	10.8	12.8	4.7	-1.4	10.5	12.8
Inorganics	18.3	3.1	14.9	3.6	-3.4	0.4	13.6	4.1
Aluminum	6.3	4.3	6.5	5.2	0.3	0.9	4.9	5.3
Others	4.0	4.4	6.7	4.8	2.6	0.4	4.1	4.9
Total	44.4	39.8	52.4	40.4	8.0	0.6	* 46.7	41.0

* Capital expenditure for consolidation has been deducted from the initial forecast

CQ2 Summary (Reference)

CQ1 (Jan.1 – Mar.31), 2014 v s. CQ2 (Apr.1 – Jun.30), 2014

(Unit: Billions of Yen)

	CQ1, 2014	CQ2, 2014	Increase
Net Sales	209.6	204.0	-5.7
Operating Income	7.6	3.0	-4.6
Non-operating income and expense	-1.0	-2.3	-1.3
Interest/Dividend income less expenses	-0.6	-0.4	0.2
Equity in earnings or losses of affiliates	0.6	-0.2	-0.9
Foreign exchange gain or loss	-0.1	-0.8	-0.7
Other	-1.0	-1.0	0.0
Ordinary Income	6.6	0.6	-6.0
Extraordinary Income	0.7	0.4	-0.3
Extraordinary Loss	-1.0	-4.7	-3.7
Income before income taxes and minority interests	6.3	-3.7	-10.0
Income Taxes	-4.9	-0.5	4.4
Income before minority interests	1.4	-4.3	-5.6
Minority Interests in income	-0.4	-0.1	0.3
Net Income	0.9	-4.4	-5.3

Consolidated Sales by Segment

(Unit: Billions of Yen)

