NEWS RELEASE

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Showa Denko Maps Out New Medium-term Business Plan "The TOP 2021"

－The Main Points of a Briefing on the Plan－

Showa Denko (SDK) (TOKYO: 4004) has prepared a new medium-term consolidated business plan, "The TOP 2021," for the 2019-2021 period.

Under the current medium-term consolidated business plan, "Project 2020+," which started in January 2016 and will end in this December, the Showa Denko Group has been striving to strengthen revenue bases of its diverse businesses and expand the Group's "KOSEIHA Businesses" (individualized businesses) that maintain profitability and stability at high levels. The Showa Denko Group has taken various measures to make it possible for the Group to have as many businesses as possible which have top market shares in the global or certain scale of competitive markets, thereby strengthening the Group's resistance to market fluctuations and enhancing its corporate value.

As a result, the Showa Denko Group passed 3-year cumulative performance targets in far excess, and successfully earned cash which will support the Group's growth in the future. In Petrochemicals, Chemicals, and Inorganics segments, the Group is expected to show financial results in excess of 3-year cumulative targets. In Electronics and Aluminum segments, the Group is expected to improve profitability.

Under the new medium-term consolidated business plan, "The TOP 2021," the Showa Denko Group will change its course toward long-term business growth, thereby establishing a stable foundation which will continuously support the Group's growth far into the future.

The TOP 2021

1. **Structure of Showa Denko Group's corporate philosophy**

a) Basic idea

It is very important for the Showa Denko Group to continue constructive communication with all stakeholders including shareholders, customers, suppliers, local communities, and employees, aiming to satisfy them and enhance the value of the Group in order that the Group continuously grows and is trusted and acclaimed by society. The Showa Denko Group defines this idea as the Group's business philosophy, thereby promoting management to maximize shareholders', customers' and social value.

<Showa Denko Group's business philosophy>
We at the Showa Denko Group will provide products and services that are useful and safe and exceed our customers' expectations, thereby enhancing the value of the Group, giving satisfaction to our shareholders, and contributing to the sound growth of international society as a responsible corporate citizen.

b) Mission (The meaning of our existence) / Vision (Our goal) / Value (Means to realize Vision)

The Showa Denko Group defined its Mission, Vision and Value as follows, aiming to realize the Group's business philosophy.

Mission (The meaning of our existence):	We will satisfy all stakeholders.
Vision (Our goal):	KOSEIHA Company
Value (Means to realize Vision):	Maximization of CUSTOMER Experience

Progress in digitization of data in the world, weight reduction of cars and spread of composite materials, improvement in quality of life (QOL), spread of specialty semiconductors, suggestion of solution beyond sales of goods (X as a Service, [XaaS]), and shift from goods consumption to experience consumption, etc.… The market and social structure which the Group's customers face are changing greatly. Reading the future trends of these changes in environment is necessary for the Group in order to realize its growth. Therefore, we define "Maximization of CUSTOMER Experience" as the Group's shared concept to be called "Value." We will realize growth of our businesses in the seven market domains, namely, "Electronics," "Industrial Equipment," "Transportation," "Life Science & Healthcare," "Lifestyle (Living Environment)," "Construction/Infrastructure," and "Energy."

At the Show Denko Group, we will completely transform ourselves to wow the world. We will listen more to our customers and further hone our technology. We will create products and services that touch the heart. We will offer solutions that make society better.

