

Mitsubishi Chemical Holdings Group
Medium-term Management Plan
***APTSIS 15 Step 2* Current Status**

Investors Meeting

December 12, 2013

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

In attendance on company side:

Mitsubishi Chemical Holdings Corporation

Yoshimitsu Kobayashi

Representative Director, Member of the Board,
President & Chief Executive Officer
(Member of the Board, Chairman,
Mitsubishi Chemical Corporation)

Shotaro Yoshimura

Representative Director, Member of the Board,
Deputy Chief Executive Officer

Shigeru Tsuyuki

Member of the Board,
Deputy Chief Executive Officer

Mitsubishi Chemical Corporation

Hiroaki Ishizuka

Representative Director, Member of the Board,
President and Chief Executive Officer

Mitsubishi Tanabe Pharma Corporation

Michihiro Tsuchiya

President & Representative Director

Mitsubishi Plastics, Inc.

Takumi Ubagai

Representative Member of the Board,
President & Chief Executive Officer

Mitsubishi Rayon Co., Ltd.

Hitoshi Ochi

Representative Director and President

P4 [Today's Agenda]

After I have explained the overall *APTSIS 15* progress and measures to undertake as we move toward FY2015, the president of each operating company will speak about the detailed business items.

In November 2013, the operating ratio of our

naphtha crackers was 89.73%, almost 90%.

Until now, the operating ratio has been 83% to 84%, or 86% at best, but the past three months have seen ratios beyond 84% and closing in on 90%.

After a time lag of slightly over two years, efforts to boost domestic consumption, including monetary policies, have finally begun to affect the Performance Products domain, and we can now see the light at the end of the tunnel. Today, we will probably receive questions about terephthalic acid, MMA, and pharmaceuticals, and the operating company presidents will speak on all of those things. I will talk about how FY2013 compared to FY2012, how FY2015 will be, and how our operating income target of ¥260 billion stands versus FY2010, which showed strong performance. In other words, I will explain quantitatively. Another topic is the new healthcare company we are preparing to launch on April 1, 2014. Looking at Taiyo Nippon Sanso, I will introduce the synergies expected by increasing our share in this company. I will also introduce the *KAITEKI* Report, which includes both financial and non-financial information. And I will explain the corporate brand logo, which clarifies the company direction as THE KAITEKI COMPANY, which usage began in November 2013.

P5 [Operating Environment for Japanese Companies]

Abenomics has boosted domestic consumption and helped industries involved in that aspect, but manufacturers that consume a lot of energy and produce various commodities have yet to see any improvement. While foreign exchange rates are favorable for exports, costs of electricity, resources, and materials face a low yen handicap. What to do amidst oversupply in China is also a big issue.

P6 [Financial Results and Outlook for FY2013]

A very large portion – more than half -- of our business consists of elements that are especially sensitive to changes in the economic climate. Immediately after the Lehman Shock, we made only ¥8.2 billion in operating income, but two years later, our income was up to ¥220 billion. Then, following Forex problems and oversupply in China, our operating income dropped below ¥100 billion, and last year fell to only ¥90.2 billion. This year, we have recovered somewhat and expect some ¥130 billion in operating income. Now our main issue is how to take operating income back up to ¥260 billion, not counting M&A.

P7 [Operating Income by Segment: Actual Results for FY2013 and Outlook for FY2013]

This slide shows a comparison between FY2012 results and the outlook for FY2013 (announced on October 22, 2013), after making a downward revision of ¥25 billion. Among the Designed Materials segment, PVOH/EVOH, carbon fiber and composite materials, performance chemicals, fibers, and others show some improvement. In the Health Care segment, the strong yen had a negative impact and long-listed products had a tough ride in the market, while we have relied heavily on generic drugs. This offset weakness in the healthcare business performance. The Chemicals and Polymers segments may be disappointing, but they are improving. As a result, through the merits of a weaker yen, a 15-month accounting period, changes in depreciation methods, etc., we should see an improvement in the neighborhood of ¥42.8 billion.

P8 [Actual Results of FY2010 vs. Outlook for FY2015]

Compared to FY2010, the FY2015 outlook for the Chemicals and Polymers segments is falling. FY2010 was an excellent period for terephthalic acid and MMA, but now we find we must reduce our estimates significantly. Although it won't be easy, looking at operating income, the Healthcare segment (Mitsubishi

Tanabe Pharma) should be about ¥100 billion, and healthcare solutions about ¥10 billion.

We have especially high expectations for performance chemicals. As PVOH/EVOH from Nippon Synthetic Chemical Industry fares relatively well, overall, we are not at a level where any change in the outlook is necessary, depending on our efforts.

P9 [Actual Results in FY2012, Forecasts for FY2013, and APTSIS 15 Step 2 Plans]

In FY2010, the Industrial Materials domain was strong, and for a while, we were well balanced, but in FY2012, the Industrial Materials domain was in the red, and we became a company that made money in healthcare. This year, the Industrial Materials domain made a bit of a comeback, but we still face big issues in our efforts to get our operating income back to ¥260 billion in FY2015. Forex had the yen at 83 to the dollar in FY2012, 98 to the dollar in FY2013, and in the final year of *Step 2* we will maintain our assumption of ¥90/\$1 as in our announcement on March 5, 2013.