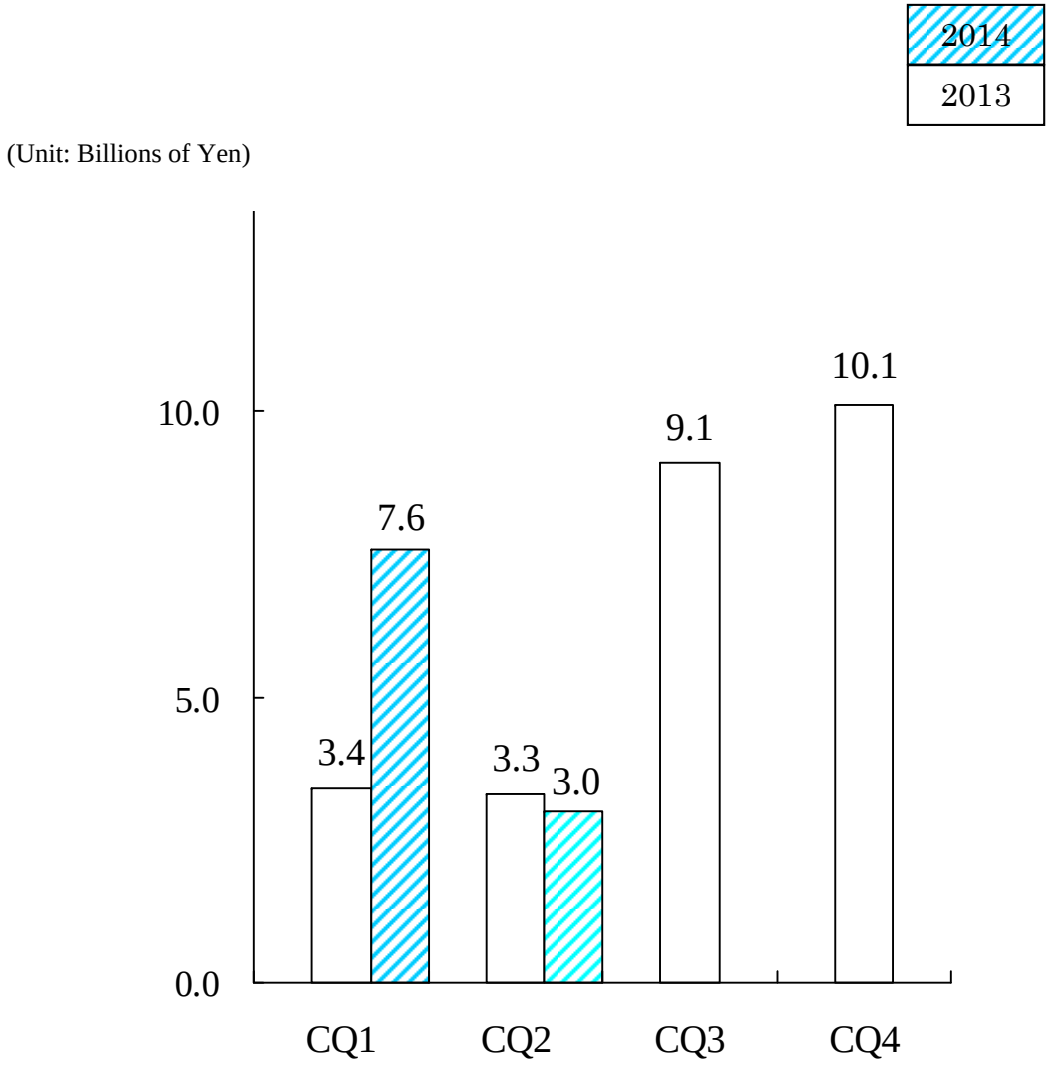
	CQ1, 2014	CQ2, 2014	Increase	
Petrochemicals	62.1	57.7	-4.4	【Olefins】sales decreased (shipment volumes down due to a difference in number of days of shutdown maintenance) 【Organic chemicals】sales decreased (shipment volumes down)
Chemicals	33.4	33.9	0.5	【Basic chemicals】sales increased (AN, Chloroprene rubber: shipment volumes up) 【Industrial gases】sales increased (shipment volumes up) 【Electronic chemicals】sales increased (shipment volumes up for Asian markets) 【Functional chemicals】sales decreased (shipment volumes down)
Electronics	37.2	32.3	-4.9	【HDs】sales decreased (shipment volumes down) 【Compound semiconductors】sales increased (shipment volumes up) 【Rare earth】sales decreased (shipment volumes down)
Inorganics	16.0	17.4	1.4	【Ceramics】sales increased (shipment volumes of abrasives up) 【Graphite electrodes】sales increased (shipment volumes up)
Aluminum	21.2	24.6	3.3	【High-purity foil for capacitors】sales increased (shipment volumes up) 【Aluminum specialty components】sales increased (shipment volumes for automotive applications up) 【Aluminum cans】sales increased
Others	49.8	49.5	-0.3	【LIB materials】sales increased (shipment volumes for smartphones, tablets, and automobiles up)
Adjustment	-10.1	-11.4	-1.2	
Total	209.6	204.0	-5.7	

Consolidated Operating Income by Segment

(Unit: Billions of Yen)

	CQ1, 2014	CQ2, 2014	Increase	
Petrochemicals	-0.1	-1.9	-1.8	【Olefins】profit decreased (shipment volumes down due to a difference in number of days of shutdown maintenance) 【Organic chemicals】profit decreased (raw material costs up)
Chemicals	1.0	0.4	-0.6	【Basic chemicals】profit maintained at the CQ1 level 【Industrial gases】profit increased 【Electronic chemicals】profit increased 【Functional chemicals】profit decreased 【IPP】profit decreased (due to shut down maintenance)
Electronics	8.1	5.1	-3.0	【HDs】profit decreased (shipment volumes down) 【Compound semiconductors】profit increased 【Rare earth】profit decreased
Inorganics	-0.4	-0.3	0.1	【Ceramics】profit increased 【Graphite electrodes】profit increased
Aluminum	0.9	0.9	0.1	【High-purity foil for capacitors】profit increased 【Aluminum specialty components】profit increased 【Aluminum cans】profit decreased (raw material costs up)
Others	0.2	0.1	0.0	【LIB materials】profit increased (shipment volumes up)
Adjustment	-2.1	-1.4	0.7	
Total	7.6	2.9	-4.6	

