

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

Investors Meeting

June 9, 2014

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In attendance on company side:

Mitsubishi Chemical Holdings Corporation (MCHC)

Yoshimitsu Kobayashi
Representative Director, Member of the Board,
President & Chief Executive Officer

Kenkichi Kosakai
Managing Executive Officer

Ryoji Tanaka
Managing Executive Officer

Mitsubishi Chemical Corporation (MCC)

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

Mitsubishi Tanabe Pharma Corporation (MTPC)

Michihiro Tsuchiya
President & Representative Director

Mitsubishi Plastics, Inc. (MPI)

Takumi Ubagai
Representative Member of the Board,
President & Chief Executive Officer

Mitsubishi Rayon Co., Ltd. (MRC)

Hitoshi Ochi
Representative Director and President

Life Science Institute, Inc. (LSII)

Kuniaki Kaga
President

P4 [Today's Agenda]

Each year, in June and again in December, MCHC makes presentations to the media, investors, and analysts that report the company's stance on economic conditions and the business environment, and MCHC's current financial and business situations. This time, topics will include the April launch of Life Science Institute, Inc. (LSII), which engages in our healthcare solution businesses and the transformation of Taiyo Nippon Sanso Corporation (TNSC) into a consolidated subsidiary announced on May 13, along with our views on how

to move forward into fiscal 2015.

P6 [Operating Environment for Japan-based Companies]

First, let's look at the environment surrounding Japanese businesses. Japanese companies, especially those that consume a great deal of energy, or the petrochemical industry, which brings raw materials from the Middle East for production, are at a turning point. The big difference between fiscal 2013 and fiscal 2014 is the impact of Abenomics, in which the major merit is that the yen has dropped from its artificial high to a very stable level of about 100 yen to the U.S. dollar. On the back side of that benefit, however, are higher costs for electricity and raw materials. Another major management challenge is how to deal with shale gas, the Chinese coal-based technology problem, and so on.

P7 [Structural Changes in the Chemical Industry]

Even though the issue is perceived as a structural change in the chemical industry, the problem is easy to see by looking at the chart, "Global ethylene production capacity growth." With shale gas in the forefront and increased coal-based production in China, ethylene is in a state of oversupply. A major point will be what measures Japan takes to address the problem. Since the Lehman Shock, emerging economies have invested a great deal of public money, which has had positive results, but some, including China, have become sluggish, resulting in massive oversupply of iron and chemical products. As shown in the chart, Global Terephthalic Acid Production Capacity Changes, compared to global demand, China's production capacity, which is forecast to exceed domestic demand, and shows continual expansion. That means its momentum will see no end in the immediate future. Thus a key issue will be how to deal with the oversupply. In Japan, the focus will be mainly on the environment, energy conservation, and other sustainability issues, along

with how quickly healthcare-related business can contribute to profits.

P8 [Trends in Domestic and Overseas Performance]

As you see in the chart, Domestic and Overseas Sales Ratios, comparing fiscal 2010 with fiscal 2013, overseas sales grew from 34% of the total in fiscal 2010 to 40% in fiscal 2013. Unfortunately, overseas operating income dropped significantly. In our strategies, we decided that our commodity businesses in Japan were no longer viable. We stopped production at the Matsuyama Plant in 2010 and moved our terephthalic acid business overseas, but it is no longer able to generate profits. We tried to move swiftly to stave off this situation, but we still face difficulties with terephthalic acid, PHL/PC chains, and MMA.

