

Evolving unique chemical company

Third Quarter, 2012 Financial Results

- Consolidated -

SHOWA DENKO K.K.

November 1, 2012

Yoshikazu Sakai, CFO

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 changes from the end of June, 2012)
- Equity method applied: 18 (No changes from the end of June, 2012)

Selected Data

(Average)

	2011		2012		Increase/decrease	
	Jan.-Sept.	Jul.-Sept.	Jan.-Sept.	Jul.-Sept.		Jul.-Sept.
■ Exchange rate: ¥/US\$	80.7	77.9	79.4	78.6	Yen strengthened by ¥1.3/\$	Yen depreciated by ¥0.7/\$
■ Domestic naphtha price: ¥/kl	55,467	54,900	54,833	49,800	-634	-5,100
■ Aluminum LME price: US\$/t	2,527	2,434	2,061	1,949	-466	-485

Exchange rate at the end of June, 2012 ¥79.3/US\$, at the end of September, 2012 ¥77.6/US\$
 ⇒ Yen strengthened by ¥1.7/US\$



Summary

Jan. 1 – Sept. 30, 2011 v s. Jan. 1 – Sept. 30, 2012

(Unit: Billions of Yen)

	Jan.- Sept.2011	Jan.-Sept.2012	Increase/decrease
Net Sales	641.6	546.9	-94.7
Operating Income	38.9	23.8	-15.0
Non-operating income and expense	-6.1	-4.1	2.0
Interest/Dividend income less expenses	-3.3	-2.7	0.6
Equity in earnings or losses of affiliates	0.5	-0.3	-0.9
Ordinary Income	32.8	19.8	-13.0
Extraordinary Income	1.5	0.5	-1.1
Gain on sales of noncurrent assets	0.1	0.1	0.1
Gain on sales of investment securities	0.2	0.1	-0.1
Reversal of provision for retirement benefits	0.7	—	-0.7
Extraordinary Loss	-10.2	-7.7	2.6
Loss on sales and retirement of noncurrent assets	-1.0	-1.3	-0.2
Impairment loss	-0.7	-2.6	-1.9
Loss on the Great East Japan Earthquake	-3.1	—	3.1
Income before income taxes and minority interests	24.1	12.6	-11.5
Income Taxes	-4.4	-0.1	4.3
Income before minority interests	19.7	12.5	-7.2
Minority Interests in income	-2.2	-1.3	0.9
Net Income	17.5	11.2	-6.3

Consolidated Sales by Segment

(Unit: Billions of Yen)

	Jan.-Sept. 2011	Jan.-Sept. 2012	Increase/ decrease	
Petrochemicals	191.1	131.4	-59.7	Olefins: sales decreased (shipment volumes down due to problem with equipment that occurred in 1H, 2012, weakened supply and demand conditions) Organic chemicals: sales decreased (shipment volume of vinyl acetate and ethyl acetate down)
Chemicals	97.9	94.4	-3.4	Functional polymers, electronic chemicals: sales maintained at the year-earlier level Industrial gases: sales decreased (shipment volumes down) Basic chemicals: sales decreased (AN: weakened supply and demand conditions, decline of the market prices)
Electronics	120.6	127.3	6.7	HDs: sales substantially increased (shipment volumes up, reflecting the capacity expansion, centering on high storage capacity media) Compound semiconductors: sales increased (shipment volume of GaN-based blue LEDs up) Rare earth: sales substantially decreased (shipment volumes down due to inventory adjustment in customer's industry)
Inorganics	58.9	49.0	-9.8	Ceramics: sales decreased (shipment volumes for electronic applications down) Graphite electrodes: sales slightly decreased (sales in the U.S. up, sales in Japan down)
Aluminum	94.4	69.9	-24.5	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, aluminum cans: sales maintained at the year-earlier level
Others	113.2	101.3	-11.9	LiB materials: sales decreased (shipment volumes down) SHOKO Co., Ltd.: sales decreased (sales of metals down)
Adjustments	-34.5	-26.5	7.9	
Total	641.6	546.9	-94.7	

Consolidated Operating Income by Segment

(Unit: Billions of Yen)

	Jan.-Sept. 2011	Jan.-Sept. 2012	Increase/ decrease	
Petrochemicals	5.1	-2.2	-7.3	Olefins: profit decreased (shipment volumes down due to problem with equipment that occurred in 1H, 2012, weakened supply and demand conditions) Organic chemicals: profit decreased (shipment volumes of vinyl acetate and ethyl acetate down)
Chemicals	2.3	-0.3	-2.6	Industrial gases: profit decreased (shipment volumes down) Basic chemicals: profit decreased (AN: shipment volumes down, decline of the market prices) Price of electricity increased
Electronics	20.0	26.4	6.4	HDs: profit increased (shipment volumes up, centering on high storage capacity media) Compound semiconductors: profit increased (shipment volumes of GaN-based LEDs up) Rare earth: profit substantially decreased (shipment volumes down)
Inorganics	8.1	2.8	-5.3	Ceramics: profit decreased (shipment volumes for electronic applications down) Graphite electrodes: profit maintained at the year-earlier level
Aluminum	6.0	1.7	-4.4	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, aluminum cans: profit maintained at the year earlier level
Others	1.8	0.2	-1.6	LiB materials: profit decreased (shipment volumes down) SHOKO Co.,Ltd.: profit slightly decreased (profit of metals down)
Adjustments	-4.5	-4.9	-0.4	
Total	38.9	23.8	-15.0	



Summary

CQ3 (Jul.1 – Sept.30), 2011 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ3, 2011	CQ3, 2012	Increase/decrease
Net Sales	225.1	194.6	-30.5
Operating Income	16.8	7.8	-9.0
Non-operating income and expense	-2.0	-2.5	-0.5
Interest/Dividend income less expenses	-1.2	-0.9	0.2
Equity in earnings or losses of affiliates	0.1	-0.9	-1.0
Ordinary Income	14.7	5.3	-9.4
Extraordinary Income	0.2	0.2	0.0
Gain on sales of investment securities	0.0	0.1	0.1
Extraordinary Loss	-1.8	-2.2	-0.3
Loss on sales and retirement of noncurrent assets	-0.4	-0.5	-0.1
Impairment loss	-0.3	-0.3	0.0
Income before income taxes and minority interests	13.1	3.4	-9.8
Income Taxes	-2.9	0.5	3.4
Income before minority interests	10.2	3.8	-6.3
Minority Interests in income	-0.6	-0.5	0.1
Net Income	9.6	3.4	-6.2