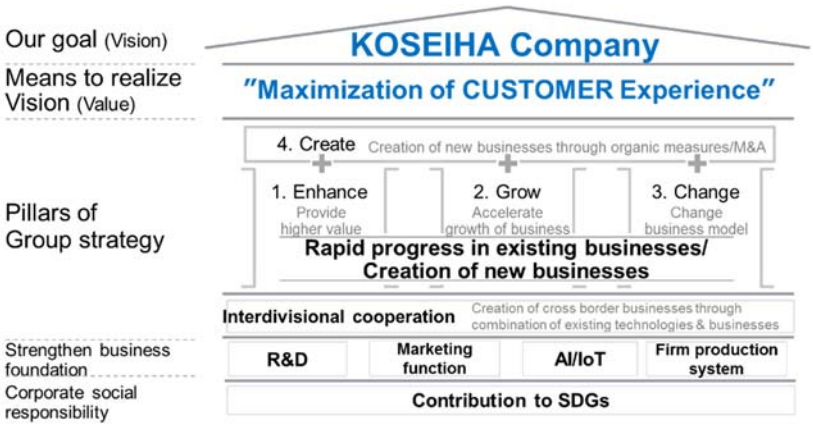
Corporate message: "Act!"
We act to touch the heart and make society better.
To start the Group's new story to wow the world, we made a clapperboard the symbol of our corporate message.
Companies of the Group are stages for employees.
This symbol also expresses the strong will of each employee to act to touch the heart and make society better.



2. New medium-term business plan –Basic concept and basic strategy-

a) Basic concept

"KOSEIHA Company," which is our Vision, is an aggregate of KOSEIHA Businesses that can maintain high levels of profitability and stability. The Group aims to make half or more if its businesses KOSEIHA Businesses by 2025. Therefore, in The TOP 2021, the Group will change its course toward long-term business growth, thereby establishing a stable foundation which will continuously support the Group's growth far into the future.



In addition, we must maximize shareholders' value, customers' value and social value in order to accomplish our Mission, "We will satisfy all stakeholders." To accomplish this,

the Group must mobilize each employee's power. The Group will provide stages full of pride and dreams for the employees to support their value creation activities, aiming to make itself a promising corporate group.

b) Basic strategy

1) Dramatic improvement in existing businesses (Enhance / Grow / Change)

We redefined the courses of action for each business in accordance with its battlefield and financial goal. There are three categories (portfolios) to which our businesses belong to.

Enhance: Businesses categorized into this are positioned as businesses that should continuously improve profitability. These businesses compete in mature markets and enhance offering value by evolving business models.
We will aim to make petrochemicals, industrial gases and basic chemicals businesses No.1 in specific regions/fields. As for HD media and graphite electrode businesses, we will aim to make these businesses global No.1 by taking advantage of our superiority in technology and quality and deepening customer relations at home and abroad.

Grow: Businesses categorized into this are positioned as businesses that should realize high growth rate and high profitability simultaneously. We will accelerate growth of these businesses in growing market at home and abroad. We will aim to make our electronic chemicals business global No.1 in terms of market share, growth rate and profitability. We will also aim to make our advanced battery materials, electronics materials and SiC epitaxial wafer for power devices businesses establish leading presence in target markets (i.e., establish bases for rapid growth and high profitability).

Change: Businesses categorized into this are positioned as businesses that should increase sales while maintaining profitability. We will change business models of them, considering expansion into downstream.
We will aim to make our aluminum can and aluminum rolled products businesses expand overseas business activities. We will also aim to make our aluminum specialty components, functional chemicals and ceramics businesses shift to solution oriented businesses, and change them to high-value adding businesses.

2) Creation of new businesses (Create)

To realize continuous growth of the Group, we must create new businesses. Therefore, we will take strategic discontinuous measures such as M&As, in addition to R&D to realize organic growth of the Group. We will invest ¥150 billion in these discontinuous measures in the three-year period of the new business plan, and positively promote M&As and formation of business alliances.

3) Inter-business cooperation

The Group has wide-ranging-businesses and materials-related-technologies concerning inorganics, organics, aluminum, etc. The Group also has elemental technologies concerning process design, process analysis, evaluation, etc. We will aim to offer new added-value and solutions in growing markets through combination of these existing businesses and technologies. As the first case of such inter-business cooperation, we will start a project to create new composite materials for cars. This new project will offer solutions such as composite materials to optimize light weight/rigidity, heat radiation/heat storage, electrical insulation and adhesion between different materials, adapted to future

changes in automotive industry which will change the industry's requirements for materials.