P9 [Factors Placing Downward Pressure on Revenue]

A major reason for the downward pressure on revenue is the loss of profitability due to a supply-demand imbalance, mostly in China. In our MMA business, we acquired Lucite International Group Limited, but the launch of the Beaumont Plant in the U.S. has required considerable time, and investments in plant and equipment and technological preparation have yet to be completed. Thus an important point will be how to make up for lost opportunities and increased costs as we move forward. Another source of downward pressure on revenue comes from a growing share of generic drugs. In the domestic market environment, generic drugs accounted for some 30% of the market, but that share is about 90% in the U.S. and 60% in Europe. The pressure to use generics comes in part from efforts to hold down rising medical costs. For our part, the damage is considerable, as our long-listed products provided much of our revenue in this segment. For some of our growth driver

businesses such as lithium-ion battery materials, organic photovoltaic modules and materials, and so on, growth has been less than expected.

P10 [Management Issues Requiring Emphasis]

One of the major management issues will be transforming our portfolio itself, as we have done with the transformation of TNSC into a consolidated subsidiary. Of course, synergy effects are important, but before that can happen, we are still in need of a very large transformation as we must get into more stable businesses and get out of cyclical sectors. Also, in Japan, medical costs grow by 1 trillion yen or more per year, and how should we respond to the move from sick care to healthcare? For one thing, we will move decisively to enhance our healthcare solution businesses, mainly with LSII, which we launched in April. This is the underpinning of our transformation efforts. In addition, our holding company system is unlike any other in the world, and one of our major challenges will be to promote synergy within our organizations. We will strengthen our revenue base, especially with Lucite International Group in the MMA business, which is positioned as a growth business. Another question is how strongly we can develop other product lines that seem to be on the way upward, such as carbon fiber and composite materials, alumina fiber, *ALPOLIC* aluminum composite materials, and other performance products. These two approaches may well determine the directions of our positive side. In addition, while we move ahead with structural reforms, we must also work to restructure and rebuild petrochemical-related businesses in Japan, where actions are mostly on schedule, and we will continue to move ahead as planned. Overseas, we are fully aware of the need to implement fundamental countermeasures regarding terephthalic acid, PHL/PC chains, and so on.

P12 [Business Life Cycle Management and Variability Management]

Let's now move on to explain the implementation and results of *APTSIS 15* Step 2, looking forward to fiscal 2015. We will implement business life cycles and variability management. Up to this point, we have managed and operated businesses through a combination of the four-quadrant model: next-generation growth businesses, newly nurtured and conforming to business life cycles; growth businesses grown largely by concentrated investment; cash-generating businesses that have little chance of market growth but should impart a significant part of our income as cash cows; and businesses with limited life cycles, or those that have to be withdrawn or cannot be established in Japan's prevailing conditions. However, with these only, we were unable to deliver our management message clearly. In fiscal 2013, we implemented a growth model that said we should somehow get out of businesses that were cyclical and made lots of profit at times, but at other times posted huge deficits. We designated three business categories: stable businesses, growth driver businesses, and volatile businesses. Growth driver businesses are divided into next-generation growth businesses and growth businesses. Stable businesses are those we can rely on for steady profits, and are divided into growth businesses and cash-generation businesses. Volatile businesses are those at the end of their life cycles. Businesses that have exceeded a certain standard for changes in the ratio of operating income to net sales for the past 10 years are categorized as volatile businesses.

P13 [Portfolio Transformation]

Turning to our portfolio transformation, over the past five or six years, we have withdrawn from businesses with net sales of around 300 billion yen and added MRC, Qualicaps (QKK), Quadrant, and others to the MCHC Group, resulting in an increase

of some 820 billion yen in net sales. In the fourth quarter of fiscal 2014, TNSC will become a consolidated subsidiary, marking another step in our portfolio transformation. Looking at the bar graph at the bottom right, you can see that operating income from pharmaceuticals ranged from 65 billion yen to 70 billion yen in normal years, and except for fiscal 2010, our new companies in this sector are nearly all profitable, and the pillars of the conventional businesses—petrochemicals and materials—have contributed little to our profit picture. In fiscal 2010, terephthalic acid and MMA earned some 60 billion yen in operating income, but by fiscal 2013, these businesses dropped by some 80 billion yen from that level. Thus, in our Group, these areas, plus PHL/PC chain, showed very large variations, which we will explain later.