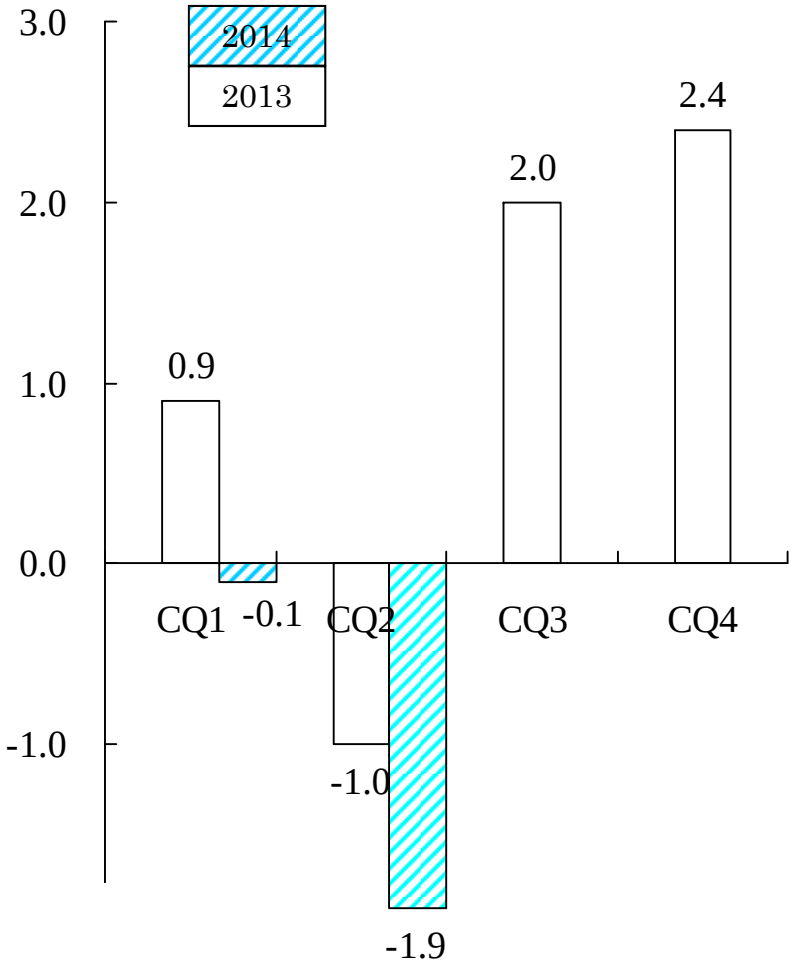
(Reference)　Quarterly Operating Income



(Reference) Quarterly Operating Income by Segment

