APTSIS

Mitsubishi Chemical Holdings Group Investors Meeting

June 14, 2011

Yoshimitsu Kobayashi
President & Chief Executive Officer
Mitsubishi Chemical Holdings Corporation

Good Chemistry for Tomorrow
Creating better relationships among people, society, and our planet.

The forward-looking statements are based largely on information available as of the date hereof, and are subject to risks and uncertainties which may be beyond company control. Actual results could differ largely, due to numerous factors, including but not limited to the following: Group companies execute businesses in many different fields, such as information and electronics, performance products, polymers and processed products, pharmaceuticals, carbon and inorganic products, petrochemicals, and these business results are subjected to influences of world demands, exchange rates, price and procurement volume of crude oil and naphtha, trend of market price, speed in technology innovation, National Health Insurance price revision, product liabilities, lawsuits, laws and regulations.

List of Abbreviations

MCHC: Mitsubishi Chemical Holdings Corporation

MCC: Mitsubishi Chemical Corporation

MTPC: Mitsubishi Tanabe Pharma Corporation

MPI: Mitsubishi Plastics, Inc.

MRC: Mitsubishi Rayon Co., Ltd.

TKI: The KAITEKI Institute, Inc.

MCM: Mitsubishi Chemical Medience Corporation

Today's Agenda

- **Impact of the Great East Japan Earthquake on Our Operations and Progress in Restoration**
  - MCHC Group overview
  - Kashima Plant: Petrochemical business overview
- ***APTSIS 15* (FY2011-FY2015)**
  - Summary of *APTSIS 10*
  - Management challenges under *APTSIS 15*
  - Specific reforms in and progress of *APTSIS 15*
- ***APTSIS 15* Business Topics**
  - MMA/PMMA,
    Carbon fibers and composite materials (Performance composite materials)
  - Lithium-ion battery materials,
    White LED lighting and materials,
    OLED (Organic photo semiconductor),
    Organic photovoltaic modules and materials

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Impact of the Great East Japan Earthquake on Our Operations and Progress in Restoration(1)

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*Amount of damage = sum of operating and extraordinary losses in the fiscal years ending March 31, 2011 and 2012

Group/ Amount of damage* (Billions of Yen)	Location	Company	Site	Damage from earthquake	Progress in restoration
MCC (48.0)	Ibaraki pref.	MCC	Kashima Plant (Tobu Zone)	Entire plant shut down. Water cut off. Wharf equipment damaged.	K2E** operations resumed on May 20, start of regular maintenance delayed until end of August. Recovery work for K1E*** underway aiming to resume operations at the end of June.
			Tsukuba Plant (Ushiku city)	Entire plant shut down.	Recovery work almost finished. Resumed all equipment operations.
		Mitsubishi Chemical Medience	Kashima Plant (Hasaki Zone)	Utilities cut off temporarily; operations continued using minimal resources.	All utilities operational. Recovery complete by the end of the early May holiday (Golden Week).
	Fukushima pref.	Nippon Kasei Chemical	Onahama Plant	Plant operations halted due to lack of power and water and damage to some equipment.	With the exception of some plants and peripheral equipment in need of repair, the site is back up and running normal operations.
		API Corp.	Iwaki Plant	Facilities damaged.	Resumed operations at the end of May.

**K2E = the Kashima No.2 ethylene production facility
***K1E = the Kashima No.1 ethylene production facility

Impact of the Great East Japan Earthquake on Our Operations and Progress in Restoration (2)

APTSIS

*Amount of damage = sum of operating and extraordinary losses in the fiscal years ending March 31, 2011 and 2012

Group/ Amount of damage* (Billions of Yen)	Location	Company	Site	Damage from earthquake	Progress in restoration
MTPC (6.0)	All six prefectures in Tohoku	MTPC	Tohoku Branch and other sites within the area	Difficult to sustain ordinary business operations.	Since March 28, resumed mainly safety management operations to meet demand from medical institutions.
	Tochigi pref. Ibaraki pref.	Mitsubishi Tanabe Pharma Factory	Ashikaga Plant and Kashima Plant	Equipment shut down temporarily, but there was no major damage done to buildings or equipment.	Ashikaga Plant and Kashima Plant resumed equipment operations on April 11.
	Chiba pref.	MP-Logistics	East Japan Distribution Center	Stopped inbound and outbound freight due to damage to portions of building and equipment.	Resumed inbound and outbound freight movement on April 11.
MPI (5.0)	Ibaraki pref.	MPI MKV DREAM	Tsukuba Plant	All manufacturing equipment shut down.	Resumed operations on some equipment by the end of March. Resumed all equipment operations during the end of April.
	Fukushima pref.	MPI	Koriyama Plant	All manufacturing equipment shut down.	Resumed equipment operations.
MRC (1.0)	Aomori pref.	MRC Unitec	Hachinohe Factory	Plant completely shut down. Wharf equipment damaged.	Resumed equipment operations on March 28. Resumed all operations on April 18.
	Fukushima pref.	Toei Kasei	Ono Factory	Plant completely shut down. Equipment damaged.	Resumed some equipment operations on April 8. Others will be phased in.

Impact of the Earthquake on Our Financial Results and Forecast

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(Billions of Yen)

	FY2011 Forecast	FY2010 Actual	Total
Impacts of the eathquake	**(40.0)**	**(20.8)**	**(60.8)**
Decrease in production/sales	(40.0)	(1.8)	(41.8)
Expenses to fix property	-	(14.4)	(14.4)
Lost or damaged inventories	-	(1.7)	(1.7)
others	-	(2.9)	(2.9)

Effect on operating income	(30.0)	1.7	(28.3)
Extraordinary loss	(10.0)	(22.5)	(32.5)

Also, included 9.0 billion yen insurance in FY2011 forecast.

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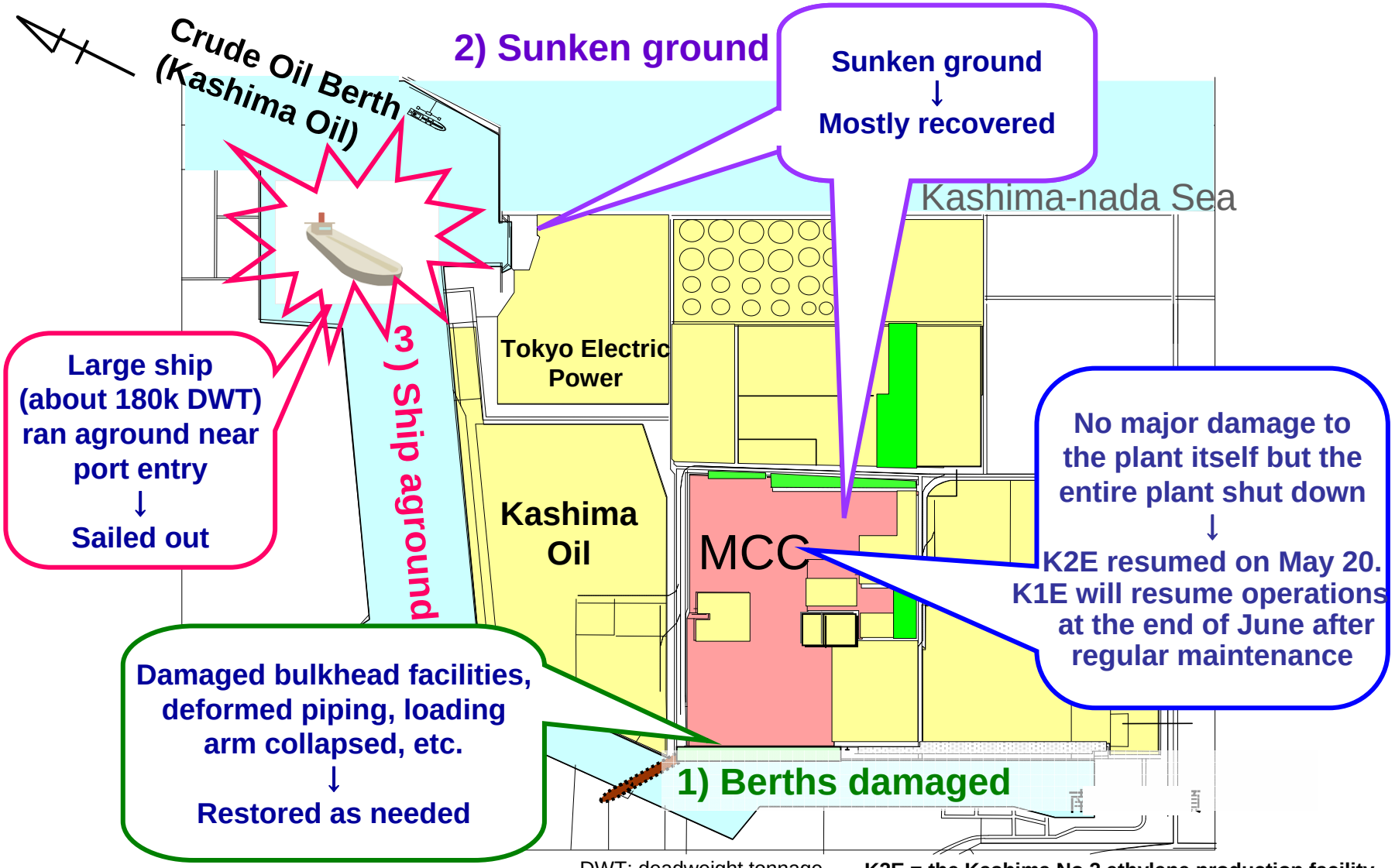
Earthquake Damages



DWT: deadweight tonnage

K2E = the Kashima No.2 ethylene production facility
K1E = the Kashima No.1 ethylene production facility

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1) Berths

Just after earthquake → **After recovery**

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2) Sunken Ground

Just after earthquake → **After recovery**

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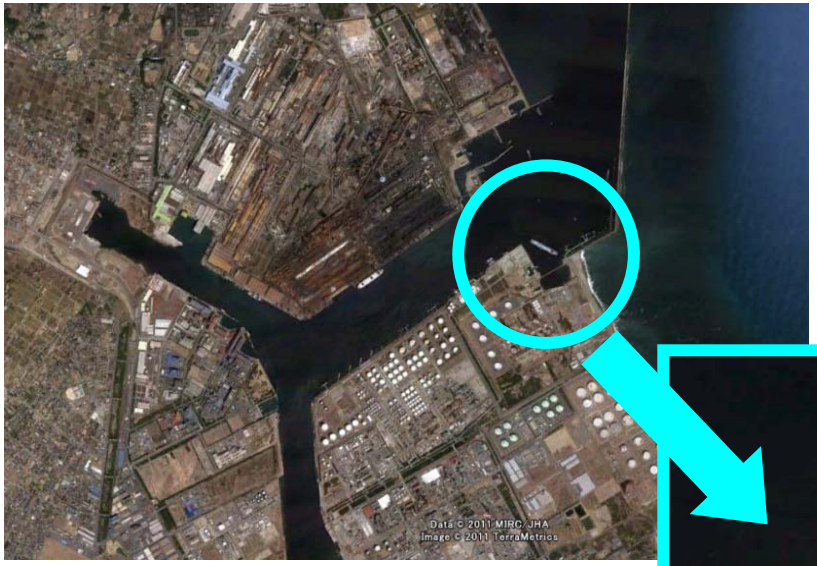
3) Ship Aground at Entry to Central Channel



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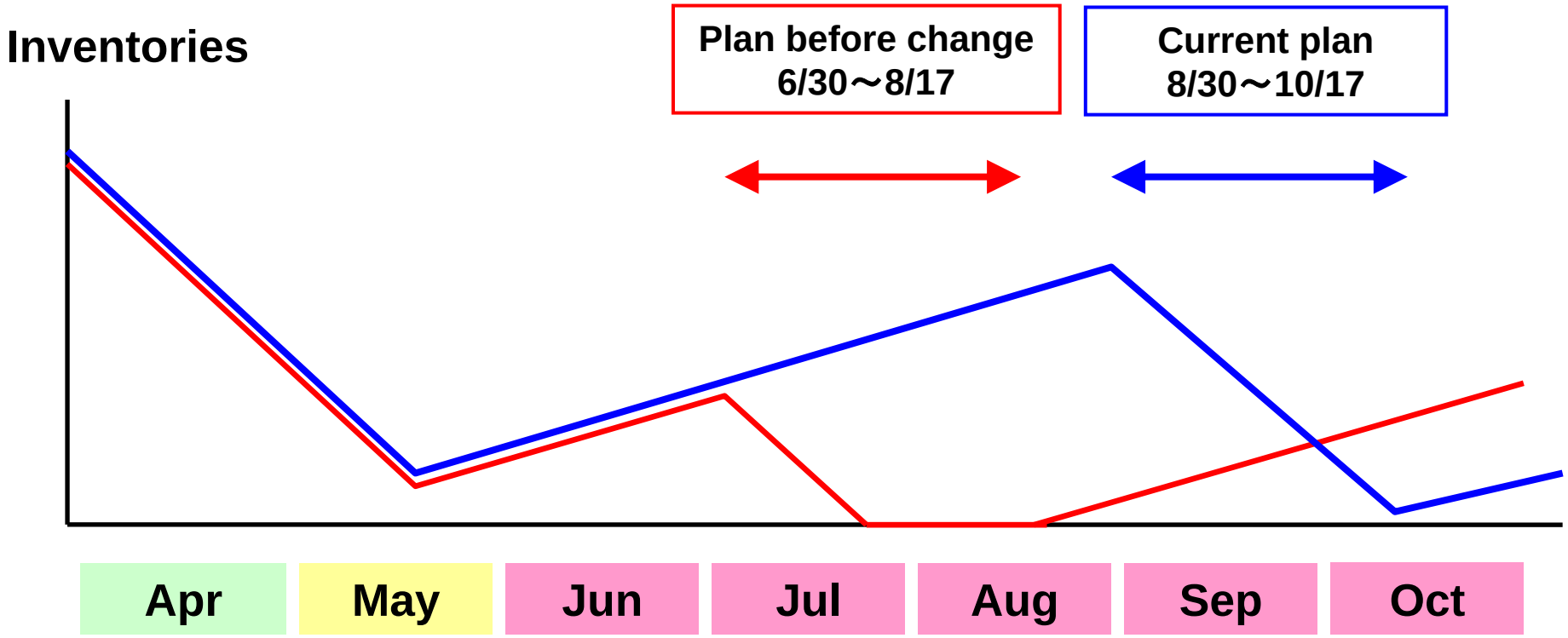
Restoring and Maintaining the Supply Chain

- With the understanding of the regulatory bodies, we are postponing regular maintenance at Kashima No.2 ethylene production facility and derivatives facilities until the end of August. This will allow us to build inventory and ensure that our supply chain is maintained.