P14 [Financial Results and Outlook for FY2014]

Our financial results and the outlook for fiscal 2014 are very realistic, in our estimation. We project operating income of some 136 billion yen.

P15 [Operating Income by Segment: Actual Results for FY2013 vs. Outlook for FY2014]

Speaking of operating income by segment, we expect nearly every segment to show improved income, and we feel our estimates are very realistic. We still forecast a loss for the Electronics Applications segment, but finally, GaN substrates as well as phosphors, display materials, and others, are starting to receive stable orders, and recording media is at a level where loss margins are nearly eliminated. Our most severe estimates place this segment in an overall deficit position of some 3 billion yen. In the Designed Materials domain, polyester film, alumina fiber, *ALPOLIC*, and so on show steady increases in profit. Food ingredients and fibers are performing well. Overall, in the Health Care segment, pharmaceuticals should show about the same profit as last year, but we anticipate

increased profits from LSII, as it handles QKK, LSI Medience Corporation (LSIM), and others. The Chemicals segment should also show a profit, and the margin of loss with terephthalic acid should be reduced as well. In the Polymers segment, the Beaumont Plant in the U.S. should come on line, boosting our MMA/PMMA polymer business and improving profits in that segment. As of now, polyolefins are also showing good increases in profitability.

P16 [APTSIS 15 Step 2: Plan and Actual Results]

Considering our plan *APTSIS 15* Step 2 and its results for a moment, we have not changed our ambitious goals for fiscal 2015. From this year end to the New Year is the time for setting budgets for the coming year, and we plan to put a great deal of energy into that process. Looking here, you can see that we expect the Health Care and Performance Products domains to grow significantly, and we have high expectation for improvement in the Industrial Materials domain.

P17 [Preparing for FY2015]

Looking ahead to the 260 billion yen operating income target for fiscal 2015, we have discussed three different growth models, including analyses that show upward and downward shifts in the profit plan.

P18 [Current Degree of Attainment Regarding FY2015Targets]

Assessing our current rate of progress toward our targets, looking from the four-quadrant model and from the growth model, our stable businesses are comprised of growth businesses and cash-generating businesses. Growth driver businesses are comprised of next-generation growth businesses, which nurture new ones, and growth businesses with high expectations, such as lithium-ion battery materials, carbon fiber, and

composite materials. Volatile businesses include cash-generating businesses and businesses to be restructured. The businesses that have fallen behind most in growth toward our fiscal 2015 targets are the next-generation growth businesses in the growth driver category. Launching new businesses and opening new markets, are far behind our plan. In the growth businesses, carbon fiber and composite materials have moved into the black. They will continue to improve, we believe. Lithium-ion battery materials will struggle for another two to three years. Looking at growth businesses within the stable businesses, we see pharmaceuticals at about the level of the previous year. Growth of generics is causing some difficulty for long-listed products, but royalty income is steady. We can expect growth from LSII, which includes Qualicaps and LSIM. And in our cash-generating businesses, coke and others remain steady.

P19 [Stable Businesses: Progress]

During fiscal 2015, we expect our stable businesses to play a vital part in our profit picture, adding operating income of more than 70 billion yen. We will implement measures to improve MMA/PMMA business performance, and expect performance polymers, PVOH/EVOH used in optical films for FPDs, and so on, to play a vital part in our stable business portfolio.

P20 [Stable Businesses: Major Policies and Progress]

This chart displays stable businesses by SBU. We will explain pharmaceuticals, MMA/PMMA, *ALPOLIC*, and alumina fibers later. In polyester films, the plant in Suzhou, China, is on line, FPD needs are being met by greater cooperation among Japanese plants, and we are preparing for full-scale production in the future. New construction of a processing line at the Wuxi Plant is moving forward as planned. In the PVOH/EVOH business, the sixth

new extra-wide production line for OPL film is being added at the Kumamoto Plant. We think it is moving toward stability. With performance polymers, we are pushing ahead to augment world-leading products, and things are proceeding as planned.