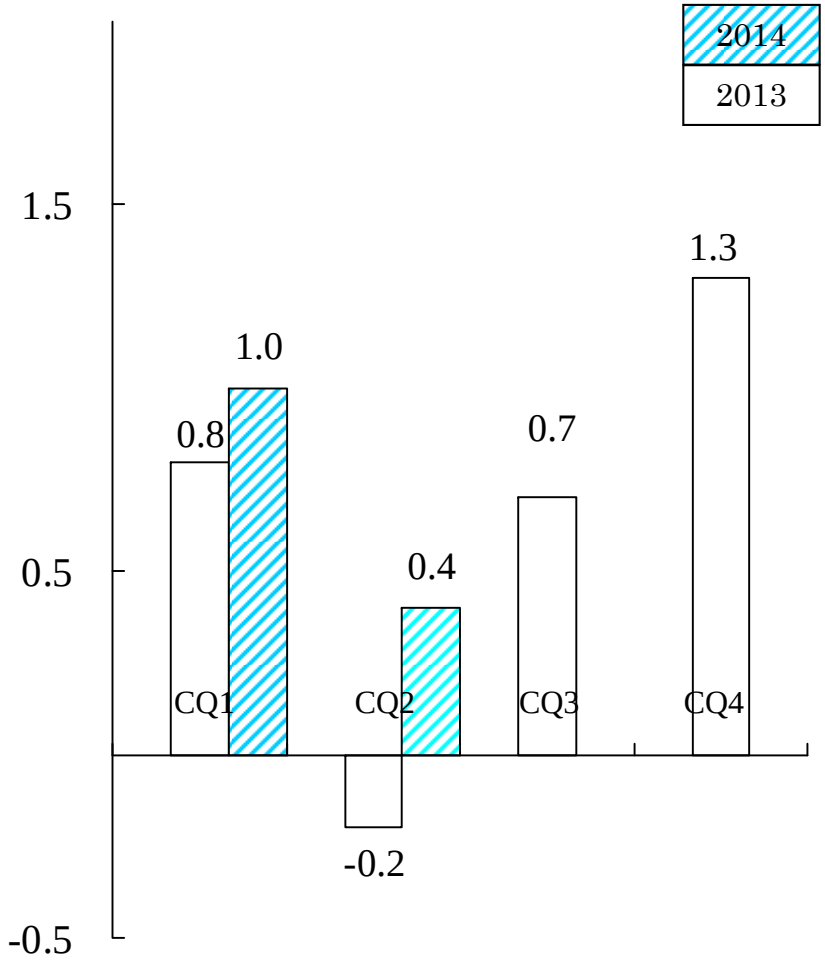
《Petrochemicals》

(Unit: Billions of Yen)



《Chemicals》

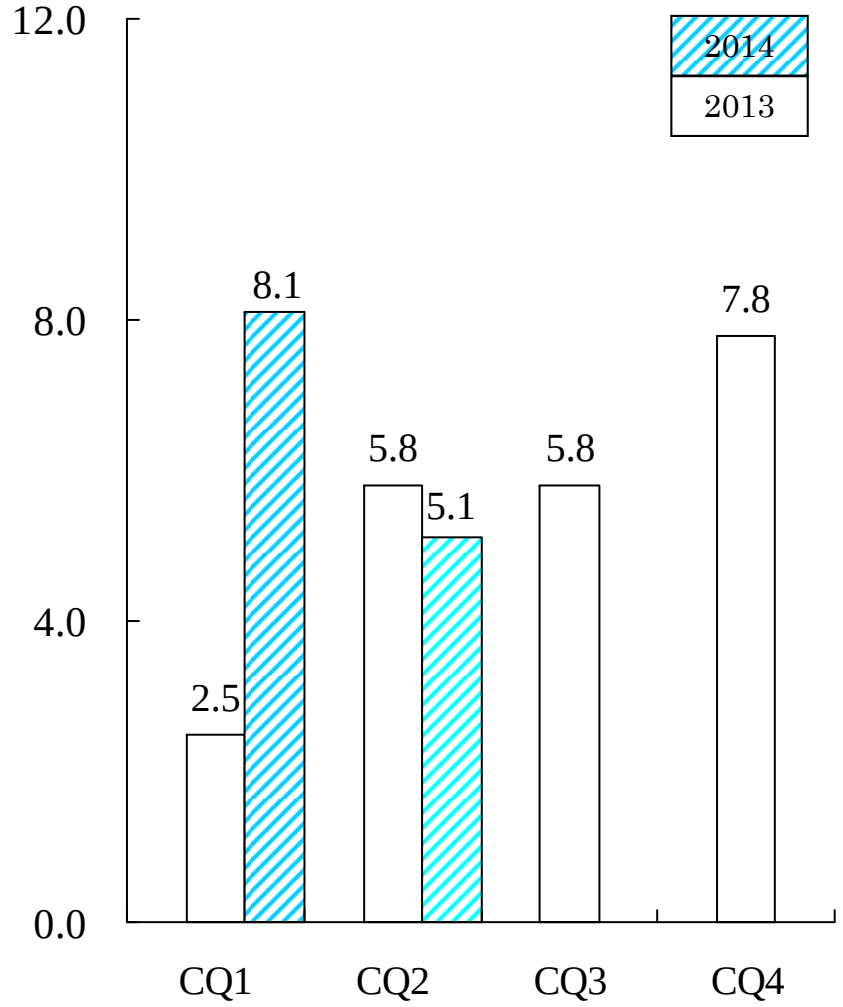
(Unit: Billions of Yen)



