

*Evolving unique chemical company*

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# Second Quarter, 2012 Financial Results

- Consolidated -

## SHOWA DENKO K.K.

August 2, 2012  
(Corrected on April 25, 2017)

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This presentation contains statements relating to management's projections of future profits and expectations for the Company's product development program. The Company cannot guarantee that these expectations and projections will be realized or correct. Please note that actual results may differ materially from the forecast due to a variety of factors, including changes in the market conditions. The timely commercialization of products under development by the Company may be disrupted or delayed by a variety of factors, including market acceptance, and the introduction of new products by competitors. The foregoing list of factors is not inclusive.

## Consolidated Companies

- Consolidated subsidiaries: 38 (No new additions in this period)  
 Excluded: 4 Thermal Technology Corporation of America  
     Showa Aluminum (Thailand) Co., Ltd.  
     Showa Aluminium Czech S.R.O.  
     Grand Ocean-Showa Auto Air Conditioning (Dalian) Co., Ltd.

- Equity method applied: 18  
 Newly applied, Excluded: none

\*There is no change from 2012 1Q.

### Selected Data

(Average figure)

	Jan.- Jun. 2011	Jan.- Jun. 2012	Increase
■ Exchange rate:¥/US\$	82.0	79.7	Yen strengthened by ¥2.3/\$
■ Domestic naphtha price: ¥/kl	55,750	57,350	1,600
■ Aluminum LME price: US\$/T	2,573	2,116	-457

Exchange rate at 2011 year-end: ¥77.7/US\$, at the end of June, 2012 ¥79.3/US\$ ⇒ Yen depreciated by ¥1.6/US\$



# Summary

2011 (Jan.1 – Jun.30) v s. 2012 (Jan.1 – Jun.30)

(Unit: Billions of Yen)

	Jan.-Jun. 2011	Jan.-Jun. 2012	Increase
Net Sales	416.5	352.3	-64.2
Operating Income	22.1	16.0	-6.1
Non-operating income and expense	-4.0	-1.6	2.4
Interest/Dividend income less expenses	-2.1	-1.8	0.3
Equity in earnings or losses of affiliates	0.4	0.5	0.1
Ordinary Income	18.1	14.4	-3.6
Extraordinary Income	1.3	0.3	-1.0
Extraordinary Loss	-8.4	-5.5	2.9
Income before income taxes and minority interests	11.0	9.2	-1.8
Income Taxes	-1.8	-0.6	1.2
Income before minority interests	9.2	8.7	-0.5
Minority Interests in income	-1.4	-0.8	0.6
Net Income	7.8	7.9	0.1

# Extraordinary Profit/Loss

(Unit: Billions of Yen)

	Jan.-Jun. 2011	Jan.-Jun. 2012	Increase
■ Extraordinary Profit	1.3	0.3	-1.0
● Gain on sales of noncurrent assets	0.0	0.1	0.1
● Reversal of provision for retirement benefits	0.7	—	-0.7
● Other	0.7	0.2	-0.5
■ Extraordinary Loss	-8.4	-5.5	2.9
● Loss on sales and retirement of noncurrent assets	-0.6	-0.8	-0.2
● Impairment loss	-0.4	-2.3	-2.0
● Loss on the Great East Japan Earthquake	-2.9	—	2.9
● Other	-4.5	-2.4	2.1
■ Extraordinary Profit/Loss, Net	-7.1	-5.2	1.9

## Consolidated Sales by Segment

(Unit: Billions of Yen)

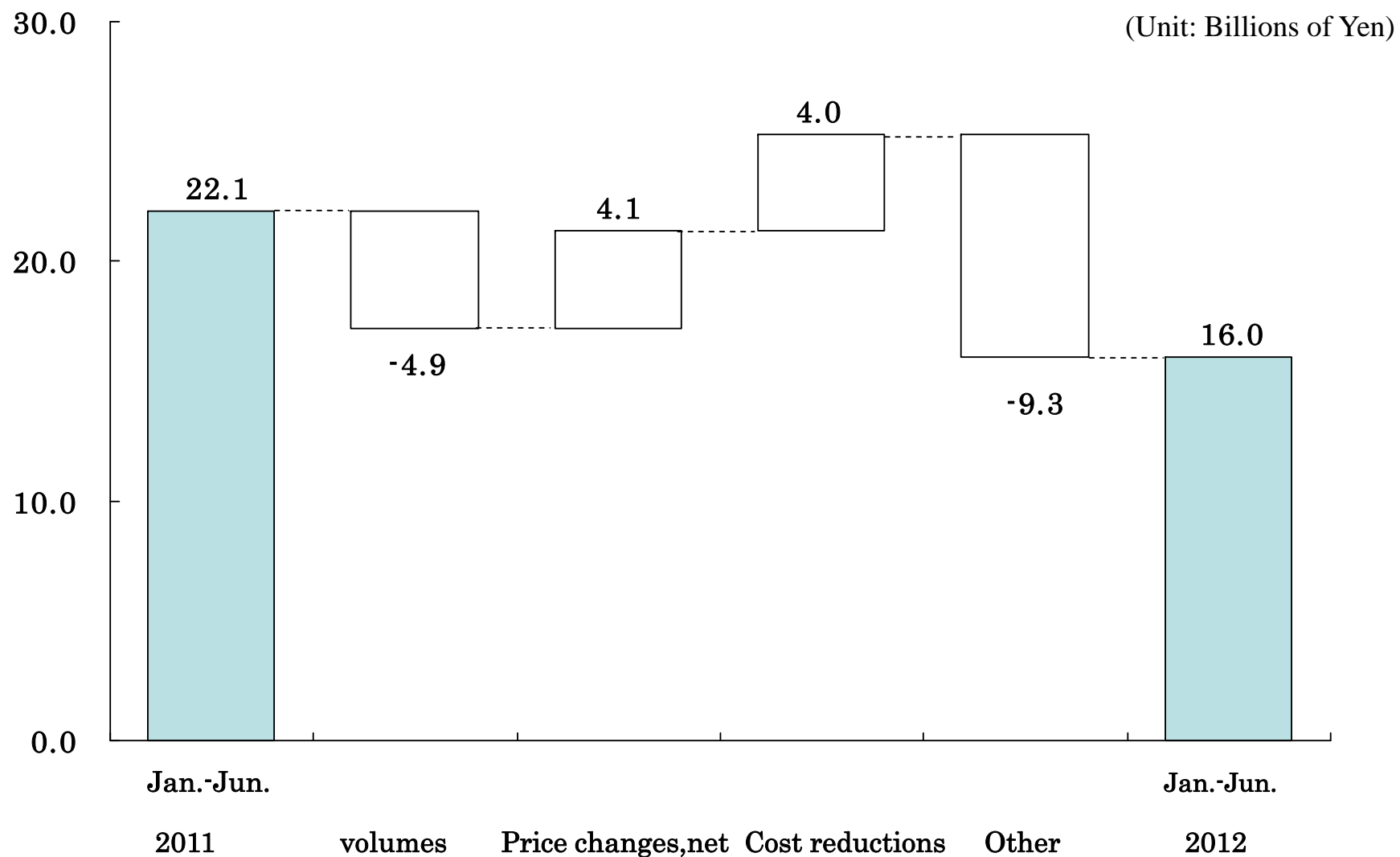
	Jan.-Jun. 2011	Jan.-Jun. 2012	Increase	
Petrochemicals	127.0	72.6	-54.5	Olefins: sales decreased (shipment volumes down due to problem with equipment, weakened supply and demand conditions) Organic chemicals: sales decreased (shipment volume of vinyl acetate down)
Chemicals	66.3	62.7	-3.6	Functional polymers: sales slightly decreased (shipment volumes down) Industrial gases: sales decreased (shipment volumes of dry ice down) Basic chemicals: sales decreased (AN: weakened supply and demand conditions, decline of the market prices) Electronic chemicals: sales maintained at the year-earlier level
Electronics	68.6	85.4	16.8	HDs: sales increased (shipment volumes up, reflecting the capacity expansion) Compound semiconductors: sales increased (shipment volume of ultra bright LEDs up) Rare earth: sales increased (reflecting the influence of the drastic material cost increase in the middle of previous year)
Inorganics	40.0	32.9	-7.1	Ceramics: sales decreased (shipment volumes for electronic applications down) Graphite electrodes: sales maintained at the year-earlier level (sales in the U.S. up, sales in Japan down)
Aluminum	61.7	47.6	-14.2	High-purity foils for capacitors, extrusions/specialty products: sales decreased (shipment volumes down) Heat exchangers: sales substantially decreased (heat exchangers for automotive air conditioners business was transferred) Shotoc: sales increased (shipment volumes up) Aluminum cans: sales slightly increased
Others	76.6	68.8	-7.8	LiB materials: sales decreased (shipment volumes down) SHOKO Co., Ltd. :sales decreased (sales of metals and chemicals down)
Adjustment	-23.8	-17.7	6.1	
Total	416.5	352.3	-64.2	