Consolidated Sales by Segment

CQ3 (Jul.1 – Sept.30), 2011 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ3, 2011	CQ3, 2012	Increase/ decrease	
Petrochemicals	64.0	58.8	-5.2	Olefins: sales decreased (price down) Organic chemicals: sales decreased (shipment volumes of vinyl acetate, ethyl acetate down)
Chemicals	31.6	31.7	0.2	Functional polymer materials, industrial gases: sales maintained at the year-earlier level Basic chemicals: sales slightly decreased (AN: decline of the market prices) Electronic chemicals: sales increased (shipment volumes up)
Electronics	52.1	41.9	-10.2	HDs: sales decreased (shipment volumes down) Compound semiconductors: sales slightly increased (shipment volumes of ultra bright LEDs up) Rare earth: sales substantially decreased (shipment volumes down, price down)
Inorganics	18.8	16.1	-2.7	Ceramics: sales decreased (shipment volumes for electronic applications down) Graphite electrodes: sales increased (sales in the U.S. up, sales in Japan down)
Aluminum	32.7	22.3	-10.3	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 maintained at the year-earlier level Aluminum cans: sales decreased (shipment volumes down)
Others	36.7	32.6	-4.1	LiB materials: sales maintained at the year-earlier level SHOKO Co., Ltd. : sales decreased (sales of metals down)
Adjustments	-10.7	-8.9	1.9	
Total	225.1	194.6	-30.5	



Consolidated Operating Income by Segment

CQ3 (Jul.1 – Sept.30), 2011 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ3, 2011	CQ3, 2012	Increase/ decrease	
Petrochemicals	1.0	0.0	-1.0	Olefins: profit decreased (price down, reduction of production) Organic chemicals: profit decreased (shipment volumes of vinyl acetate, ethyl acetate down)
Chemicals	-0.5	-0.1	0.5	Functional polymer materials: profit increased (price up) Basic chemicals: profit decreased (AN: decline of the market prices) IPP: profit improved
Electronics	12.5	8.6	-4.0	HDs: profit maintained at the year-earlier level Compound semiconductors: profit increased (shipment volumes of ultra bright LEDs up) Rare earth: profit substantially decreased (shipment volumes down, price down)
Inorganics	2.5	0.5	-2.0	Ceramics: profit decreased (shipment volumes for electronic applications down) Graphite electrodes: profit slightly increased
Aluminum	2.4	0.6	-1.9	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, aluminum cans: profit maintained at the year-earlier level
Others	0.3	0.0	-0.3	LiB materials: profit decreased (shipment volumes down) SHOKO Co.,Ltd.: profit maintained at the year-earlier level
Adjustments	-1.4	-1.7	-0.3	
Total	16.8	7.8	-9.0	



Consolidated Balance Sheet

(Unit: Billions of Yen)

Assets	Dec.31, 2011	Sept.30, 2012	Increase/de crease	Liabilities and Net Assets	Dec.31, 2011	Sept.30, 2012	Increase/ decrease
Cash and deposits	55.2	40.5	-14.7	Notes and accounts payable	117.2	111.1	-6.0
Notes and accounts receivable	139.4	155.4	16.0	Interest-bearing debt	347.3	371.5	24.2
Inventories	123.7	127.2	3.5	Provision for retirement benefits	24.7	23.8	-0.9
Other current assets	29.6	37.7	8.1	Other liabilities	156.4	134.3	-22.1
<u>Total Current Assets</u>	347.9	360.8	12.9	<u>Total Liabilities</u>	645.6	640.7	-4.8
Buildings and structures	84.2	81.1	-3.2	Capital stock	140.6	140.6	—
Machinery and equipment	123.5	116.4	-7.0	Capital surplus	62.2	62.2	0.0
Land	254.9	254.7	-0.2	Retained earnings	48.9	54.8	6.0
Other tangible fixed assets	19.8	20.0	0.2	Treasury stock	-0.1	-0.1	0.0
<u>Tangible Assets</u>	482.4	472.2	-10.1	<u>Total Shareholders' equity</u>	251.5	257.5	6.0
Intangible Assets	11.1	10.4	-0.7	Valuation difference on available-for-sale securities	-4.9	-3.8	1.1
Investments and other assets	99.9	100.2	0.3	Foreign currency translation adjustment, Deferred hedge gains	-22.9	-21.2	1.7
Incl. Investment securities	59.6	63.2	3.7	Revaluation reserve for land	28.2	28.2	0.0
				<u>Total accumulated other comprehensive income</u>	0.4	3.2	2.8
				Minority Interests	43.8	42.2	-1.6
<u>Total noncurrent assets</u>	593.4	582.9	-10.5	<u>Total net assets</u>	295.7	302.9	7.2
Total Assets	941.3	943.7	2.4	Total Liabilities and Net Assets	941.3	943.7	2.4

