FY2019 2Q Financial Results Presentation Summary

(Held on November 8, 2019)

(1) Overview of Financial Results for FY2019 First Half (year-on-year changes)

(Billions of yen)

① Net sales: 192.0 〔-6.4〕 Decrease in sales volume (-0.5)
Differences in sales prices (-5.9)

② Operating income: 15.3 〔+0.7〕

Decrease in sales volume 〔−0.6〕 chloroprene rubber (CR), etc.

Improvement in spread 〔+1.8〕 Decreases in raw material prices, etc. (+7.9)
Sales prices (-6.1)

Effect of foreign exchange 〔−0.1〕 Raw material prices, etc. (-0.4)
Sales prices (+0.2)

Other cost elements 〔−0.8〕

Absence of periodic shutdown maintenance (SDM) of styrene monomer (SM) plant (+1.4)

Resolution of damage previously incurred by Denka Performance Elastomer (DPE) in the United States due to cold wave and the restoration of the Omi Plant's hydroelectric power generation output (+1.3)

Other administrative and manufacturing costs (-3.5): Labor costs, etc.

Forward-looking investments 〔+0.5〕 R&D expenses, etc.

Net increase due to factors listed above〔+0.7〕

① **Net sales** decreased due to lower CR sales, which reflected a decline in demand, and the downward revisions of sales prices of styrene-based products in step with plunges in raw material prices; these factors outpaced year-on-year growth in sales of xEV-related products, diagnostic reagents and influenza vaccines.

② **Operating income** grew ¥0.7 billion thanks to higher sales of xEV-related products and offerings produced by the Life Innovation as well as the absence of periodic SDM of SM plant, despite a year-on-year decrease in the sales volume of CR and semiconductor-related products.

(2) Full-Year Operating Results Forecasts for FY2019 (year-on-year changes)

(Billions of yen)

① Net sales:	400.0	〔-13.1〕	Growth in sales volume (+2.5) Differences in sales prices (-15.6)
② Operating income:	35.0	〔+0.8〕	
Growth in sales volume		〔+0.9〕	Diagnostic reagents and Electronics & Innovative Products, etc.
Improvement in spread		〔+5.0〕	Decreases in raw material prices, etc. (+17.9) Sales prices (-12.9)
Effect of foreign exchange		〔−1.0〕	Sales prices (−2.7) Raw material prices, etc. (+1.8)
Other cost elements		〔−2.8〕	
			Absence of periodic SDM of SM plant (+1.4)
			Resolution of damage previously incurred by DPE in the United States due to cold wave and the restoration of the Omi Plant's hydroelectric power generation output (+1.6)
			Other administrative and manufacturing costs (-5.8)
Forward-looking investments		〔−1.4〕	Rise in R&D expenses

Net increase due to factors listed above〔+0.8〕

Denka expects operating income to total ¥35.0 billion as it believes that sales of diagnostic reagents, influenza vaccines and xEV-related products will grow and offset the negative impacts of lower CR sales volume and growing costs arising from forward-looking investments and other expenses

(3) Shareholder Returns

Policy on shareholder returns under the Denka Value-Up management plan: Remain committed to a targeted total shareholder return ratio of 50%; place stronger focus on cash dividends; and flexibly execute share repurchases

Forecasts for dividends per share for fiscal 2019:

Interim: ¥60; year-end: ¥65; full-year: ¥125; (dividend payout ratio: 45%)

（4）Topics Current situation of and Future Outlook for Denka's Operations in Singapore

1. Positioning of and roles assigned to these operations under Denka Value-Up

History of Denka's expansion into Singapore and its current position

■ From the first entry into Singapore to the present

1984 Initiated the manufacture of special electro-conductive carbon black
→2003 Initiated the production of granule carbon black products and began supplying them for use in high-voltage transmission cables

1991 Initiated the manufacture of molding compound fillers for semiconductor packages (fused silica), with Denka becoming the world's largest supplier supported by two facilities, including the Omuta Plant

1997 Initiated the manufacture of polystyrene (PS)

2006 Considerably boosted PS production capacity while initiating the manufacture of high-value-added resins (MS and SBC)

2012 Initiated the manufacture of Maleimide Type Heat Resistance Modifier "Denka IP" in line with an overseas production policy aimed at meeting demand from Japanese automakers expanding globally and local makers gaining prominence

2015 Established Denka Life Innovation Research (DLIR), an institution charged with the development of vaccines for tropical infectious diseases, etc.