## Consolidated Operating Income by Segment

(Unit: Billions of Yen)

	Jan.-Jun. 2011	Jan.-Jun. 2012	Increase	
Petrochemicals	4.1	-2.2	-6.3	Olefins: profit decreased (shipment volumes down due to problem with equipment, weakened supply and demand conditions) Organic chemicals: profit decreased (shipment volume of vinyl acetate down)
Chemicals	2.8	-0.2	-3.1	Functional polymers: profit maintained at the year earlier level Industrial gases: profit decreased (shipment volumes down) Basic chemicals: profit decreased (AN: weakened supply and demand conditions, decline of the market prices) Electronic chemicals: profit decreased (shipment volumes down)
Electronics	7.5	17.9	10.3	HDs: profit increased (shipment volumes up, reflecting the capacity expansion) Compound semiconductors: profit increased (shipment volumes up) Rare earth: profit decreased (shipment volumes down)
Inorganics	5.6	2.3	-3.3	Ceramics: profit decreased (shipment volumes for electronic applications down) Graphite electrodes: profit maintained at the year earlier level
Aluminum	3.6	1.1	-2.5	High-purity foils for capacitors, Extrusions/specialty products: profit decreased (shipment volumes down) Heat exchangers: profit decreased (heat exchangers for automotive air conditioners business was transferred) Shotoc: profit maintained at the year earlier level Aluminum cans: profit slightly increased
Others	1.5	0.2	-1.3	LiB materials: profit decreased (shipment volumes down) SHOKO Co.,Ltd.: profit slightly decreased
Adjustment	-3.1	-3.2	-0.1	
Total	22.1	16.0	-6.1	

# Operating Income Breakdown by Factor





# Consolidated Balance Sheet

(Unit: Billions of Yen)

Assets	Dec.31, 2011	Jun.30, 2012	Increase/ decrease	Liabilities and Shareholders' Equity	Dec.31, 2011	Jun.30, 2012	Increase/ decrease
Cash and deposits	55.2	42.4	-12.8	Notes and accounts payable	117.2	113.1	-4.0
Notes and accounts receivable	139.4	127.6	-11.7	Interest-bearing debt	347.3	361.4	14.1
Inventories	123.7	131.9	8.2	Provision for retirement benefits	24.7	24.1	-0.6
Other current assets	29.6	42.2	12.6	Other liabilities	156.4	134.4	-22.0
<u>Total Current Assets</u>	347.9	344.2	-3.7	<u>Total Liabilities</u>	645.6	633.0	-12.6
Buildings and structures	84.2	82.0	-2.2	Capital stock	140.6	140.6	—
Machinery and equipment	123.5	119.1	-4.4	Capital surplus	62.2	62.2	0.0
Land	254.9	254.6	-0.2	Retained earnings	48.9	51.5	2.6
Other tangible fixed assets	19.8	19.4	-0.4	Treasury stock	-0.1	-0.1	0.0
<u>Tangible Fixed Assets</u>	482.4	475.1	-7.2	<u>Total Shareholders' equity</u>	251.5	254.1	2.6
Intangible Fixed Assets	11.1	10.5	-0.7	Valuation difference on available-for-sale securities	-4.9	-3.7	1.2
Investments and other assets	99.9	102.4	2.5	Foreign currency translation adjustment, Deferred hedge gains	-22.9	-21.2	1.7
Incl. Investment securities	59.6	64.7	5.2	Revaluation reserve for land	28.2	28.2	0.0
				<u>Total accumulated other comprehensive income</u>	0.4	3.3	2.9
				Minority Interests	43.8	41.8	-2.0
<u>Total fixed assets</u>	593.4	588.0	-5.4	<u>Total net assets</u>	295.7	299.2	3.5
<b>Total Assets</b>	<b>941.3</b>	<b>932.2</b>	<b>-9.1</b>	<b>Total Liabilities and Net Assets</b>	<b>941.3</b>	<b>932.2</b>	<b>-9.1</b>



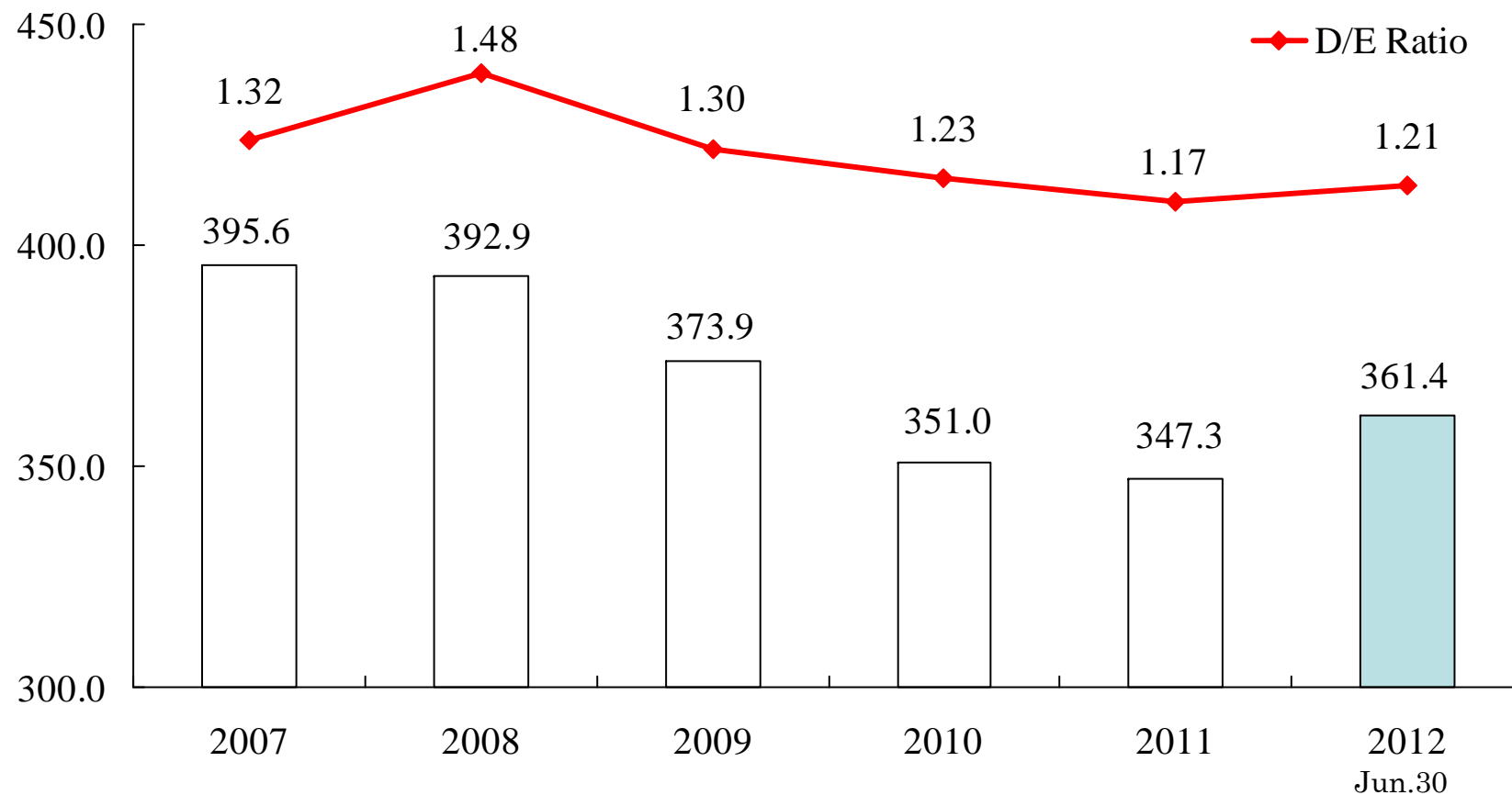
## Total Assets Interest-bearing Debt and D/E ratio