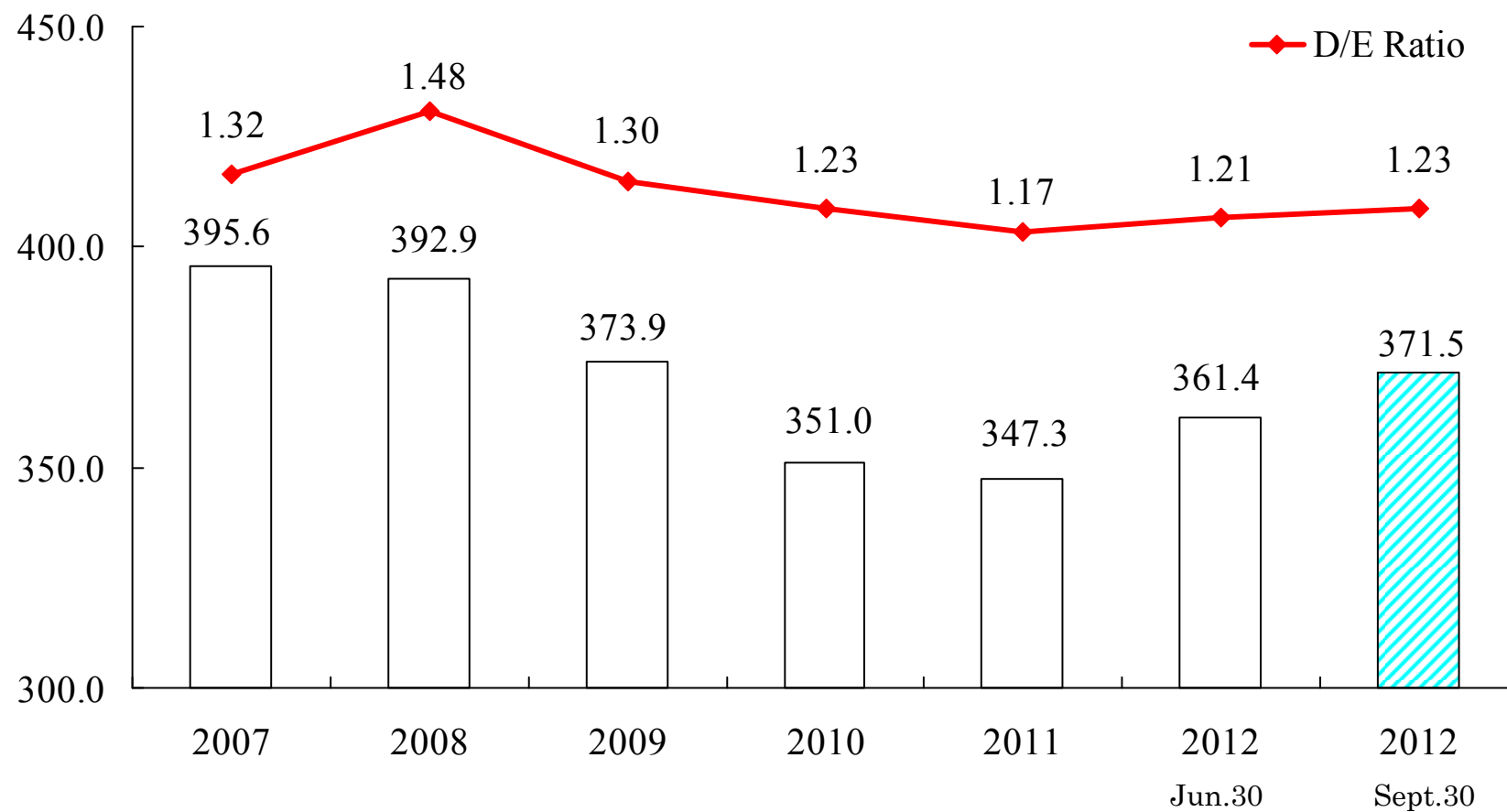
Total Assets, Interest-bearing Debt, D/E ratio and Stockholders' Equity ratio

(Unit: Billions of Yen, times, %)

	Dec.31, 2011	Sept.30, 2012	Increase
● Total assets	941.3	943.7	2.4
● Interest-bearing debt	347.3	371.5	24.2
● Debt/Equity ratio	1.17times	1.23times	0.06p
● Stockholders' Equity ratio	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%	27.6%
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(Reference) Summary

CQ2 (Apr.1 – Jun.30), 2012 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ2, 2012	CQ3, 2012	Increase/ decrease
Net Sales	171.0	194.6	23.7
Operating Income	6.5	7.8	1.3
Non-operating income and expense	-0.4	-2.5	-2.1
Interest/Dividend income less expenses	-0.8	-0.9	-0.1
Equity in earnings or losses of affiliates	0.0	-0.9	-0.9
Ordinary Income	6.1	5.3	-0.8
Extraordinary Income	0.1	0.2	0.1
Extraordinary Loss	-4.0	-2.2	1.8
Income before income taxes and minority interests	2.2	3.4	1.1
Income Taxes	0.7	0.5	-0.2
Income before minority interests	2.9	3.8	0.9
Minority Interests in income	-0.4	-0.5	-0.1
Net Income	2.6	3.4	0.8



Consolidated Sales by Segment

CQ2 (Apr.1 – Jun.30), 2012 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ2, 2012	CQ3, 2012	Increase/ Decrease	
Petrochemicals	25.5	58.8	33.3	Olefins, organic chemicals: sales increased (shipment volumes up due to the resumption of ethylene plant operation)
Chemicals	32.1	31.7	-0.4	Functional polymer materials: sales decreased (shipment volumes down) Industrial gases: sales increased (shipment volumes up) Basic chemicals: sales decreased (AN: shipment volumes down due to weakened supply and demand conditions)
Electronics	44.0	41.9	-2.1	HDs: sales slightly increased Compound semiconductors: sales decreased (shipment volumes down) Rare earth: sales substantially decreased (shipment volumes down, price down)
Inorganics	16.8	16.1	-0.7	Ceramics: sales decreased (shipment volumes down) Graphite electrodes: sales decreased (sales in the U.S. maintained at the CQ2, 2012 level, sales in Japan down)
Aluminum	26.1	22.3	-3.8	High-purity foils for capacitors, heat exchangers, } : sales decreased Shotoc, aluminum cans } (shipment volumes down) Extrusions/specialty products: sales maintained at the CQ2, 2012 level
Others	35.2	32.6	-2.6	SHOKO Co., Ltd. : sales decreased (sales of metals down)
Adjustments	-8.7	-8.9	-0.2	
Total	171.0	194.6	23.7	



Consolidated Operating Income by Segment

CQ2 (Apr.1 – Jun.30), 2012 v s. CQ3 (Jul.1 – Sept.30), 2012

(Unit: Billions of Yen)