■ As for operations in Singapore, we aim to raise the ratio of specialty businesses to 80% by executing the following measure.

2. Specialize Our Key Operations

In 2021 Switch PS production facilities to MS resin to increase its production volume

■MS resin: A transparent resin consisting of copolymer of methyl methacrylate (MMA) and styrene monomer (SM). MS resin boasts features of both MMA and SM in terms of optical properties and low moisture absorption and is used as light guiding substrates for LCD backlight and cosmetics containers. Going forward, MS resin will be sought after by manufactures of large-size LCD televisions and others seeking glass substitutes in such regions as ASEAN.

■PS resin: A commodity product that is difficult to differentiate from other general-purpose resins. Currently, PS resin markets are faced with oversupply. Although the sum of annual production capacities possessed by PS manufacturers worldwide totals 15 million tons**,** on the other hand, that of Denka's facilities in Singapore is only 200,000 tons. Our share is therefore extremely small. In addition, we have no downstream processing facilities in Singapore and thus sell all PS output directly to external customers.

■Net sales are expected to decrease upon terminating PS production. Considering the low profitability of PS, however, shifting our resources to the production of value-added MS resin will position us to achieve a considerable improvement in the profitability of styrene-related operations in Singapore.

3. Business strategies for Acetylene Black and Spherical Alumina

Current situation of and future outlook for Acetylene Black-related operations

■Current: We started out supplying Acetylene Black for use in manganese batteries. Then, we began producing granule Acetylene Black that can easily be compounded with resin and marketing these for use in the semiconductor layers of high-voltage transmission cables. Today, these products are widely used, especially in the EU's transmission networks thanks to the trade bloc's policy of raising the ratio of renewable energy.

■Future: We expect demand to grow in step with the rapid progress in power grid development projects now under way in Europe. We will also initiate the full-fledged production of Acetylene Black in Singapore in 2020 for use as a LiB material, with the aim of supplying products of even superior value.

An initiative to be undertaken in connection with Spherical Alumina

■Applications: Thanks to its superior thermal conductivity, Spherical Alumina is supporting LiB cooling mechanisms for electric vehicles (EVs). Other applications include use as a thermal dissipating material in 5G communication base stations.

■Strengths: Unique fusing technologies that Denka has cultivated as a leading manufacturer of spherical fused silica; sophisticated particle design technologies; stable quality backed by robust production process; and an extensive product lineup

■Initiative: Boost our Spherical Alumina production capacities in Singapore, with plans calling for bringing additional facilities on line in the first half of 2021. By doing so, we will establish a supply structure capable of meeting growing demand in the global market. In tandem with the Omuta Plant, our manufacturing base in Singapore will also support the Denka Group to formulate more resilient BCPs supported by a dual plant structure.

4. Process reforms employing digital technologies

A "digital plant" initiative

■Establish a value chain management system

Consolidate our value chains connecting upstream functions (procurement and logistics) supported by physical facilities and downstream functions (supply-demand planning and customer inventory management) supported by data analysis and management systems. To this end, we will digitize these operations, with the aim of employing real-time data connectivity to optimize costs and speed up the formulation or revision of manufacturing and marketing plans for the entire supply chains.

■Features of a "digital plant"

Reduce energy consumption via the analysis of operational data from steam traps; predict the physical properties of resulting products to curb the occurrence of defects; and analyze vibration and electrical current to perform real-time device diagnosis. These functions are managed in an integrated manner by employing the cloud.

■Staggered roll out in Japan

We are better positioned in Singapore to introduce a "digital plant" thanks to governmental support offered by Singapore's Economic Development Board and the concentrated locations of our production facilities. Accordingly, we will push ahead with this initiative in Singapore while introducing individual technologies in our facilities in Japan.

5. DLIR taking on challenge of achieving further breakthroughs in Singapore

Denka Life Innovation Research (DLIR) established

Opened in February 2017, DLIR is the Denka Group's first overseas research base specializing in the life innovation field. Taking advantage of Singapore's location, which attracts excellent human resources from regions around the globe, DLIR is engaged in the research of vaccines for tropical infectious diseases and diagnostic reagents.