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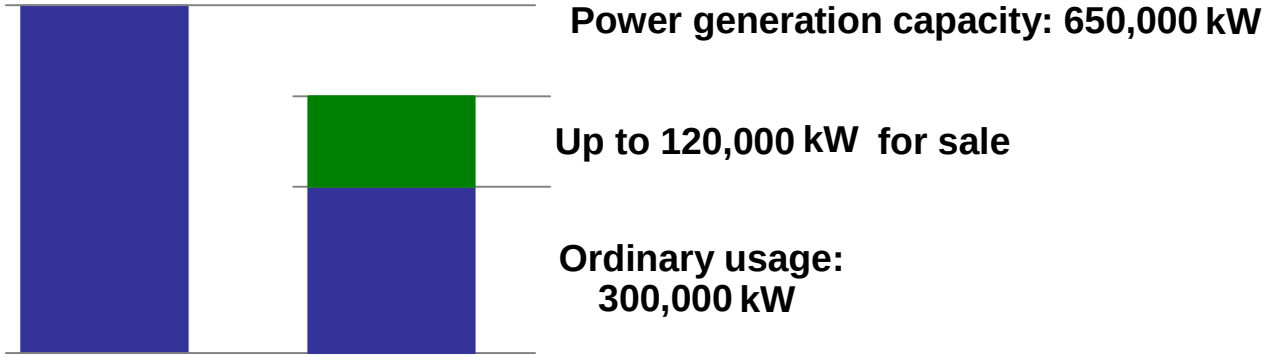
Power Supply

- Use heavy oil boiler, which has extra capacity, to supply power
  Kashima Plant: Began selling power from Kashima-kita Electric Power to Tokyo Electric Power (April 21)
  (Max) Enough to supply power for 300,000 households
  Naoetsu Plant: Begin selling power to Tohoku Electric Power (Planned mid June)
  (Max) Enough to supply power for 150,000 households
- Avert impact from power usage reductions by effectively utilizing capacity at Kashima-kita Electric Power



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APTSIS 10 Basic Strategies and Results

Respond to economic contraction by business reform, accelerating innovation, and leaping ahead

Basic concept of

APTSIS 10

Growth Strategy

◆ **Focus on Growth Business**
- FPD components - Pharmaceuticals

◆ **Structural reforms**
- Main focus on petrochemicals
- Significant reduction in CAPEX

Innovation Strategy

◆ **Focused acceleration**
- White LEDs
- Lithium-ion battery materials for hybrid electric vehicles

Leaping Ahead (M&A)

◆ **Prompt realization**
- Quadrant
- Nippon Synthetic Chemical Industry
- Taiyo Nippon Sanso
- MRC

Prompt realization of Leaping Ahead

Investment for Leaping Ahead: approx. ¥250.0 billion

Net sales increased by ¥627.0 billion

Operation income increased by ¥53.5 billion

Acceleration of Structural Reforms & Fixed cost reduction

Withdrawal from unprofitable businesses*

***Net sales: ¥320.0 billion/y**

***Operating income: (¥17.0 billion/y)**

(Annual effect estimated on actual results)

Accumulated extraordinary loss: ¥17.0 billion

Fixed cost reduction

¥32.0 billion

Nishi Nippon Ethylene was established in April 2011 to unify naphtha cracker operations of MCC and Asahi Kasei Chemicals in Mizushima

☑ **Operation income**

APTSIS10 Targets	FY2010 results
≥ ¥190.0 billion	¥226.5 billion

☐ **ROA (income before income taxes/total assets)**

APTSIS10 Targets	FY2010 results
≥ 6%	5.1%

(without the impact of the earthquake 5.7%)

☑ **GHG emission reductions**

APTSIS10 Targets	FY2010 results
≥ 20% emission Reduction (FY2015)	as planned

Medium-term Management Plan

APTSIS 15

FY2011 - FY2015

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Business Challenges

Business Environment

- Globalization
- Sustainability
- The Great East Japan Earthquake of March 11

Solutions

- Differentiation
- Innovation

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Globalization (G∞)

1. Difficulty of differentiation (by digitalization and IT)
2. Securing resources (key challenges: rare earths, oil, and the Great East Japan Earthquake)
3. Speed (in an increasingly borderless world)

Decoupling

Asia, South America, Eastern Europe, Middle East

- Capturing Asian growth markets with sales of commodities and other resources
- Scale and global expansion

◆Inflationary risks ◆Country risks

Japan, Western Europe, North America

- Heading toward high performance and high-added value and solutions

◆Volatile trends ◆Sovereign risks

State Capitalism — **Free Market**

Two-pronged strategy: Specialties and Commodities

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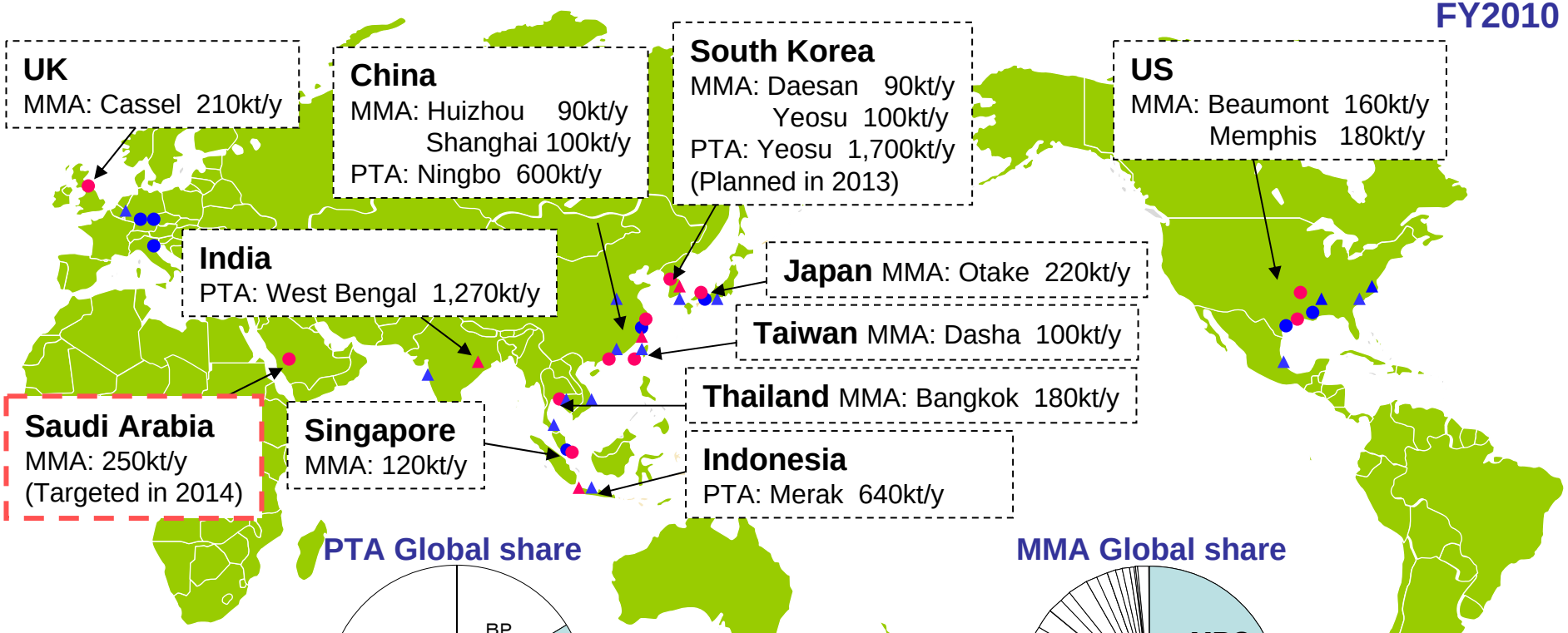
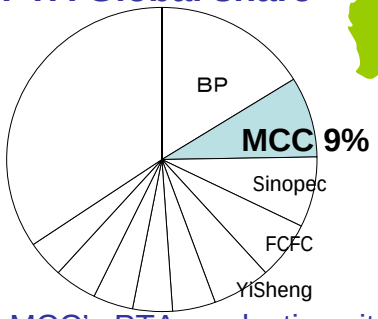
Global Operation of PTA/MMA

Increase PTA earnings driven by growing demand for polyester in Asia
Increase MMA earnings via global optimization of production

FY2010

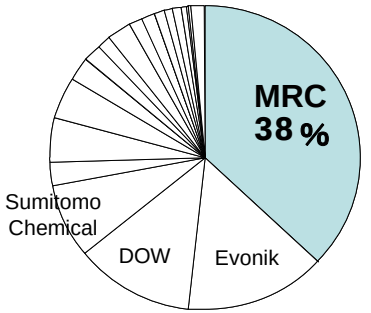


PTA Global share



▲ MCC's PTA production sites
▲ Competitors' production sites

MMA Global share



● MRC's MMA monomer production sites
● Competitors' production sites

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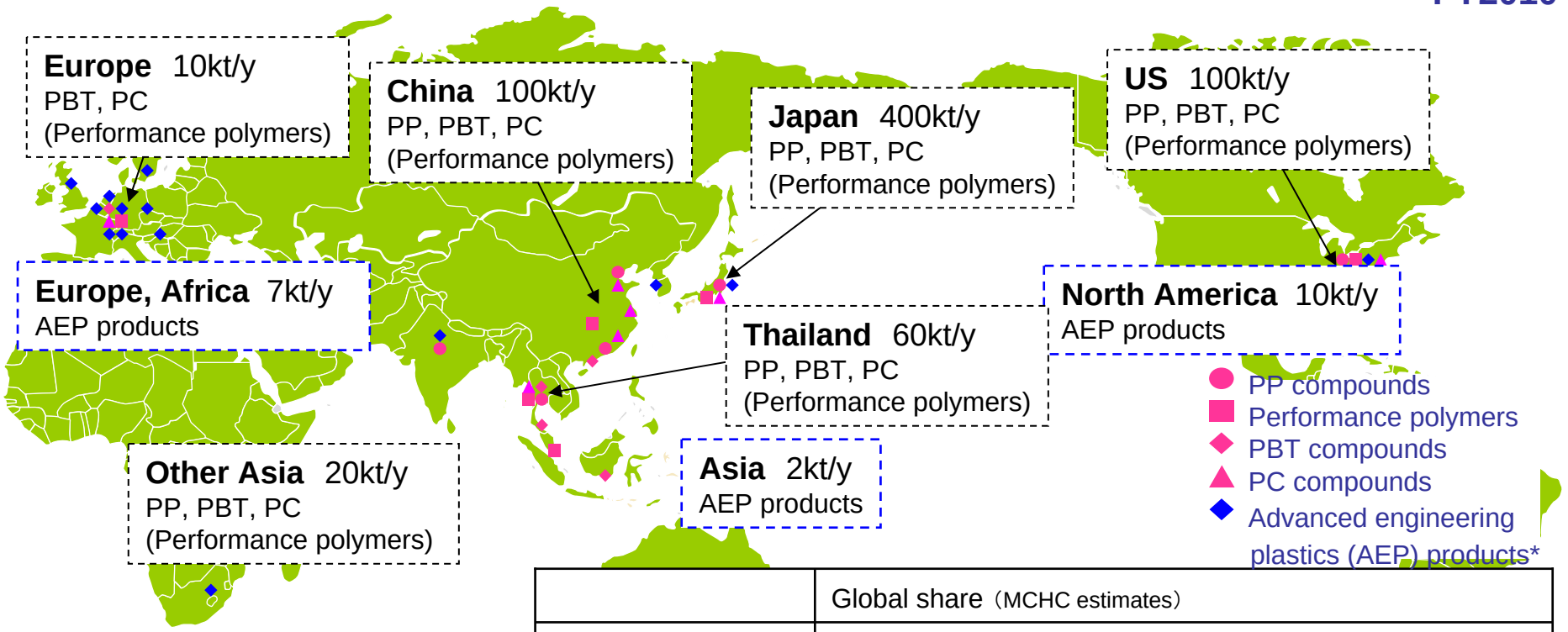
Global Operation of High Performance Polymers

Globalize by establishing local production and overseas sales networks
Increase sales in Europe, the US and growing emerging countries

FY2010



	Global share（MCHC estimates）
PP compounds	About 10%（for Automobile）
Performance polymers*	About 60%（for airbag covers） ＞10%（as adhesive polymer for food packaging）
PBT compounds	About 5%
PC compounds	＞10%

* Performance polymers refer to polyolefins, PVCs, polyesters and others having higher performance characteristics through the processing of compounds.
* "AEP products" refer to molded products with high-performance engineering plastics produced by Quadrant AG.

Sustainability

The Environment

Notably global warming, water, desertification, and the biodiversity crisis

Economy

Issues including resource depletion, food, financial, and economic crisis

Society

Such as population of 7 billion, aging society and problems of developing countries

The world is approaching a major turning point

Nuclear power accident transforms energy policies

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Differentiation

People around the world are now exploring business opportunities for such products as LEDs, lithium-ion batteries, and silicon photovoltaic modules

‘Unique’ competitiveness, value, and digitalization and modularization

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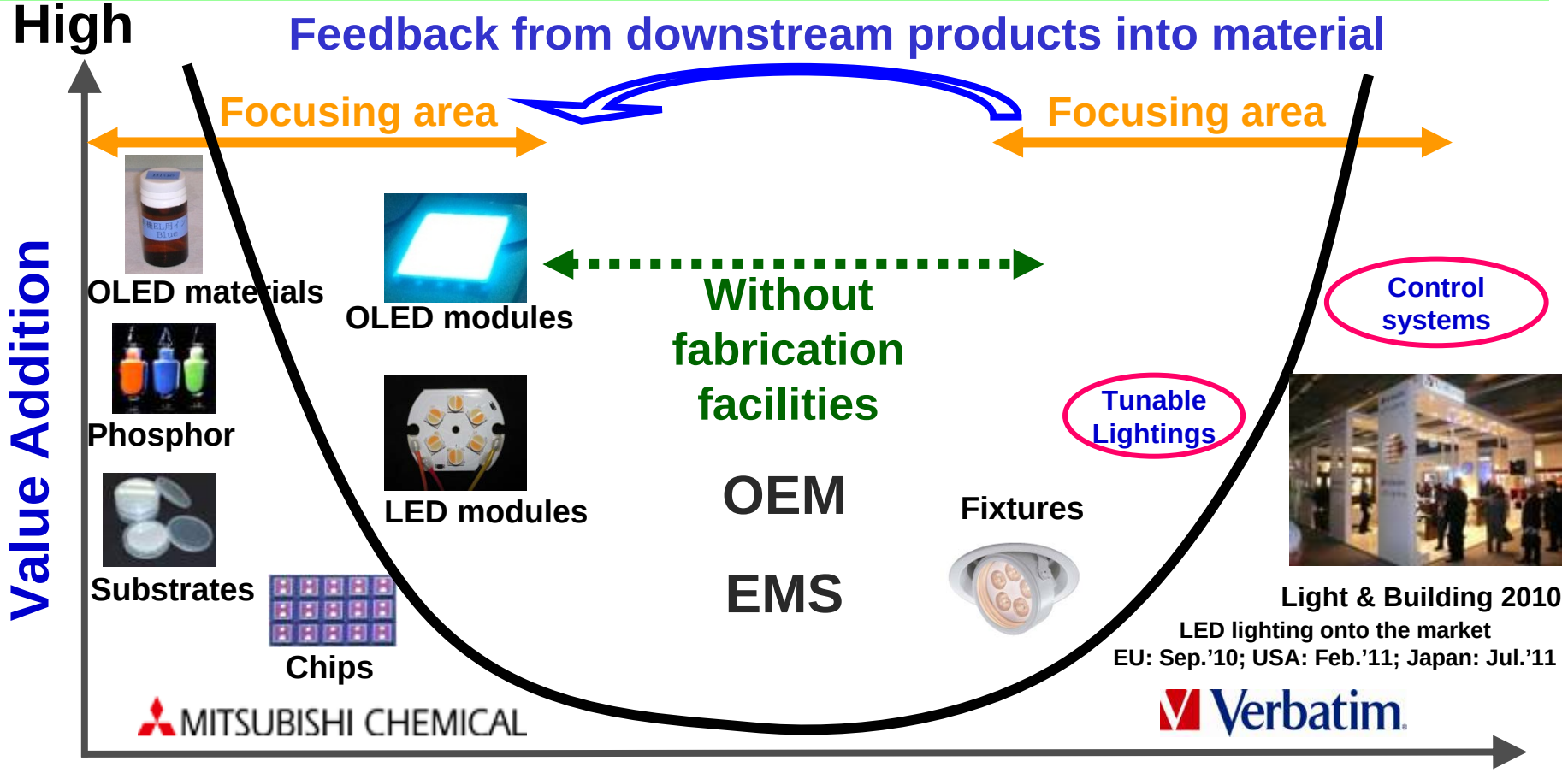
Business Strategy of LED and OLED Lighting