(Unit: Billions of Yen, times, %)

	Dec.31, 2011	Jun.30, 2012	Increase
● <b>Total assets</b>	941.3	932.2	-9.1
● <b>Interest-bearing debt</b>	347.3	361.4	14.1
● <b>Debt/Equity ratio</b>	1.17times	1.21times	0.04p
● <b>Stockholders' Equity ratio</b>	26.8%	27.6%	0.8p

# Interest-bearing Debt

(Unit: Billions of Yen)



Equity ratio	26.9%	25.0%	25.5%	26.1%	26.8%	27.6%
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## Consolidated Cash Flows

(Unit: Billions of Yen)

	2011 Jan.-Jun.	2012 Jan.-Jun.	Increase
● CF from Operating Activities	13.9	2.5	-11.4
● CF from Investing Activities	-19.1	-18.8	0.3
● Free CF	-5.2	-16.3	-11.1
● CF from Financing Activities	-1.4	3.3	4.7
● Others	0.0	1.0	1.0
Increase of cash and equivalents	-6.6	-12.1	-5.5

## Selected Data (Consolidated)

(Unit: Billions of Yen)

	Jan.-Jun. 2011	Jan.-Jun. 2012	Increase
● Interest/dividend income less interest expenses	-2.1	-1.8	0.3
● Capital expenditures	19.6	20.7	1.1
● Depreciation and amortization	24.7	23.1	-1.5
● R&D expenditures	11.0	10.2	-0.8
● Number of employees	11,790	9,905	-1,885
● Total employment cost	37.7	36.4	-1.3

(note) Due to the transfer of automotive heat exchanger business, the number of aluminum segment's employees decreased by 1,471.

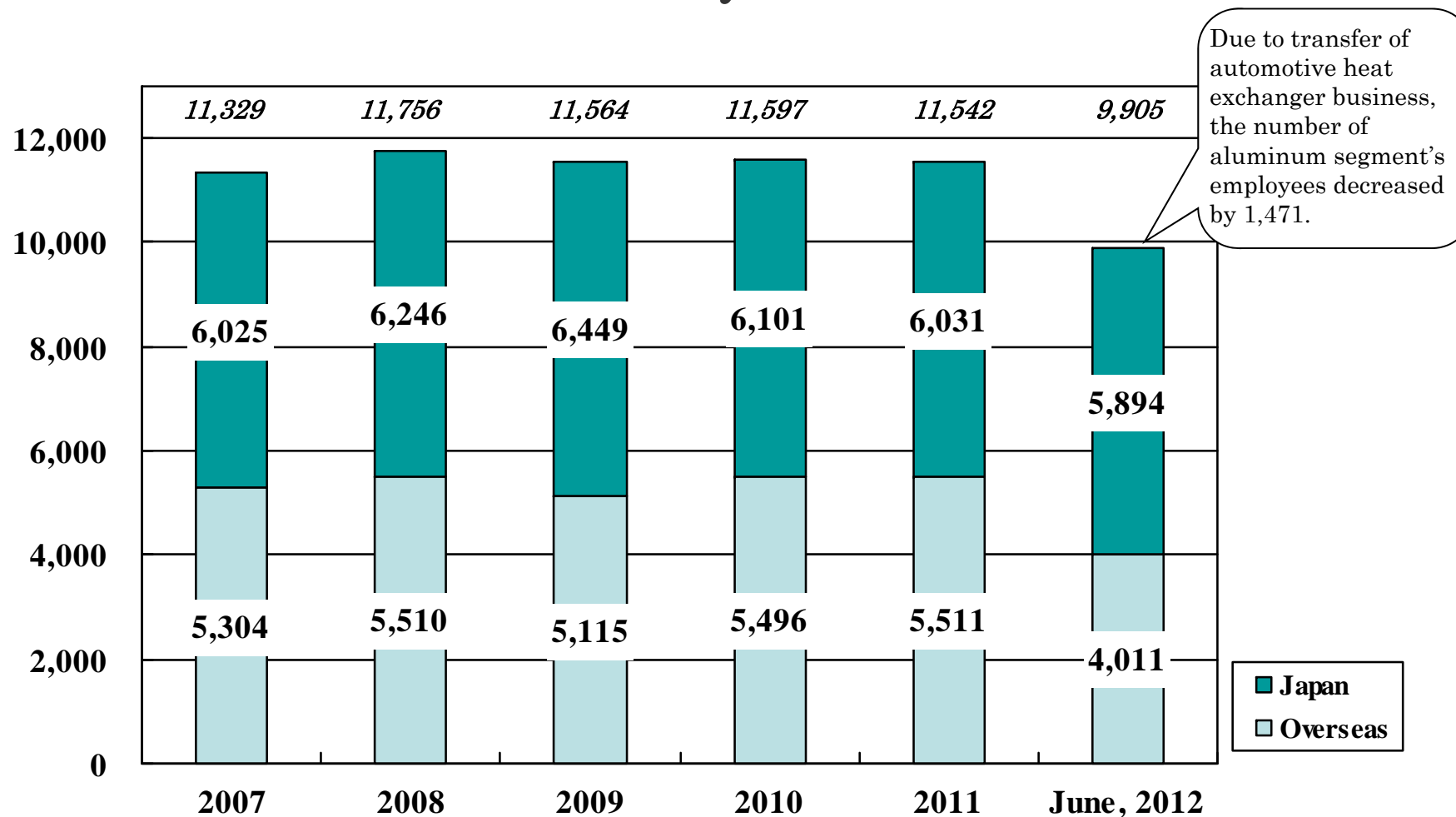


# Capital expenditures/ Depreciation by Segment

(Unit: Billions of Yen)