	CQ2, 2012	CQ3, 2012	Increase/ Decrease	
Petrochemicals	-2.3	0.0	2.3	Olefins: profit increased (shipment volumes up due to the resumption of ethylene plant operation) Organic chemicals: profit maintained at the CQ2, 2012 level
Chemicals	-0.8	-0.1	0.7	Functional polymer materials: profit maintained at the CQ2, 2012 level Industrial gases: profit increased (shipment volumes up) Basic chemicals: profit slightly decreased (AN: shipment volumes down due to weakened supply and demand conditions) IPP: profit improved
Electronics	9.1	8.6	-0.6	HDs: profit slightly decreased (yen appreciation) Compound semiconductors: profit increased Rare earth: profit maintained at the CQ2, 2012 level
Inorganics	0.8	0.5	-0.3	Ceramics: low shipment volumes for electronic applications Graphite electrodes: profit slightly decreased (profit in the U.S. down due to yen appreciation, profit in Japan maintained at the CQ2, 2012 level)
Aluminum	1.4	0.6	-0.8	High-purity foils for capacitors: profit decreased (shipment volumes down) Extrusions/specialty products, } : profit maintained at the CQ2, 2012 level heat exchangers, Shotic, aluminum cans
Others	0.1	0.0	-0.1	
Adjustments	-1.9	-1.7	0.1	
Total	6.5	7.8	1.3	

2012 Forecast

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

	2012 Earlier Forecast*	2012 Revised Forecast**	Increase/ decrease	2011
Net Sales	790.0	750.0	-40.0	854.2
Operating Income	42.0	32.0	-10.0	47.4
Ordinary Income	36.0	27.0	-9.0	40.0
Net Income	18.0	10.0	-8.0	17.0
Net Income per Share	¥12.03	¥6.68	¥-5.35	¥11.35
Cash dividends per Share	¥3.00 (planned)	¥3.00 (planned)	—	¥3.00

*2012 earlier forecast was announced on Aug. 1, 2012.

**2012 forecast was revised on Nov. 1, 2012.



Consolidated Net Sales by Segment, 2012 Forecast

(Unit: Billions of Yen)

	2012 Earlier Forecast*	2012 Revised Forecast**	Increase/ decrease	2011
Petrochemicals	195.0	190.0	-5.0	250.4
Chemicals	135.0	130.0	-5.0	130.2
Electronics	175.0	170.0	-5.0	165.0
Inorganics	75.0	65.0	-10.0	77.6
Aluminum	100.0	90.0	-10.0	124.3
Others	145.0	140.0	-5.0	150.6
Adjustments	-35.0	-35.0	0.0	-43.9
Total	790.0	750.0	-40.0	854.2

*2012 earlier forecast was announced on Aug. 1, 2012.

**2012 forecast was revised on Nov. 1, 2012.

Consolidated Operating Income by Segment, 2012 Forecast

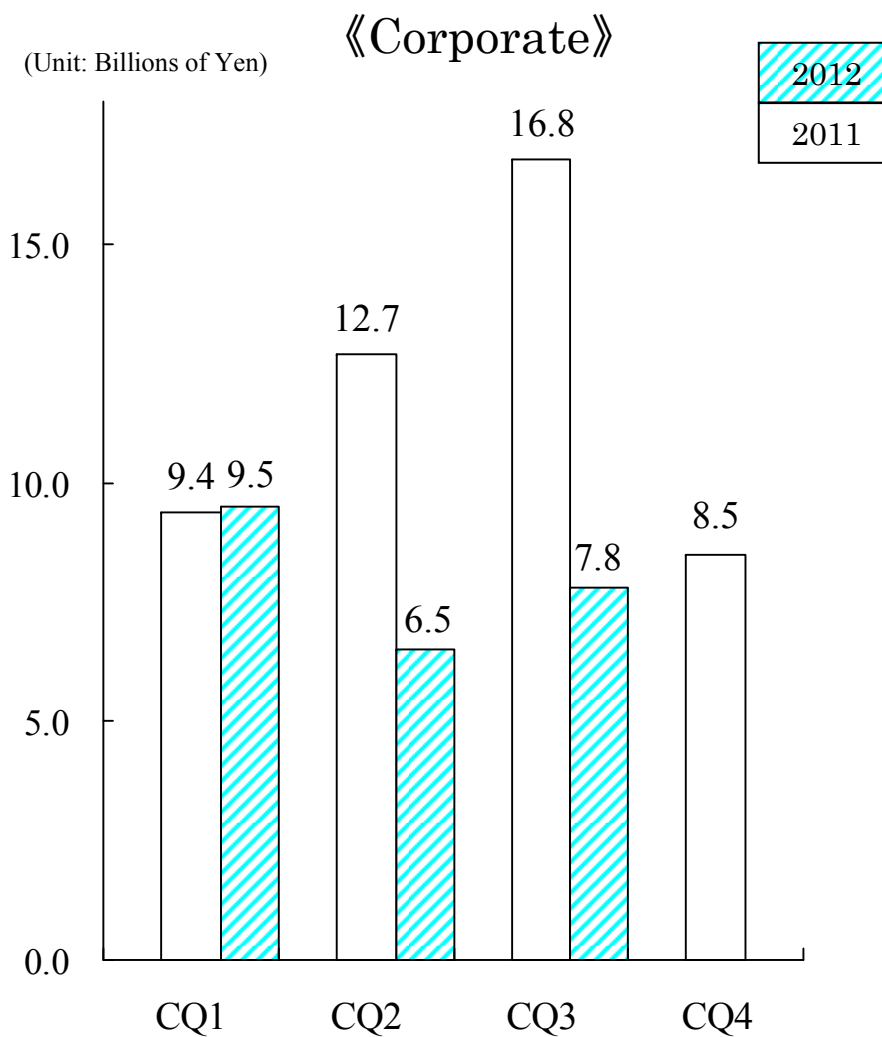
(Unit: Billions of Yen)

	2012 Earlier Forecast*	2012 Revised Forecast**	Increase/ decrease	2011
Petrochemicals	0.0	-1.5	-1.5	3.5
Chemicals	2.5	0.5	-2.0	2.0
Electronics	33.5	33.0	-0.5	30.2
Inorganics	7.5	4.0	-3.5	9.6
Aluminum	4.0	2.0	-2.0	6.2
Others	1.0	0.5	-0.5	1.9
Adjustments	-6.5	-6.5	0.0	-6.1
Total	42.0	32.0	-10.0	47.4

*2012 earlier forecast was announced on Aug. 1, 2012.

