

Passion Extension (2009~2010)

Showa Denko's Strategy in Drastically Changed Environment

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SHOWA DENKO K.K.

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Passion Extension

~ Preparation for a new business plan

- Unprecedented global recession triggered by the U.S. financial crisis
- Drastic changes in the business environment

(2009-2010)

While maintaining the basic concepts of the Passion Project, we have worked out “**Passion Extension**” to meet the drastic changes in the environment.

⇒ Preparing for the new project for 2011 and thereafter

- Speedily carry out structural reform in response to the changes in the business environment
- Identify market segments that will grow in the future

Return to the track of continuous growth as soon as the economy recovers.

Production cutbacks at the moment

~ Making intensive cuts; inventories in supply chains being reduced

- | | |
|------|--|
| ■ HD | Production cuts in response to a sharp decline in HDD production |
|------|--|

- | | |
|------------------|--|
| ■ Petrochemicals | Ethylene A 30% cut (due to SM, PP and acetic acid production cuts) |
| | Acetic acid Suspended plant operation (withdrew from PTA market) |

- | | |
|-------------|---|
| ■ Chemicals | Acrylonitrile A 30% cut in production |
|-------------|---|

- | | |
|--------------|---|
| ■ Inorganics | G. electrode Producing in line with demand; maintenance in 1Q
(Progress in inventory adjustment) |
|--------------|---|

- | | |
|------------|--|
| ■ Aluminum | Production cuts in high-purity foils for capacitors, <i>Shotic</i> ,
heat exchangers, and aluminum cylinders for printers |
|------------|--|

Maintain basic concepts, but lower financial targets

~ Carry out structural reforms in response to drastic changes in environment

Passion Extension (2009–2010)

Contribute to the good of society

By enhancing the company value, we will contribute to the interests of all stakeholders.

Company images

Unique chemical company with individualized products

Technology-oriented company

Financial strength

CSR

Carry out drastic structural reform and focus on high-growth areas where we have competitive advantages

Create individualized products by deepening and merging wide-ranging material technologies centering on inorganics and metals

Establish financial strength by squeezing assets and reducing interest-bearing debt

Earn the full trust and confidence of the market and society

Images of the financial targets (2010)

Operating income
D/E ratio

Original image		Revised image (2010)
100.0 billion yen	⇒	40.0 billion yen
1.0 times	⇒	1.4 times

Revised target images in 2009 and 2010

~ Expecting slow recovery after hitting bottom in 2009

	2008 Actual	2009 (Forecast)	2010 (Revised image)	(billion yen) 2010 (Original image)
Net Sales	1,003.9	800.0	900.0	1,000.0
Operating Income	26.8	17.0	40.0	100.0
Profit ratio	2.7%	2.1%	4.4%	10.0%
Interest-bearing debt	392.9	385.0	360.0	
D/E ratio	1.63 times	1.6 times	1.4 times	1.0 times

Major tasks under “Passion Extension” (2009-2010)

1

Improve business portfolio by promoting growth strategies and structural reform

2

Allocate managerial resources efficiently by very carefully selecting investments

3

Carry out drastic cost reductions

4

Secure sufficient cash flows

5

Improve financial strength

6

Strengthen R&D to ensure future growth

1. Portfolio improvement through implementation of growth strategies and structural reform

Portfolio

~ Step up portfolio improvement based on accomplishments under the Passion Project

	Growth businesses		Base businesses	
	New growth drivers	Growth drivers	Cash cow	
Petro-chemicals	Specialty polymers (development)	HD Semiconductor-processing materials	Olefins (Improve facilities at Oita)	Plastic products <ul style="list-style-type: none"> - Sold shares in Showa Aluminum Powder and Heisei Polymer - Sold the business of moisture removal sheet for perishable foods
Chemicals			Life science Fine chemicals	
Electronics	Ultrabright LED chips Capacitors		Ammonia (Tender offer for Showa Tansan shares) Basic chemicals	<ul style="list-style-type: none"> - Sold Kokusai Eisei
Inorganics	Fine carbons		Rare earth magnetic alloys Conventional compound semiconductors	<ul style="list-style-type: none"> - Formation of JV in aluminum alloy - Dissolution of Showa Aluminum Alloy - Completion of withdrawal from the commodity foils business
Aluminum, etc.			Graphite electrodes Ceramics High-purity foil for capacitors High-performance components Heat exchangers Aluminum cans	

Launch of new products

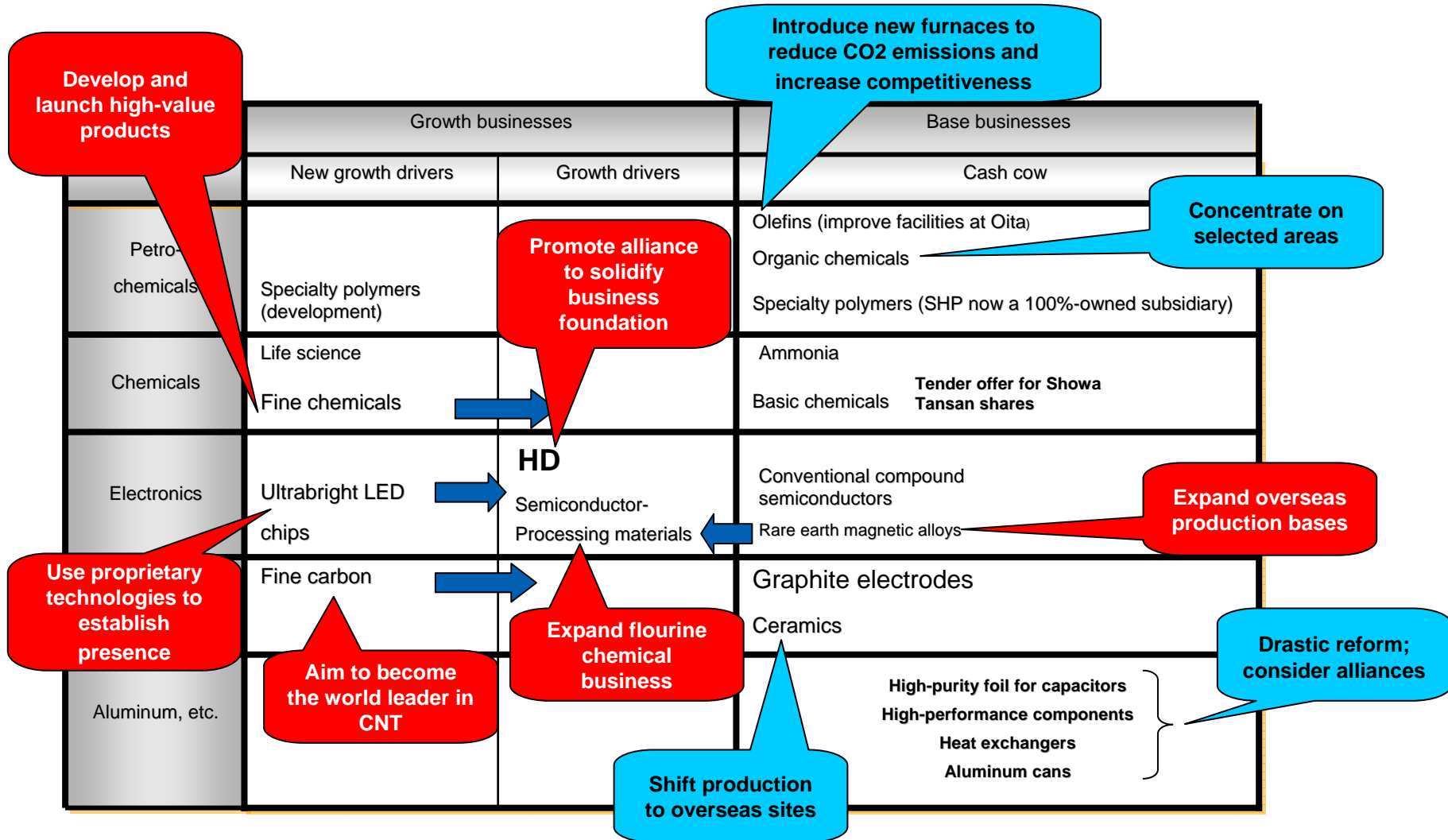
Business expansion

Structural reform

1. Portfolio improvement through implementation of growth strategies and structural reform

Portfolio

~ Further improvement in business portfolio in 2009 and 2010



1. Portfolio improvement through implementation of growth strategies and structural reform

Major topics for business portfolio improvement

Growth drivers	<ul style="list-style-type: none">▪ HD▪ Semiconductor-processing materials	<p>Based on our leading position in technology solidify our business foundation through M&A strategy</p> <p>Focus on fluorine chemicals business</p>
New growth drivers	<ul style="list-style-type: none">▪ Ultrabright LED chips▪ Fine carbon▪ Fine chemicals▪ Rare earth magnetic alloys	<p>Use proprietary technologies to establish our presence in the market</p> <p>Establish “only one” technologies and products on a global scale</p> <p>Develop and launch high-value products</p> <p>Expand overseas production sites</p>
Structural reform	<ul style="list-style-type: none">▪ Aluminum▪ Petrochemicals▪ Ceramics (alumina)	<p>Carry out drastic structural reform; start alliances</p> <p>Increase competitiveness of naphtha cracker</p> <p>Move production bases overseas</p>