(Reference) Quarterly Operating Income by Segment

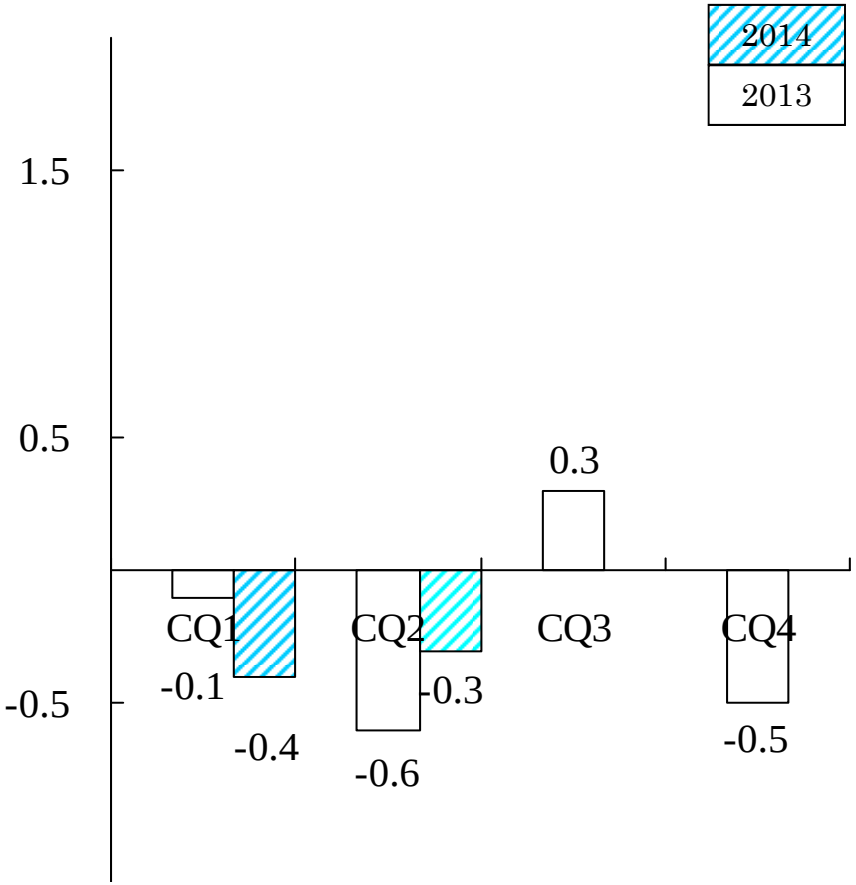
《Electronics》

(Unit: Billions of Yen)