**2012 forecast was revised on Nov. 1, 2012.

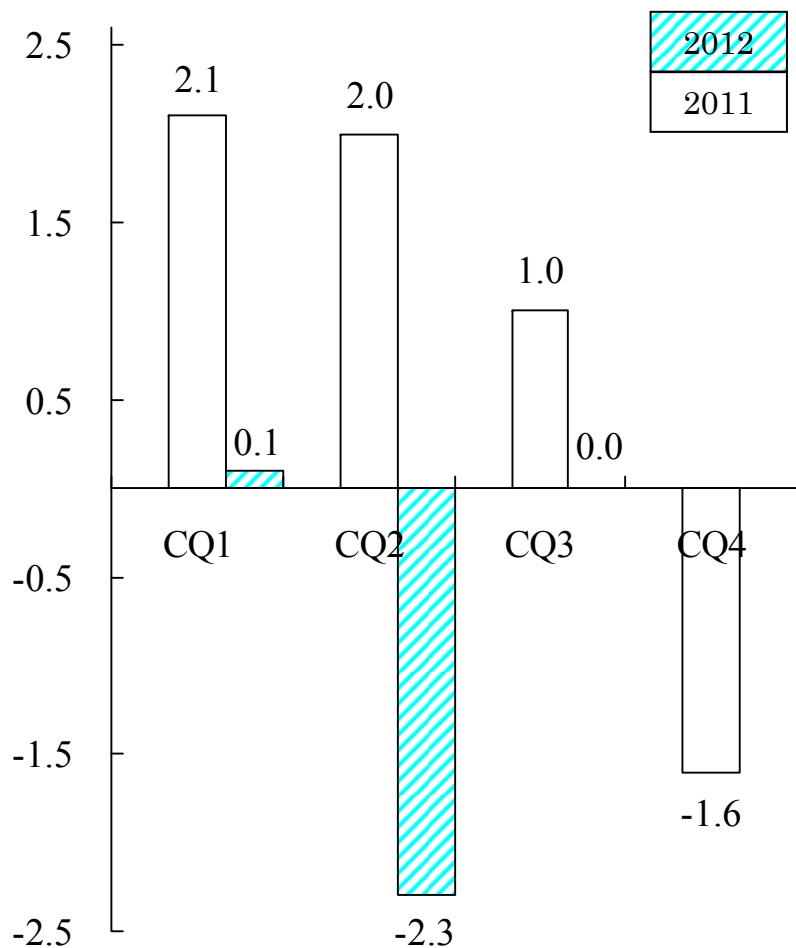
(Reference) Quarterly Operating Income



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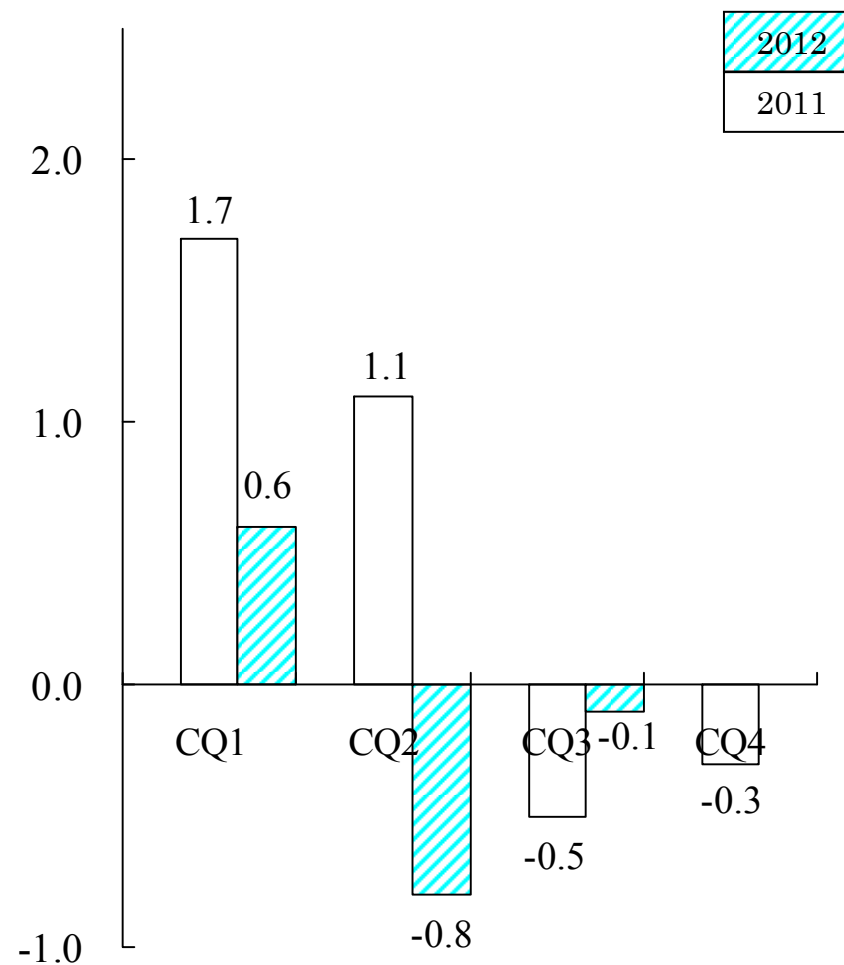
《Petrochemicals》

(Unit: Billions of Yen)



《Chemicals》

(Unit: Billions of Yen)