HDD demand trends in 2009

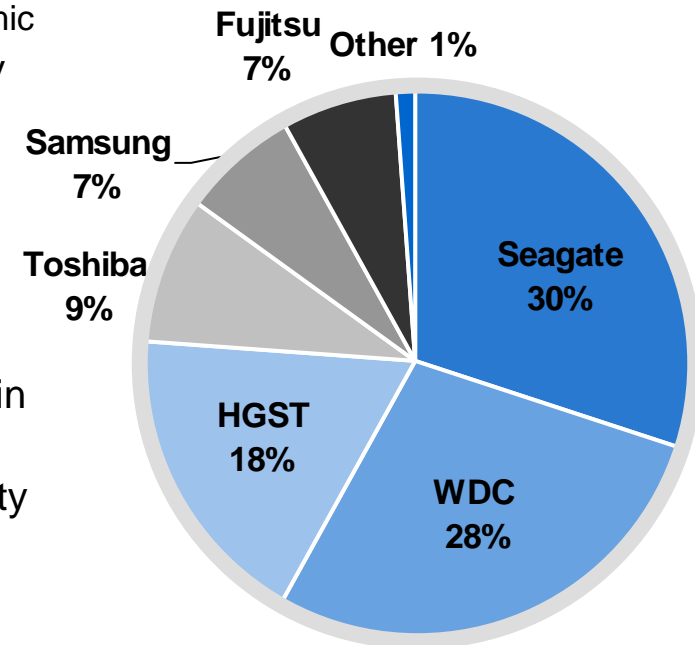
■ HDD industry trends

- Shipment volumes: Total demand will be lower than the results in 2008.
Inventory adjustments in 1H. Substantial cuts in media production in 1Q.
Gradual recovery in 2Q. Recovery in 2H depends on macroeconomic recovery. (No change in medium-term growth outlook: 10%/y or more)
- Notebook PCs will continue to drive growth in 2009.
- Further reorganization of the industry is expected.

■ Showa Denko's HD media business

- Substantially cut production in response to sharp declines in demand.
- Leading the world in commercial production of high-capacity media. Started the world's
- First commercial production of the fourth-generation PMR media. Also leading in the race for the fifth-generation.
- Rapid increase in the production of high-capacity glass-based media (Shipment of aluminum-based media declining)
- We will further strengthen our position through positive reorganization focusing on glass-based media.

[HDD shipment]
(Oct.–Dec. 2008)



TrendFocus

1. Portfolio improvement through implementation of growth strategies and structural reform

HD: Improving profitability through production cuts in response to a sharp drop in demand

■ HD

- Intensively cutting production in response to sharp production cuts by the HDD industry

(Our plant utilization rates: 70% in 4Q '08; 40% in 1Q, and 60% in 2Q, '09)

- Rationalization measures to be implemented in 1H '09

Fixed costs at all production sites to be cut by a total of ¥3 billion

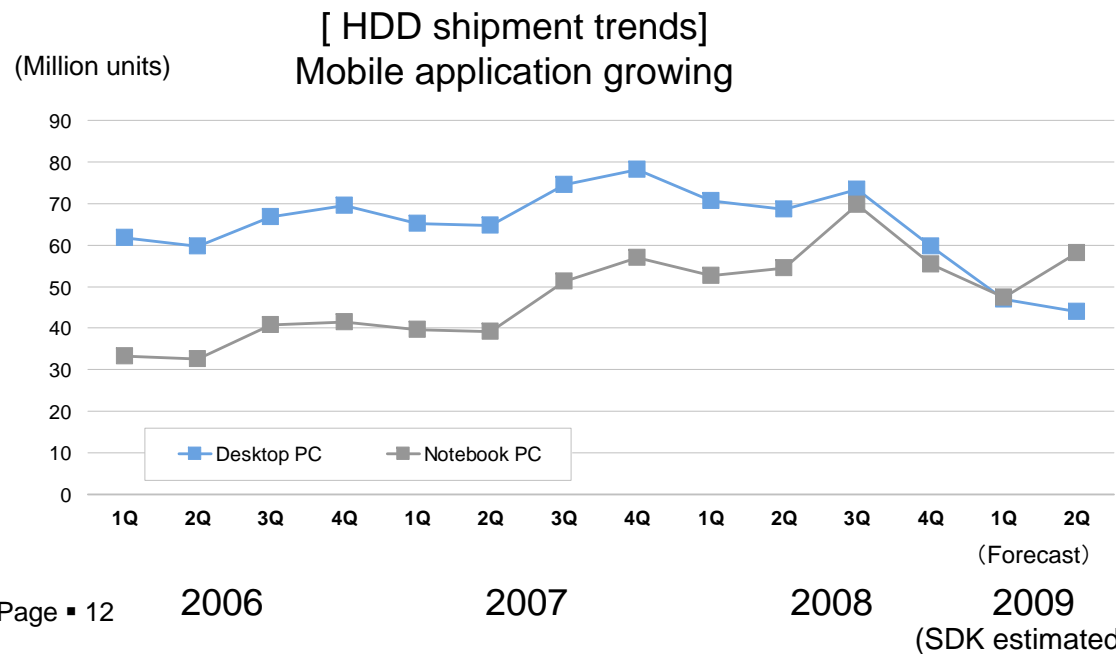
(including ¥1 billion fixed-cost reductions in Taiwan and Singapore due to intensive production cutbacks in 1Q and workforce reduction)

- Renewed VPA with major customers

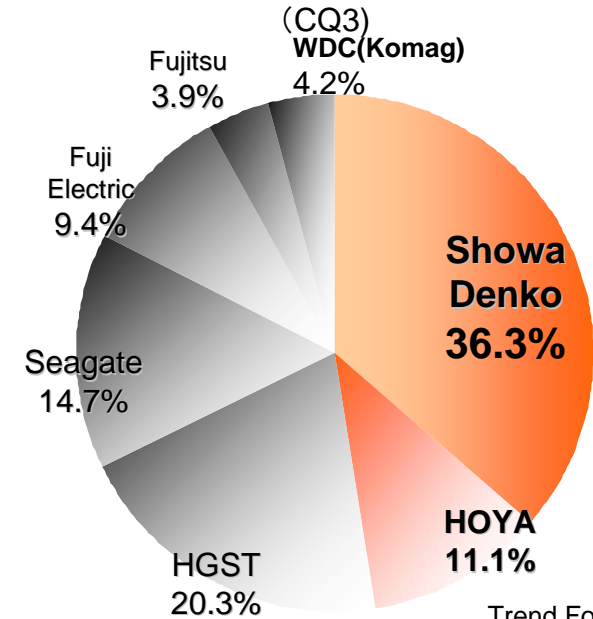
1. Portfolio improvement through implementation of growth strategies and structural reform

HD: Integration with HOYA to become world No. 1 in notebook PC applications

- The HDD market will shrink slightly in 2009. In the medium term, however, demand for HD media for mobile PC applications will grow.
- Showa Denko will focus on rapidly growing glass-based high-capacity HD media.
- Consolidation with HOYA's glass-based HD media business
 - 1) The new JV will start up in 2Q '09.
 - 2) Our position in the glass-based HD media market will be strengthened further.