Combination of material technology and Verbatim sales channel



LED & OLED Lighting	Materials	Modules	Retrofit manufacturing	Fixture manufacturing	Sales	Install	Service
Optical Disc	PC/AZO/HC	Cutting Stamper	Disc manufacturing	Marketing Standardization	Brand/OEM Sales channel		

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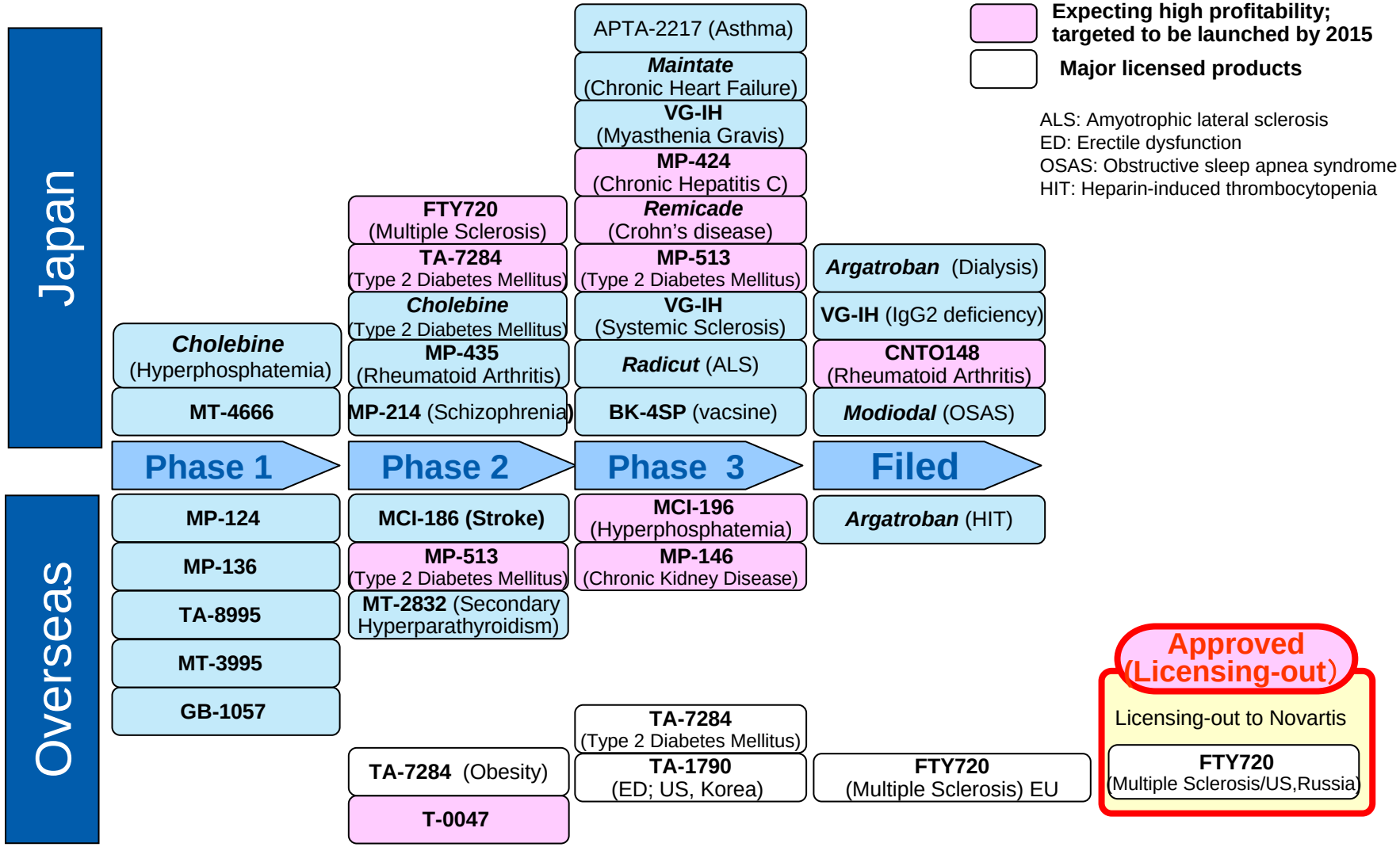
MTPC's Pipeline

(As of Oct. 29, 2010)



Total	7	10	13	6	1

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Enhancement of MTPC's Pipeline (As of June 2011)

: Changes since announcement on Oct. 29, 2010

Expecting high profitability; targeted to be launched by 2015

Major licensed products

	Phase 1	Phase 2	Phase 3	Filed
Japan	*Cholebine* (Hyperphosphatemia) MT-4666	TA-7284 (Type 2 Diabetes Mellitus) *Cholebine* (Type 2 Diabetes Mellitus) MP-435 (Rheumatoid Arthritis) MP-214 (Schizophrenia)	MP-513 (Type 2 Diabetes Mellitus) VG-IH (Systemic Sclerosis) *Radicut* (ALS) BK-4SP (vacsine)	VG-IH (IgG2 deficiency) CNTO148 (Rheumatoid Arthritis) *Remicade* (Crohn's disease) FTY720 (Multiple Sclerosis) VG-IH (Myasthenia Gravis) *Modiodal* (OSAS) MP-424 (Chronic Hepatitis C)
Overseas	MP-124 MP-136 TA-8995 MT-3995 MP-157 MT-1303 GB-1057	MCI-186 (Stroke) MP-513 (Type 2 Diabetes Mellitus) MT-2832 (Secondary Hyperparathyroidism) TA-7284 (Obesity)	MCI-196 (Hyperphosphatemia) MP-146 (Chronic Kidney Disease) TA-7284 (Type 2 Diabetes Mellitus) TA-1790 (ED; US)	TA-1790 (ED; Korea)

(Additional indications)

- *Argatroban* (Dialysis)
- *Maintate* (Chronic Heart Failure)
- Anti-D Human Immunogloblin
- *AZANIN*

Agreed to approval

- *Argatroban* (HIT; France,Spain)

Approved

Licensing-out to Novartis

- FTY720 (*Gilenya*) (Multiple Sclerosis) EU

Total	9(+2)	8(-2)	8(-5)	8(+2)	6(+5)

MTPC's New Products Expected in FY2011

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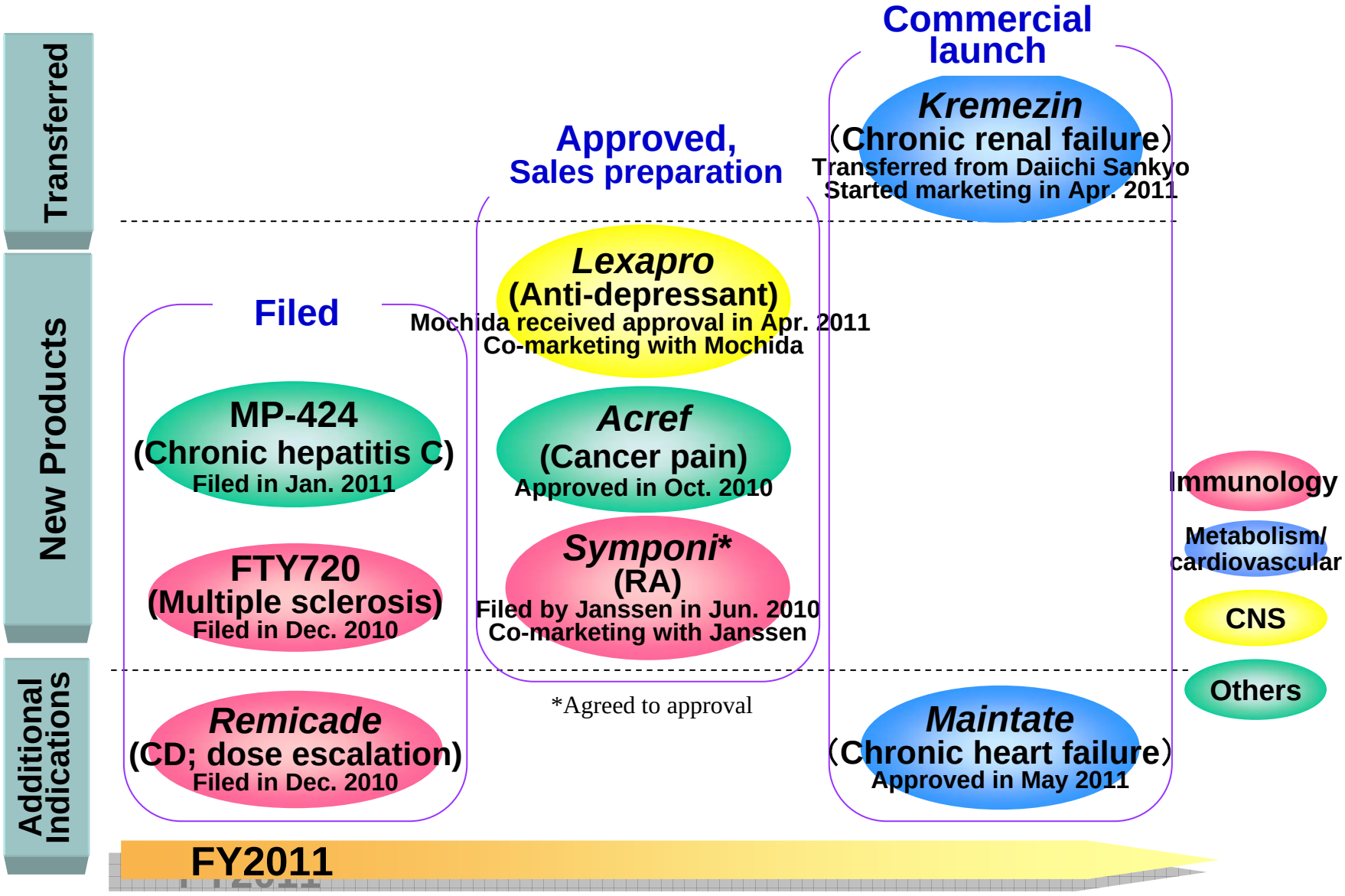

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Innovation

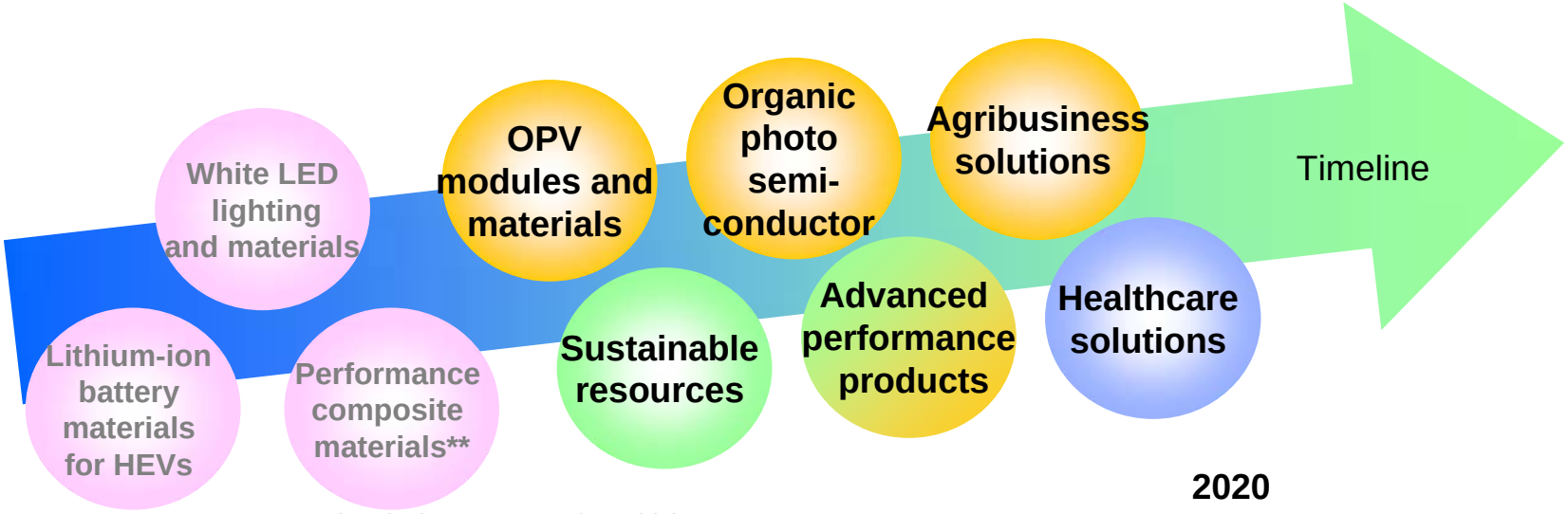
Accelerate launch of next growth drivers