	Jan.-Jun. 2011		Jan.-Jun. 2012		Increase	
	Capital expenditures	Depreciation	Capital expenditures	Depreciation	Capital expenditures	Depreciation
Petrochemicals	1.3	3.5	2.2	3.6	1.0	0.0
Chemicals	3.0	4.6	4.9	4.6	1.9	0.0
Electronics	9.5	9.7	5.1	8.3	-4.4	-1.5
Inorganics	2.1	1.7	3.1	1.7	1.0	0.0
Aluminum	2.1	3.4	2.0	3.0	0.0	-0.4
Others	1.6	1.7	3.2	1.9	1.6	0.2
Total	19.6	24.7	20.7	23.1	1.1	-1.5

## Total number of employees and breakdown by location



Japan	53.2%	53.1%	55.8%	52.6%	52.3%	59.5%
Overseas	46.8%	46.9%	44.2%	47.4%	47.7%	40.5%

## 2012 Forecast

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

	2011	2012 Revised Forecast*	Increase	2012 Initial Forecast**
Net Sales	854.2	790.0	-64.2	880.0
Operating Income	47.4	42.0	-5.4	48.0
Interest/dividend income less interest expenses	-7.3	-6.0	1.3	-6.0
Ordinary Income	40.0	36.0	-4.0	42.0
Extraordinary Profit	2.2	-11.5	2.4	-9.0
Extraordinary Loss	-16.1			
Net Income	17.0	18.0	1.0	23.0
Net Income per Share	¥11.35	¥12.03	¥0.68	¥15.37
Cash dividends per Share	¥3.00	¥3.00 (planned)	—	¥3.00 (planned)

\* 2012 Forecast was revised on Aug. 1, 2012.

\*\*2012 Initial forecast was announced on Feb. 9, 2012.

# SHOWA DENKO Consolidated Net Sales by Segment, 2012 Forecast

(Unit: Billions of Yen)

	2011	2012 Revised forecast*	Increase	2012 Initial forecast**
Petrochemicals	250.4	195.0	-55.4	240.0
Chemicals	130.2	135.0	4.8	140.0
Electronics	165.0	175.0	10.0	190.0
Inorganics	77.6	75.0	-2.6	85.0
Aluminum	124.3	100.0	-24.3	105.0
Others	150.6	145.0	-5.6	160.0
Adjustment	-43.9	-35.0	8.9	-40.0
Total	854.2	790.0	-64.2	880.0

\* 2012 Forecast was revised on Aug. 1, 2012.

\*\*2012 Initial forecast was announced on Feb. 9, 2012.



## Consolidated Operating Income by Segment, 2012 Forecast

(Unit: Billions of Yen)

	2011	2012 Revised forecast*	Increase	2012 Initial Forecast**
Petrochemicals	3.5	0.0	-3.5	4.5
Chemicals	2.0	2.5	0.5	4.5
Electronics	30.2	33.5	3.3	26.0
Inorganics	9.6	7.5	-2.1	10.0
Aluminum	6.2	4.0	-2.2	6.0
Others	1.9	1.0	-0.9	3.0
Adjustment	-6.1	-6.5	-0.4	-6.0
Total	47.4	42.0	-5.4	48.0

\* 2012 Forecast was revised on Aug. 1, 2012.

\*\*2012 Initial forecast was announced on Feb. 9, 2012.

## Selected Data, Forecast

(Unit: Billions of Yen)

	2011 Actual	2012 Forecast	Increase
● Interest-bearing debt at year end	347.3	350.0	2.7
● Interest/dividend income less interest expenses	-4.3	-3.9	0.4
● R&D expenditures	21.6	21.2	-0.4
● Number of employees	11,542	10,087	-1,455
● Total employment cost	75.3	72.9	-2.4
● Exchange rate: ¥/US\$	(1 <sup>st</sup> half) 82	(1 <sup>st</sup> half) 80	(1 <sup>st</sup> half) -2
	(2 <sup>nd</sup> half) 78	(2 <sup>nd</sup> half) 80	(2 <sup>nd</sup> half) 2
● Domestic naphtha price: ¥/kl	(1 <sup>st</sup> half) 55,750	(1 <sup>st</sup> half) 57,350	(1 <sup>st</sup> half) 1,600
	(2 <sup>nd</sup> half) 53,300	(2 <sup>nd</sup> half) 52,400	(2 <sup>nd</sup> half) -900
● Aluminum LME price: US\$/T	(1 <sup>st</sup> half) 2,573	(1 <sup>st</sup> half) 2,116	(1 <sup>st</sup> half) -457
	(2 <sup>nd</sup> half) 2,600	(2 <sup>nd</sup> half) 2,170	(2 <sup>nd</sup> half) -430



## Capital expenditures/Depreciation Forecast by Segment for 2012

(Unit: Billions of Yen)

	2011 Actual		2012 Forecast		Increase	
	Capital expenditures	Depreciation	Capital expenditures	Depreciation	Capital expenditures	Depreciation
Petrochemicals	2.6	7.1	4.1	7.2	1.4	0.1
Chemicals	6.8	9.4	8.0	9.4	1.2	0.0
Electronics	13.5	19.2	11.4	16.6	-2.1	-2.5
Inorganics	5.3	3.5	13.9	3.5	8.6	0.0
Aluminum	5.4	6.9	4.9	6.1	-0.5	-0.7
Others	5.1	3.4	8.1	4.1	2.9	0.7
Total	38.8	49.4	50.3	47.0	11.5	-2.4



# Summary (Reference)

2011 CQ2 (Apr.1 – Jun.30) v s. 2012 CQ2 (Apr.1 – Jun.30)

(Unit: Billions of Yen)

	CQ2, 2011	CQ2, 2012	Increase
Net Sales	223.5	170.9	-52.6
Operating Income	12.7	6.5	-6.3
Non-operating income and expense	-2.6	-0.4	2.2
Interest/Dividend income less expenses	-1.0	-0.8	0.1
Equity in earnings or losses of affiliates	-0.0	0.0	0.1
Ordinary Income	10.1	6.1	-4.0
Extraordinary Income	0.9	0.0	-0.9
Extraordinary Loss	-4.1	-3.9	0.3
Income before income taxes and minority interests	6.9	2.2	-4.7
Income Taxes	-1.0	0.7	1.7
Income before minority interests	5.9	2.9	-3.0
Minority Interests in income	-0.7	-0.4	0.3
Net Income	5.2	2.6	-2.7



## Consolidated Sales by Segment

2011 CQ2 (Apr.1 – Jun.30) v s. 2012 CQ2 (Apr.1 – Jun.30)

(Unit: Billions of Yen)

	CQ2, 2011	CQ2, 2012	Increase	
Petrochemicals	68.2	25.5	-42.7	Olefins: sales decreased (shipment volumes down due to problem with equipment, weakened supply and demand conditions) Organic chemicals: sales decreased (shipment volumes down due to problem with ethylene production equipment)
Chemicals	33.9	32.1	-1.8	Industrial gases: sales decreased (shipment volumes down) Basic chemicals: sales decreased (AN: decline of the market prices) Electronic chemicals: sales decreased (shipment volumes down)
Electronics	42.1	44.0	1.9	HDs : sales maintained at the CQ2, 2011 level Compound semiconductors: sales increased (shipment volumes of ultra bright LEDs up) Rare earth: sales increased (price up)
Inorganics	20.3	16.8	-3.5	Ceramics: sales decreased (shipment volumes for electronic applications substantially down) Graphite electrodes: sales slightly decreased (sales in the U.S. maintained at CQ2, 2011 level, sales in Japan down)
Aluminum	32.0	26.1	-5.9	High-purity foils for capacitors, extrusions/specialty products: sales decreased (shipment volumes down) Heat exchangers: sales decreased (heat exchangers for automotive air conditioners business was transferred) Aluminum cans: sales increased (shipment volumes up)
Others	38.6	35.2	-3.4	LiB materials: sales decreased (shipment volumes down) SHOKO Co., Ltd. :sales decreased (sales of metals down)
Adjustment	-11.5	-8.7	2.8	
Total	223.5	170.9	-52.6	