[HD media market share for mobile applications]



1. Portfolio improvement through implementation of growth strategies and structural reform

Aiming to become a leader in inorganics/metals (1)

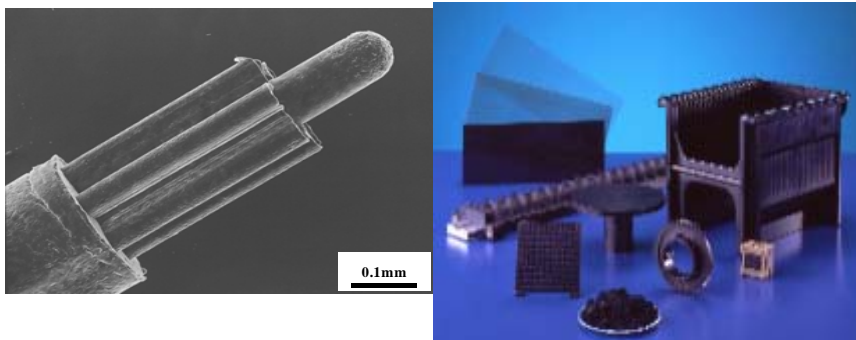
Graphite electrodes

- World leader in 30- and 32-inch electrodes
- Future capacity expansion is being considered.



VGCF™

- World leader in LIB applications
- Build a 400t/y plant for use in resin composites
- World leader in carbon nanotube



Rare earth magnetic alloys

- A leading maker in the world
- Demand growing for use in HDDs and cars
- Building a plant in Vietnam (already 2 in China)



High-performance ceramic products

- Ceria-based glass polishing slurries for LCD/HD applications
- Titanium oxide for capacitors



1. Portfolio improvement through implementation of growth strategies and structural reform

Aiming to become a leader in inorganics/metals (2)

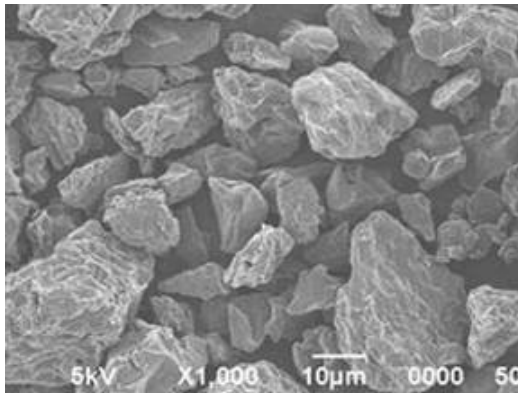
Ultrabright LED chips

- Covering the whole wavelengths
- Highly efficient production setup
- Planning to use 6-inch wafers



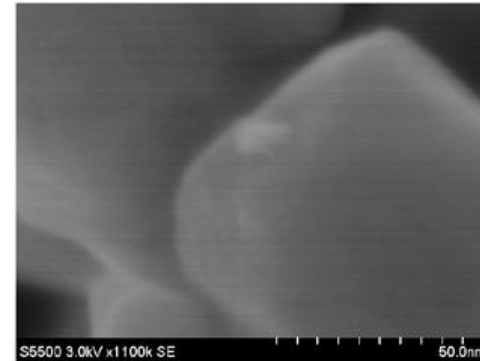
SCMG™

- Graphite cathode material for LIBs
- Growing demand for use in PCs, mobiles and cars



Photocatalyst

- Trial manufacture of new catalysts responsive to visible light
- Commercialization efforts in NEDO project
- Future market size: ¥2.8 trillion



SiC epitaxial wafers

- For energy-saving power devices
- Commercially producing high-quality epi-wafers



1. Portfolio improvement through implementation of growth strategies and structural reform

Ready to contribute to the expansion of electric vehicle market
(For GHG reduction and energy conservation)

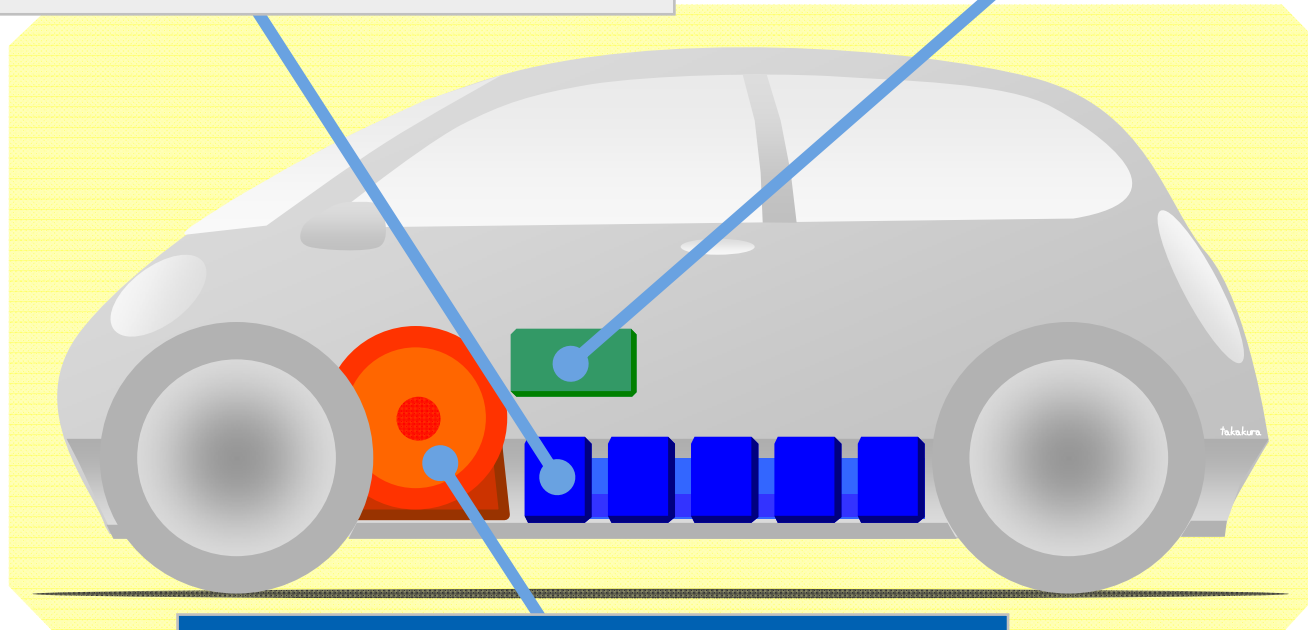
To provide high-performance parts for electric vehicles

High-capacity, long-life lithium ion batteries

- Additive in anode/cathode (VGCF™)
- Graphite cathode material (SCMG™)
- Aluminum laminate package
- Aluminum foils for electrodes