《Inorganics》

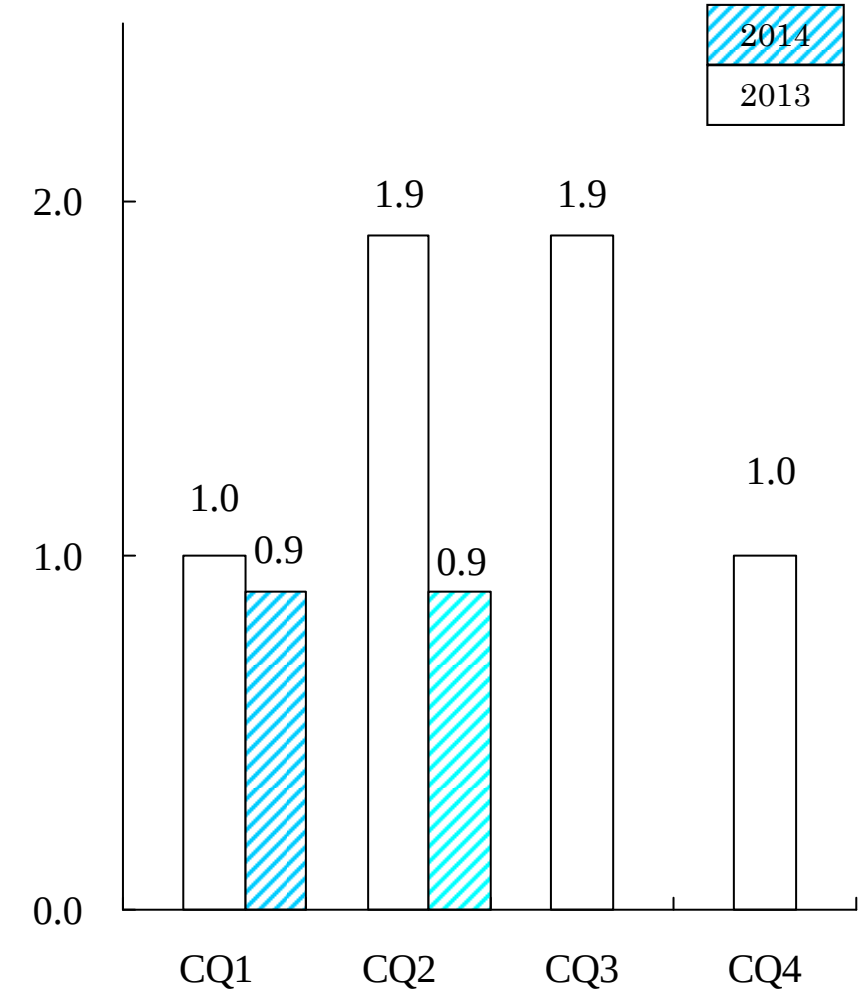
(Unit: Billions of Yen)



(Reference) Quarterly Operating Income by Segment

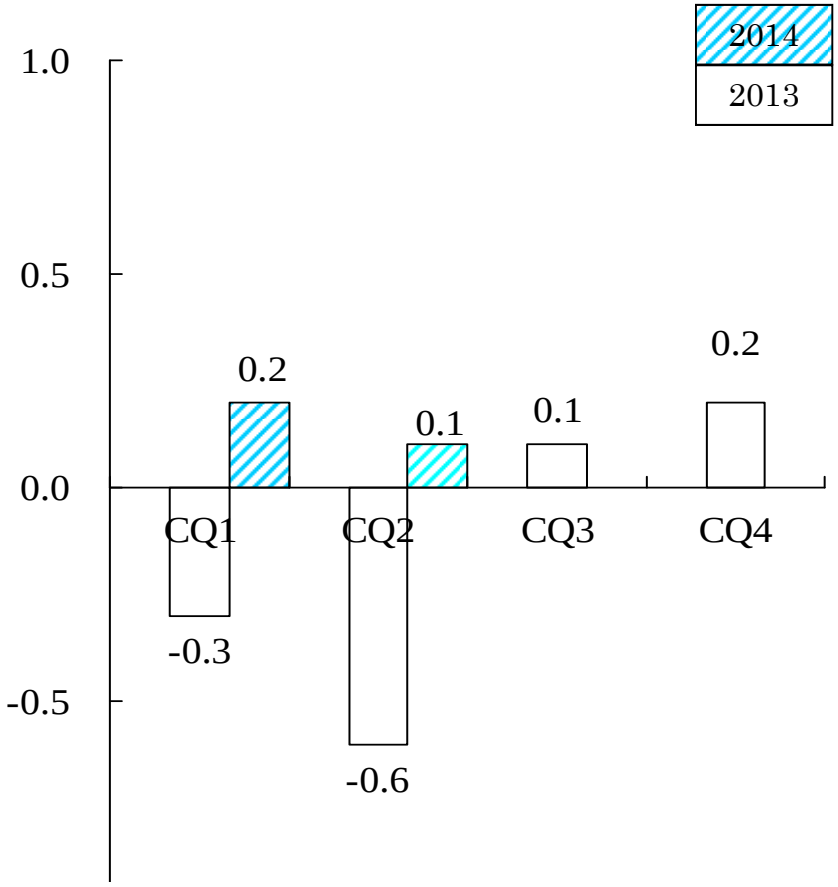
《Aluminum》

(Unit: Billions of Yen)