## Consolidated Operating Income by Segment

2011 CQ2 (Apr.1 – Jun.30) v s. 2012 CQ2 (Apr.1 – Jun.30)

(Unit: Billions of Yen)

	CQ2, 2011	CQ2, 2012	Increase	
Petrochemicals	2.0	-2.3	-4.3	Olefins: profit decreased (shipment volumes down due to problem with equipment, the relaxation of supply and demand conditions) Organic chemicals: profit decreased (shipment volumes down due to problem with ethylene production equipment)
Chemicals	1.1	-0.8	-1.9	Industrial gases: profit decreased (shipment volumes down) Basic chemicals: profit decreased (AN: decline of the market prices)
Electronics	5.4	9.1	3.7	HDs: profit increased (improvement of product mix) Compound semiconductors: profit increased (shipment volumes up) Rare earth: profit decreased (shipment volumes down)
Inorganics	3.2	0.8	-2.3	Ceramics: profit decreased (shipment volumes for electronic applications down) Graphite electrodes: profit maintained at the CQ2, 2011 level
Aluminum	2.0	1.4	-0.6	High-purity foils for capacitors, extrusions/specialty products: profit decreased (shipment volumes down)
Others	0.8	0.1	-0.7	LiB materials: profit decreased (shipment volumes down)
Adjustment	-1.7	-1.9	-0.1	
Total	12.7	6.5	-6.3	



# CQ2 Summary (Reference)

CQ1 (Jan.1 – Mar.31), 2012 v s. CQ2 (Apr.1 – Jun.30), 2012

(Unit: Billions of Yen)

	CQ1, 2012	CQ2, 2012	Increase
Net Sales	181.3	170.9	-10.4
Operating Income	9.5	6.5	-3.1
Non-operating income and expense	-1.2	-0.4	0.8
Interest/Dividend income less expenses	-0.9	-0.8	0.1
Foreign exchange gain or loss	0.5	0.0	-0.4
Ordinary Income	8.3	6.1	-2.2
Extraordinary Income	0.3	0.0	-0.3
Extraordinary Loss	-1.6	-3.9	-2.3
Income before income taxes and minority interests	7.0	2.2	-4.8
Income Taxes	-1.3	0.7	2.0
Income before minority interests	5.8	2.9	-2.9
Minority Interests in income	-0.4	-0.4	0.1
Net Income	5.3	2.6	-2.8



## Consolidated Sales by Segment

(Unit: Billions of Yen)

	CQ1, 2012	CQ2, 2012	Increase/ Decrease	
Petrochemicals	47.1	25.5	-21.6	Olefins, organic chemicals: sales decreased (shipment volumes down due to problem with ethylene production equipment)
Chemicals	30.6	32.1	1.4	Industrial gases: sales increased (shipment volumes of carbon dioxide, dry ice up) Basic chemicals: sales increased (AN: shipment volumes up) Electronic chemicals: sales increased (shipment volumes up)
Electronics	41.5	44.0	2.5	HDs: sales increased (shipment volumes up) Compound semiconductors: sales increased (shipment volumes of ultra bright LEDs up) Rare earth: sales maintained at CQ1, 2012 level
Inorganics	16.1	16.8	0.7	Ceramics: sales increased (shipment volumes up) Graphite electrodes: sales maintained at the CQ1, 2012 level
Aluminum	21.5	26.1	4.7	High-purity foils for capacitors, shotic: sales increased (shipment volumes up) Extrusions/specialty products: sales decreased (shipment volumes down) Heat exchangers: sales maintained at the CQ1, 2012 level Aluminum cans: sales increased (shipment volumes up, seasonal)
Others	33.6	35.2	1.5	LiB materials: sales increased (shipment volumes up) SHOKO Co., Ltd. : sales increased (sales of metals up)
Adjustment	-9.0	-8.7	0.3	
Total	181.3	170.9	-10.4	



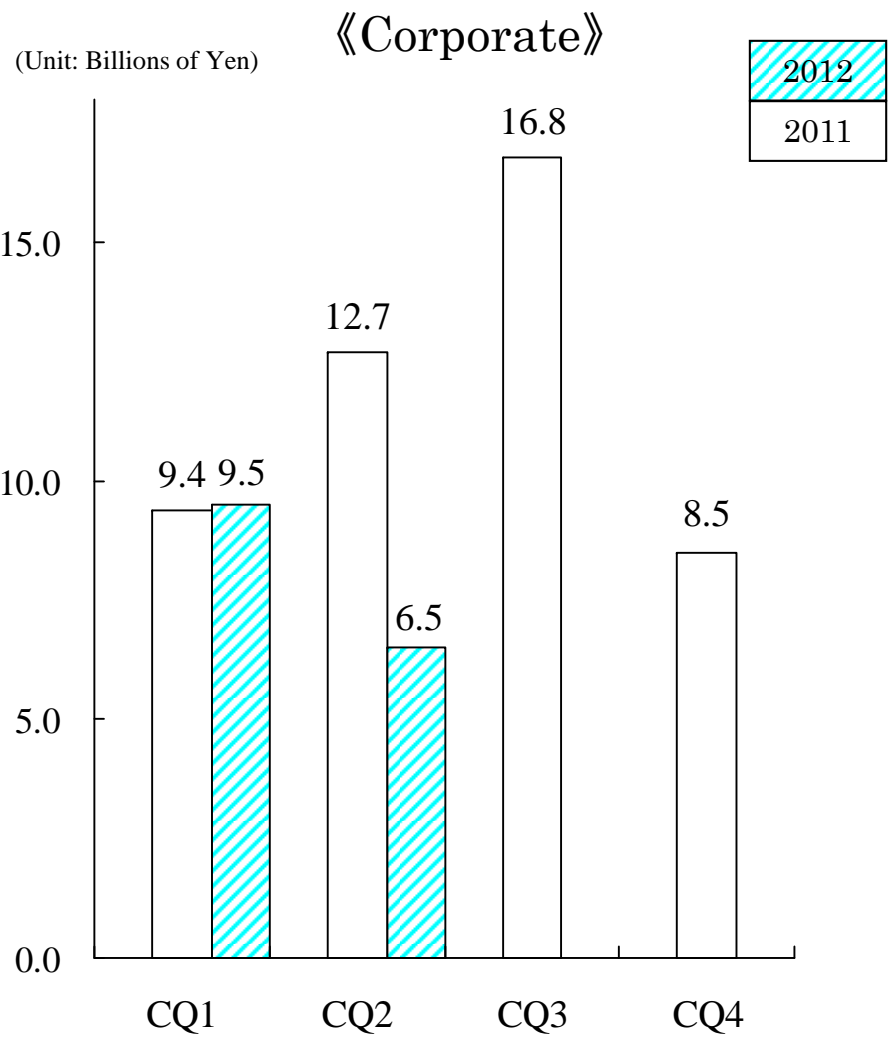


## Consolidated Operating Income by Segment

(Unit: Billions of Yen)