P10 [Portfolio Transformation]

Before, we used a four-quadrant model in business portfolio management.

Next-generation growth businesses and growth businesses grow to become cash-generating businesses, and in the end, must be restructured or rebuilt. With that in

mind, we moved forward with transformation.

P11 [Portfolio Transformation]

With such results, we abandoned some ¥300 billion in to-be-restructured businesses, and invested some ¥650 billion in Mitsubishi Rayon, Quadrant, Qualicaps, Nippon Synthetic Chemical Industry, and others. Another move we are considering is an integration of naphtha crackers at the Kashima Plant and Mizushima Plant, and restructuring of polyolefin-related production. This is a portion of “leaping ahead” that should bring in some ¥20 billion. While contents are different with each item, market conditions can cause tremendous fluctuation in fiscal results.

P12 [Verification of Progress by Each Growth Model: Growth Model Categories]

We will discuss three categories of business: volatile businesses into which we have invested few resources; growth driver businesses that we plan to promote, which we position as growth and next-generation growth, and which are worth promotion even though they are currently in the red; and stable businesses, which account for 70-80% of our business overall.

P13 [Trends in Performance by Growth Models]

Stable businesses account for the core of our

operating income. Growth driver businesses are in the red. The issue is how to get them into the black as quickly as possible. Volatile businesses must move ahead in their efforts to reduce costs.

P14 [Overall Summary]

We had a ¥43 billion increase in operating income, in FY2013 over FY2012, but the issue is how we are going to boost that further by ¥127 billion over the next two years. What targets can we achieve with our stable businesses, how do we reduce costs in volatile businesses, and how do we offset delays in growth driver businesses by reducing costs in volatile businesses? These are the basics to think about.

P15 [Progress in Stable Businesses]

Most of our investments and R&D have shifted to stable businesses. Businesses we expect to grow include performance chemicals, PVOH, and so on. We must also concentrate on how to increase ethical pharmaceuticals to ¥100 billion.

P16 [Outlook for Stable Businesses]

PVOH/EVOH and performance polymers will probably achieve the targets of *Step 2*. Ethical pharmaceuticals and MMA/PMMA will require considerable effort.

P17 [Progress in Growth Driver Businesses]

The growth driver businesses include gallium nitride (GaN) substrates, organic photovoltaics (OPV), organic light-emitting diode (OLED) lighting, advanced performance products, sustainable sources, and so on, and the technological progress with each of these products is satisfactory. Profitability, however, has fallen severely behind, and there is some danger of further declines.

P18 [Outlook for Growth Driver Businesses]

Looking at *Step 2* objectives, carbon fiber and composite materials are moving in the right direction, as are water treatment systems and services. But OLED lighting, GaN substrates, and lithium-ion battery materials are behind schedule. In the coming year, the situation for lithium-ion battery materials looks good, but the financial target will not be easy to achieve.

P19 [Progress in Volatile Businesses]

I hope we can achieve our targets by thorough rationalization and accelerating structural reforms, including reduction of fixed costs for better-than-expected performance.

P20 [Outlook for Volatile Businesses]

To achieve the *Step 2* targets: in 2014, we will close No. 1 naphtha cracker at the Kashima

Plant. I also think polyolefin and other ethylene products are close to our targets now that Japan's ethylene production is at 90% of capacity. The PHL-PC chain and terephthalic acid will still require a lot of effort.

P21 [New Healthcare Company: Projected Establishment of a New Healthcare Company]

The new healthcare company will be positioned as our fifth operating company, and should be official as of April 1, 2014. We are still studying just what structure to use.

P22 [Vision for New Healthcare Company]

The following companies will be integrated: Mitsubishi Chemical Medience (MCM) and API Corporation (APIC), which were under the Mitsubishi Chemical umbrella, and Qualicaps and Healthy Life Compass (HLC). In FY2013, net sales of the new healthcare company related businesses is forecasted at about ¥120 billion.

P23 [New Healthcare Company: Business Domains]

The total market in FY2015 is estimated to be about ¥40 trillion. The market targeted by MCM, APIC, and HLC separately is about one-third of that total. And Japan accounts for about one-tenth of the world market, so we can anticipate quite a large market for our new company – into which all three of those

companies will be integrated – that we are preparing to launch on April 1, 2014.

P24 [Taiyo Nippon Sanso Corporation: Strengthening Alliance with TNSC]

We increased the ratio of our capital holdings in Taiyo Nippon Sanso to 27% and signed a business alliance agreement with capital participation to increase our synergy and orchestration. Actually, in 2004, we held 36% of the company's shares.

P25 [Synergies Expected with TNSC]

An important point is how to develop synergy. We aim to create synergy in the industrial gas, electronics, and medical care fields.

P26 [TNSC Global Operation]

We have industrial gas businesses in the United States and in Vietnam, and, in consideration of shale gas-based MMA-related businesses, we are looking at orchestration in North America.

P27 [Progress in KAITEKI Management]

Using our unique indexes, called Management of Sustainability (MOS), we prepare reports that include not only financial information but also contributions to society and efforts to protect the global environment, development of new technology, and other non-financial information. At the same time, we have established THE KAITEKI

COMPANY as our corporate brand.