Challenge the growing markets

Comfort　Sustainability　Health

Lifestyle*	Information & electronics	Environment	Energy	Healthcare

*food, water, housing, and apparel



**chemical components for vehicles

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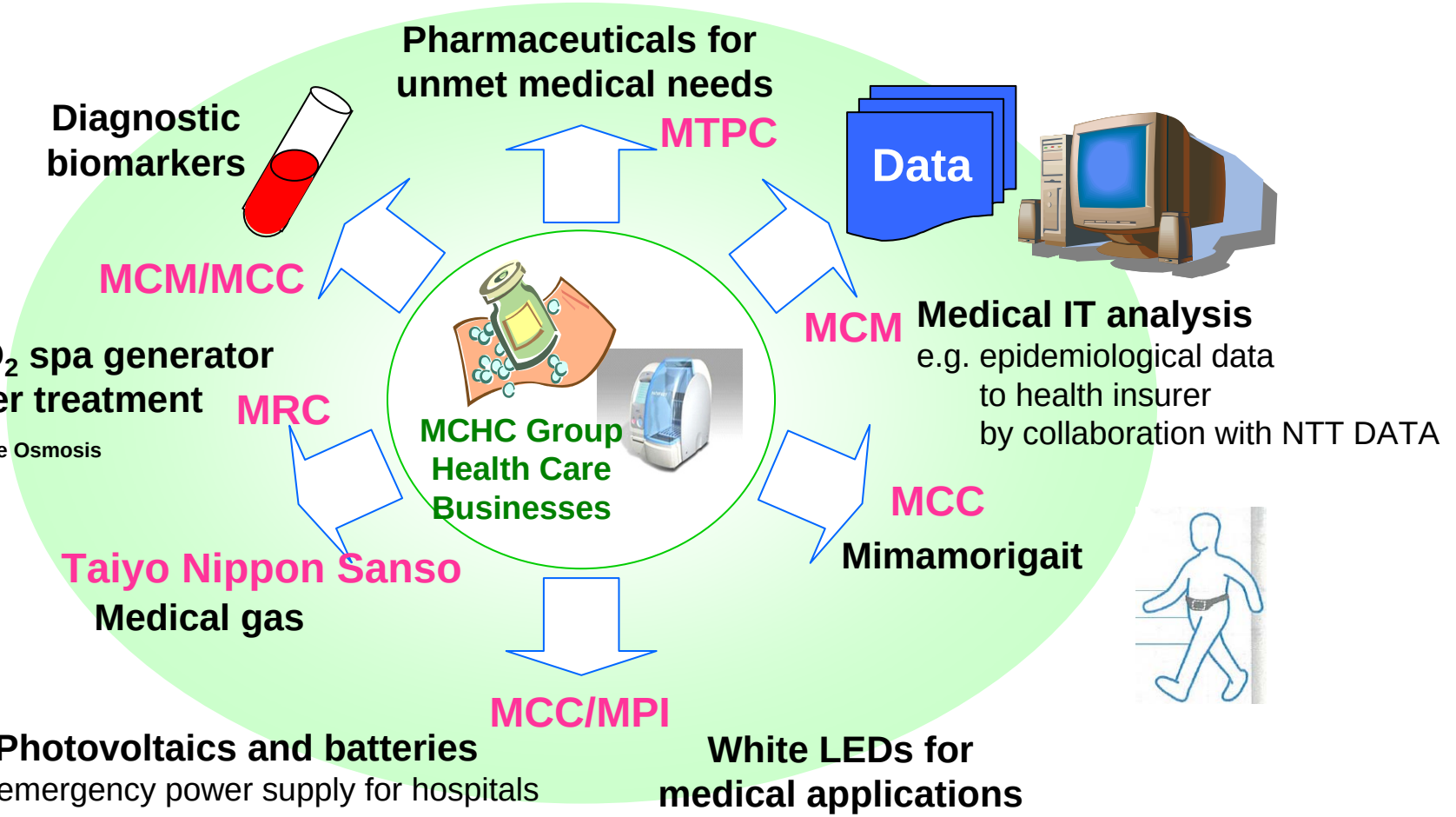
Health Care Solutions

Deliver solutions for disease treatment and prevention to meet new medical needs



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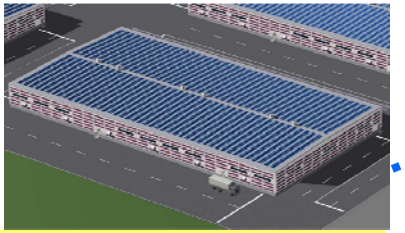
Agribusiness Solutions

Deliver *KAITEKI* through concerted group efforts focused on new plant cultivation systems

Water, light, CO_2 ⇒  ⇒ **Creating next generation solutions with vegetable**



Roof: Crystalline type
Walls: Amorphous type and BIPV

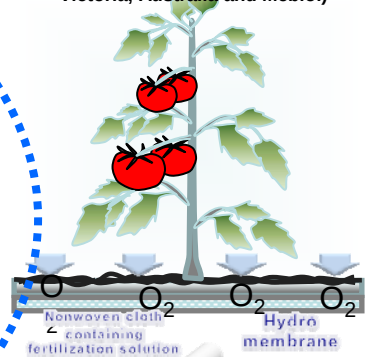
Solar-powered next generation vegetable factory

Enable cultivation In non-arable land

Deliver plant cultivation systems

Produce value-added plant derived products

Develop water efficient agricultural systems
(TKI's joint research with the State Government of Victoria, Australia and Mebiol)



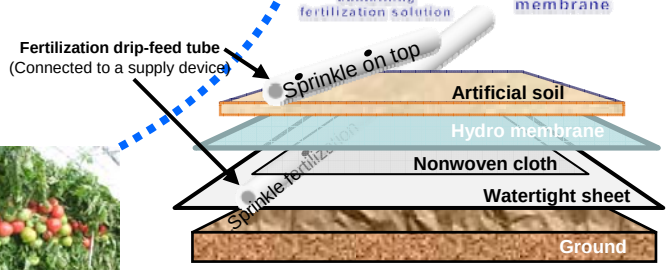
Container vegetable factory

Inside of the container vegetable factory

LED system (Optimization under study)

BIPV : Building integrated PV

MKV DREAM "Naeterace" - seeding terrace system



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Sustainable Resources

Accelerate commercialization of *GS Pla* (polybutylene succinate) with business partners (Target 20k tons production in Thailand by 2015)

Materials derived from plant life

Bio-succinic acid BioAmber GREEN TECHNOLOGIES

'11/4 Partnership with BioAmber (US)

Bio-1.4BG genomatica sustainable chemicals

'11/4 Partnership with Genomatica (US)

GS Pla ptt MCC Biochem

'11/3 Established JV with PTT (Thailand)

Develop market for *DURABIO* (isosorbide polymer)
Establish market presence as high performance products based on optical characteristics and/or weather resistance
Target 20k tons in sales by 2015

Materials derived from plants

DURABIO

'10/8 Launched pilot plant

Customers are evaluating suitability for mass production

Automotive components

Optical parts

FPD parts

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“Grow, Innovate and Leap Ahead by orchestrating the Group strengths”

APTSIS 15 Goals 2015

APTSIS 15 goals remain unchanged

Targets for enhancing corporate value

Economic Indexes

	FY2012	FY2015
Operating income	**¥230.0 billion**	**¥400.0 billion**
➢ Growth & Innovation Strategies		¥330.0 billion
➢ Leaping ahead (M&A)		¥70.0 billion
ROA (income before income taxes/total assets)		**≥ 8%**
Net debt-to-equity ratio		**1.0**
Overseas sales ratio		**≥ 45%**

MOS Indexes
(Major instances)

Sustainability Index
- Environmental impact
  - ➢ **reduce by 30% (Japan) vs. FY2005** (17% reduction of GHG)

Health Index
- Index derived by the degree of difficulty to treat diseases & the number of administered patients
  - ➢ **increase by 30% vs. FY2009**

Comfort Index
- New products ratio in the Performance Product & Health Care domains
  - ➢ **≥35%**

APTSIS 15 Portfolio Management

Categorized by profitability, market presence and attractiveness

◆Performance Products ◆Health Care ◆Industrial Materials

Next-generation Growth Business (6)

- Organic photovoltaic modules and materials
- Organic photo semiconductors
- Advanced performance products
- Agribusiness solutions
- Healthcare solutions
- Sustainable resources

Growth Business (11)

- White LED lighting and materials
- Lithium-ion battery materials
- FPD components
- Performance composite materials
- High performance molding products
- Specialty chemicals
- Water treatment system and services
- Pharmaceuticals
- High performance graphite
- Performance polymers
- MMA/PMMA

Business to be restructured (15)

- Naphtha crackers, etc.

Cash-generating Business (18)

- Recording media
- Performance films
- Food ingredients
- Diagnostics & support for new pharmaceutical development
- Terephthalic acid
- Coke
- PHL/BPA/PC
- PP

APTSIS 15 Strategies

Grow, innovate, and leap ahead by orchestrating the Group strengths

Strengthening fundamentals	**Generate synergies, improve financial position, and reform business structure**
Growth Strategy	• **Accelerate transformation to deliver high-performance products and high-value-added businesses** • **Expand green businesses** • **Develop new medicines to fulfill unmet medical needs** • **Operate globally** **Deliver *KAITEKI* solutions by pursuing Sustainability, Health, and Comfort**
Innovation Strategy	**Build new businesses for the future**
Leaping Ahead (M&A)	**Invest strategically in alliances and acquisitions**

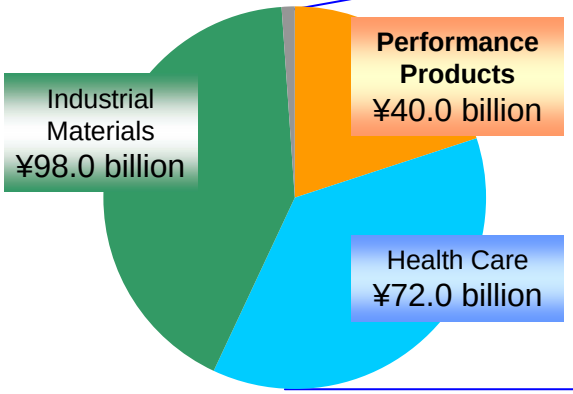
APTSIS 15 Profit Structure toward 2015

Shift to high-performance products and high-value-added business portfolio

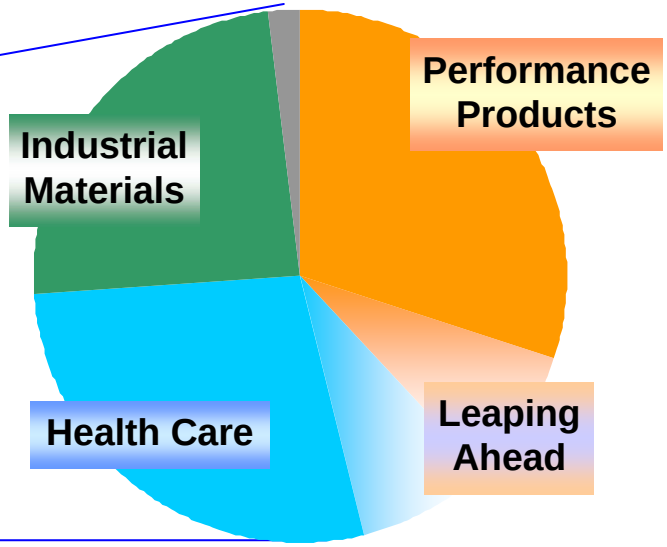
Remain unchanged from the original plan announced on Dec. 8 2010.

Operating Income

¥206.0 billion



¥400.0 billion
including 'Leaping Ahead (M&A)'



Initial year in *APTSIS 15*

FY2011 forecast

Net sales ¥3.6 trillion

Final year in *APTSIS 15*

FY2015

Net sales ¥5.0 trillion

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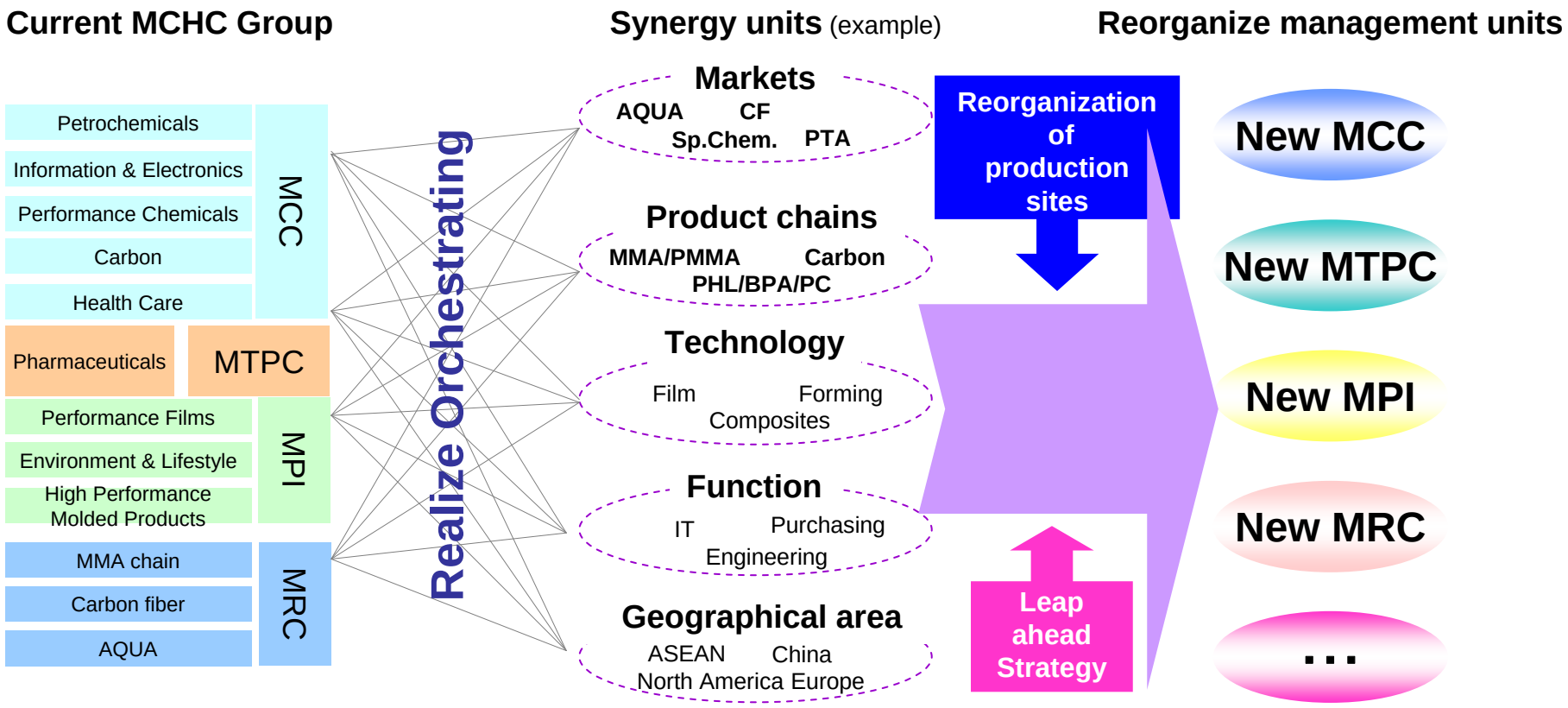
Business Frameworks