P22 [Pharmaceuticals]

Royalty income is doing very well. In fiscal 2013, *Gilenya* brought in 32.3 billion yen, an increase of 64%. We are also looking for quick growth from *Invokana*. Improving domestic performance in fiscal 2014 and fiscal 2015 will be a tough fight, but we can look forward to great strides in the future. *Remicade* and *Simponi*, pharmaceuticals for treating autoimmune disease, topped 100 billion yen on a drug price basis. We aim to expand net sales by improving the effectiveness of products and maximizing product values. *Tenelia*, a pharmaceutical for treating Type 2 diabetes, is entering its expansion period. *Canaglu* passed the Pharmaceutical Affairs and Food Sanitation Council's First Committee on Drugs in April, should be certified in June, and is scheduled for launch in the summertime. For vaccines, we are contemplating something new, which will entail making Medicago Inc. a subsidiary and MCC's development of plant factory system using artificial light. We have organized a project team to promote business and structural reforms and are making preparations to consolidate domestic production bases into the Onoda Plant and Yoshitomi Plant.

P22 [Pharmaceuticals]

Looking at the field conservatively, MTPC revised the fiscal 2015 performance target of 500 billion yen in net sales and operating income of 100 million yen to 410 billion and 65 billion, respectively. We absolutely must achieve those targets.

P23 [Business Development of MMA/PMMA]

Fiscal 2010 was a very good year. In Europe and

Asia, Lucite and MRC executed their own strategic plans and marketing separately, but in March 2014 we set up a clear global operation to unify management of both production and marketing. Startup of the Beaumont Plant in the U.S. lagged significantly, but as of January 2014 it is at full capacity, producing 156,000t/y. We also started production of Metacrylic Acid (MAA) this June. Production of MMA in Thailand also began in February. At last we are in a position to recover from lost opportunities. Our share of the global MMA market stands at 40%, and as the price leader, we are well positioned to make profits. Another hopeful sign is the gradual decline in the price of methanol, the raw material.

P24 [MMA Middle East and U.S. Projects]

Projects in the Middle East and the U.S. are proceeding as planned. We have the certification necessary to make investments in foreign currency, and setup of the joint venture and construction of the facilities are in the final phases. We should move into the final discussions shortly. The U.S. project, which is based on the new Alpha technology, will enable us to produce MMA using shale gas. With a new competitive ethylene production method, we are making preparations to secure a leading position in fiscal 2020 and later.

P25 [ALPOLIC and Alumina Fiber (MAFTEC)]

When the yen was so artificially high, we considered shutting down the Ueda Plant's ALPOLIC operation, but the yen's depreciation improved our domestic business environment. At last our aluminum composite panels are recognized worldwide, and demand from airports and other customers has grown. Up to now, we produced these panels in Nagano, Japan, and the U.S. state of Virginia, but we are planning to set a new plant in Wiesbaden, Germany, where a polyester film plant is located, in September 2014. Then, with three manufacturing

bases and five marketing units, we can develop a strong, strategic marketing operation. In addition, we faced some difficult times with *MAFTEC*, an alumina fiber-based inorganic molding product that offers excellent heat resistance, but now applications for automobiles have taken root and we are seeing solid growth. Preparations are moving ahead, including expansion of production capacity.

P26 [Growth Driver Businesses: Progress]

Next-generation growth businesses will forge ahead in fiscal 2015. Forecasts show that carbon fiber and composite materials can be expected to improve. In fiscal 2013, they posted a deficit of 13 billion yen, but in Step 2, the plan is to achieve 10 billion yen profit. We expect an improvement from the barely profitable level seen during the downturn to 14 billion yen in profits as conditions improve.