P28 [Quantification of *KAITEKI* Management]

In evaluating our results, we are looking at a 9:1 weighting system. Financial data (MOE) is weighted at 9, and societal (MOS) and new technology (MOT) combined are weighted at 1.

P29 [Quantification of *KAITEKI* Management (Third-party Analysis)]

Our MOS earned a high environmental ranking from Development Bank of Japan, Inc.

The presentation of Mitsubishi Chemical President Hiroaki Ishizuka is detailed below.

P30 [Today's Agenda]

I would like to talk about progress: progress in business restructuring, progress in growth driver businesses, and progress in generating synergies.

P31 [Progress in Business Restructuring: Basic Petrochemicals Business Structural Reforms and Future Prospects]

The petrochemicals business is a volatile business. With that in mind, we set up four measures, which in the final analysis should lead us to a stable profit structure.

First, reinforce the basic petrochemicals business by restructuring our naphtha crackers and refinery partnerships. Work at the Kashima Plant will begin in May and in July 2014, and it will operate with a single naphtha cracker. We are currently discussing facility integration of the Mizushima Plant with Asahi Kasei Chemicals Corporation, and we plan to operate with a single naphtha cracker starting in the spring of 2016. Negotiations on refinery partnerships are under way, aiming at use of the HC-FCC (high severity fluid catalytic cracking) of JX Nippon Oil & Energy Corporation (JXE) with our own technology, BTcB (butene to crude butadiene).

Second, while realigning our cracking operations, we will accelerate the shift to high-performance products and optimize derivatives. The structure for derivatives will have a great deal to do with efforts to make our remaining cracking operations profitable. We will centralize our EO and increase production of EC. We will increase production of metallocene-based PE, KERNEL and HARMOREX. With new catalysts, we will be able to strengthen our production of high-density polyethylene at plants in Mizushima and Oita. And we are now discussing ways to restructure our PE/PP lines for optimal production.

Third, promote cooperative relationships with

industrial complexes. We are quietly moving ahead with a project aimed at optimizing electric facilities at Kashima-Kita Power, which is in charge of the main utilities in the area, and is a joint-venture in which Mitsubishi Chemical, JXE, Shin-Etsu Chemical Corporation, and others have shares.

Fourth, in response to shale gas development, we are developing new technologies to produce selected products such as 1-Hexene, DTP, and BTcB.

P32 [Road Map for Structural Reforms of the Basic Petrochemicals Business]

Reforming the structure of our naphtha crackers is just what you see on the screen. Speaking of derivatives, we will have one PE line after the Kawasaki PDPE2 shutdown at the end of March 2014. After that, although we are still in negotiations with our partners, we hope to restructure the lines. We have decided to shutdown the PP line in March 2014, and other structural reforms are still in the planning stage. Concerning utilities, Kashima-Kita Power stopped its No.3 boiler at the end of 2012. At the same time, we are also reorganizing derivatives producers like Kashima Chlorine & Alkali and Kashima Vinyl Chloride Monomer. At the moment, we are working with JXE to more efficiently use the No.3 boiler and SDA facilities to reduce utility

prices.

P33 [Structural Reforms in Ethylene Capacity]

Today, we have the Kashima No.1 ethylene plant, Kashima No.2 ethylene plant, and the Mizushima ethylene plant, and derivatives from those plants include EO, EC, EG, PP copolymer, PVOH, PE, and more. Still, all ethylene is not used, and the difference must be adjusted by controlling the production ratio. Starting July 2014, Kashima No.2 and Mizushima will be our only ethylene plants. In terms of derivative demand, this means we will have to purchase ethylene to make up the balance, if commodity production percentages are not reduced. With Mizushima going to a single line, ethylene will be in even shorter supply after 2016. We expect the Mizushima cracker to be at full production by July 2014.

P34 [Terephthalic Acid and PHL/PC Chain]

The prime examples of volatile businesses are terephthalic acid and PHL-PC chain. Terephthalic acid production overcapacity in China has continued to push prices below the break-even point, and we think that profitability will worsen over the long term. First, we would like to push toward regional pricing. Then we need to work especially hard to bring costs down. We hope to move forward toward significantly reducing or

eliminating premium prices in the paraxylene trade. In the Indian market, we are pushing not only for tariffs, but also for regional pricing under antidumping rules. Our 800,000t capacity No. 2 plant in India ran at low productivity ratios in 2012, but in the summer of 2013, we hit 100% of production capacity. We are now considering measures necessary to maintain production at 100% capacity. At the same time, we are moving to reduce costs of acetic acid by reductions in acetic acid unit consumption. Further, shifting power to purchased electricity and fuel from oil to coal should result in significant cost reductions. In Indonesia, introduction of floor pricing helped us reach our goal of regional pricing. And we are moving ahead toward completing negotiations for buying electricity and extending periods between maintenance shutdowns. In Korea, exports to China have nosedived, so we are talking with our partners about measures, including downsizing. China is a most difficult place to do anything, but we are in the process of simply cutting costs.