Small inverters with minimized loss

- SiC power devices



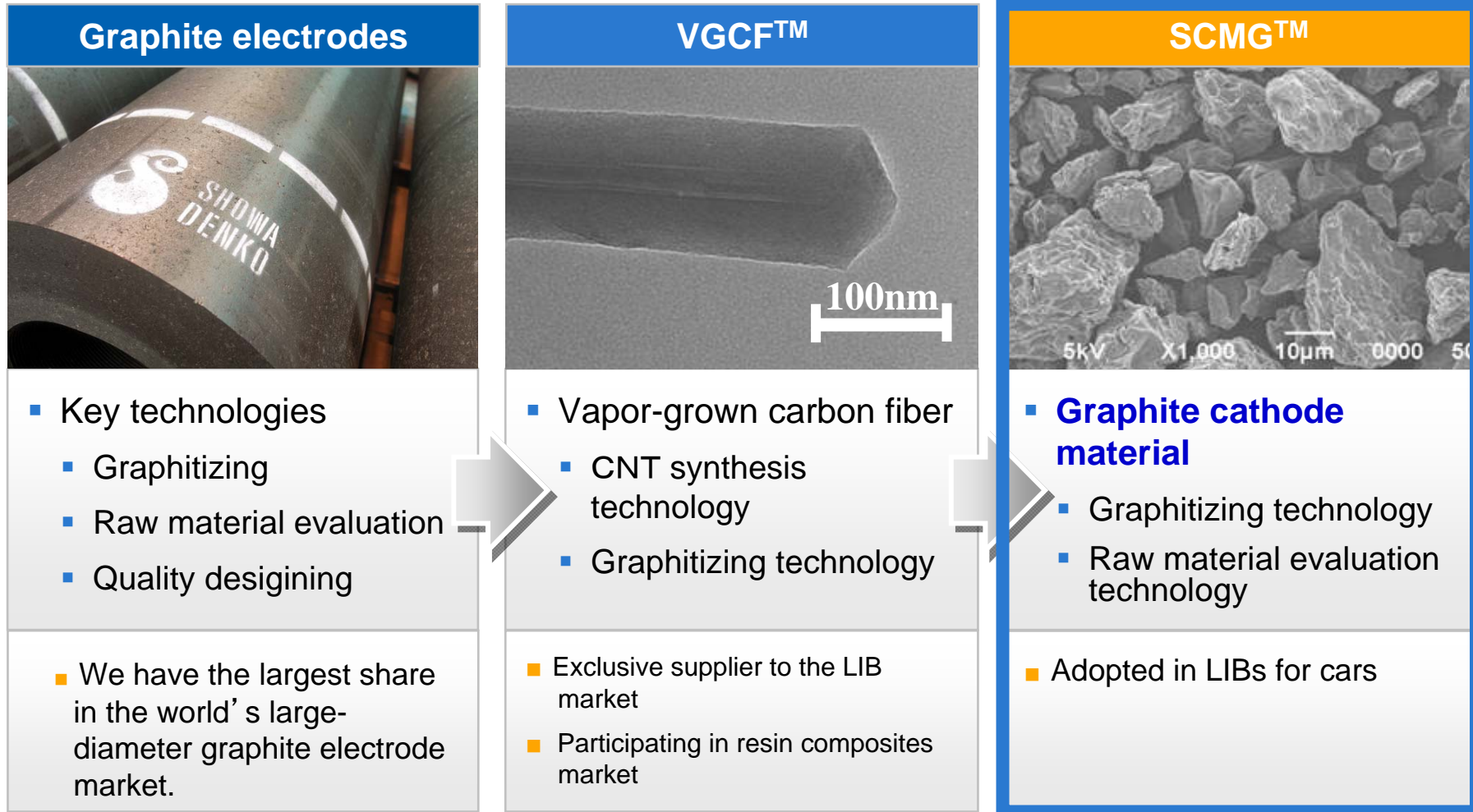
Small and efficient motors

- Rare earth magnetic alloys

1. Portfolio improvement through implementation of growth strategies and structural reform

Graphite cathode material (SCMG™) adopted in electric vehicles

Large LIB for cars, and LIB for power tools

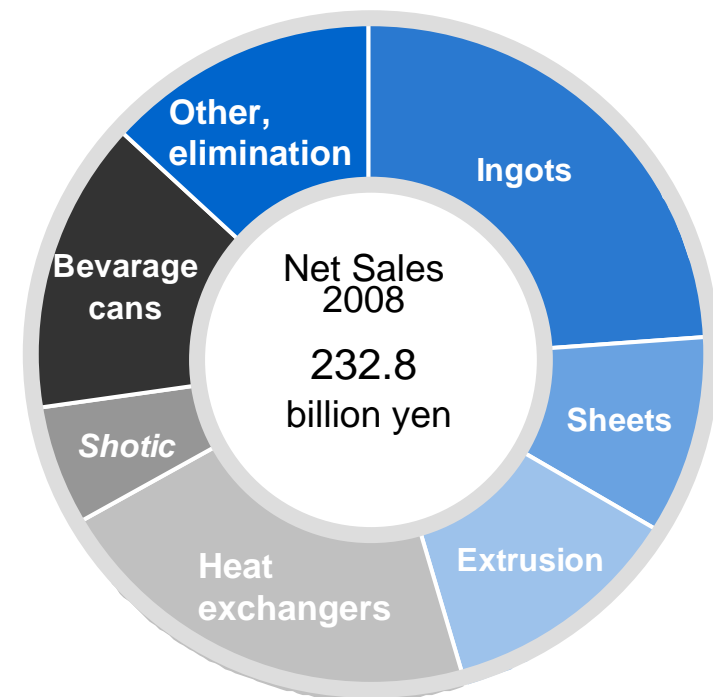


1. Portfolio improvement through implementation of growth strategies and structural reform

Aluminum: Carry out drastic structural reform and consider alliances

- Restructure production setup to improve profitability
- Pursue alliances as one of the alternatives
- Commodity aluminum materials (rolled products and extrusions)
⇒ Review production setup, including saving of labor
- Aluminum cans
⇒ Increase production efficiency and reduce costs; withdraw from bottle production
- Heat exchangers
⇒ Accelerate restructuring of our North American production site, and expand capacity in Asia
- Cylinders for LBP
⇒ Establish a global production setup to meet growing demand

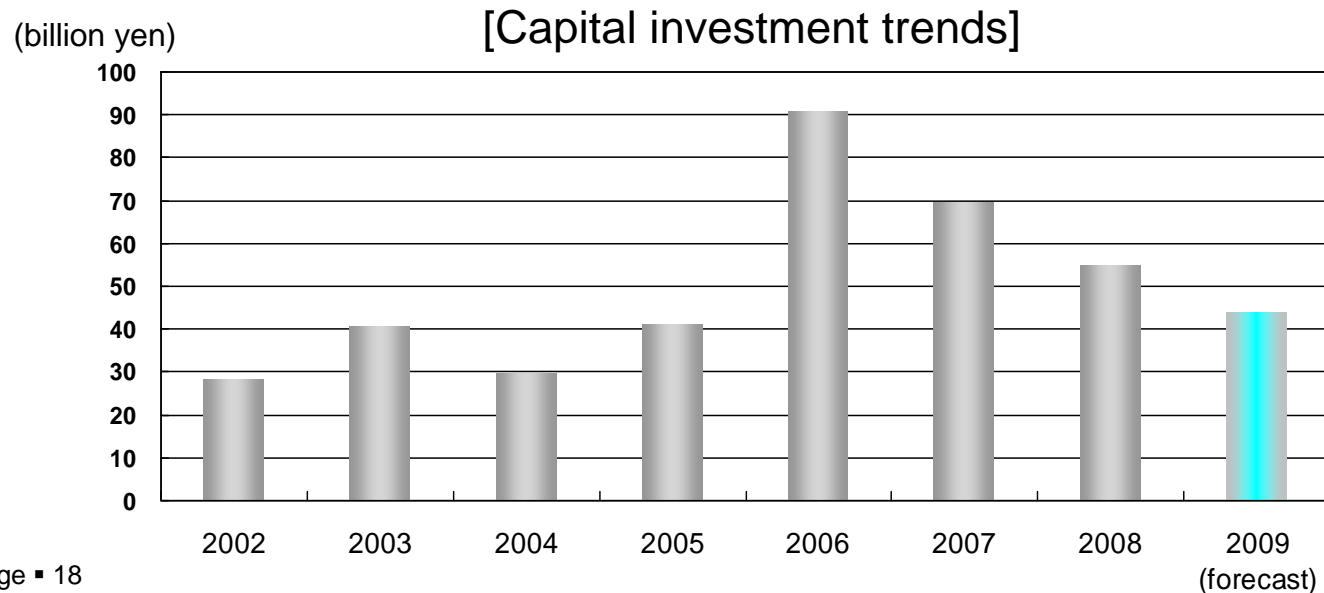
【Aluminum sales breakdown】



2. Efficient allocation of resources through careful selection of investments

Substantially reducing capital investments in 2009

- Reduce investment from 2008 level Results in 2008: ¥54.8 billion
Plan for 2009 : ¥44.0 billion
- Very carefully select investment items and focus on strategic areas of high growth
- Rationalization and labor-saving measures will be given priority.