4) Strengthening base of strategy

To conduct business activities globally and realize continuous business growth, the Showa Denko Group must fulfill corporate social responsibility and promote integrated Group management with awareness of future changes in market environment and technologies, in order to contribute to solution of social issues known as Sustainable Development Goals (SDGs). Therefore, the Group will promote various measures which will also be incorporated into the next medium-term consolidated business plan starting in January 2022, including strengthening of R&D functions and marketing functions, and introduction of AI/IoT.

3. Performance targets

a) Overall targets

(Unit: Billion yen)	2019 – 2021 (3-year total)	2016 – 2018 (3-year total)
Net sales	3,400.0	2,436.5
Operating income	480.0	289.8
Operating margin	14.1%	11.9%
Net income attributable to owners of the parent	330.0	164.7
ROA	12.6%	9.5%
ROE	19.5%	14.6%

Assumptions: For 2019, ¥105/US$, ¥126/€, Domestic naphtha price=¥51,600/KL, Aluminum LME=$2,150/t
For 2020 & 2021, ¥100/US$, ¥125/€, Domestic naphtha price=¥49,200/KL, Aluminum LME=$2,150/t
Note 1: ROA is based on operating income, and the simple average of 3 years.
Note 2: ROE is the simple average of 3 years.

b) Images of performance targets by business portfolio

(Unit: Billion yen)	2019 – 2021 (3-year total)	2016 – 2018 (3-year total)	Increase/ decrease
Enhance	2,260.0	1,502.3	+50%
	435.0	262.9	+65%
Grow	290.0	194.2	+49%
	37.0	19.2	+93%
Change	560.0	494.5	+13%
	34.0	28.4	+20%

Note 1: Upper number is net sales. Lower number is operating income.
Note 2: These numbers do not include Others segment nor Adjustments.

c) Images of performance targets by segment

(Unit: Billion yen)	2019 - 2021 (3-year total)	2016 - 2018 (3-year total)
Petrochemicals	890.0	694.9
	60.0	74.0
Chemicals	528.0	442.3
	50.0	48.3
Electronics	379.0	357.5
	53.0	51.9
Inorganics	950.0	379.3
	325.0	119.2
Aluminum	363.0	317.0
	18.0	17.1

Note 1: Upper number is net sales. Lower number is operating income
Note 2: These numbers do not include Others segment nor Adjustments.
Note 3: The numbers of Electronics segment for 2016-2018 (3-year total) include SiC epitaxial-wafer for power devices.

4. Financial strategy

a) Basic strategy

To realize continuous growth of the Group, we must invest in a timely and appropriate manner. The Group sets clear criteria for capital investment, and carefully select investments. We use free cash flow for investment to improve productivity, and improve business efficiency through use of Cash Conversion Cycle (CCC) as management tool. We will pay dividends in a stable manner, and promote financial policy, keeping increase in return to shareholders in mind, while executing M&As and other discontinuous investment.

b) Financial targets

We set specific targets for D/E ratio, total return ratio and total investment, and will strive to achieve them. We will aim to upgrade our rating from current A- positive to A or higher.

D/E ratio:	About 0.5 times (as of December 31, 2021)
Total return ratio:	About 30% (in 2021)
Total investment:	¥400 billion (2019 – 2021 total)

Note: Total investment is the total of capital investment (investment in facility improvement = ¥120 billion, investment in organic growth = ¥130 billion), and investment in M&A = ¥150 billion.