(5) Summary of Q&A Sessions

1. Operating results and Forecast of fiscal 2019

1-1 Outlook for chloroprene rubber (CR)-related operations

Although CR is used in a range of fields, including automotive parts, industrial equipment, conveyer belts and agricultural machinery, overall demand decreased in the first half. Moreover, a significant recovery in demand cannot be expected in the second half. However, despite external pressures toward downward price revisions due to weak demand, our policy of maintaining current product prices is unchanged as we have positioned CR as a specialty rubber.

In addition, a decrease in sales volume granted us some leeway in production capacity. Taking advantage of this situation, we are promoting the optimization of our CR production structure encompassing two production bases, giving due consideration to product types, marketing areas and profitability, etc.

Denka Performance Elastomer (DPE), a subsidiary in the United States, is striving to address environmental concerns. Since the acquisition, DPE has operated the plant strict compliance with the currently prevailing legal regulations and emission standards. In line with the Denka Group's environmental policies, which include "minimizing emissions and waste," DPE carried out investment totaling approximately ¥4 billion toward voluntary measures aimed at reducing emissions of environmental load substances. This move enabled DPE to achieve its goal of curbing the emission of such substances by 85%.

1-2 Expansion into overseas markets with special cement additives

Having clarified targeted customer segments in China, Southeast Asia and Europe, we have seen steady progress in the user evaluation of these products. However, it will take some time until our initiatives yield notable results in terms of consolidated business performance.

1-3 Operating results forecasts for Electronics & Innovative Products

From January 2019 to the present, we have been affected by stagnant demand for spherical fused silica, which is used in semiconductors and electronic components, and highly functional films for carrier tapes. However, we expect demand to gradually recover from January 2020 onward as we have seen an upturn in the number of orders for some products.

Thanks to mega trends in xEV and communications fields, we anticipate that growth in demand for Spherical Alumina and Acetylene Black will continue in these fields. As Denka established de facto standards for these two products, we recognize that the popularization of xEVs will directly result in sales growth.

As for Acetylene Black, we expect growing demand for products for both LiB and transmission cable applications. In Singapore, our 2022 plan for products for transmission cable applications calls for achieving sales equivalent to sales of LiB use products.

1-4 Factors contributing to growth in profit from Life Innovation

In fiscal 2019, shipments of some influenza vaccines were accelerated to the first half (in contrast to shipments of the majority of these products carried out in the second half of fiscal 2018), while sales of diagnostic reagents grew in China and other markets overseas. Thanks to these factors, segment results for the first half of fiscal 2019 included a year-on-year increase in profit.

Our Diagnostic reagents for inflammatory markers enjoyed growth in demand in the targeted Chinese market. With this in mind, discussion is now under way with regard to measures aimed at boosting supply capacities by, for example, stepping up raw material procurement and expanding production facilities.

Sales of our reagent for measuring sd LDL-C, however, has been stagnant in the United States. This is due in part to financial trouble besetting local small- and medium-size checkup centers, which are our targeted customers. We are therefore reviewing our regional strategies. Meanwhile, in China we have seen ongoing growth in demand for this reagent. In Japan, we are under way to obtain approval from relevant authorities for its use as an in-vitro diagnostic reagent.

2. Current status of and future outlook for Denka's operations in Singapore

2-1 Risk associated with fluctuations in demand after increasing MS production volume

In Southeast Asia, we expect demand for LCD televisions with LED backlight, rather than demand for those adopting OLED, to grow, as consumer preferences toward affordable prices are prevalent due to rapid population growth. We are thus expecting an increase in demand for MS resin. It can also be used in construction materials and lighting equipment as a glass substitute while functioning as an alternative for PMMA and polycarbonate used in PCs and other devices. Because of this, we assume that we are well-positioned to develop potential demand for MS resin outside such conventional applications as light guiding substrates.

2-2 Trend in operational profitability in Singapore

Previously, Denka saw growth in net sales due to the commencement of manufacturing PS, a general-purpose resin, and the expansion of its production capacity. On the other hand, these measures resulted in a decline in profitability. From 2013 onward, however, profitability has improved thanks to growing demand for MS resin for use in light guiding substrates and an increasingly significant proportion of sales accounted for by Acetylene Black for use in transmission cables.

2-3 Negative factors Denka faces in Singapore

Although Denka faces such negative factors as carbon taxation and higher wages, the Company believes that these are insignificant compared with a number of benefits it enjoys, including stable accessibility to raw materials, the trustworthy government and an advantageous location as a logistics hub. Accordingly, we do not consider the aforementioned factors matters of concern.