Restructure and reframe some businesses in the beginning of FY2013 with a leaping ahead strategy in mind

Step 1 | **Step 2**

FY2011/June — **FY2012/E** — **FY2015/E**



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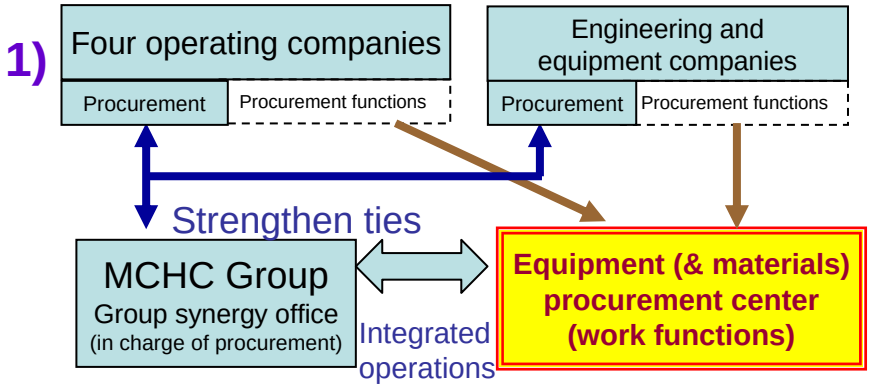
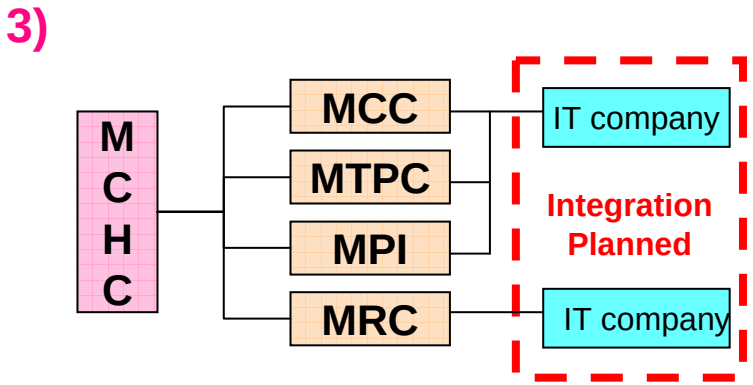
Cost and RD Synergies

Start various projects to realize synergies

Area under study (Target amount: Billions of Yen)	Remarks	FY2011 / FY2013 / FY2015
1) Purchasing **(23)**	Set up office to prepare an equipment (& materials) procurement center	Preparations office activities → Launch procurement center
2) Logistics **(5)**	Start logistics efficiency project	Review logistics centers and others → Transition; Review operations → Transition
3) IT units **(3)**	Integrate group IT companies	Planned integration → Review IT functions → Shift to optimal operatioin
4) RD units **(0.5)**	Integrate MCC & MRC biotech research labs	Integration in July → Review other overlapped and/or strongly related technologies





Introduction of "Four Dimensional Management" and "Management of SUSTAINABILITY"

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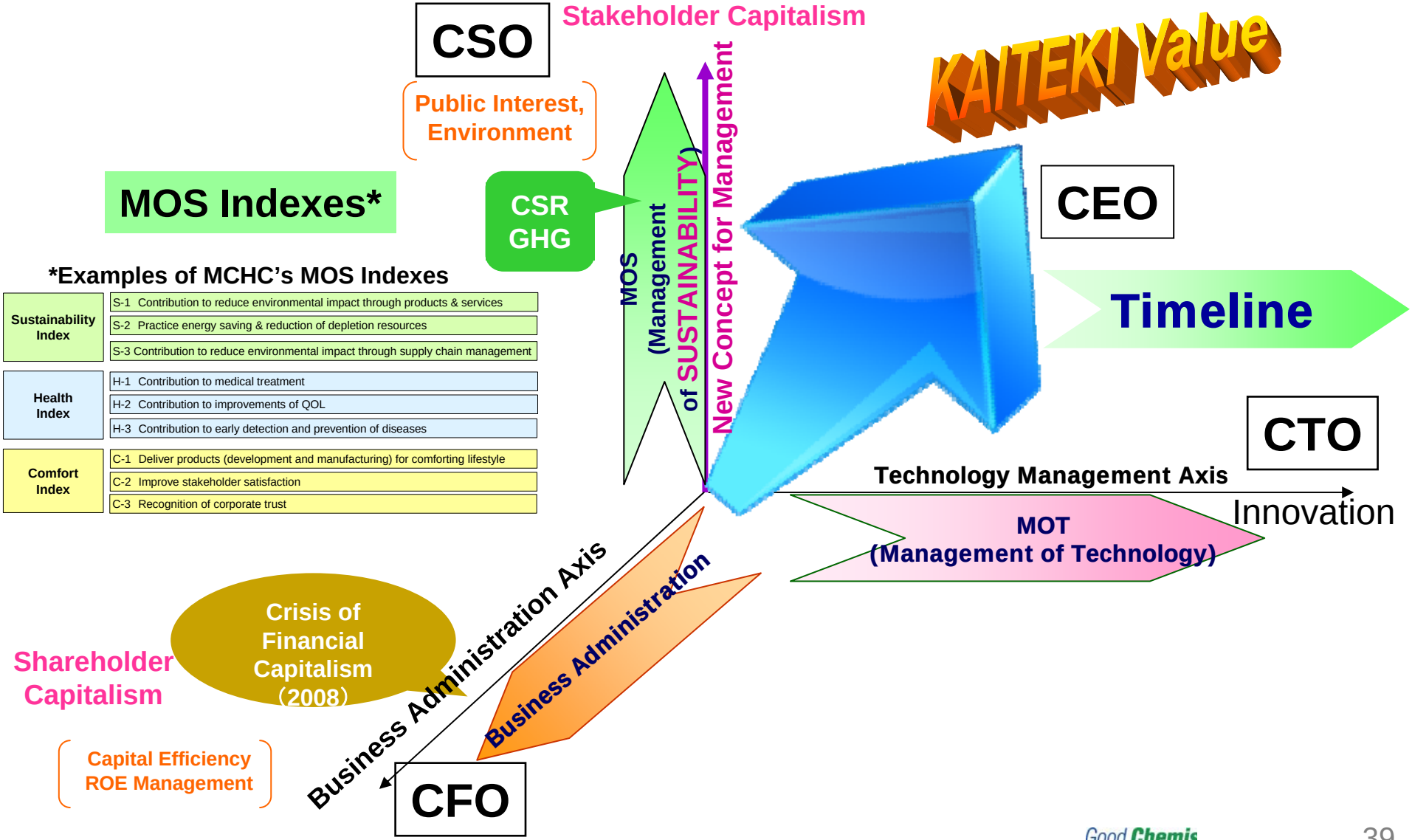
Proposal of "Management of SUSTAINABILITY" (MOS Axis)



Mitsubishi Chemical Holdings Corporation

Good Chemis
Creating better relationships a

APTSIS 15 Portfolio Management

Categorized by profitability, market presence and attractiveness

◆Performance Products ◆Health Care ◆Industrial Materials

Next-generation Growth Business (6)

- Organic photovoltaic modules and materials
- Organic photo semiconductors
- Advanced performance products
- Agribusiness solutions
- Healthcare solutions
- Sustainable resources

Growth Business (11)

- White LED lighting and materials
- Lithium-ion battery materials
- FPD components
- Performance composite materials
- High performance molding products
- Specialty chemicals
- Water treatment system and services
- Pharmaceuticals
- High performance graphite
- Performance polymers
- MMA/PMMA

Today's topics

Business to be restructured (15)

- Naphtha crackers, etc.

Cash-generating Business (18)

- Recording media
- Performance films
- Food ingredients
- Diagnostics & support for new pharmaceutical development
- Terephthalic acid
- Coke
- PHL/BPA/PC
- PP

- **Impact of the Great East Japan Earthquake on Our Operations and Progress in Restoration**
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- ***APTSIS 15* Business Topics**
  - **MMA/PMMA,**
    Carbon fibers and composite materials (Performance composite materials)
  - Lithium-ion battery materials,
    White LED lighting and materials,
    OLED (Organic photo semiconductor),
    Organic photovoltaic modules and materials

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MMA/PMMA

Introduction of MMA chain and its business strategies

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Broadening Applications in the MMA Chain

Upstream

Downstream

Business	Product	Application
Chemicals	MMA monomer	Acrylic resin pellets Acrylic sheets
	Methacrylic acid	Paints and more
	Methacrylic esters	Paints and more
Plastics	Acrylic resin pellets	Tail lights, light-guiding panels, home appliances
	Acrylic sheets	Signboards, light-guiding panels, water tanks, bath tubs
	Rod lenses arrays	Printers Fax machines
	Optical fibers	Automotive harnesses and more
Coating resins and Modifiers	Coating resins	Coatings for automobiles and ships
	Plastic modifiers	Materials for enhancing the processability of plastics
	Acrylic films	Surface materials for construction materials, automotive interiors and exteriors and more








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Positioning of the MRC Group

A leading global company with a broad range of product families

Business comparison of major MMA monomer producers

	Company / Product	MRC Japan	A Germany	B US	C France	D Japan	E Japan	F Japan
Monomer	MMA	○	○	○	○	○	○	○
	Methacrylic Acid	○	○	○	○	×	○	×
	Methacrylic Esters	○	○	○	○	△	×	×
Homopolymer	Acrylic resin pellets	○	○	×	○	○	○	○
	Acrylic sheets	○	○	×	○	○	○	○
	Acrylic bathtubs	○	○	×	○	○	○	○
	Aquariums	○	×	×	×	×	×	△
	Optical fibers	○	×	×	×	○	×	×
Copolymer	Plastic modifiers	○	×	○	○	×	×	×
	Coating materials	○	○	○	×	×	×	×
	Films	○	×	○	×	×	○	○
	Artificial marble	○	×	×	×	×	○	×

○ : Commercialzsed △ : Partially commercialized × : No businesses (MRC estimates)

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MMA/PMMA: Strategies

Accelerate both business globalization and the shift to high-performance businesses

-Development in line with Growth Strategies in the Performance Products and Industrial Materials domains

MMA／PMMA

Global top

Net sales
’10 → ’15 Target
270.0 → 430.0
(Billions of Yen)

MMA monomer:

- Expand production capacity capturing rising demand and optimize global sites.
- Global market share: 38% → 45%（’15）
  [Increase capacity: Thailand (’11), US (’11), S. Korea (’13), Saudi Arabia (’14)]

PMMA:

- Develop and expand as high-performance growth driver (e.g. FPD applications).
- Secure more than 60% share in light guide plate applications as MMA product chain.
- Expand sales of high-performance sheets (e.g. Anti-fingermark, Anti-reflection)

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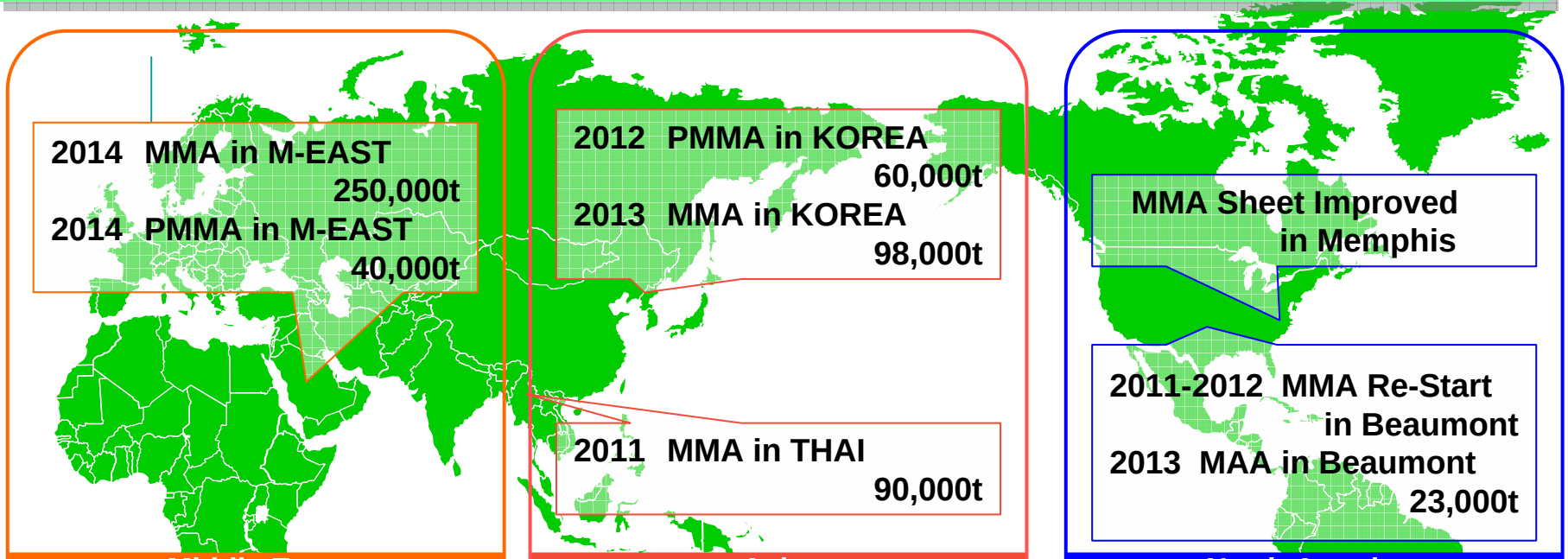
MMA/PMMA: Global Expansion

Progress in accelerating globalization

Steady progress underway toward reaping results in 2015



Middle East: Deepen relationships with key players

- **Execute α Project**
  - Business tie-up in Saudi Arabia
    MMA monomer: 250,000t;
    PMMA: 40,000 t
    Target 2014 launch

Asia: Capture growing demand and strengthen competitiveness

- **Expand business in Asia**
  - Ramp up in MMA growth areas
  - Increase MMA monomer capacity (Thailand, Korea)
  - China: Expand continuous cast plate line
  - Korea: Increase PMMA capacity

North America: Ramp up production capacity again to meet growing demand

- **Increase chemicals capacity and re-expand production capacity**
  - Increase MAA (methacrylic acid) capacity
  - Expand production capacity for producing acrylic resin plates for light guide plates
  - Resume production on dormant MMA line