《Others》

(Unit: Billions of Yen)



Topics

[General]

- **Recognition as Chemical Heritage**

  In relation to the first industrial production in Japan of aluminum by one of the predecessors of SDK, the Chemical Society of Japan (CSJ) recognized relevant equipment and data as valuable historical records concerning the development of chemistry and the chemical industry in Japan. The historical records received recognition as CSJ's 5th Chemical Heritage in March. Nobuteru Mori, the founder of our company, and his team, succeeded in producing alumina (raw material for aluminum) from alum. CSJ recognized the proprietary technology to produce alumina from alum, which was available in Japan, and aluminum smelting based on hydraulic electricity in Omachi, Nagano Prefecture, as pioneering efforts.

- **Refinancing of existing Hybrid Securities by subordinated loan**

  In April, SDK carried out refinancing of an aggregate amount of ¥24 billion by way of a subordinated loan and the repurchase and cancellation of the subordinated convertible bonds due 2014 issued by SDK and perpetual preferred securities issued by SD Preferred Capital Limited, SDK's wholly-owned special purpose company.

Topics

- Receipt of award for six-inch SiC epitaxial wafer technology

SDK received in June, for its six-inch silicon carbide (SiC) epitaxial wafers for power devices, The Semiconductor Industry News' "Semiconductor of the Year 2014 Grand Prix" in the category of electronic materials for semiconductors. When compared with the mainstream silicon-based semiconductors, SiC power devices using SiC epitaxial wafers can operate under high-temperature and high-voltage conditions, while substantially reducing energy loss. Crystal defects in our six-inch SiC epitaxial wafers are limited to the level of crystal defects in conventional four-inch SiC epitaxial wafers. Thus, the six-inch SiC epitaxial wafers satisfy the conditions for use in heavy-current SiC devices for automotive inverters, in terms of both product quality and cost. Demand for SiC power devices will grow for use in cars, power sources of servers, electric vehicles and distributed power supply systems for new energies. SDK will continue its efforts to improve product quality and increase production capacity, thereby contributing to the spread of SiC power devices

[Petrochemicals segment]

- Start-up of new ethyl acetate plant

In June, SDK started commercial operation of its new ethyl acetate plant at Oita Complex using its proprietary production process technology. Ethyl acetate is an organic solvent used in wide-ranging applications, including printing ink, paint, and adhesives for electronic devices. In the new process technology adopted this time, however, acetic acid is directly added to ethylene, enabling efficient production of high-quality ethyl acetate. While the technology is already being used at our production site in Indonesia, this is the first time that the technology is commercially used in Japan.

Topics

[Chemicals segment]

● Expanding high-purity ammonia production in China

SDK increased the production capacity for high-purity ammonia (a specialty gas for semiconductor production) at its manufacturing subsidiary* in Zhejiang Province, China, from 1,000 t/y to 2,000 t/y. The expanded facility started operation in January. Following the expansion, SDK now has a total high-purity ammonia production capacity of 6,000 tons a year, consisting of 1,500 t/y in Japan, 2,500 t/y in Taiwan, and 2,000 t/y in China. High-purity ammonia is used for nitride film deposition in the manufacturing processes of liquid crystal display (LCD) panels and light-emitting diodes (LEDs). High-purity ammonia demand is growing for the production of LEDs used in general lighting and LCD backlight. SDK will continue to strengthen its supply system to meet the growing demand for high-purity gases in East Asia, where electronics production sites are integrated.

* Zhejiang Quzhou Juhua Showa Electronic Chemical Materials Co., Ltd.