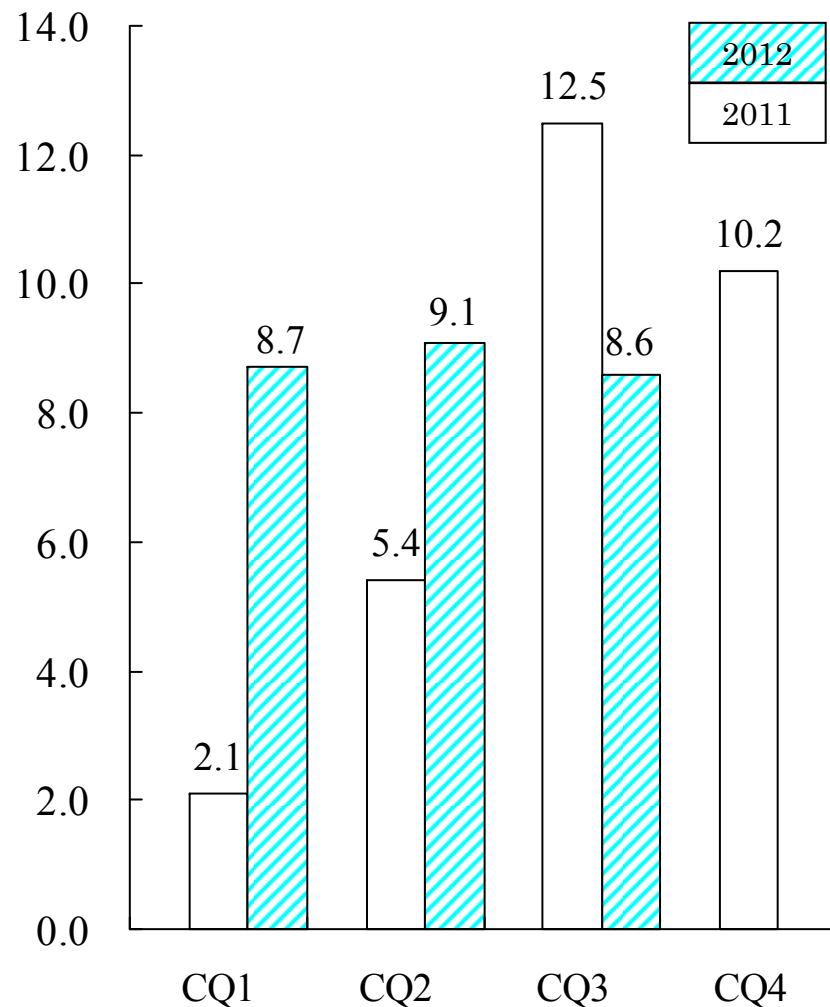




(Reference) Quarterly Operating Income

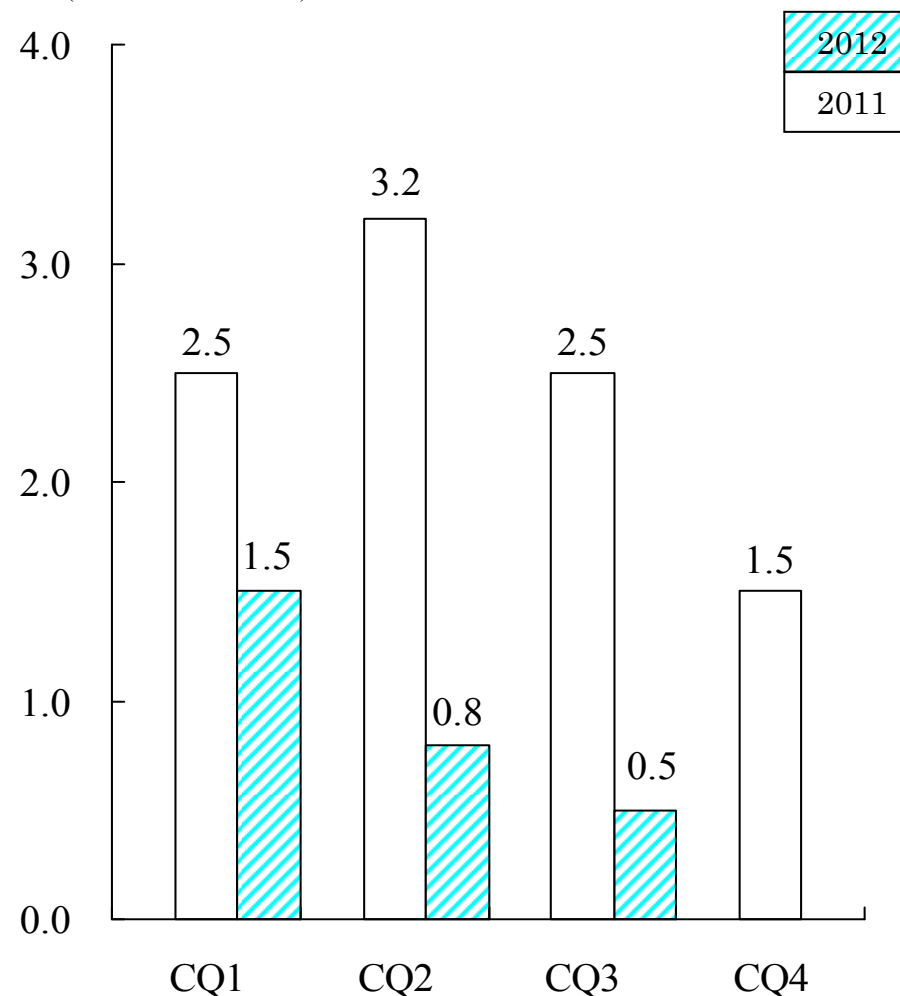
《Electronics》

(Unit: Billions of Yen)