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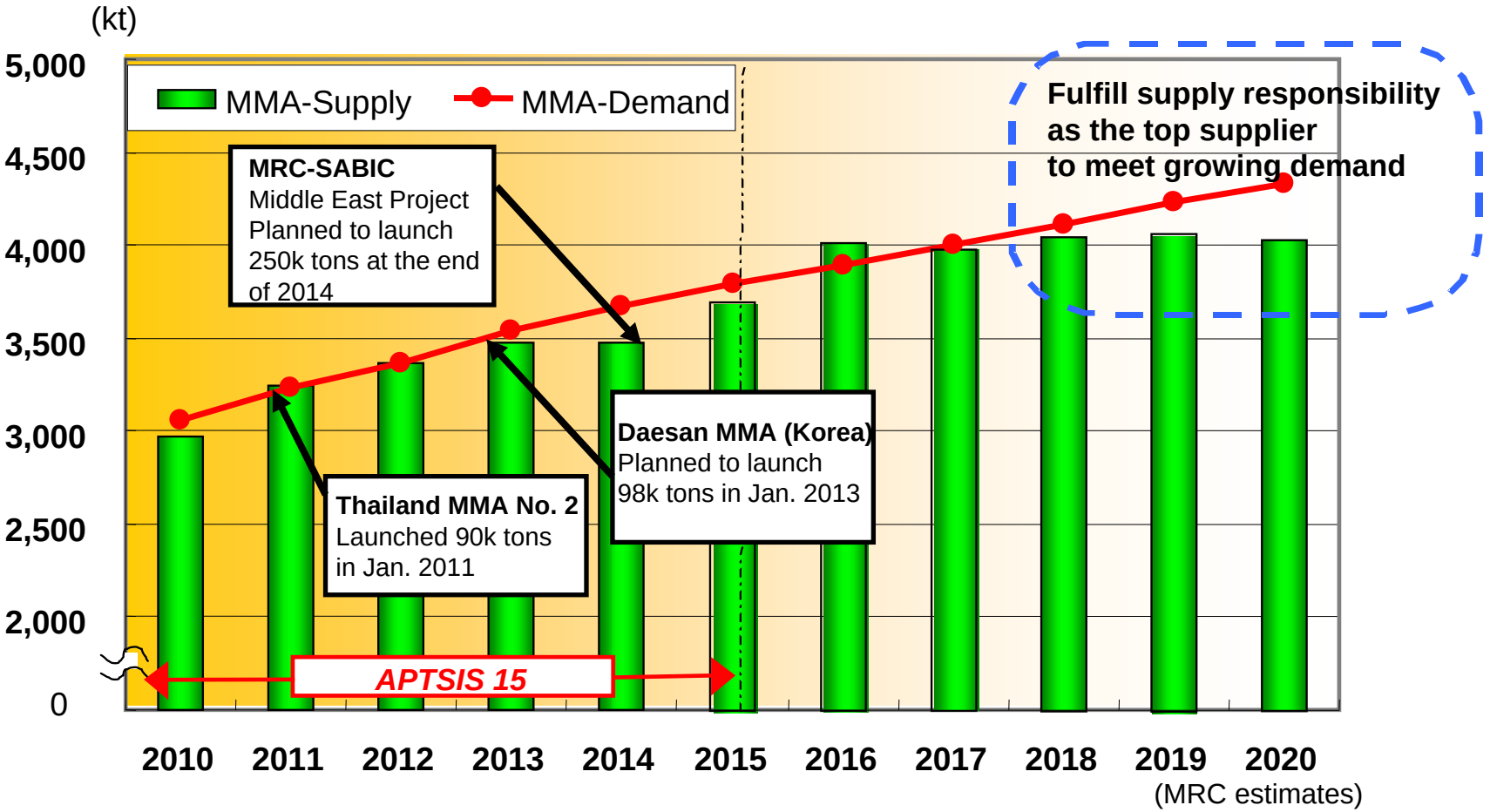
MMA Monomer: Global Supply and Demand

Global demand for MMA monomer growing 4-6% per annum
Increase supply capacity as global top supplier



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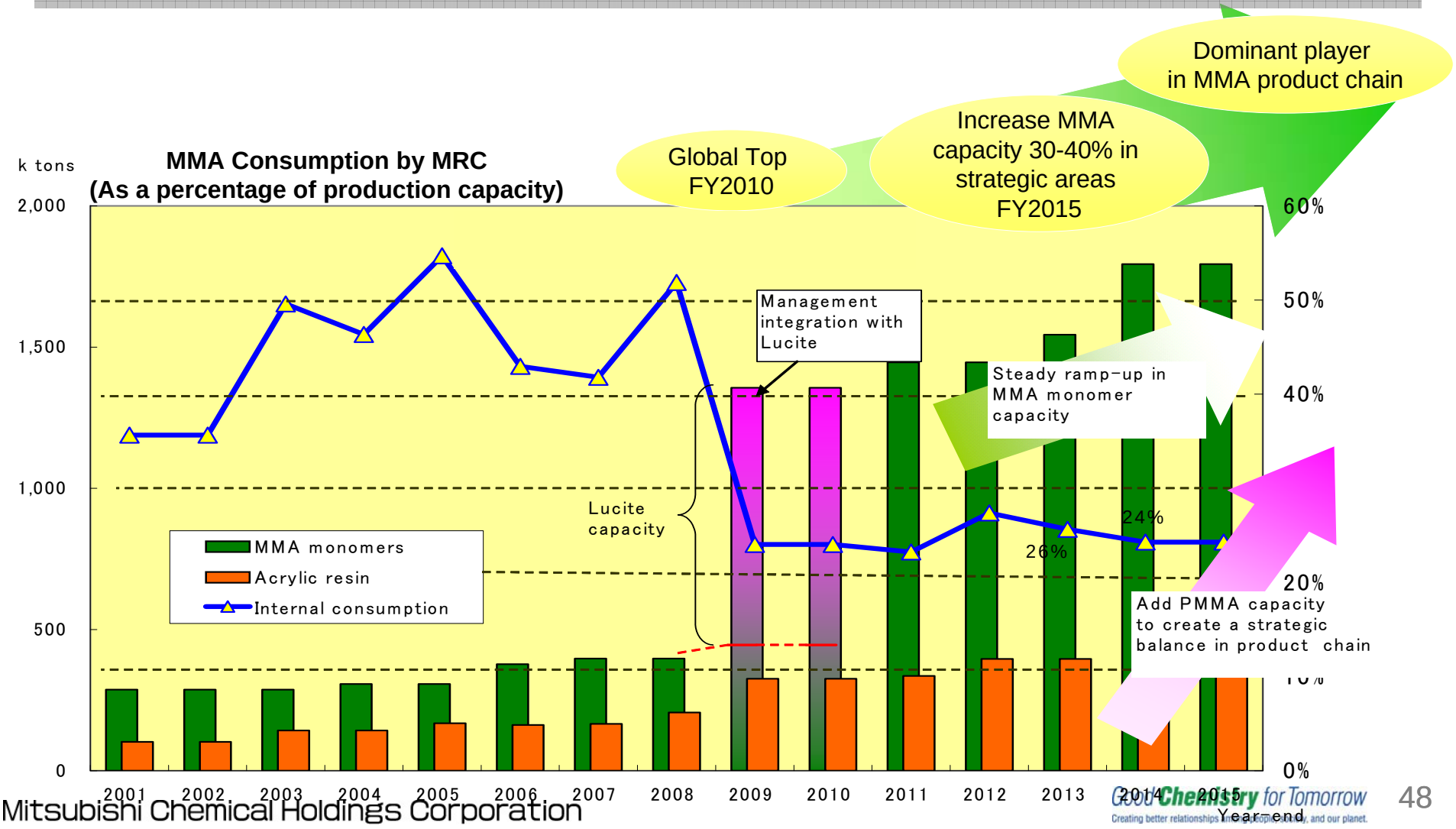
Where We Want to Be in 2015 and Our Strategy to Get There

Leverage global No. 1 production capacity and competitiveness to establish a powerful MMA chain worldwide



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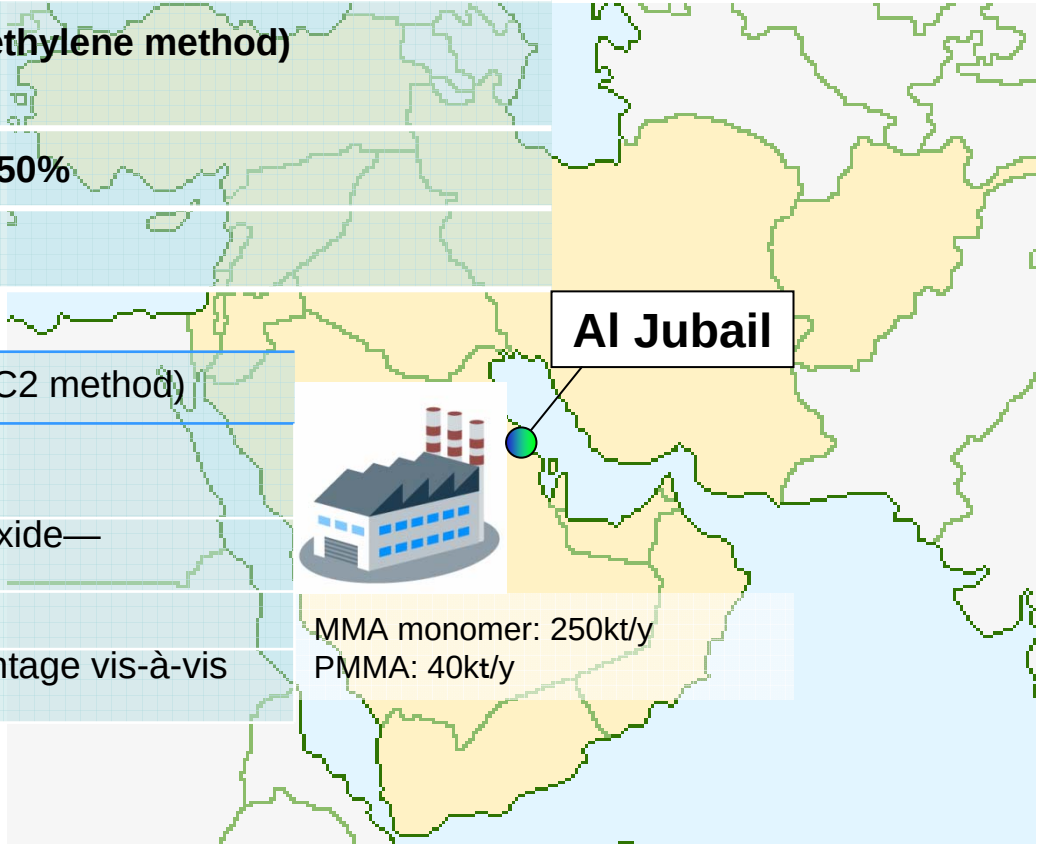
Saudi Arabia MMA/PMMA Capacity Addition

Overview

Company name	**Saudi Methacrylates Company, LLC** (tentative)
Location	Al Jubail, Kingdom of Saudi Arabia
Capacity	MMA monomer: 250kt/y (New ethylene method) PMMA: 40kt/y
Stake	Mitsubishi Rayon 50%, SABIC 50%
Launch	End of 2014 (target)

Characteristics of the new ethylene method (C2 method)

- The world's first commercialization by Lucite International in 2008
- Uses methanol, ethylene and carbon monoxide—feedstocks that are easy to procure.
- Simple process
- Location provides overwhelming cost advantage vis-à-vis competition



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Performance composite materials

Carbon fibers and composite materials growth strategy

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Growth Strategy

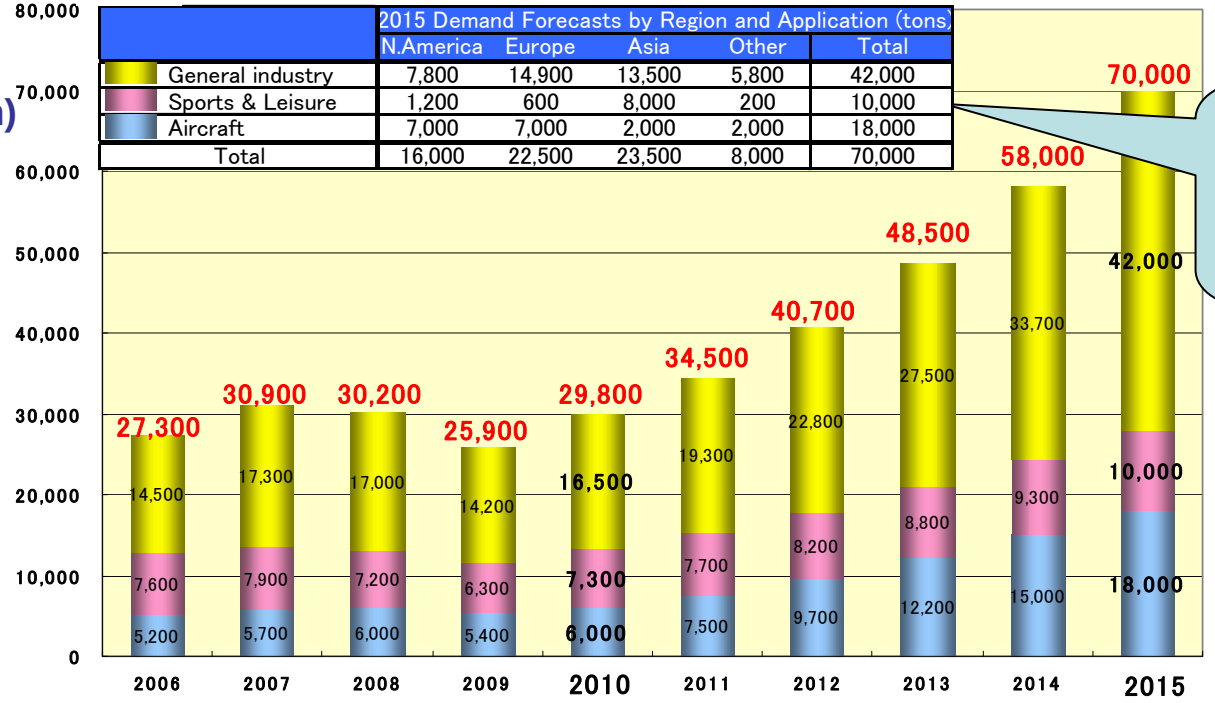
Expand performance and value-added businesses

Capacity increases in step with a rapidly expanding carbon fiber market

Global carbon fiber market	30,000 → 70,000t/y (2015 estimate)
MCHC Group carbon fiber capacity increase	PAN-based (MRC) 7,400 → 13,800t/y (2015)
	Pitch-based (MPI) 1,000 → 1,450t/y (2015)

Demand forecasts (by application)

2015 Demand Forecasts by Region and Application (tons)	N.America	Europe	Asia	Other	Total
General industry	7,800	14,900	13,500	5,800	42,000
Sports & Leisure	1,200	600	8,000	200	10,000
Aircraft	7,000	7,000	2,000	2,000	18,000
Total	16,000	22,500	23,500	8,000	70,000



Growing industrial applications
- Wind power: 16,500
- Automotive: 5,000
- Other: 20,500

Mitsubishi Rayon estimates. Unit: tons/year

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Growth Strategy (PAN-based Carbon Fibers and Composite Materials)