P27 [Growth Driver Businesses: Major Policies and Progress]

We will explain carbon fiber and composite materials later. Turning to electronic applications; several times we have discussed GaN substrates, organic photo-semiconductors, and organic photovoltaic modules and materials (OPV), but both the technology and the market are taking time to develop. Finally, the demand for GaN substrates has mostly stabilized and Taisei Corporation is now conducting demonstration tests of OPVs are now undergoing demonstration as see-through films to be put on glass window panes of buildings. While they may not be able to contribute to profitability in fiscal 2015, the business is moving forward. Our share of the market for water treatment systems and services is moving upward. The use of lithium-ion battery materials, in automobile batteries has lagged two or three years behind our initial projections. During that time, many other corporations have entered the market. Preparations for electrolytes in Europe and Asia are complete. We hope to make

the best use of such advantages. The competition will be severe, but the lithium-ion battery materials business itself has begun and we feel there will be numerous opportunities.

P28 [Carbon Fiber and Composite Materials]

The market is gradually expanding and is moving toward 100,000 tons (industrial use) by 2020. In aircraft, where carbon fiber composites are used for the main wings, it will take time for our company to gain a foothold. Instead, we think we should first concentrate on pressure vessels, automobiles, and wind power generators.

P30 [Volatile Businesses: Progress]

Volatile businesses were 10 billion yen in the red for fiscal 2013, but we will limit deficits to 3 billion yen in fiscal 2014. In fiscal 2015, an upward surge should take us to 31 billion yen loss, and a downward one should take us to 13 billion yen in operating income. Mainly, we are consolidating facilities mainly for production of basic petrochemicals and polyolefins, as part of our profit improvement programs. Terephthalic acid is not at a level at which we can make an announcement, but we are moving forward step by step.

P31 [Volatile Businesses: Major Policies and Progress]

Basic petrochemicals are going according to plan. In polyolefins, we shut down one PE and one PP line at the Kawasaki Plant, and are planning to shut down one polyethylene line at the Kashima Plant.

P32 [Terephthalic Acid and PHL/PC Chain]

Our terephthalic acid plant in India is finally operating stably at over 90% capacity. We are planning to shift to electricity purchases, and our cost reduction drive has nearly reached its target. We aim to realize profitability through regional pricing plus supplemental charges corresponding to

customs duties. The introduction of a floor price system in our Indonesian operation should result in profitability. In Korea, we are taking actions that include major downsizing to reduce losses. China is a major concern, and while some other companies are stopping production in the current oversupply situation, we are looking for the best possible situation within our product chain.

The situations for PHL/PC chains and for terephthalic acid are similar, but we have the technology for non-phosgene PC and we will think of different applications for the reactor, such as plant-derived PC.

P34 [Establishment of LSII]

LSII was launched on April 1, 2014. The LSII Group is composed of LSIM, API Corporation (APIC) for active pharmaceutical ingredients, QKK, with which we acquired in March 2013, and Healthy Life Compass (HLS), which was launched April 2013. All eyes will be on the cooperation that happens between LSIM and APIC and the new companies: QKK and HLS.

P35 [Operating Environment for Business in the Healthcare Field]

While there is no Japanese version of the United States' National Institutes of Health (NIH), monitoring individuals to maintain their health, as well as taking care of the sick, is a very important theme for us as well as Japan's government. We feel that our timing was ideal for launching LSII.

P36 [Strengthening and Expanding Healthcare-related Businesses]

The business fields we should enter are three in all: first, health and medical ICT, second, support for pharmaceutical development and manufacturing, and third, advanced medication including iPS cell and others.

P37 [Business Development through Concerted Collaboration]

LSIM, APIC, QKK, and HLC, must figure out how they are going to relate to the three above-mentioned businesses, and consider specifically what measures they must take to create the most effective synergy. MTPC has been involved with pharmaceuticals from the beginning. MRC has the production technology for artificial spa generators. MPI has advantages in films for pharmaceuticals. TNSC has begun home medical care. MCC has conducted research into the production of vaccines with MTPC with a plant factory system using artificial light. The point is how LSII is related to all of them.