The spread for PHL and PC chain has gone downhill because of PHL production overcapacity. There is also overcapacity for PC, a situation for which there is no quick cure. We use Kashima Plant as the only one-line production structure for PHL, and we expect the per unit price to improve in 2014. We can address the bisphenol- A issue by

reducing utility costs from the Kashima Plant and the Kurosaki Plant, and eliminate the current red ink through efficiency measures and introduction of new processes. We will also work to drastically reduce PC costs. Over the long term, besides PC, we plan to move into high-performance PCs. We conducted trial productions at the Kurosaki Plant last autumn and our clients are currently evaluating the results. If the evaluations are positive, we will move it to the mass production line. In Hong Kong, where non-phosgene PC is produced, we are behind Asahi Kasei Chemicals in putting this product out, but we hope to cut costs with our process.

P35 [Performance Polymers]

The performance polymers business is one of our stable businesses. We have expanded our leading global products, and with stepped up M&A and in-house technology development, opening of new markets, development of new applications, and obtaining of new technology. Green represents current plants, purple signifies M&A done this year, and yellow indicates new plants. This year, M&A brought us two places in the U.S., one in China, and one in Europe. In addition, we have started local production in India, and construction of a plant in Brazil is under way. Setup of a new marketing operation in Indonesia is complete. While our

net sales were ¥40 billion in FY2012, we expect ¥60 billion in FY2013, and should be close to ¥100 billion by FY2015. And our profit percentages are in double figures.

P36 [Progress in Growth Driver

Businesses: Electronics Applications]

Concerning growth driver businesses, I would like to explain three in the electronics applications segment. All three were under development in-house until 2012, but are now under evaluation by customers. Some have progressed to the point where we can start small-scale mass production. Pilot production of coating type organic photovoltaics (OPVs) started in October. We have two types that are now under evaluation. Those OPVs are also registered for use in a New Energy and Industrial Technology Development Corporation (NEDO) project, R&D on advanced technology necessary to make OPV cells practical. One is a see-through type for smart buildings, and the cells/modules are to be delivered in February, with field tests to begin in June. Working with Takenaka Corporation, one of the NEDO projects focuses on OPV unit type louvers. Tests began in November 2013, and the louvers are now being evaluated by the customer. If the test results are favorable, we hope to expand their use into distributed-type power-producing models.

In the field of OLED lighting, Mitsubishi

Chemical and Pioneer Corporation are jointly developing OLED lighting using a wet-coating process for the light-emitting layer. Mitsubishi Chemical developed the coating material and Pioneer and Mitsubishi Chemical jointly developed devices and panels. Samples were ready for evaluation in September 2013. Small-scale production will begin in February in Yonezawa, Yamagata Prefecture.

The key point in the field of gallium nitride (GaN) substrates is how to reduce costs to open up new markets. A major reduction in cost should come from increasing HVPE: hybrid vapor phase epitaxy substrates from 2-inch C-plane to 4-inch C-plane ones. At last, samples are in our customer's hands for evaluation. The surface area is four times as large as before, so simple math says cost should be about one-fourth what it was before. On boosting quality, 2-inch M-plane substrates made with a super critical acidic ammonia technology (SCAAT) are currently undergoing customer evaluation. And on the marketing side, we can develop and sell LED automotive lamps with GaN substrates to replace halogen lamps.

P37 [Agribusiness Solutions (Closed-type Plant Factory System)]

The speed with which plants grow, their taste, and so forth, change with light wave frequency, temperature, and humidity. We are

able to set every variable at the optimum, and systematize the processes to create closed-type factories. This is the result of a synergistic effort that includes hydroponics and LED lighting technology from Mitsubishi Chemical, and water treatment technology and systems from Mitsubishi Rayon. Compared to conventional outdoor farming, growth rates are much faster, so the production rate increases as well. The unique feature of our system is that hydroponic trays can be placed one above the other in multiple layers. So the system can be set up on any nook of leftover space in a factory, for instance. Last year, we sold our system in Russia, Hong Kong, and Kanazawa, Ishikawa, (Tsudakoma General Service Company). In 2013, we received orders from several large companies in Tokyo and Osaka, and those plant factories are now being set up. In the future, we think the same system we use for plant factories can be used to produce vaccines.

P38 [Progress in Generating Synergies: Specialty Chemicals]

Now let's look at the MCHC Group's specialty chemicals business. They are divided into three fields: electronic materials, living and health, and coatings and additives, and all three intertwine to create a dynamic synergy. The objective is to increase the scale of each business and create a broader product lineup,

and the slogan is "from 'dispersal' to 'orchestrating the Group strengths'." An example of orchestrating is the collaboration of Chuo Rika Kogyo and Mitsubishi Rayon on new acrylic emulsions in April 2013, which are now used by a major automaker. Overseas marketing of coatings and additives will be orchestrated, and we will surely increase net sales from ¥2 billion to ¥4 billion. The slide shows our measures for strengthening business and making structural reforms.

The following is the presentation of Michihiro Tsuchiya, President of Mitsubishi Tanabe Pharma

P39 [Today's Agenda]

Today I will talk about progresses in our pharmaceutical business and generating synergies in healthcare solutions.