《Inorganics》

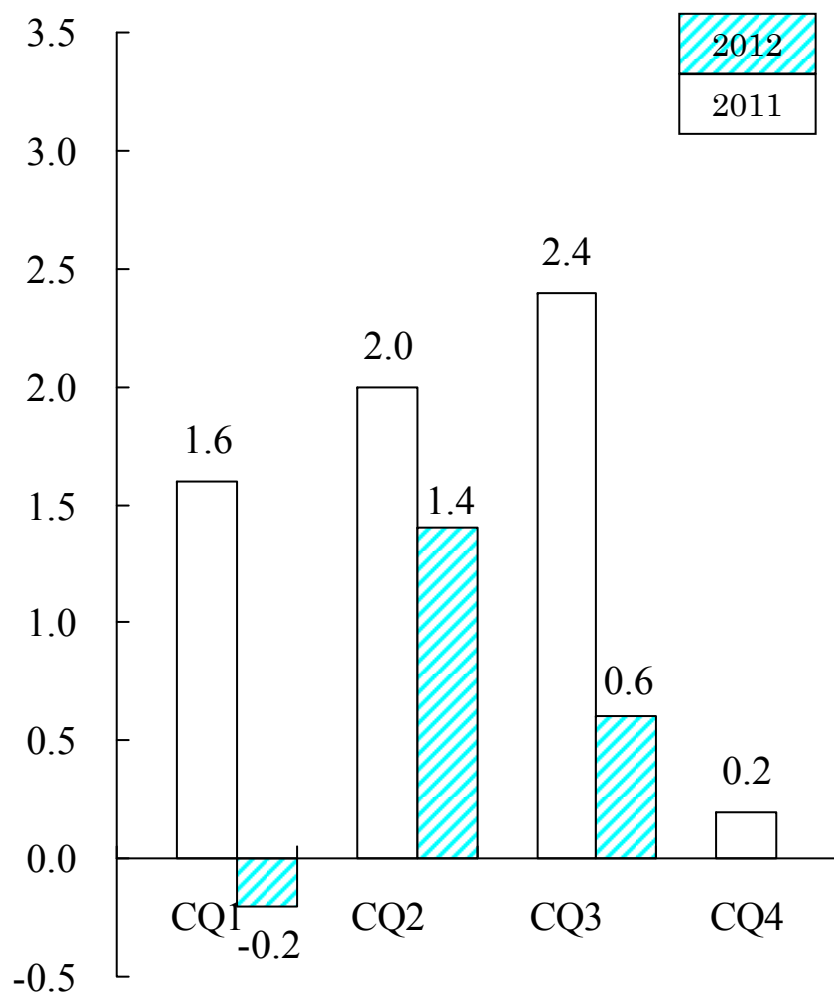
(Unit: Billions of Yen)



(Reference) Quarterly Operating Income

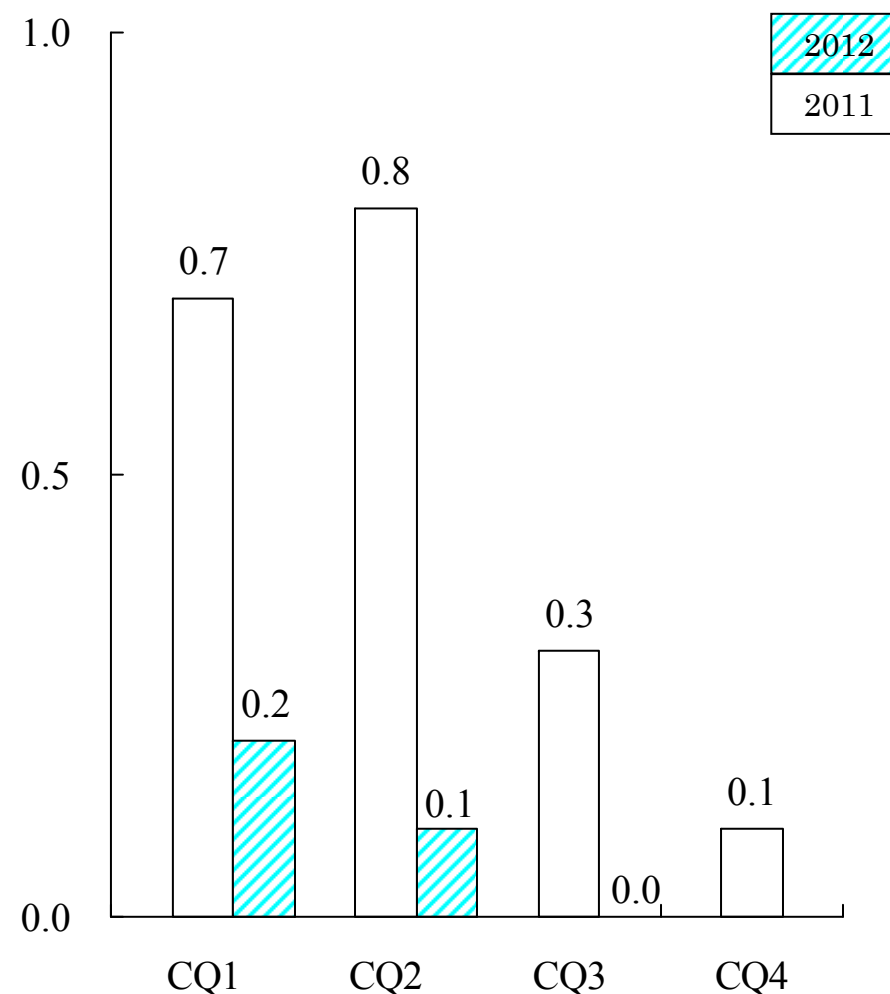
《Aluminum》

(Unit: Billions of Yen)



《Others》

(Unit: Billions of Yen)



■ Corporate

- Acquisition of highest-level BCM rating from DBJ
 - ◆ SDK received a loan in August from Development Bank of Japan Inc. (DBJ), after acquiring the highest-level rating for its business continuity management (BCM). DBJ evaluates firms' ability to prevent disaster and continue business. SDK was highly evaluated for its efforts to make all of its facilities earthquake-proof, and to review and improve its supply chains. The Group will continue its efforts to establish a business system resistant to disaster, aiming to contribute toward creating a society where affluence and sustainability are harmonized.