3. Carry out drastic cost reductions

Planning to reduce costs by ¥12 billion in 2009

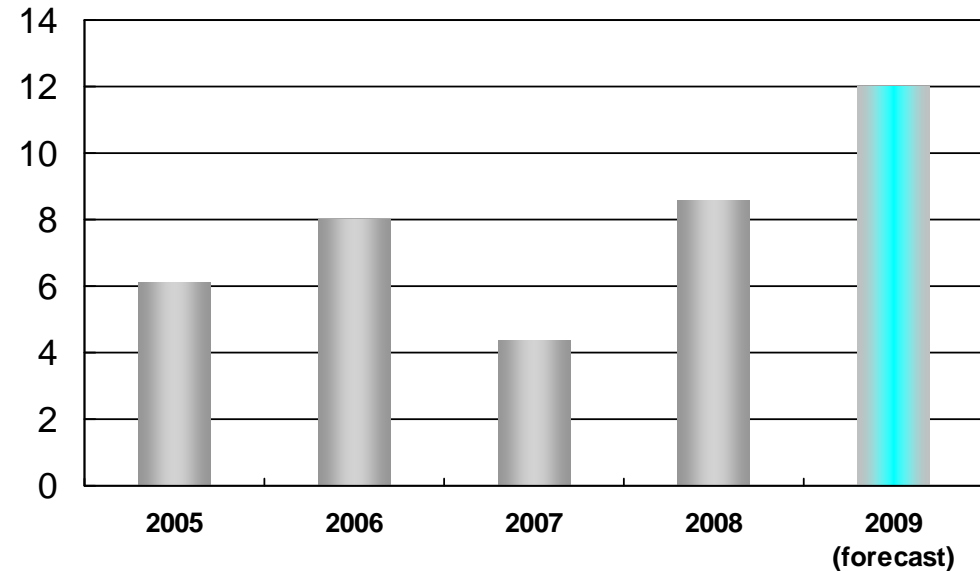
- Breakdown by segment

(billions of yen)

Electronics	6.0
Aluminum and other	3.5
Inorganics	1.5
Chemicals	1.0

(billion yen)

[Cost reduction trends]

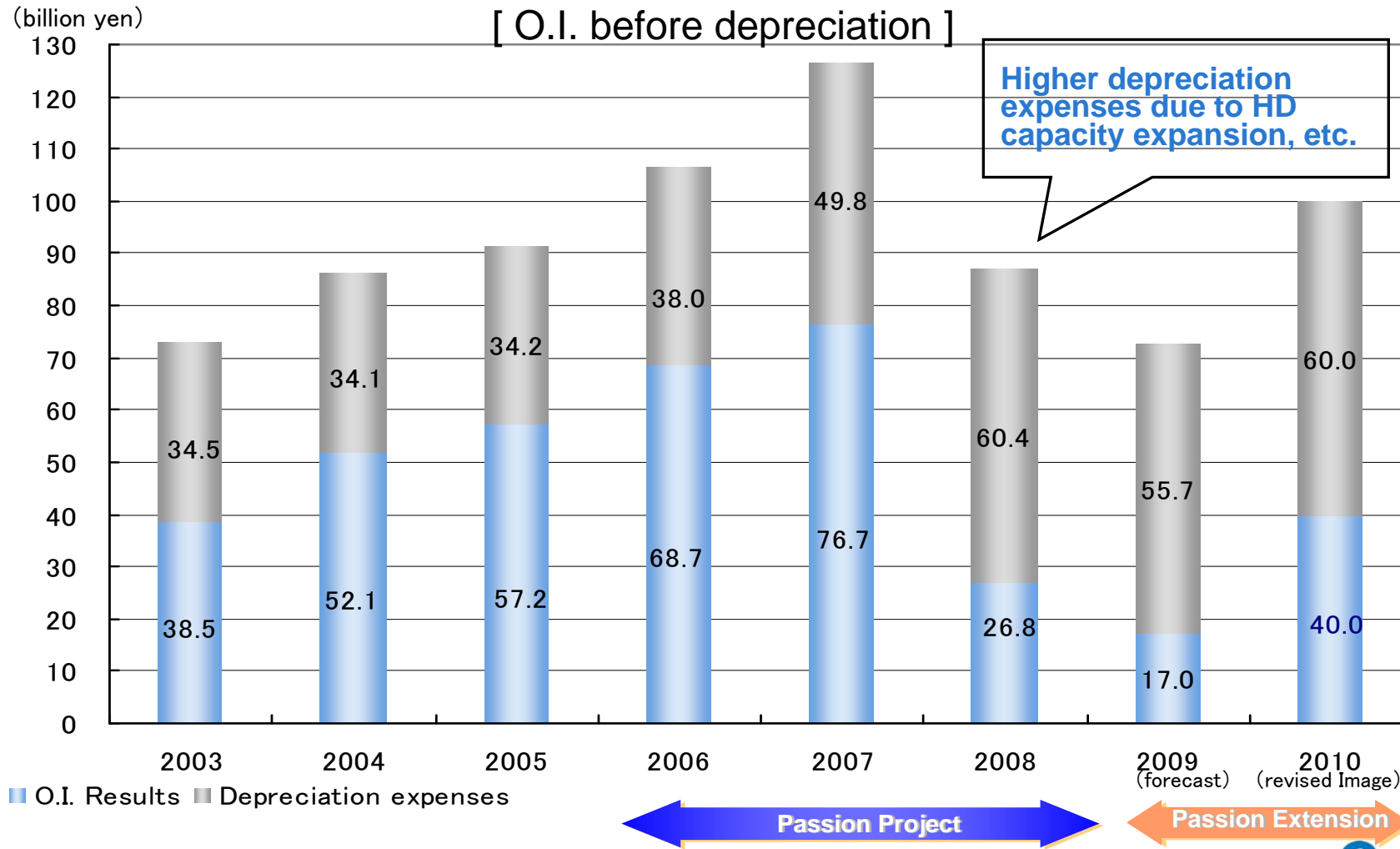


- Reduce purchasing costs of all items, including raw materials and auxiliary materials
- Establish an optimized production setup in accordance with the present levels of plant utilization
- Increase productivity through SPS (Showa Denko Production System) activities
- Set to take additional measures in response to further declines in economic conditions

4. Ensure sufficient cash flows

Ensure sufficient cash flows

The total of operating income and depreciation expenses in 2009 will be maintained at the 2003 level; will increase again in 2010.