Expanding the business for carbon fiber and its precursors

Processed product	**MRC Composite Products** (Toyohashi) (golf shafts)	**Dynetek Industries** (Canada) (CNG tanks)		**BMW** (Germany)
Prepregs	**MRC** (Toyohashi)	**Newport Adhesives and Composites** (US)	**Structil** (France)	**SGL/BMW JV** (Germany)
Carbon fibers	**MRC** (Toyohashi)	**MRC** (Otake) Planned launch in 2011	**Grafil** (US)	**SGL Technic** (UK)	**SGL Automotive Carbon Fibers** (US)
Precursors	**MRC** (Otake)				**MRC-SGL Precursors** Launched in Apr 2011
AN	**MRC** (Otake; Dia-Nitrix)				

- **Integrated production regime from AN through precursors, carbon fibers and composite materials**
- **Overwhelming supply capacity and cost competitiveness in precursors**

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Growth Strategy (Pitch-based Carbon Fibers and Composite Materials)

Expand carbon fibers and composite materials

Source: Yaskawa Electric

Processed products	Partner company / MPI (Sakaide)	MPI (Sakaide) (Carbon composite brake disc)	
Prepregs	MPI (Sakaide)		
Carbon fibers	MPI (Sakaide)		
Liquid crystal pitch	MPI (Sakaide)		
Coal tar	MCC (Sakaide)		

- Integrated production from coal tar through carbon fibers and composite materials
- Overwhelming supply capacity and cost competitiveness in highly elastic carbon fiber

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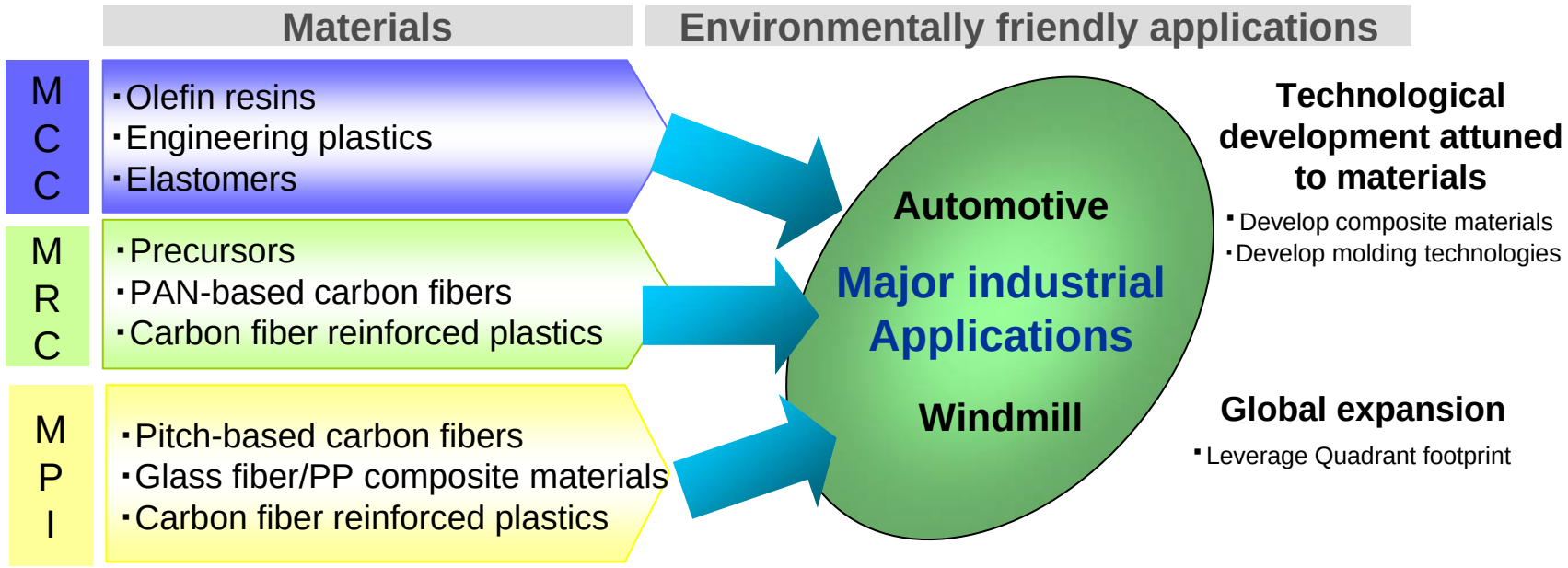
Synergy Creation

Generate higher performance products leveraging the Group's materials and molding technologies

* Combine the strengths of PAN-based carbon fiber (high strength, high modulus) and pitch-based carbon fiber (high rigidity, low thermal expansion, high heat conductivity)
* Develop thermoplastic carbon fibers
* Develop parts with carbon fibers
* Expand globally—leverage Quadrant's European footprint
* Strengthen integrated operations—alliances and M&A



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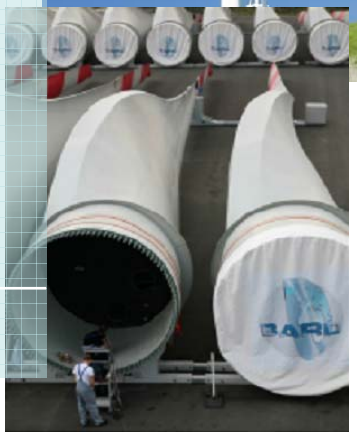
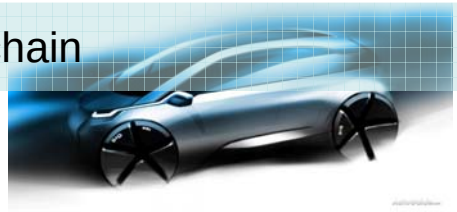
Measures to Reach Where We Want to Be in 2015

Expand to performance composite materials and molding materials

Coordinate a three-pronged approach mobilizing precursors, carbon fibers and prepregs to expand our business domain

- Launch industrial high-performance carbon fiber (large tow) in June 2011 and plan next capacity increase
- Strengthen precursor strategy (MRC-SGL Precursor and others)
- Strengthen synergies between pitch- and PAN-based carbon fibers and composite materials
  - Collaboration between MRC, MPI, MCC and Quadrant
  - Develop composite materials for automotive structural parts and supply automotive components
  - Establish competitive advantages in intermediate materials and processing technologies
- Leverage M&A to expand business chain





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Carbon Fibers That Fulfill *KAITEKI*

Destruction of earth's environment | Depletion of natural resources | Government policies

- Renewable energy
- Alternative energy
- Energy conservation
- Environmental recovery
- Natural resource development
- Natural resource conservation

- Power generation using wind, waves and sea currents
- Fuel cells

- Natural gas
- Nuclear power
- Lighter transportation (airplanes, automobiles, ships, etc.)
- Storage batteries

- Smart grid
- Water purification
- Deep-sea development
- Offshore development
- Underground development
- Repair and reinforcement of building structures
- Large-scale structures

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    White LED lighting and materials,
    OLED (Organic photo semiconductor),
    Organic photovoltaic modules and materials**

Lithium-ion battery materials

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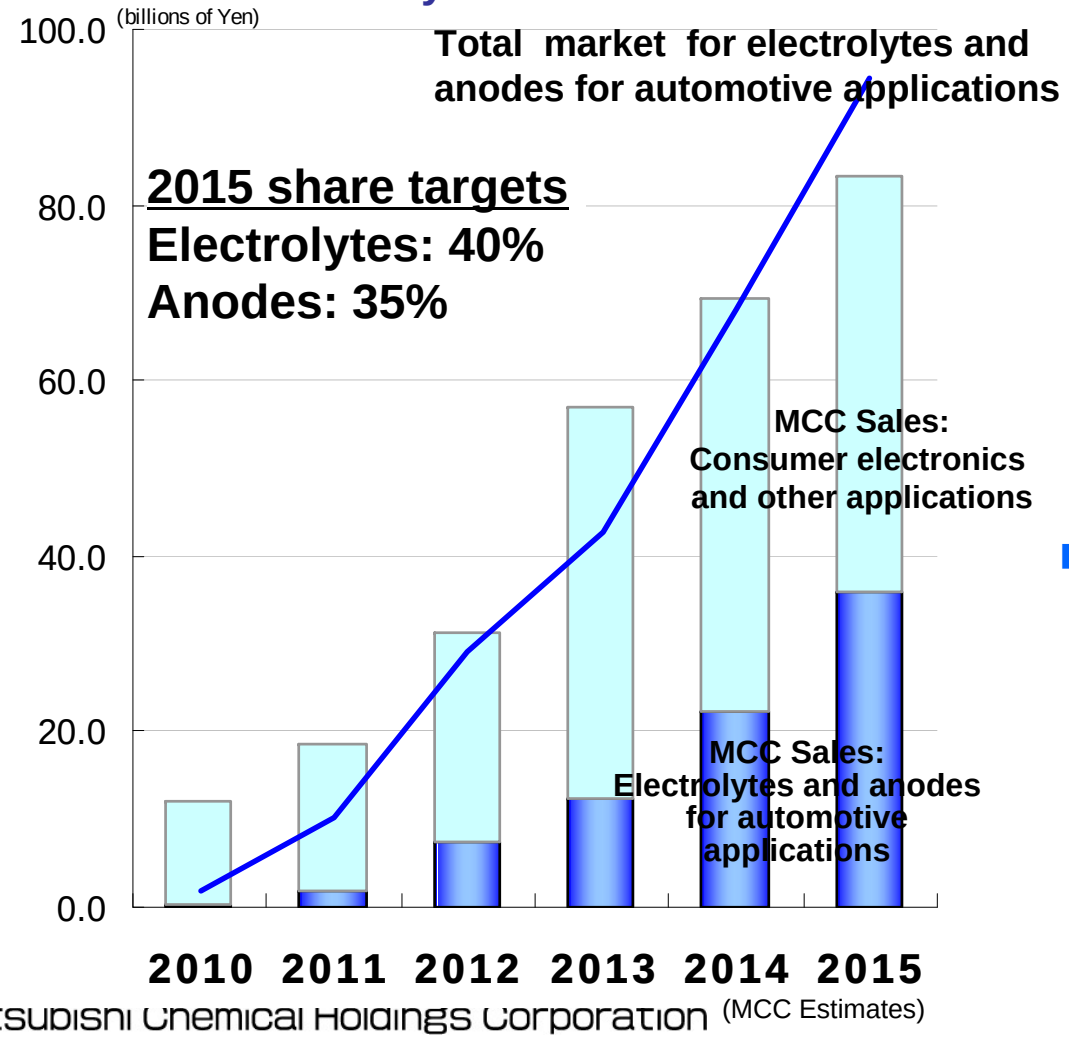
MCC's Lithium-ion Battery Materials

Expand sales and market share in automotive applications

Automotive Market Forecasts
Electrolytes and Anodes



(MCC Estimates)

- **Our strengths in electrolytes**

  Technologies in organic synthesis to develop functional additives that enhance EV's power output and battery life.

  Alliances with suppliers (such as Stella Chemifa) to strengthen the supply chain from procurement to customer delivery.

- **Strengths of anodes**

  Technologies to control graphite structure to achieve rapid charging performance and long battery life for EVs.

  Integrated supply chain from the procurement of spherical graphite in China to customer delivery.

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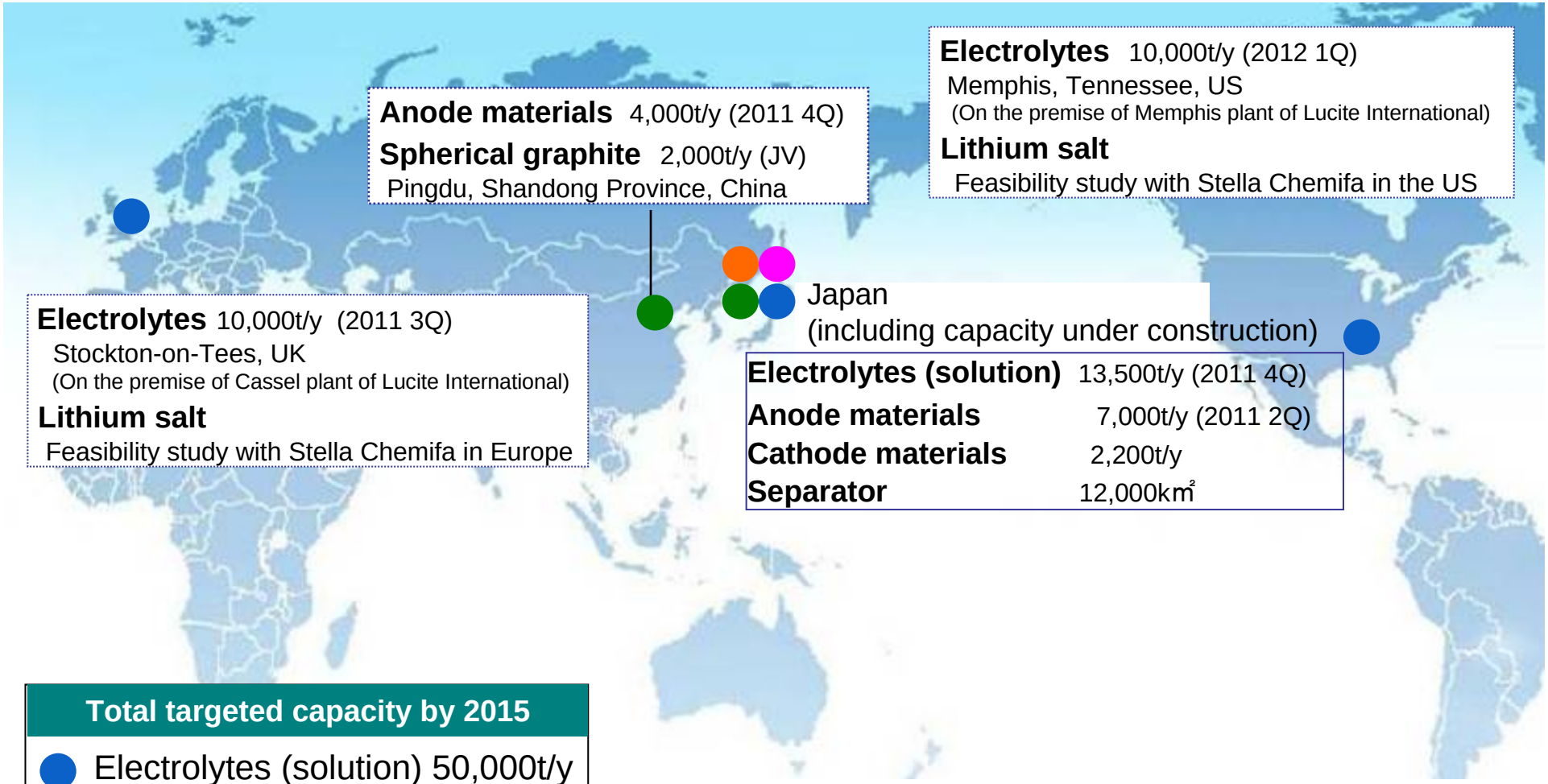
Global Operation