- Increasing SiC epitaxial wafer production capacity by 2.5 times
 - ◆ In August, SDK increased its silicon carbide (SiC) epitaxial wafer production capacity at its Chichibu Plant by 2.5 times, to 1,500 units a month, through facility expansion and improvement in production technology. The wafers are used in SiC power devices for a wide range of applications, including automobiles, railcars, and home electric appliances. In particular, SiC power devices are expected to be used increasingly in inverters to control rotation of motors. Such inverters are already commercialized in some home electric appliances, and used in subway railcars on a trial basis. Following the capacity expansion, SDK will continue developing SiC epitaxial wafers with larger diameter, lower defect, and higher uniformity. Specifically, SDK will accelerate the development of six-inch SiC epitaxial wafers for heavy-current high-voltage applications.

■ Corporate

● Development of printable conductive inks for electronics

- ◆ In October, SDK announced the joint development, with Osaka University, of printable silver nanowire ink for the manufacture of electronic devices. When the ink is used in combination with Photonic Curing™ process technology (provided by NovaCentrix, of the United States), highly stable, transparent conductive patterns can be formed on flexible films. SDK also developed copper/silver hybrid ink, which can be used as a low-cost substitute for silver ink, and started sample shipments in October. Printed electronics—the technology to manufacture electronic circuits and devices through printing—is expected to be increasingly used, as it enables substantial simplification of manufacturing processes.

■ Chemicals

● Development of epoxy resin contributing to long-term reliability of electronic devices

- ◆ SDK developed, in cooperation with the National Institute of Advanced Industrial Science and Technology (AIST), a technology to produce epoxy resin material for use in chlorine-free semiconductor sealant. To reduce production costs, semiconductor manufacturers are shifting from gold-plated wire to copper wire for printed circuit board production. The trend involves a problem of contamination of copper wire by chlorine compounds, resulting in corrosion of copper wire and damage to long-term reliability. Thus, there is a need for sealant that will not cause chlorine contamination. The newly developed epoxy resin technology is chlorine-free, and uses oxidation based on hydrogen peroxide. The new technology will prevent corrosion and ensure high long-term reliability. SDK is aiming to establish the technology and put it to commercial use in 2014.

Note: A semiconductor sealant protects the surface of electronic materials, preventing deterioration of performances.

■ Chemicals

- Launch of efficient and large dry-type PFC decomposition system
 - ◆ SDK decided to begin marketing a new hybrid-type system for decomposing global-warming perfluoro compounds (PFCs) by the end of this year. PFCs are used in the process of manufacturing LCD panels and semiconductors. SDK has developed the new system by combining the advantages of two different decomposition systems, namely, a “chemical capture system” and a “catalytic decomposition system.” The new system enables the reduction in the costs of adsorbent and waste water treatment. As adsorbent is automatically fed into and discharged from the system, the exhaust gas treatment capacity is maintained at the same level as that of a conventional large-sized catalytic decomposition system. SDK will sell the new system in China and other overseas markets where production of LCD panels and semiconductors is expected to grow rapidly.

- Development of new method for stable solidification of insoluble ferrocyanide
 - ◆ Union Showa K.K., a joint venture between SDK and UOP LLC, of the United States, announced in July that it successfully developed a new method of stable solidification of insoluble ferrocyanide widely used to remove radioactive cesium. Insoluble ferrocyanide maintains high cesium-adsorbing-volume capacity even in contaminated radioactive cooling water. However, insoluble ferrocyanide is easily decomposed by heat, resulting in vaporization of cesium. Thus, an innovative method of heat solidification had been sought. Union Showa, under the guidance of Professor Mimura of Tohoku University, succeeded in developing a new method of stable solidification by heat-treating mixture of used ferrocyanide and zeolite. Under the method, zeolite traps vaporized cesium, preventing the release of vaporized cesium into the air. Union Showa supplies UOP’s inorganic ion exchangers, including zeolite, used for treating contaminated water resulting from a nuclear power plant accident.

■ Electronics

- Transfer of GaN LED business by company split
 - ◆ SDK decided to split and transfer its gallium-nitride (GaN) LED business to its wholly owned subsidiary TS Opto Co., Ltd. effective December 1, 2012 through company split. SDK will transfer 70% of shares in TS Opto to Toyoda Gosei Co., Ltd. on the same date, thereby making TS Opto a joint venture between the two companies.

■ Inorganics

- Focusing on $VGCF^{\text{TM}}$ -H for resin composite applications
 - ◆ SDK decided to focus on $VGCF^{\text{TM}}$ -H grade to strengthen its business in carbon nanotube for resin composite applications. $VGCF^{\text{TM}}$ -H grade is already used in LIBs. In June, SDK stopped its 400 t/y production facility for $VGCF^{\text{TM}}$ -X, a grade intended exclusively for resin composite applications.

■ Aluminum

- Construction of an aluminum casting plant in Malaysia
 - ◆ SDK decided to construct an aluminum casting plant in the state of Johor, Malaysia, for start-up by the end of 2014. In addition to an integrated aluminum casting/forging facility at Kitakata, Japan, SDK is operating one each plant in Portugal and Singapore for producing forged aluminum parts. SDK has been selling the products (trade name: *Shotic*) on the world market, mainly for use in automotive parts. With the scheduled construction of the new casting plant in Malaysia, SDK aims to better meet growing demand in Asian markets. By securing casting capability at two locations (Fukushima and Malaysia), SDK intends to ensure the security of supply. SDK will expand the Shotic business as a key component of its Aluminum segment.

■ Others

- Increasing LIB packaging material production capacity
 - ◆ In August, Showa Denko Packaging Co., Ltd., a subsidiary of SDK, decided to increase its production capacity for aluminum laminated films used for packaging LIBs. Specifically, Showa Denko Packaging decided to double its annual production capacity versus the 2010 level by the second half of 2013. Compared with metallic LIBs, aluminum-laminated-film-based pouch type LIBs provide higher flexibility in molding, lighter weight, and better heat dissipation. Thus, pouch type LIBs are widely used as small LIBs for portable devices. Reflecting the rapid growth of the market for smartphones and tablet PCs, demand for aluminum laminated film is expected to grow, as it contributes toward the miniaturization of LIBs.