P40 [Progress in Pharmaceutical Business: Changes in the Pharmaceutical Business Operating Environment]

The operating environment surrounding the pharmaceutical business gets ever more severe. Populations are getting older, and medical technology grows ever more advanced and more expensive, pushing healthcare costs up. That means people try to cut costs by moving to generic pharmaceuticals that cost much less, and by negotiating lower pharmaceutical prices as

well. Domestic drug markets are sluggish, and with the price revisions scheduled for April 2014, things are certain to get even more difficult. In R&D, development of new drugs is much more difficult now, and R&D costs continue to rise. The structure of the market is changing as well, and there is a movement that seeks to compare a pharmaceutical's effectiveness with its price. Competition in this market is very tough as well.

P41 [Countermeasures against Changes in the Operating Environment]

"Post-marketing" development is important for the new and high priority products we have launched. It's also important to let patients know the value, characteristics, effectiveness, and safety of all pharmaceuticals we market, and to perform life cycle management (LCM). Then, as a company that creates new pharmaceuticals through research and development, we must strengthen R&D pipelines that address unmet medical needs. And we must establish even more massive operations through structural and operational reforms, and continually reinforce the generic business. We are already moving ahead on several of these items.

P42 [Measures/Ethical Pharmaceutical Business]

Let's look at some of the measures being

taken in our pharmaceutical business. We will increase profits in domestic business through post-marketing development of new and priority products. Overseas, we have great expectations for our new pharmaceutical *Gilenya*, which has turned out to be a blockbuster and should grow even further. Canagliflozin, used in the treatment of diabetes, has penetrated the market to a greater degree than expected. Now I would like to explain the kind of product pipelines we must build in order to expand our product sales in the future. In a move to strengthen the presence of our vaccine business in overseas markets, we acquired a Canadian company called Midecago. I will also discuss how we plan to work with MCHC Group companies to use plant factories in the production of vaccines.

P43 [Outline of Domestic Ethical Pharmaceutical Business Strategies]

Our strategy for the domestic pharmaceutical business, which faces an increasingly difficult environment, includes the essential theme of increasing the value of our priority and new products as quickly as possible. We divide our pharmaceuticals into three categories and pursue each business in the optimum manner. With our priority and new products, we will promote LCM as quickly as possible to acquire the evidence necessary to add indications and preparations. We will

strengthen our sales activities through collaboration with other companies, and completely restructure our sales operations. Looking at long-listed products excluding priority products, for those that are constantly used at the clinical level, those pharmaceuticals with a high evaluation, and those with no alternative pharmaceuticals available, we will provide information through multi-channel and IT methods marketed with non-MR promotion, or build a more efficient pharmaceutical supply system. Long-listed products are the targets of generic drug makers, and efforts to keep these product sales from falling off are very important. In the United States, after a pharmaceutical's patent expires, sales drop nearly 80%, and even in Japan, generic drugs are able to capture some 30-40% of the market. The higher a pharmaceutical's profit margin, the greater the possibility it will be targeted by generic drug makers, so our approach to this issue is vitally important.

P44 [Growth of *Gilenya*]

The multiple sclerosis therapeutic agent *Gilenya*, which has become a blockbuster (annual sales of more than ¥1 billion) just two years after its launch, and income from royalties has become a breadwinner of operations. This is licensed to the Swiss company Novartis and is recognized in 75 countries. Worldwide, there are some 2.5

million people suffering from this disease, 15,000 of whom are in Japan. Novartis reported its net sales as an increase of 66% to some \$1.4 billion from January to September 2013. We will receive royalties from those sales. Our sales of this pharmaceutical in FY2013 should reach \$1.9-2 billion.

P45 [Expectations toward TA-7284/Canagliflozin]

This SGLT2 inhibitor is a new mechanism that operates without insulin for use when there is too much sugar excreted in urine. It is licensed to Janssen Pharmaceuticals, Inc. The inhibitor was cleared for prescription in the U. S. beginning in April 2013, and among endocrinologists prescribing for new diabetes patients, it has already surpassed the DPP-4 inhibitor to become the top pharmaceutical. Early penetration in the U.S. market is going very well. In Europe, following its approval in November 2013, SGLT2 inhibitor is second only to Dapagliflozin. In Japan, we filed for authorization in May 2013, and expect to receive it in the middle of 2014. We anticipate this pharmaceutical becoming our second blockbuster, following *Gilenya*.

P46 [Pipeline Status (New Pharmaceuticals, Additional Indications)]

We have a very strong pipeline for patients whose disease areas are mainly

auto-immune, diabetes and kidney, and central nervous system (CNS).

P47 [Three Priority Disease Areas]

Currently, we offer this lineup of products for patients with auto-immune disease, diabetes and kidney disease, and CNS disease, but we also have several new candidates from among pharmaceuticals under development, and we have high hopes for them. We hope to launch new pharmaceuticals that will strengthen our own company's foundation as well as providing the resources to collaborate with other companies and invite investment to help develop new pharmaceuticals. There are still many unmet medical needs, and we would like to concentrate on creating new pharmaceuticals to meet those needs.