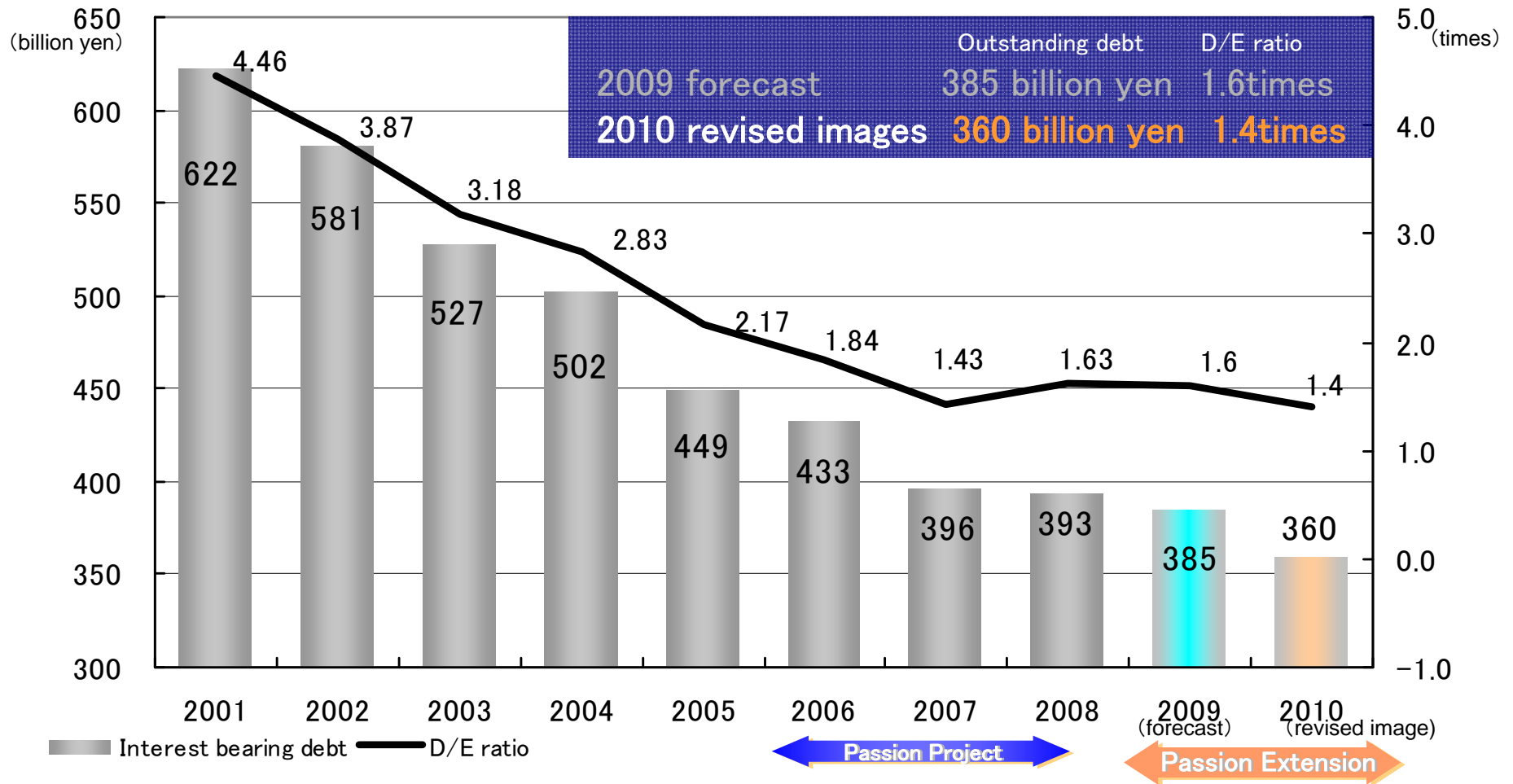


5. Improve financial strength

Improve financial strength

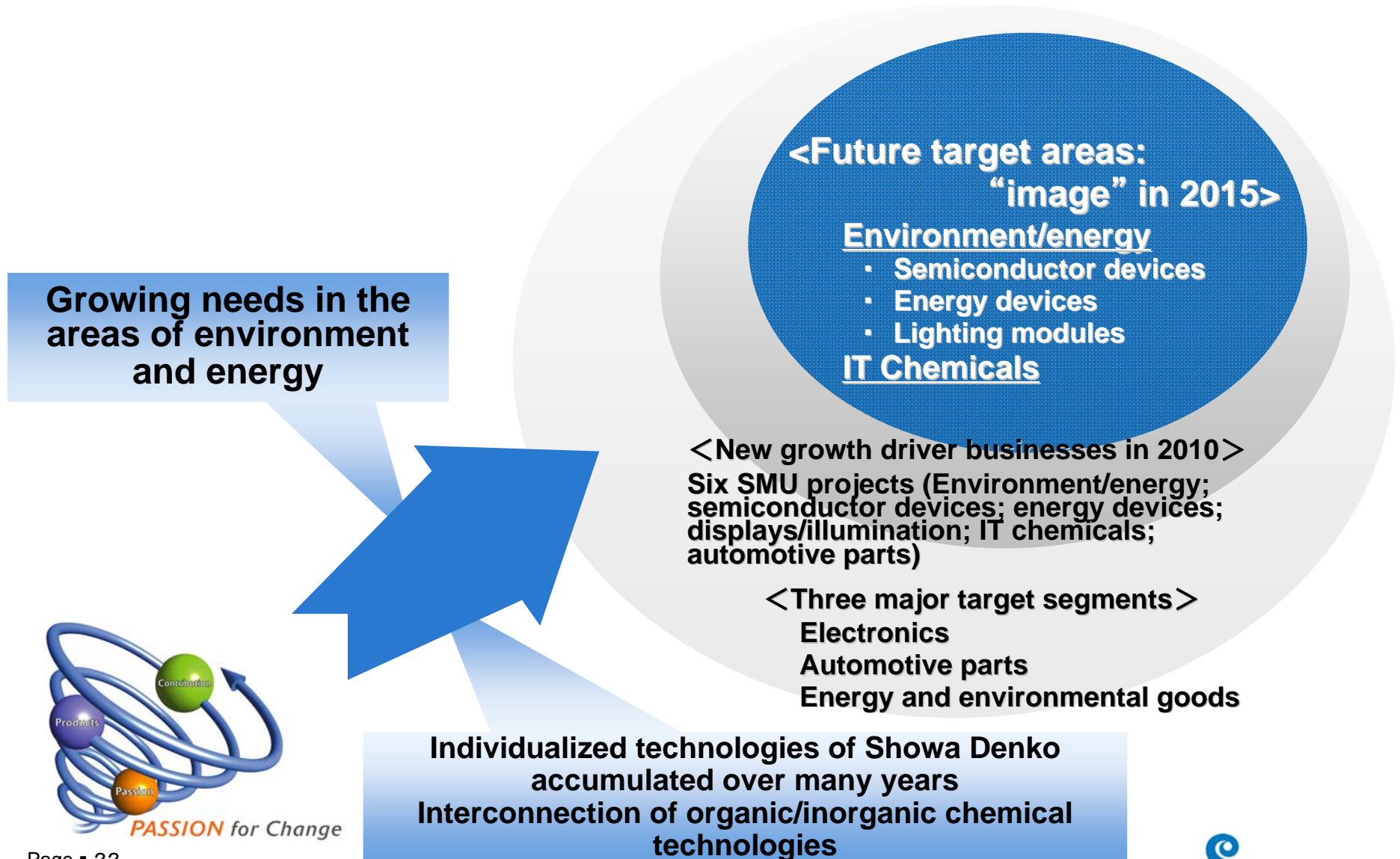
Continue to steadily improve financial strength despite severe environment

⇒ Drastically reduce inventory and very carefully select investments



6. Strengthen R&D to realize our "image" under the new business plan

Fully utilizing our position as the unique chemical company with excellent inorganic/metal technologies



6. Strengthen R&D to realize our “image” under the new business plan

Contribute to reduction of impact on global environment

Trends in society and market

- Request for reductions in environmental impact
- Increased demand for energy; Measures to cope with the depletion of resources



Value to be provided by the Showa Denko Group

<Contribute to environmental protection as the unique chemical company with excellent inorganic/metal technologies>

- GHG reduction: Cathode material for LIBs for cars; carbon separators for fuel cells, etc.
- Conservation of energy: VGCF™; LED chips; SiC power devices; organic EL, etc.
- Conservation of resources & recycling: Platinum-substitute catalysts for fuel cells; production of chemicals based on used materials



SDK Group technologies

- Individualized technologies: Fusion of organic/inorganic chemical and metal technologies accumulated over many years
- Deepening core technologies for the future (Molecular design, reaction control, organic/inorganic hybrid, and other technologies)

Supplementary data

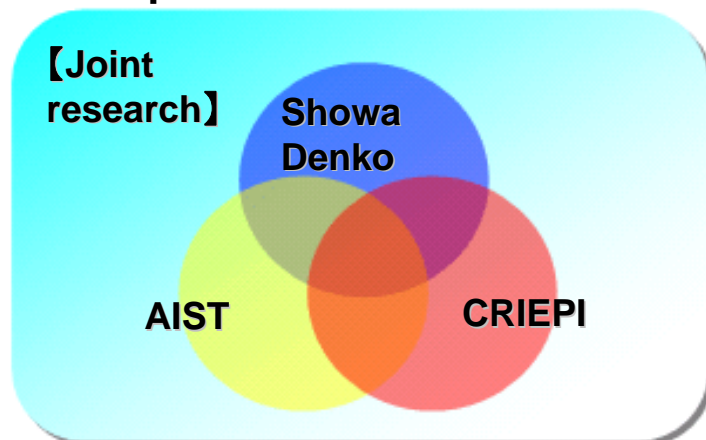
~ Development efforts by Showa Denko Group

- SiC power devices
 - First company in Japan to commercially produce epitaxial wafers for SiC power devices
- LED chips
 - Developing InGaN-based LED chip technologies
- Organic EL
 - Development roadmap
 - Achieved 100-times improvement in material performance
- Fuel cell components
 - Requirements for commercial use in electric vehicles
 - Showa Denko's efforts for FCEV commercialization

SiC power devices: First in Japan to commercialize epitaxial wafers

- **Developing SiC epitaxial wafers with the top-level quality in the world: large diameter, low deficiency, and high uniformity**
- **Taking over ESICAT Japan's business; becoming the first Japanese company to produce SiC epitaxial wafers on a commercial scale**