● Establishing a new base for high-purity N^2O in South Korea

SDK decided to increase its capacity for supplying high-purity nitrous oxide (N^2O), a specialty gas for semiconductor production, by cooperating with Dooam Industrial, which is headquartered in Anseong, Gyeonggi Province, South Korea. SDK and Dooam concluded a work commissioning agreement concerning the production of high-purity N^2O. The two companies also agreed to jointly construct a purification facility within the premises of Dooam's plant near Seoul. The purification facility is scheduled for completion by the end of 2014, and commercial shipments will start in 2015. After the completion of the new facility, SDK's total high-purity N^2O supply capacity will increase to 1,800 t/y, consisting of 1,200 t/y in Japan and 600 t/y in South Korea. High-purity N^2O is used for deposition of an insulating oxide film in the process of chemical vapor deposition (CVD) for producing semiconductors. For this application, demand for high-purity N^2O is growing at the rate of 10-15% a year in Asia. SDK is strengthening its high-purity N^2O supply system in response to the growing demand in East Asia.

Topics

- Establishing a liquefied ammonia stable supply system in Tohoku and Niigata

In April, SDK started operating Showa Denko Tohoku Ammonia Center, a liquefied ammonia distribution base in Fukushima Prefecture. SDK reconstructed the distribution base, which had been damaged by the Great East Japan Earthquake. Liquefied ammonia is used in the production of synthetic fibers and metal surface treatment for automotive and construction machinery parts. It is also used for removing nitrogen oxides contained in exhaust gas from thermal electric power plants and waste incineration facilities. Thus, liquefied ammonia is an essential part of the lifeline. Furthermore, SDK's liquefied ammonia (trade name: EcoannTM) is approved as "eco-friendly goods for procurement" by major electric power companies because the product is partly based on used plastics. SDK forecasts high demand for EcoannTM in the Tohoku region and Niigata Prefecture as thermal electric power plants are expected to continue operating at high rates.

[Electronics segment]

- Increased adoption of proprietary LED chips for plant growth facility

Shigyo® Method, developed jointly by SDK and Yamaguchi University, accelerates the growth of plant at LED-based facilities by irradiating light with optimum wavelengths and intensity in consideration of the kind of plant and growing stages. SDK's proprietary LED chips are used for this technology. In the first half of this year, Shigyo® Method was adopted by Gushiken Co., Ltd., a major bread maker in Okinawa. According to the results of a demonstration experiment at Gushiken's plant growth facility, the electricity cost, including air-conditioning electricity cost, decreased by more than 30% compared with that of conventional fluorescent-lamp-based facility. It was also confirmed that the amount of harvest increased significantly. Furthermore, Shigyo® Unit was adopted by Endo Corporation at its plant growth facility in Tendo City, Yamagata Prefecture. The unit is a system for optimum plant growth environment, packaging all necessary technology and equipment for vegetable cultivation. Aiming to promote plant growth facilities that realize stable supply of safe food, SDK will continue to provide various types of support to companies considering participation in this business.

Topics

[Aluminum segment]

- **Completion of the acquisition of a Vietnamese aluminum can maker**

In May, SDK and its wholly owned subsidiary Showa Aluminum Can Corporation (SAC) completed the procedures for jointly acquiring 91.75% of shares in Hanacans*, a manufacturer of aluminum beverage cans in Vietnam. SDK classifies the aluminum can business in the "Growth" category under its "PEGASUS Phase II" business plan. Hanacans, with a solid customer base, is the largest aluminum can producer in the northern region of Vietnam. Furthermore, Hanacans will introduce SAC's advanced production technology and quality control system, thereby strengthening its competitive power in the growing Vietnamese market.

* Hanacans Joint Stock Company

[Others segment]

- **Completion of the expansion of LIB packaging film production capacity**

Showa Denko Packaging Co., Ltd. (a subsidiary of SDK) completed expansion of its capacity at its Hikone Plant for producing LIB-packaging aluminum laminated film. Commercial production started in July, and the production capacity has tripled versus the 2010 level. The market for LIB packaging film continues to grow. Demand for the film is expected to grow for use in large LIBs for automotive applications, in addition to demand for use in small LIBs for smartphones and tablet computers.