P48 [Strengthening of Vaccine Business]

Medicago has a revolutionary technology that extracts vaccine from tobacco leaves, and we would like to make maximum use of that technology in our vaccine business. We jointly acquired Medicago in September 2013 in partnership with Phillip Morris Investments. With this acquisition, we will develop our vaccine business on a global scale. Orchestrating our expertise in closed-type plant factories, which call on technology from four MCHC operating companies, should give us a strong competitive advantage over other companies. We will strengthen our

relationship with the Research Institute for Microbial Diseases of Osaka University (BIKEN) to move ahead domestically and overseas with businesses such as those collaborating with Medicago.

P49 [Progress in Generating Synergies: Healthcare Solutions Strategy]

Our objective is to provide solutions for unmet medical needs ranging from sick care to healthcare. Orchestration and synergy among Group companies, I hope, will give birth to new businesses. Topics for today include acquisition of Qualicaps to strengthen our earnings base and creation of new businesses such as the *Jibun Karada Club*, which I will explain.

P50 [Affiliation of Qualicaps]

Qualicaps produces capsules, many of them plant-derived, for medical use, capsule fillers, printing equipment, and other pharmaceutical equipment. Its business is global in scale. I believe Qualicaps' profits will help stabilize the profitability of our healthcare business. Also, by making use of technology held within the MCHC Group, we should be able to develop much more competitive products, and we have already started some projects aimed in that direction.

P51 [Outline of *Jibun Karada Club*]

One of our new businesses started in April

2013. At a prescription corner in their local drugstore, people can draw their own blood and leave it there. MCM picks it up, tests it, and gives the results to users. All the consumer needs to do is register with the *Jibun Karada Club*, and health records like weight, blood pressure, and other vital data will always be ready for comparison, which helps motivate healthy living by promoting exercise, good eating habits, and so on. We hope to make the system effective in promoting healthful lifestyles that are easy to maintain without extreme measures.

**The presentation of Mitsubishi Plastics
President Takumi Ubagai follows.**

P52 [Today's Agenda]

Today I will report on our restructuring and growth strategies, and progress in generating synergies.

**P53 [Restructuring and Growth Strategy:
Restructuring]**

While our medium-term management plan *APTSIS 15* is under way, we are operating our business as we envision our growth strategies. While there are sectors where business profits are growing, they are mixed with some businesses operating in the red. As a result, we are not progressing as we should. Therefore, we will reduce money-losing operations to the minimum through structural

reforms. When Mitsubishi Plastics was integrated as the newborn Mitsubishi Plastics in 2008, 21 of its business units operated in the red. Fifteen businesses were reorganized and restructured in FY2011, nine in FY2012, and three are scheduled in FY2013, and only a few of these businesses will be in the red. Basically, these companies lowered the breakeven point on their own, or they went over every variable cost, then took every possible measure to reduce fixed costs, and we think their efforts have achieved results.

P54 [Growth Strategy]

Turning to our growth strategies, the Mitsubishi Plastics sales target for FY2015 is ¥500 billion, and we hope to achieve balanced business in which each sector contributes to clearing our target of ¥500 billion. Specifically, we must decide where our management resources must go to achieve our target. The next slide will explain new capital investments, which are the results of our decisions on which areas to invest in, and where to allocate our management resources.

P55 [New Capital Investments]

This slide shows investment projects that were undertaken after April 2013 or that have started recently. The four items below the first line, that is, the four down to new construction of the new high gas barrier PET bottle plant,

are on line. During FY2014, we plan to put three plants into operation, beginning with the new *ALPOLIC* plant in Germany. Today, I would like to explain the bottom two – the high-performance multi-layer film plant at the Azai Plant, and a new PET film converting facility in China.

P56 [DIAMIRON]

DIAMIRON is a co-extruded multi-layer film. Each layer can be given a distinct function, so one film can have many functions. One film we are planning to produce is for the medical field. Therefore, it will be produced as a “clean” film in the clean room, to tremendously increase its safety features. The high gas barrier function means the film helps keep pharmaceuticals from deteriorating, and it can be used for sterile packaging. At the moment, some 90% of *DIAMIRON* film utilization is in the food industry. Specifically, it is used to package ham, sausages, and side dishes. In addition, it is already being used for infusion bags, and we are looking at a number of medical applications such as making film packages for syringes, hypodermic needles, and other medical applications. Our target is to boost the medical use of this film to about a 30% share, with foods accounting for 70%; a 3:7 balance, in other words.

P57 [Polyester Film]

In polyester films, we have decided to build a polyester film converting facility for release film for polarizers and silicon coating PET film in Wuxi, China. The facility is slated to go online in April 2015. There are two reasons behind this decision. One, while we have coating facilities in Japan, all of them will be running at full capacity. Further, demand for touch screens is very high, so we must build additional capacity. Two, when we focus on the market, we will see that China will soon start producing polarizers. In fact, two local Chinese companies are already producing them, and a large Korean maker has launched its first polarizer production facility. We think China will be the main battlefield for FPD panels, and we will probably see 30% of all FPD panels made in China by 2015. We also think that 10-20% of polarizers will be made in China, so moving swiftly to establish production capacity in that market, where growth will certainly come, will help us meet the needs that are sure to arise there.