P38 [Health and Medical ICT]

In the self-health check business, we launched HLC in April 2013, and are currently working to develop the system in drugstores around Japan. In February 2014, the Ministry of Economy, Trade and Industry and the Health, Labour and Welfare Ministry certified self-blood testing done in drugstores as a viable business, eliminating the gray zone and allowing us to speed up our business.

P39 [Support for Pharmaceutical Development and Manufacturing]

LSIM was involved in non-clinical studies and clinical trials, but now APIC needs to determine how it will become involved with pharmaceutical development, and QKK must decide to establish a role for its laser printing on capsules, while bringing alliances with Contract Research Organization (CRO) and pharmaceuticals companies into its field of view.

P40 [Advanced Medication]

We must determine how we will relate to regenerative medicine, home medical care, telemedicine, and other advances in medicine, including IT. MTPC is involved with regenerative

medicine and TNSC with the cell-cooling business, but the point is how they will relate and synergize.

P42 [Significance of Integration with TNSC]

Our alliance began on May 13, 2014. We must think about how we generate vertical merger of industrial gases and chemicals, integrating their offices and facilities, and further synergies in electronics, energy, and healthcare.

P43 [Organizational Structure of the MCHC Group]

By making TNSC a consolidated subsidiary, we will have a lineup of six operating companies under the MCHC umbrella. We believe this will require a new management strategy as we move forward toward fiscal 2020.

P44 [Post-Consolidation Business Portfolio]

When TNSC became a consolidated subsidiary, simple addition said it would add about 4 trillion yen in net sales and 142 billion yen in operating income (fiscal 2013 figures). Now, the issue is how to gain improved profit margin on sales. We will have detailed discussions on both strategies and structures, and build them into the fiscal 2015 targets as we begin to formulate the next mid-term management plan (from fiscal 2016 to fiscal 2020).

P45 [TNSC: Medium-term Business Plan]

TNSC's targets for fiscal 2015 are 570 billion yen in net sales, 38 million in operating income, and a 6.7% operating margin. In 2012, TNSC withdrew from a joint manufacturing business for monosilane gas, and except for the extraordinary loss connected with that move, the company's profit figures have been very stable. In addition to synergy, the move to bring TNSC under the MCHC umbrella was also an important step in our portfolio management.

P46 [Synergies Stemming from Overseas Expansion]

In Asia, TNSC and MCC have already generated synergies through their supply systems and marketing. In North America, the shale revolution should enable us to meet on-site demand and we look forward to the advantages of the Alpha technology.

P47 [Business Synergies]

Our target for business synergies with TNSC is to generate a positive impact of 5 billion yen in fiscal 2017, but we have yet to calculate the results of cost synergies.

P49 [KAITEKI Management]

The quantification of MOS Indexes has made significant progress. The mentality of employees has also changed, and they feel much more affinity towards MOS. In Europe and the U.S., BASF, The Dow Chemical Company, and DSM N.V. have adopted materiality assessment. Our company will now concentrate on materiality assessment as one of the management issues we must work on. Last year, we produced our *KAITEKI* Report, which combined both financial information and non-financial data. This time, we hope to put out a report that reflects the materiality assessment viewpoint.

P50 [Materiality Matrix]

Our highest priorities are safe and secure processing, reducing our environmental impact, and enhancing sustainability. We should clearly show our directions in terms of overall procedural consistency, including MOS, and this should be made clear to people within the company as well as stakeholders outside our organization.

P51 [KAITEKI Management by Quantification]

If our target for fiscal 2015 is 300, then it should be 209 for fiscal 2013. Sustainability [Green], health, and comfort are the three indexes that gain points.

Many people insist that MOS indexes are in conflict with the figures in financial statements, but companies with strong profit figures also have strong showings on MOS indexes.