SiC epitaxial wafer consortium



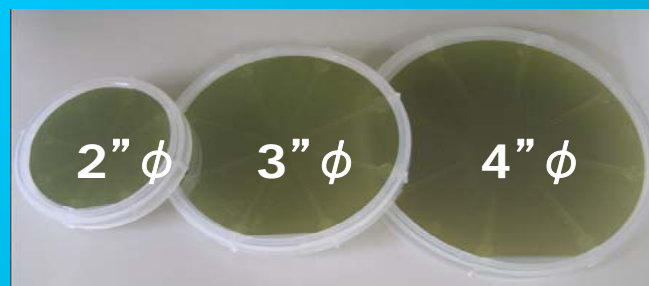
Technology transfer

<SiC epitaxial wafer supplier>
ESICAT Japan, LLP

Takeover in January
2009

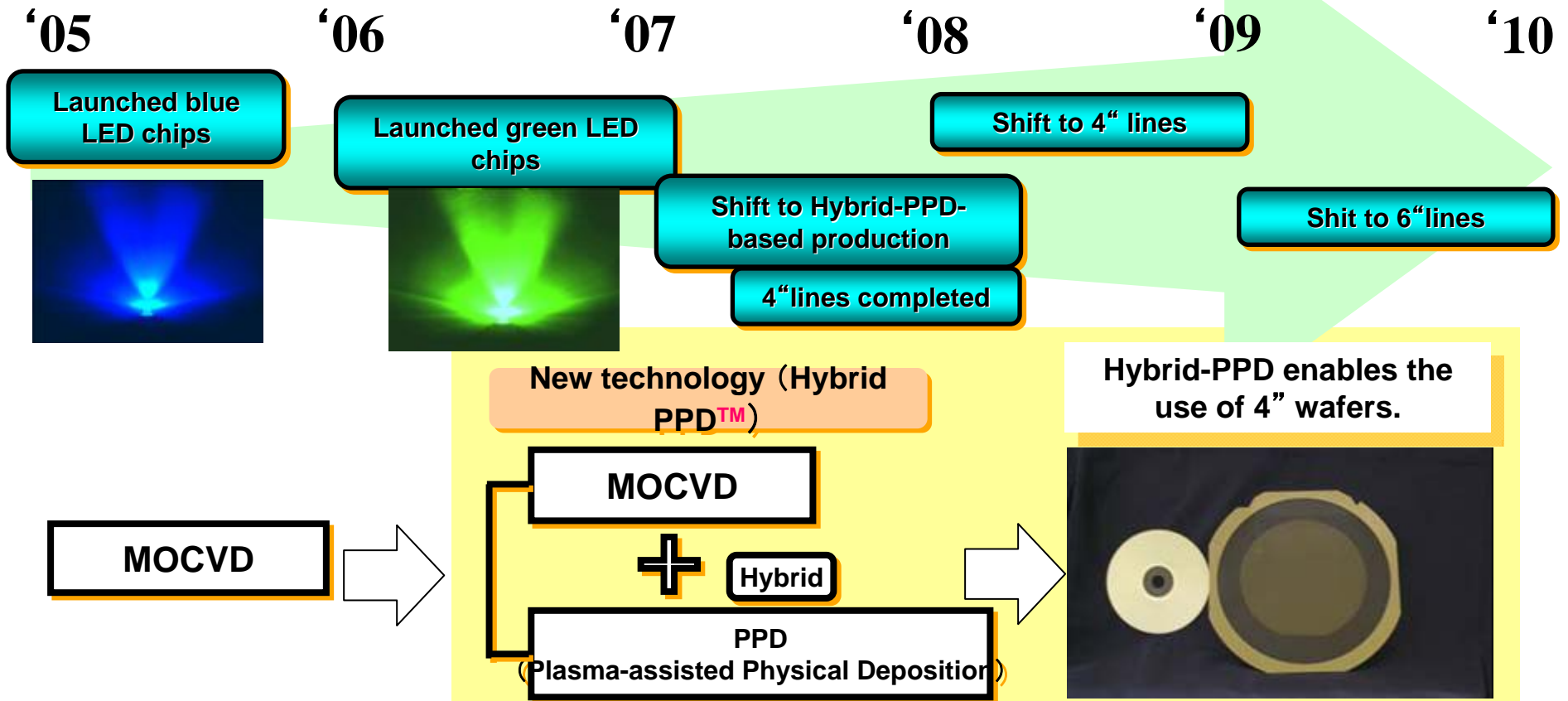
Showa Denko

- **Epitaxial wafers (2, 3, and 4 inches in diameter) with world's leading quality**
- **Starting full-scale epitaxial wafer business following takeover of ESICAT Japan's business**



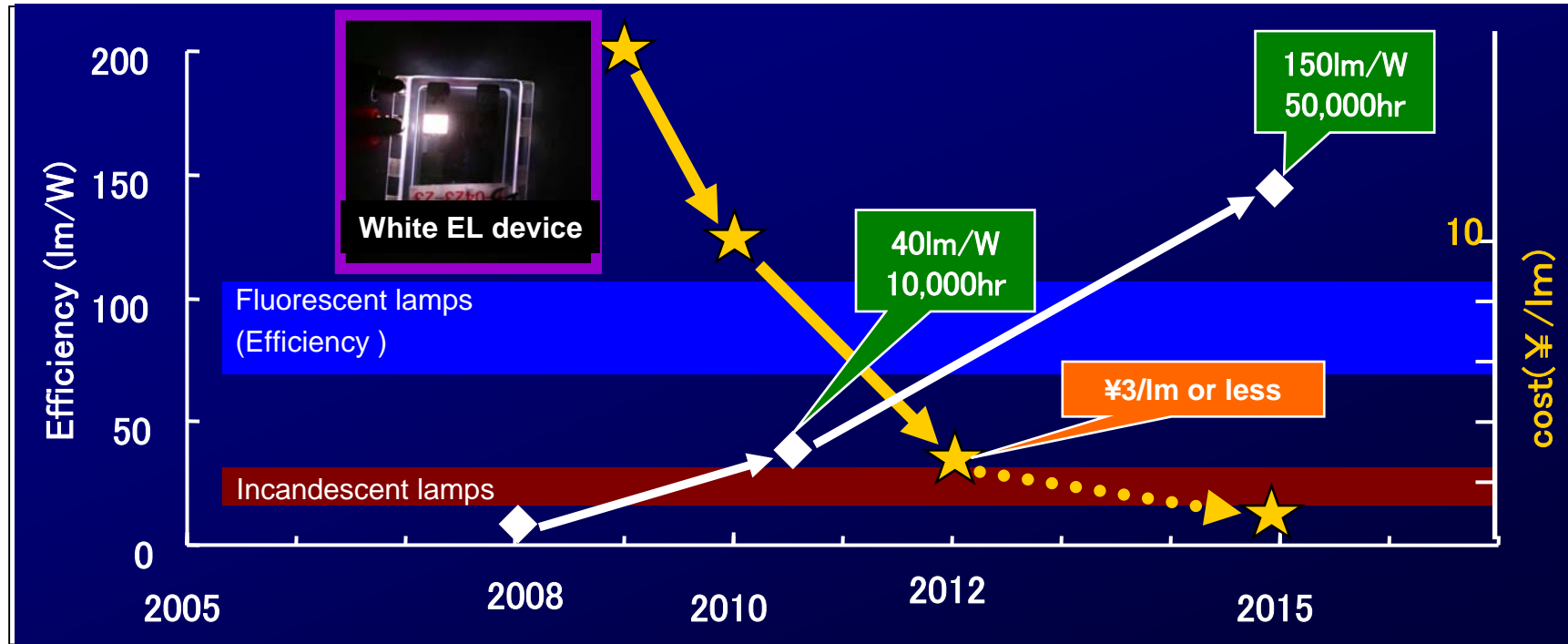
LED chips: Developing InGaN-based LED chip technologies

- Developed an innovative film-forming technology for nitride-based compound semiconductors
- Developed a new crystal process using MOCVD; production based on four-inch epitaxial wafers; aiming to shift to six-inch epitaxial wafers