P58 [New Demand Area]

Next, consider new areas where demand should develop. Specific areas where we see growth in film demand are in Asia, and we would like to see our access to the ASEAN+6 countries gain speed. As income levels increase, lifestyles will change. Concerns about food safety will grow, and needs for

sanitation will increase. With our own products, our food packaging materials have until now been marketed mostly on the domestic market, and demand for multi-layer film has increased at tremendous speed. Not long ago, I went to see what supermarkets in Asian countries were like, and without a doubt, demand for multi-layer films will increase. One more thing is a hygiene film. We have the technology to produce permeable film and non-breathable film, and we must start using those technologies in the hygiene film business as quickly as we can.

P59 [Agribusiness Solutions (Solar Plant Factory)]

In agribusiness, Mitsubishi Plastics is moving into solar plant factories. We spent two years, beginning in 2011, testing hydroponic systems in China. During 2013, we worked on the business aspects, and, because business possibilities have expanded, we plan to begin a licensing business that uses our hydroponic technology in April 2014. We are now negotiating details with prospective partners, and aim to expand the business to 15 areas by FY2015. We should be able to report on progress next week.

P60 [Progress in Generating Synergies: Polymer Processing and Information and Electronics]

Finally, let's review the activities of the

synergy unit in polymer processing, and information and electronics. The mission is synergies through the material development technologies of Mitsubishi Chemical and Mitsubishi Rayon, and molding processing technologies of Mitsubishi Plastics to put new products on the market. Today I would like to report on sustainable resources.

P61 [Polymer Processing and Information and Electronics]

Our films and sheets made from sustainable resource at the moment centers on *DURABIO*, a plant-based bio-engineering plastic; PBS plastic, which is biodegradable; and products made from these plastics.

P62 [Polymer Processing and Information and Electronics]

We are developing the *DURABIO* business with optical films and sheets. Compared to PC film, its optical properties are excellent. Transparent acoustic walls have been tested in practical use such as expressways since FY2013. *DURABIO* is highly transparent, resistant to shock, does not yellow in sunlight, and its excellent colorability. It has great potential, and should be able to garner a significant share of its market.

P63 [Polymer Processing and Information and Electronics]

Turning to PBS plastic, Group companies are

currently developing business for biodegradable mulching films for agricultural use, but we hope to shift its raw material to plant-based plastic and then expand the business. In addition, we are planning to develop products targeting agricultural materials, molded parts and materials for consumer electronics and office equipment, as well as automobile interior materials.

**The presentation of Mitsubishi Rayon
President Hitoshi Ochi below:**

P64 [Today's Agenda]

I would like to explain our business conditions and our strategies for the future.

P65 [Business Development of MMA: Key Measures toward FY2015]

First, looking at our MMA business, China's economy began to slow down in the second half of FY2011, and because the U.S. and European economies were also sluggish, unfortunately our profits suffered as well. Now, prices in China are gradually starting to increase, and we expect a gentle recovery. In 2009 and 2010, our MMA profitability was very high, but after the Lehman Shock, we suffered a very strong backlash. We think it affected our business significantly, and don't foresee a recovery without significant measures on our part. We think several things must be done. In FY2013, two factors

adversely affected our profits: the sluggish economy in China and the Beaumont Plant project in the U.S. falling behind schedule. Our operating income target for the year was ¥16.5 billion, but the weak Asian market, the delays in the Beaumont Plant project, and other problems pushed us into the red, a situation we hope to remedy as quickly as possible. We think MMA will soon be in an oversupply situation. Thus, to achieve our targets for FY2015, we must improve profitability. One point in that process will be to join operations with Lucite, and minimize costs in step with market prices, raw material market conditions, and operational status. A second point is to get the absolute highest profit ratio and reduce costs to the bone. The Beaumont Plant project is behind, but increasing production of MMA will result in comparatively lower fixed costs, and building a new methacrylic acid plant should enable us to shift to products with a higher profit ratio.

In the same manner, we will increase production of methacrylic acid in Thailand. In China, we already operate the Shanghai plant with a 90,000-ton capacity, but the facility itself was originally designed with 170,000-ton capacity. So the plant will be able to produce 170,000 with one line by remodeling fillers and heat exchangers. We think this will reduce operational costs, fixed costs, and other expenses, while increasing

production volume.

Speaking of our new ethylene process (Alpha technology) in Singapore, first we had to get the operation started up, and energy-saving and work-efficiency measures are not fully in place, but we think it should be possible to achieve a 15% improvement in energy efficiency by optimizing energy use. We are also developing many kinds of catalysts, which should further boost efficiency.

P66 [Strategic Moves toward 2020]

Now, about strategic moves toward 2020. Of the three processes in the world, each has advantages and disadvantages. The new ethylene process (Alpha technology), for example, used with ethane from the Middle East and shale gas from the U.S., could result in a product with greatly superior competitiveness. In considering what strategies to use in the various areas, the U.S.'s coming new ethylene process (Alpha technology) will probably mean construction of a new plant there in 2018 or 2019. We are considering many things, including gradually getting out of the inefficient acetone cyanohydrins (ACH) process. We have yet to sign an official contract, but we have negotiated doing a detailed feasibility study with Dow Chemical. For Europe, we are aiming to start up a plant using the new ethylene process (Alpha technology) with

SABIC of Saudi Arabia, and should reach a deal in 2014. On the other hand, in China, there is now a government policy emphasizing domestic balance. Our company holds a tremendous share in China, and we are also strong in acrylics there, so we hope to use the ACH process strategically and be effective with our projects. In Japan, the problem is how petrochemical complexes are going to be restructured. This will affect the raw material situation, and we hope to take quick action. For example, we are considering shifting some production of MMA at the C4 process plant at Otake to methacrylic acid production instead.