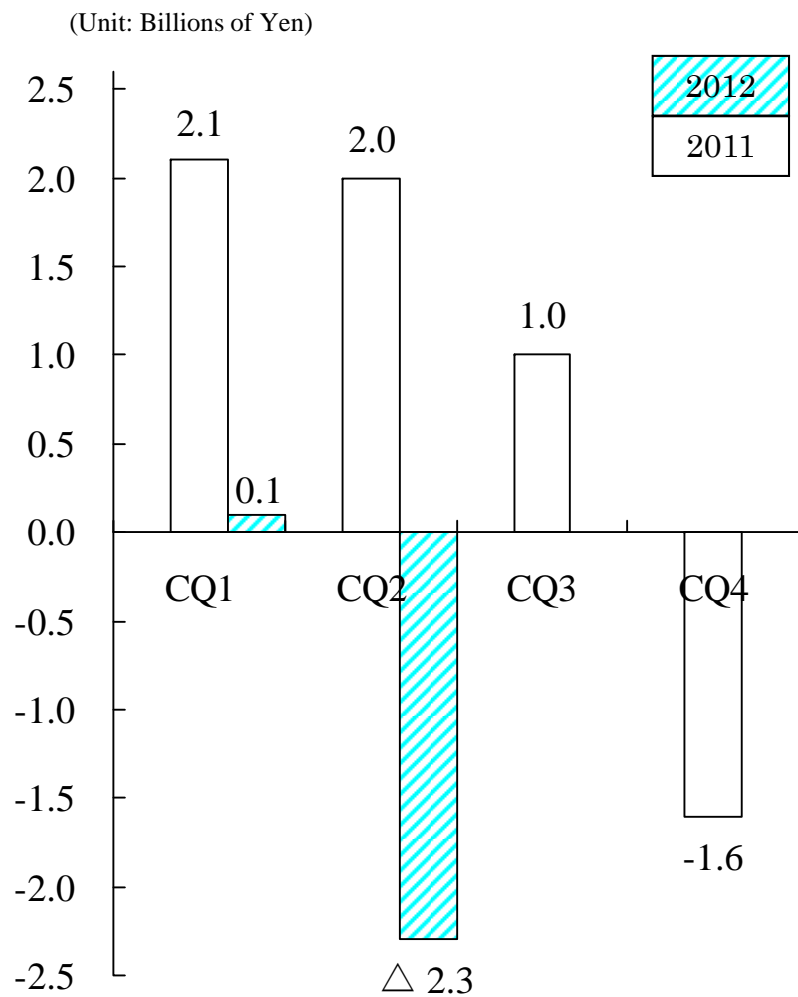
	CQ1, 2012	CQ2, 2012	Increase/ Decrease	
Petrochemicals	0.1	-2.3	-2.3	Olefins: profit decreased (shipment volumes down due to problem with equipment) Organic chemicals: profit maintained at the CQ1, 2012 level
Chemicals	0.6	-0.8	-1.3	Industrial gases: profit decreased (higher raw materials and fuels cost) Basic chemicals: profit decreased (AN: decline of the market prices) Electronic chemicals: profit slightly increased
Electronics	8.7	9.1	0.4	HDs: profit increased (shipment volumes up) Compound semiconductors: profit increased (shipment volumes of ultra bright LEDs up) Rare earth: profit decreased (price down)
Inorganics	1.5	0.8	-0.7	Ceramics: profit decreased (lower of cost or market method) Graphite electrodes: profit increased (profit in the U.S. maintained at the CQ1, 2012 level, profit in Japan up)
Aluminum	-0.2	1.4	1.6	High-purity foils for capacitors, shotoc: profit increased (shipment volumes up) Extrusions/specialty products: profit slightly decreased Heat exchangers: profit maintained at the CQ1, 2012 level Aluminum cans: profit increased (shipment volumes up, seasonal)
Others	0.2	0.1	-0.1	
Adjustment	-1.3	-1.9	-0.5	
Total	9.5	6.5	-3.1	