Organic EL: ~ Development roadmap

For next-generation lighting



Marketing

Sample distribution

Launch

Replacing incandescent lamps

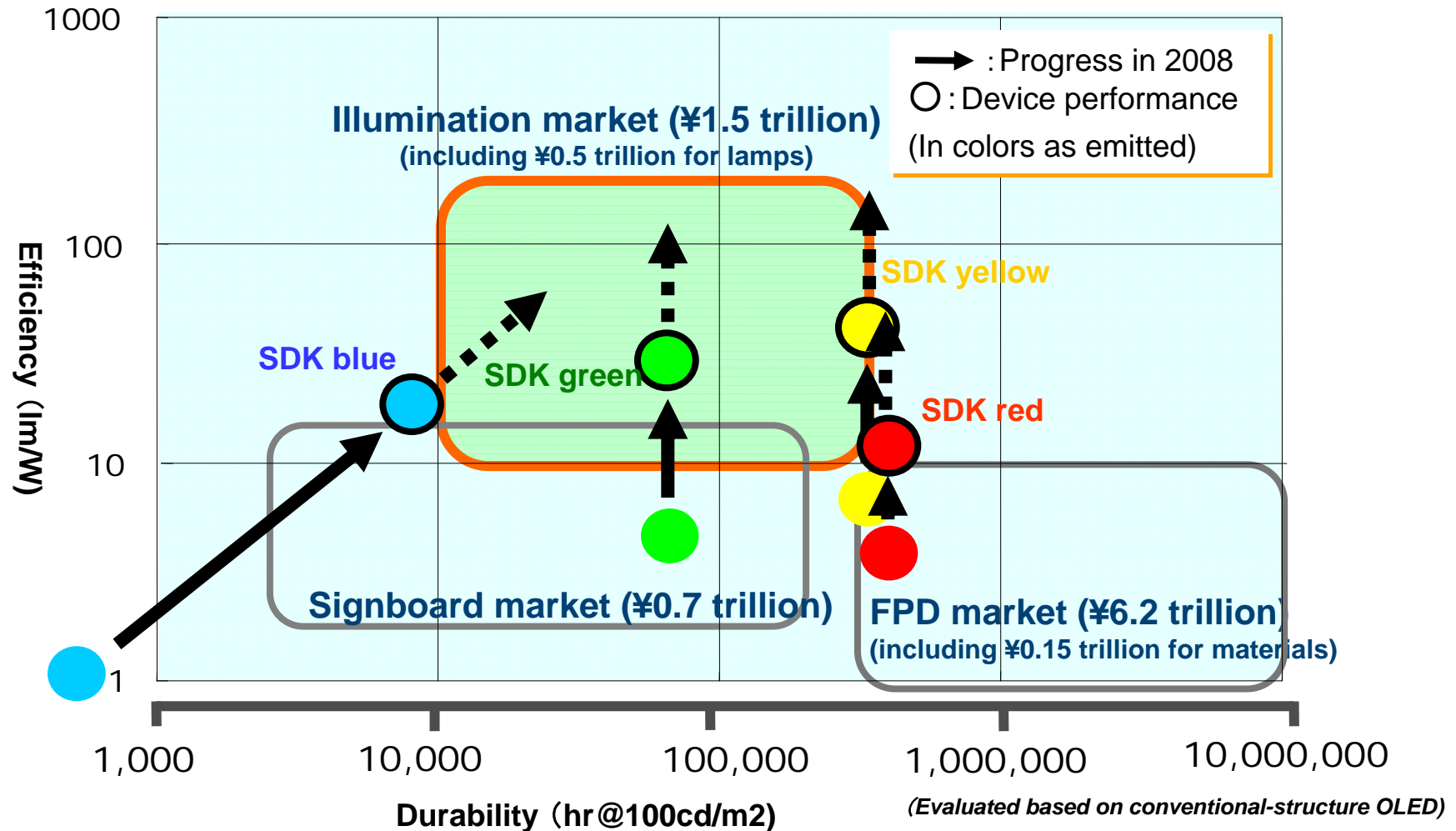
Replacing fluorescent lamps

R&D

To achieve high durability and efficiency by developing white luminescent devices with a "new-concept" structure

Organic EL: Achieved 100-times improvement in material performance

Now at a level close to commercialization for the illumination market due to longer life and higher efficiency

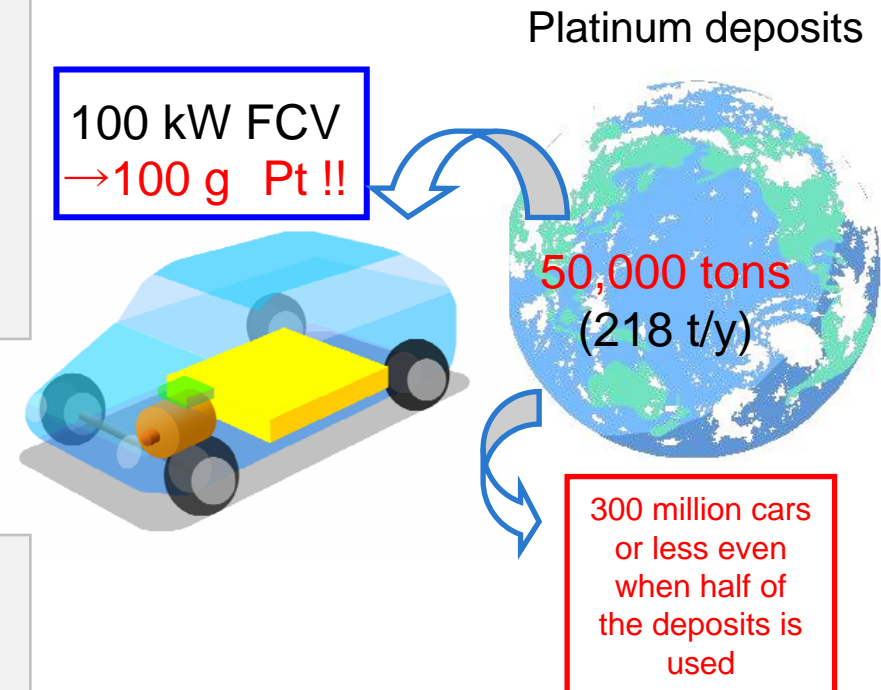


Fuel cell components: Requirements for commercial use in electric vehicles

- **Fuel cell costs should be reduced to 1/100 to realize commercialization.**
 - Develop platinum-substitute catalysts
 - Reduce the weight of separators
 - Establish an infrastructure of hydrogen, including its storage

Materials-based approaches

- Development of **platinum-substitute catalysts** is essential because of limited deposits of platinum.
- Development of **a substitute for metallic separators** is essential in view of their weight and costs.



No. of four-wheeled cars (2007)

World total: 922 million units
Japan: 76 million units (8.2%)

Fuel cell components: Showa Denko's efforts for FCEV commercialization

- Developing “1/100 cost” materials for fuel-cell electric vehicles (FCEVs)
- Commercialize fuel cell components in preparation for the expected spread of FCEVs in and after 2015

Carbon separators

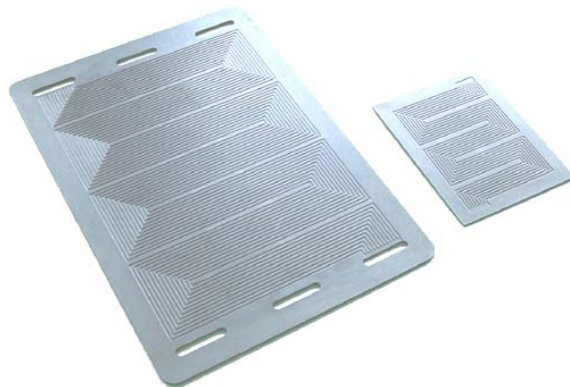
Low-cost, thin, and light carbon separators

- Fine powder of graphite with high electrical conductivity
- Low-cost production using a high-speed molding process
- Special surface treatment for high drainage
- Member of a project at NEDO

Platinum-substitute catalyst

Niobium-based (IV/V group) oxide catalyst

- High specific surface
- High crystallinity
- High-speed production
- Member of a new project at NEDO



Reference

~ Operating Income by segment

(billion yen)

	[Passion Project]						2009 (forecast)	
	2006		2007		2008		Net Sales	Operating Income
	Net Sales	Operating Income	Net Sales	Operating Income	Net Sales	Operating Income		
Petro-chemicals	335.4	16.4	395.1	19.6	400.2	-1.3	245.0	3.0
Chemicals	79.2	5.1	84.7	7.4	93.3	5.3	100.0	2.0
Electronics	165.5	28.6	201.0	25.8	188.8	9.3	155.0	0.0
Inorganics	74.3	16.1	84.6	20.9	88.8	19.2	90.0	17.5
Aluminum	260.1	6.5	257.8	8.0	232.8	-0.2	210.0	0.0
HQ costs and other		-3.9		-5.1		-5.5		-5.5
Total	914.5	68.7	1,023.2	76.7	1,003.9	26.8	800.0	17.0