Total targeted capacity by 2015	
Electrolytes (solution)	50,000t/y
Anode materials	35,000t/y
Cathode materials	15,000t/y
Separator	72,000k㎡

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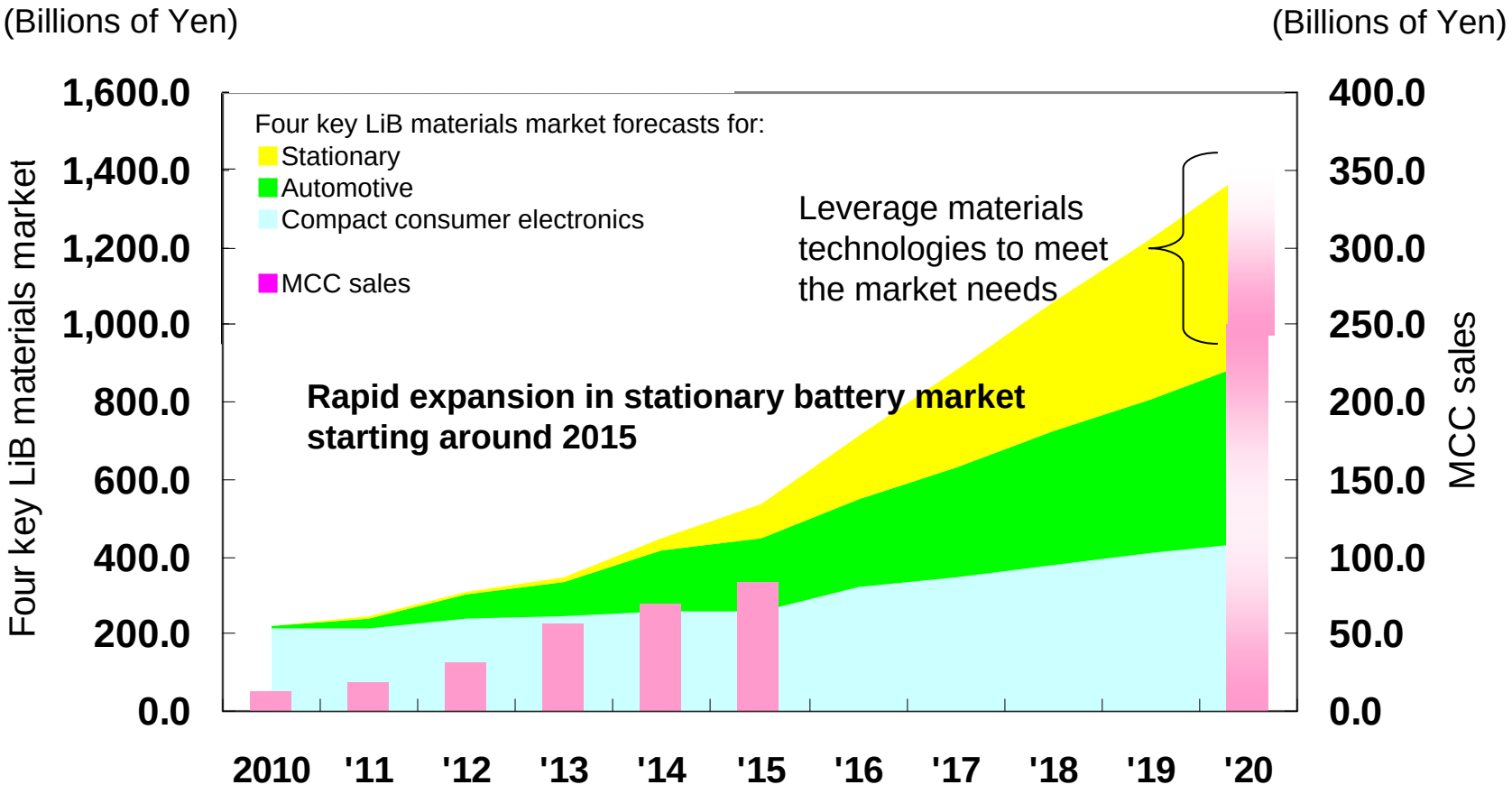
Lithium-ion Battery Materials Market Forecast

Rapid growth is expected in automotive and stationary markets in 2015 and forward



(MCC estimates, 2011)

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Long Lifetime, High Safety Requirements for Stationary Battery Materials

Apply technology developed for EVs and accelerate materials innovations

Charge

Emergency power supply

Large-scale LiB for mounting on EV and PHEV

Large-scale stationary LiB for residential and commercial buildings

Larger capacity
Longer use
Charge/discharge cycle

Application of materials technologies

Materials innovations

White LED lighting and materials
OLED (Organic photo semiconductors)

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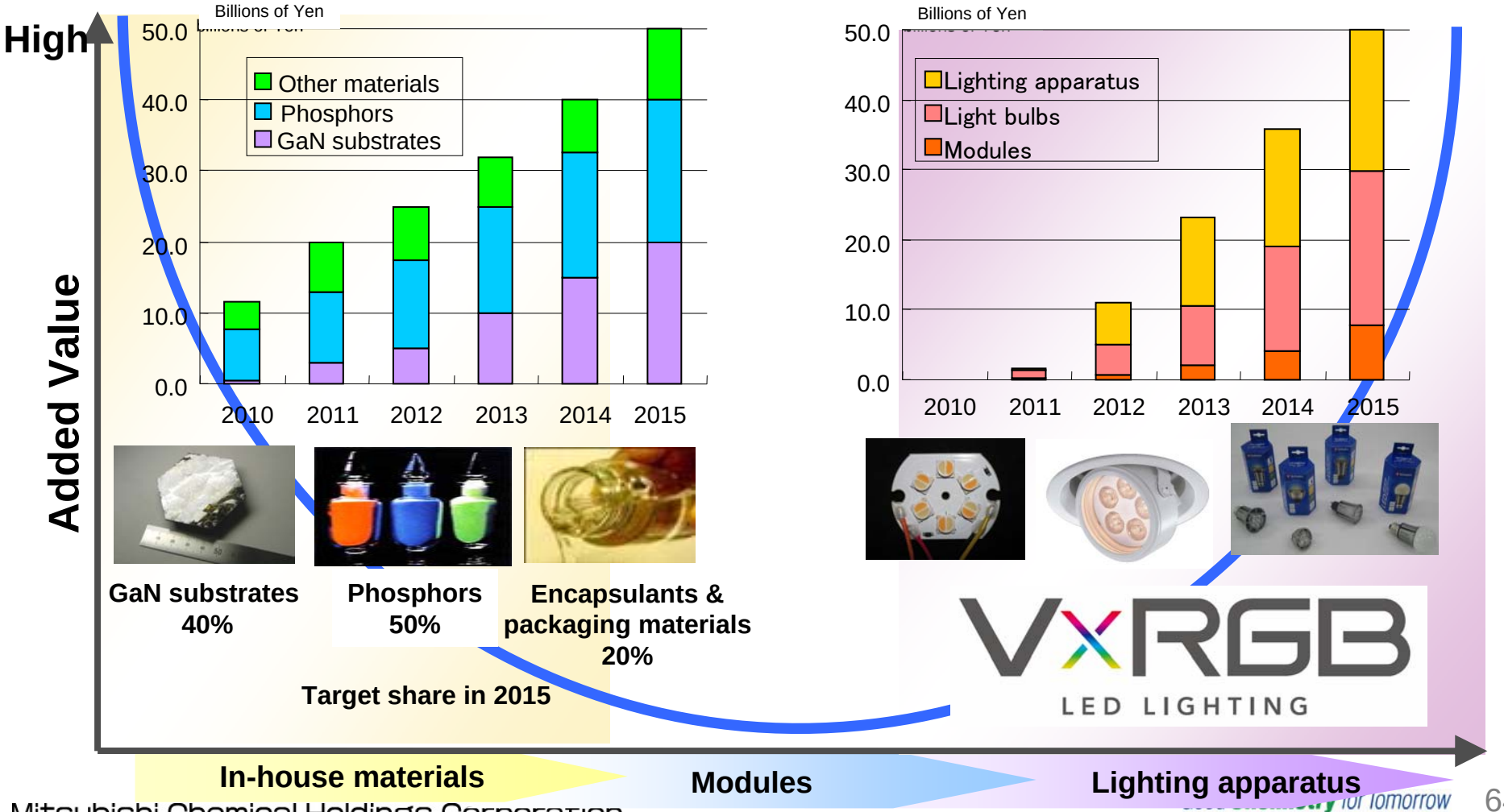
White LEDs : Business Outlook

Global development of *KAITEKI* lighting by utilizing technological superiority in materials and Verbatim's sales network
Combined sales target of ¥100.0 billion with materials and lighting/modules



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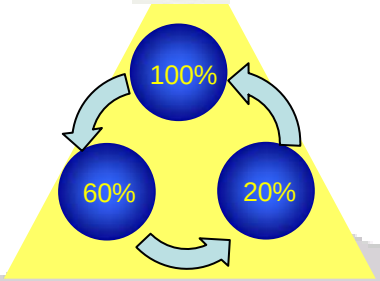
Deploying LED Light Bulbs under Verbatim Brand

Japan

Start Jul. 2011

Launch four products



Europe

Start Sep. 2010

Launched 14 products

US

Start Feb. 2011

Launched five products

VXRGB LED LIGHTING

3-step dimmable LED light bulbs

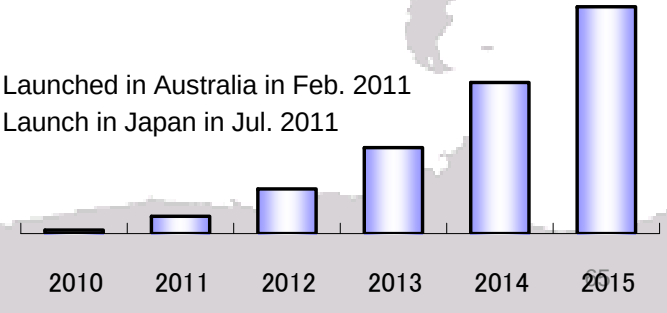
Dim brightness to save energy

Total luminous flux and power consumption (E26 daylight)

100%	550lm	6.8W
60%	330lm	4W
20%	110lm	1.5W

Growing market for quality lighting

Launched in Australia in Feb. 2011
Launch in Japan in Jul. 2011



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The Way Forward for the OLED Lighting Business

Sales target ¥30.0 billion

2015

2014

2013

2012

- Create a new lighting world differentiated from existing lighting
- Develop coating materials

Jointly develop coating process with Pioneer

Cut costs substantially with coating technology and fully commercialize in 2014

Mass Production (Jul. 2011)

OLE1
Vapor deposition-based (Coating under layer) OLED lighting

OLE1
Ver. 2
Increasing of the brightness and the luminous efficiency
Variety of whites from cool to warm

OLE2
Coating type OLED lighting

Low Cost (for large panels with fast performance) on new production line


Lighting design: Uchihara Creative Lighting Design Inc.

Establish a joint marketing business entity with Pioneer (under study)

VELVE
OLED LIGHTING

Organic photovoltaic modules and materials

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Marketing for Photovoltaic Modules

2011 2012 2013 2014 2015

Lightweight/thin film/flexible

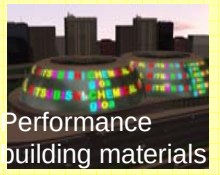
Printing/design/3D

Construction materials

Building: JR Meguro Green Bldg (TBD)
Ordered by: JR East Building Co., Ltd.
Design supervisor: First Grade Architect, JR East Building Co., Ltd.

Keihanna Plaza, Inside the Kansai Science City Super Laboratory steel sheet roof (top), Great conference hall rooftop (bottom)

Organic thin film



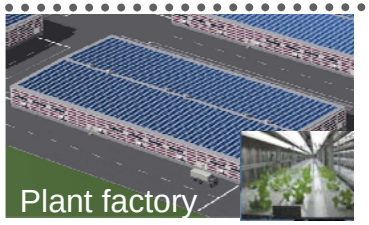
Daily sundries

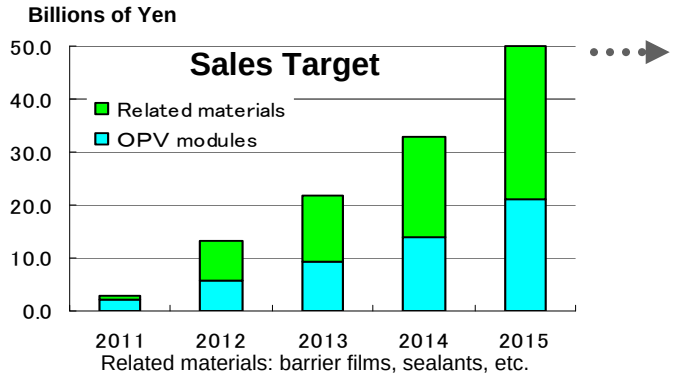
Automotive

KDDI base station (Kochi Prefecture)

Systems

gioa [ジオア]





Related materials: barrier films, sealants, etc.

◆Using a-Si thin film cells, incorporation into construction materials (BIPV), and development of automotive products (AIPV). Now growing a market for the gioa brand.

BIPV : Building integrated PV AIPV : Automobile integrated PV

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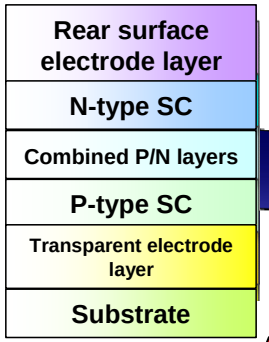
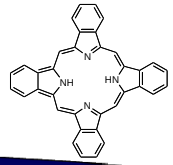
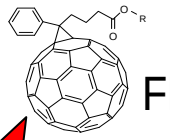
High Performance Milestones





BP



FLN

The world's best performance as organic thin-film type

Latest data >10%

2007 3.4% efficiency → 2008 4.9% → 2009 7.4% → 2010 → 2012 Efficiency 12% → 2015 Efficiency 15% → 20XX Efficiency >20%

Hybrid, Nano material, ・・・

Layer formation (tandem)

Hybrid and tandem types,
n-nano materials
Zinc oxide nanorods
Semiconductor nanoparticles
Carbon nanotubes

Launch OPV onto the market by FY2012 with efficiency improvement

present → 2012

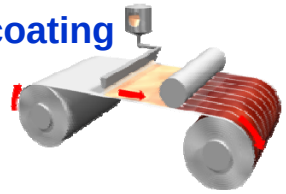
Cell → **Module** → **Process** → **Application**

Latest data >10%

15cm Square Module

Toward Pilot Stage

RtoR coating



To develop light flexible 3D Application by Coating and Printing Technology

Collaboration with Construction and Automobile Makers