# (Reference) Quarterly Operating Income

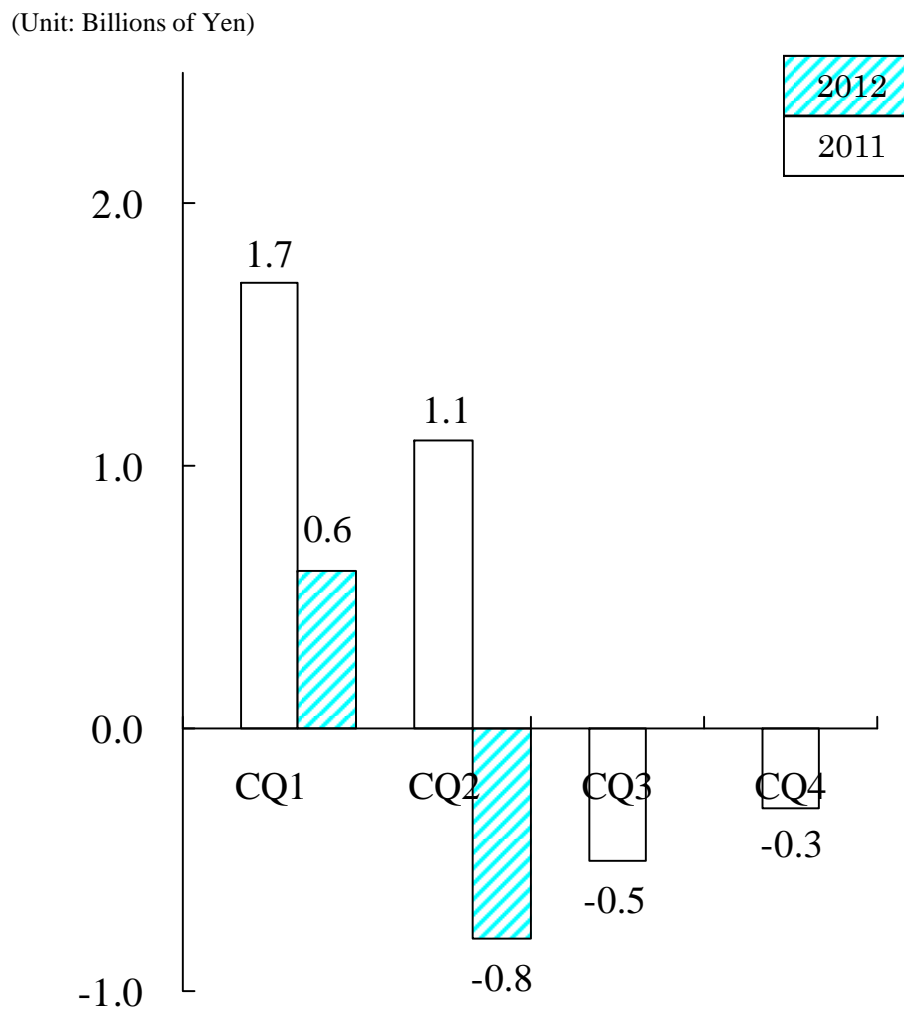


# (Reference) Quarterly Operating Income

## 《Petrochemicals》



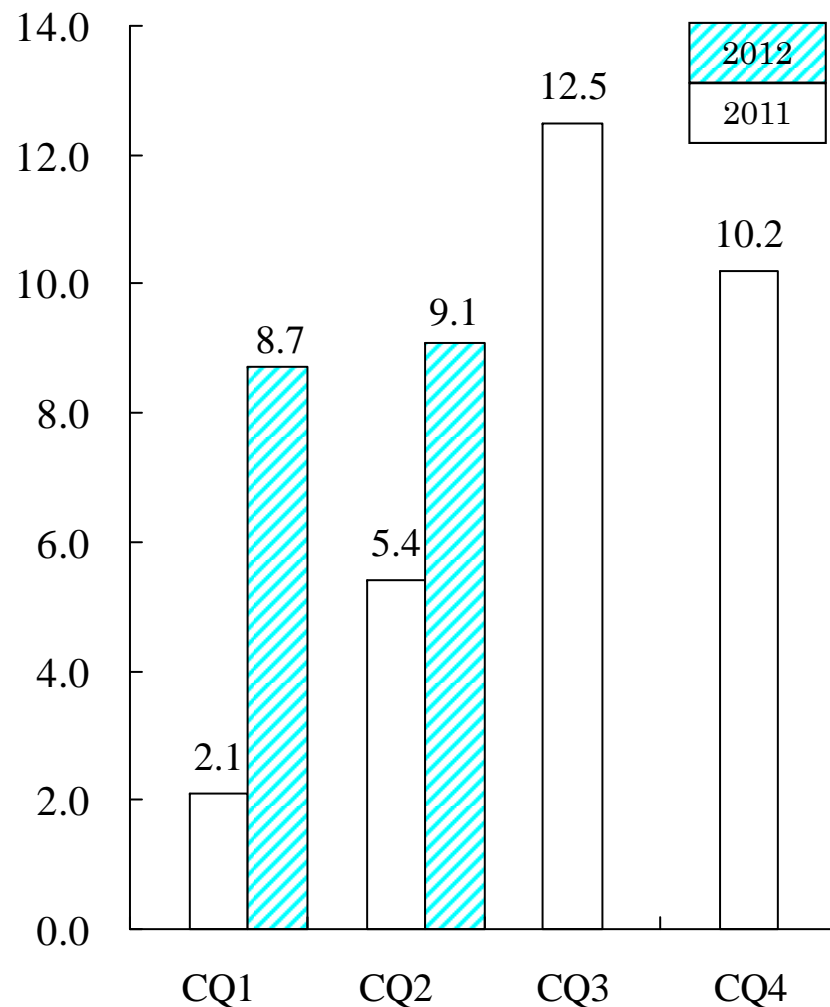
## 《Chemicals》



# (Reference) Quarterly Operating Income

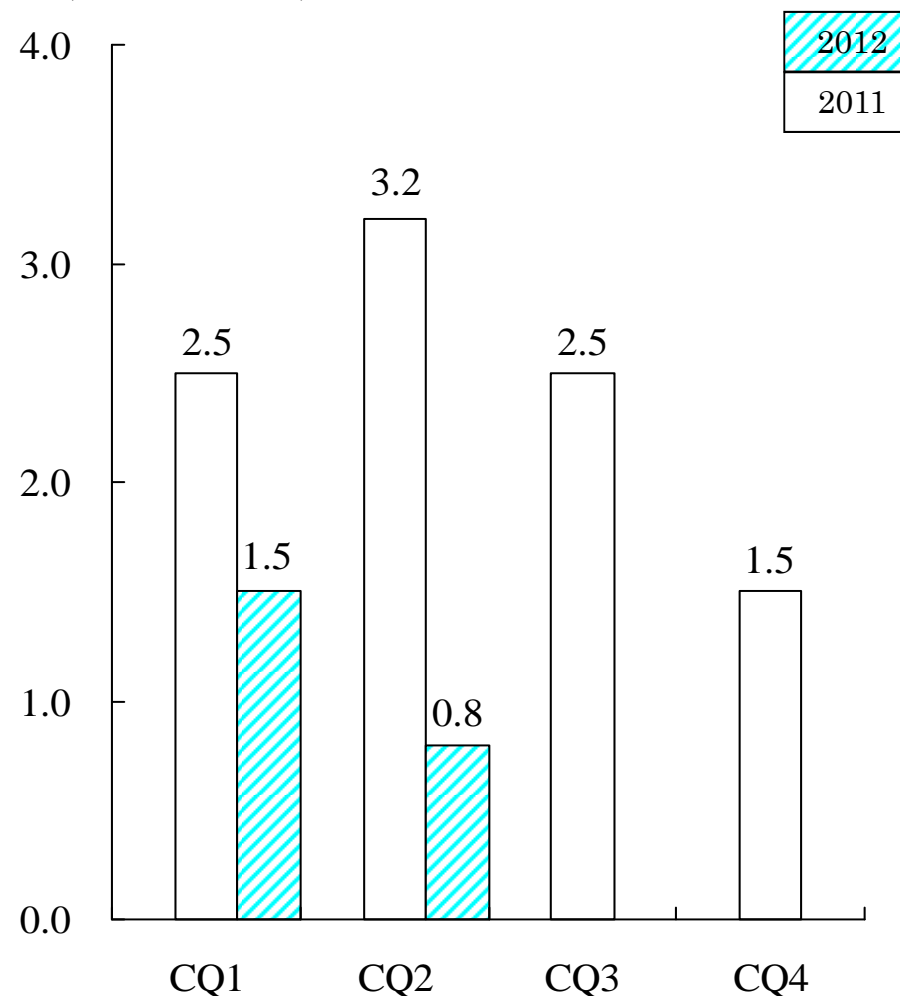
## 《Electronics》

(Unit: Billions of Yen)



## 《Inorganics》

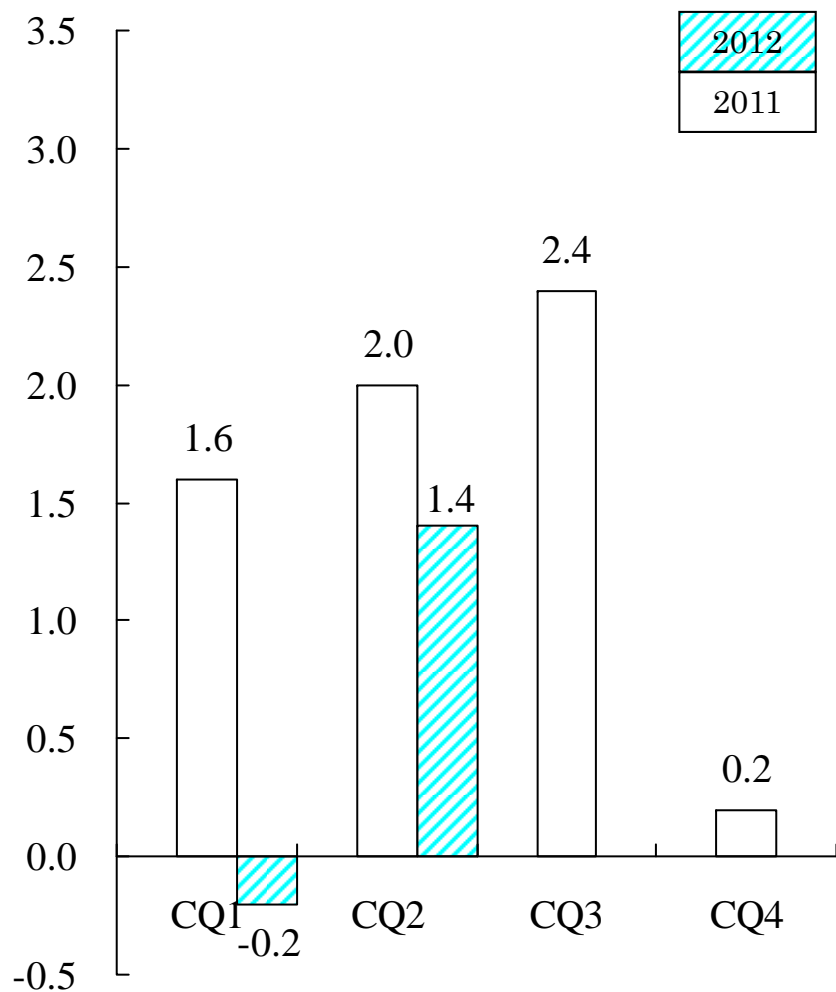
(Unit: Billions of Yen)