P67 [Carbon Fiber and Composite

Materials: Key Measures toward FY2015]

Next, carbon fiber. We are considering a proactive move into the development of industrial applications to expand our business and increase revenues. In FY2012, the carbon fiber business posted a huge loss. But industrial applications have expanded, demand for leisure-related applications has rebounded, and prices have recovered somewhat, although there is a supply gap. So FY2013 should see us in the black, and we think FY2014 should bring steady profits. That said, here's what is needed to create the solid foundation we need for a market that is growing significantly in FY2015. First we must reduce costs and correct prices. We are

planning to reduce costs for three years, and further increase our product quality and differentiate our products from others in the market. While steadily establishing value chains in automotive, pressure vessels, and wind turbine applications, we want to build a strong business environment by marketing original intermediate materials, prepreg compression molding (PCM), sheet molding compound (SMC), towpreg, and so on. As we announced previously, carbon fiber composites made with the PCM process will be used in the *GTR*, a mass-produced automobile from Nissan Motor Co., Ltd. We think this will result in added momentum for our products.

P68 [Development of Value Chains]

In the industrial application businesses, automotive, pressure vessels, and wind turbines should grow. While we estimate our current share of these markets at a little less than 20%, we hope to expand our share while building effective value chains. The performance of the materials is important, of course, but matching those processing technologies to the needs of the industry is also critical. Once matched, true value becomes apparent and also increases. There is no doubt that the precursor holds the quality of carbon fiber in the palm of its hand, but as we hone our technology, we hope to produce more for *BMW* and others. In carbon

fiber, we are close to a decision about adding 2,000 tons of capacity to our U.S. plant early in FY2014. With prepreg, we hope to have our Toyohashi Plant and the Aldila facility that we purchased this fiscal year at full production, which will increase our overall production. We see production of the composites we emphasize most in Japan centering on Challenge, but we are looking at the possibility of establishing production points in Asia and Europe as well.

P69 [Increase in Production Capacity of Carbon Fiber Precursors for *BMW*]

Let me explain some more about precursors. In Europe especially, there are pollution and exhaust problems, and each automaker's large cars need to be lightened considerably. So automakers in Europe are more interested in the possibilities of carbon fiber than anywhere else in the world. *BMW* is already producing and marketing i3 and i8 models, and our precursor lines No. 1 and No. 2 are already over capacity. This fiscal year, we will invest ¥3 billion in setting up lines No.3 and No. 4 and a polymerization facility.

P70 [Water Treatment Systems and Services: MBR Market Forecast and Our Targets]

Next is the water treatment systems and services. While strengthening our Mitsubishi Rayon *Cleansui* water purifier business, we

will pay special attention to the water-related businesses, which we think we can bring into the black almost according to our plan. Concerning the mainstay MBR, in the domestic and Korean markets, sewage treatment systems are being upgraded and renewed; in China, ASEAN countries, and other nations, sewage treatment systems and pig farm wastewater treatment systems will result in stronger demand. While targeting mainly niche markets, we're able to expand businesses at the same time. The MBR market in Asian and ASEAN countries is estimated to grow to some ¥50 billion in 2015, and we plan to get 35% share of that market. Therefore, we need a number of measures -- gaining authorizations from local research institutes, establishing ties with agents and engineering companies, and so on. We've been able to undertake a lot of those measures over the past two years, and we aim to achieve net sales and operating income targets based on those efforts.

P71 [Expansion of Value Chains]

Thus we have strengthened our sewage and wastewater treatment business and are moving forward, but until now we have never gotten deep into the clean water business. Now, here at home, acquisition of Wellthy Corporation gave us a foothold in the on-site water treatment system (private water supply) business. Now we would like to expand this

business to China and ASEAN countries where the needs seem to be high. Right now, Wellthy's share of the market for portable water treatment of groundwater is estimated at more than 50%, and it is an excellent company with advantages in service and maintenance networks. So we hope to collaborate with Nippon Rensui and move ahead with this business.

P72 [Progress in Generating Synergies: Carbon Fiber and Composite Materials and Water Treatment Systems and Services]

Finally, let me explain about the progress of generating synergies by Mission Coordinators who appointed in 2012. With carbon fiber and composite materials, we have strengthened our projects for leading automakers. We acquired TK Industries in Europe, and will soon conclude contracts to invest in a company with production facilities in Asia. We will introduce PCM technology to that company, and start selling the components it makes in Europe. We are also looking for parts manufacturers in Europe, and hope to move aggressively ahead. In the water treatment systems and services, working with Miura Co., Ltd., we will develop a relatively inexpensive compact unit, as we see a considerable need for such a product. We will utilize it in our own specialties: chemicals and food businesses, etc., while recycling

wastewater into a zero liquid discharge system. In other words, we will develop a system that emits no wastewater. Such a system is currently undergoing testing at our Toyohashi Plant.