# (Reference) Quarterly Operating Income

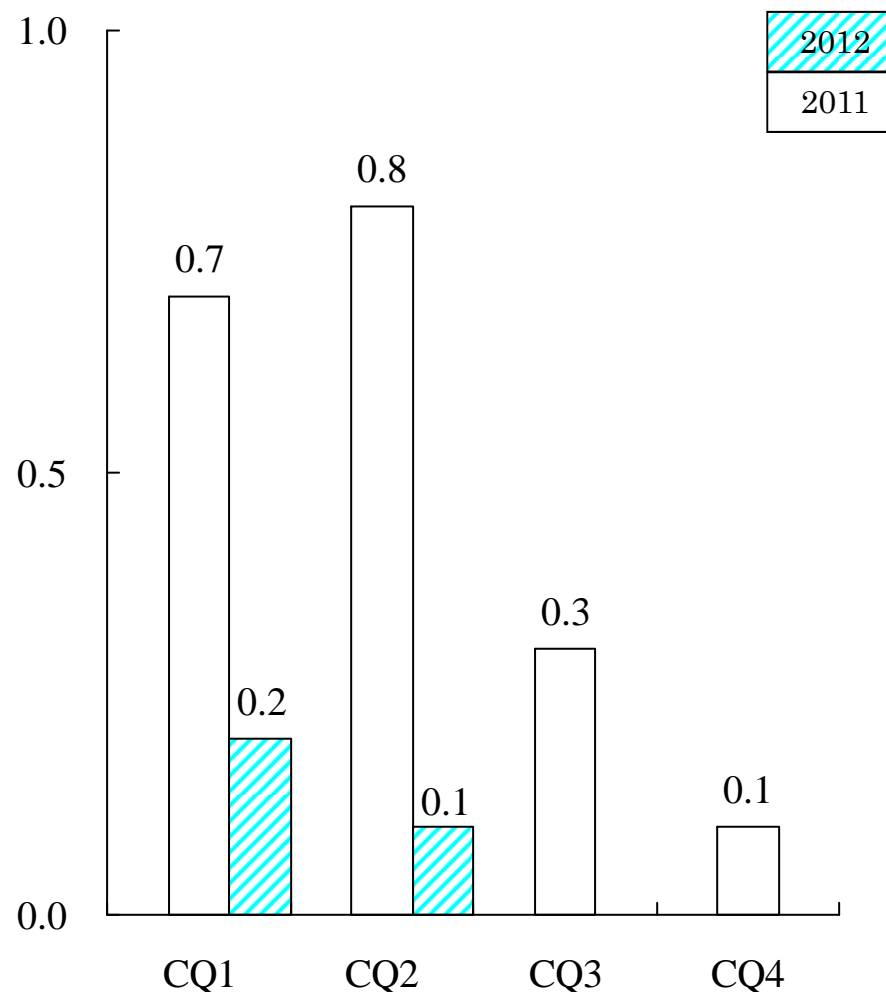
## 《Aluminum》

(Unit: Billions of Yen)



## 《Others》

(Unit: Billions of Yen)



## ■ Corporate

- Launch of company-wide campaign to recycle industrial wastes, aiming to achieve “zero emissions”
  - ◆ In May, SDK launched a company-wide campaign to recycle industrial wastes resulting from manufacturing processes, replacing site-by-site efforts. As a first phase, SDK will collect organic wastes from respective operation sites in Japan, gasifying them at the plastic recycling plant in Kawasaki for use as raw materials for ammonia and carbon dioxide gas. SDK aims to process inorganic wastes as well, achieving “zero emission” by the end of 2015. By doing so, SDK will almost halve the costs of entrusting the disposal of industrial wastes to outside companies.

Note: “Zero emission” was first proposed by the United Nations University in 1994. The concept calls for the realization of a recycling-based society through maximum utilization of resources and energy, and reduction of emissions to the environment to nearly zero. At SDK, the term is defined as “reduction of final volume of landfill disposal to 1% or less of the total volume of wastes generated in a year (1,200 tons or less).”

## ■ Petrochemicals

- Temporary suspension, and restart of ethylene plant
  - ◆ On March 18, a trouble occurred in the cooling unit of SDK’s two-line ethylene plant at the Oita Complex. SDK initially had planned to suspend production at the 200,000 t/y line from March 7 to March 29, and at the 495,000 t/y line from March 15 to March 21, respectively, to conduct periodic maintenance and cleaning of cracking furnaces. Due to the need to repair the cooling unit, SDK extended the period for suspension of operations. SDK resumed the normal operation of the ethylene plant on June 13.

## ■ Chemicals

- Establishment of subsidiary for high-purity-gas-related business
  - ◆ In July, SDK started using its wholly owned subsidiary Shanghai Showa Electronics Materials Co., Ltd. (SSE) to strengthen its business in China related to high-purity gases for electronics. SSE produces and sells equipment for treating used high-purity gases resulting from the production of semiconductors. SSE will expand its operations in the future, covering production, sale, and distribution of high-purity gases for the Chinese electronics industry.

## ■ Electronics

- Establishment of JV for GaN LED chip business
  - ◆ In April, SDK decided to split its business in gallium-nitride (GaN)-based blue LED chips, and transfer 70% of shares in the new company to Toyoda Gosei Co., Ltd. by the end of 2012. SDK is already cooperating with Toyoda Gosei, a world leader for the development and marketing of GaN LEDs. By establishing a joint venture with Toyoda Gosei for the GaN LED business, SDK will aim to achieve synergistic effect in R&D, improving brightness and production efficiency. In the LED business other than the GaN LED chips, such as AlGaInP, GaAs, and GaP, SDK will continue its independent operations.

## ■ Inorganics

- Investment in a graphite electrode company in China
  - ◆ In April, SDK signed an agreement with Sinosteel Corporation, of China, to acquire 67% of shares in Sinosteel's wholly owned subsidiary Sinosteel Sichuan Carbon Co., Ltd. This is in accordance with SDK's plan to expand operations in China and other Asian countries to supply graphite electrodes used in electric steel production. Sichuan Carbon will become SDK's subsidiary subject to ratification by related government organizations. When Sichuan Carbon's 22,000 t/y plant is added to the existing facilities in Japan and the United States, the Showa Denko Group's total graphite electrode production capacity will reach 127,000 t/y. After capacity expansion in the United States, the Group's total capacity will further increase to 157,000 t/y in 2014. Thus, SDK will establish itself as a leading supplier of graphite electrodes in the world.



## ■ Aluminum

- Construction of a high-purity aluminum foils plant in China
  - ◆ As part of its plan to expand the capacitor-grade high-purity aluminum foils business, SDK has decided to build a new plant in China. A groundbreaking ceremony was held in March at a site in Nantong, Jiangsu Province. The new plant in China, scheduled for start-up in the second half of 2013, will finish rolled foils supplied from SDK's Sakai Plant, and supply final products to customers in China. Aluminum electrolytic capacitors are used widely in electric appliances and transport machinery. Demand for aluminum electrolytic capacitors in China is expected to grow, reflecting continued economic growth in that country. With the establishment of the new plant in China, SDK aims to meet the growing demand for capacitor-grade high-purity aluminum foils in a timely manner.
  
- Transfer of automotive heat exchanger business
  - ◆ In January, SDK completed the transfer of its business in automotive air-conditioner heat exchangers (condensers, evaporators, etc.) to Keihin Corporation by transferring 60% of shares in Thermal Technology Corporation. The remaining 40% of shares will be transferred to Keihin Corporation two years later.