5. R&D strategy

a) Basic strategy

We will focus our R&D resources on 10 technical fields corresponding to 7 priority business domains, and accelerate creation of value-adding pipelines for businesses. To achieve financial targets mentioned above, we will increase R&D personnel for about 10% and increase R&D investment for about 30% by investing in progressing themes of development, from the amount invested during the three-year period of Project 2020+.

b) Establishment of new base for global R&D: “Stage for Fusion”

We have decided to move our R&D function from Chiba City to Yokohama area (Kanagawa Ward, Yokohama City) to establish a new base as global headquarters of the Group’s R&D activities to be named “Stage for Fusion”

The new base will function as the hub of the Group’s R&D activities which gathers the Group’s technologies and knowledge. This will take three major roles: 1) Promotion of search for products/technologies that may become socially important in the future, and R&D to put these products/technologies into practical use; 2) Contribution to realization of Society 5.0 through improvement of electronics-materials related technologies; and 3) Creation of chemicals/materials development method which utilizes AI.

The new facility will also have spaces which can accommodate conferences, trainings and workshops. At “Stage for Fusion,” many talented persons will gather from all over the world, communicate each other, promote open innovation, and create new value.

This facility will come into service in spring 2022.

6. Others

a) Capital investment

The total of our capital investment to improve facilities and promote organic growth during the 3-year period (2019 – 2021) is expected to be ¥250 billion, including investment to increase production capacity for SiC epitaxial-wafer for power devices and other products, to replace old facilities and equipment, and to strengthen measures that support our business continuity plan (BCP).

b) AI/IoT strategy

In March 2018, SDK organized AI Promotion Project, and has been promoting utilization of AI/IoT, aiming mainly to improve the accuracy of estimates in the process of R&D and facility operation. Our Plants, Divisions and Business Development Center cooperatively promoted many projects including those to develop materials by utilizing materials informatics, to map out method to develop functional materials by utilizing computational science and AI, to develop systems to utilize accumulated technical documents, and to develop technologies to sense in real time the occurrence of changes in facility status and abnormal incidents that might be warning signs of troubles. The Project also promoted development projects in cooperation with outside entities.

We will invest in facilities and equipment to introduce AI/IoT technologies into our production processes and plants during the period of The TOP 2021.

c) Contribution to achievement of Sustainable Development Goals (SDGs)

Aiming to realize the Group's business philosophy and sustainable development of international society and the Group, we stipulated in "Our Code of Conduct" how each employee of the Group should behave and do what, and have been observing it. We also have been offering our products, technologies and services, aiming to promote business activities that are in line with 17 goals stated in SDGs. For example, we produce ammonia by utilizing hydrogen produced through chemical recycling of used plastics. This is our original recycling technology. We also offer graphite electrodes which are used in electric arc furnaces to melt steel scraps in order to recycle them. These technologies and products also contributes to strengthening of our business foundations.

The Showa Denko Group, through its business activities, will continue to make its maximum effort to contribute to creation of society where affluence and sustainability are harmonized, as "a Social Contribution Company."

7. Strategy for each business (Highlights)

a) Graphite electrodes (Carbon)

Graphite electrodes are used in electric arc furnaces to melt steel scraps. The tight supply-demand situation in the graphite electrode market is expected to continue due to enforcement of strict environmental regulation in China and other factors. The Showa Denko Group is a leading graphite electrode manufacturer which has the largest production capacity in the world. We will continue to provide our customers with high-quality graphite electrodes in a stable manner by making maximum use of the increase in production capacity of our US subsidiary amounting to 30,000 tons per year, and taking maximum advantage of business integration with SHOWA DENKO CARBON Holding GmbH (former SGL GE Holding GmbH). We will aim to improve the stability of the basis of our earning structure through reform of our sales system and stabilization of sales prices and raw-material costs in order to improve our tolerance to market fluctuation.

b) HD media

Progress in AI/IoT and utilization of big data have been increasing the amount of generated and stored data in the world very rapidly. We expect that the demand for HDDs will remain stable during the period of The TOP 2021 because the per-bit prices of HDDs continue to be less than those of SSDs. Large storage capacities and technologies to realize high-density data storage are pillars that support price competitiveness of HDDs. The Group has been developing leading-edge large-capacity HD media. We will accelerate development of next-generation large-capacity HD media technology through collaboration with HDD manufacturers, and continue providing our customers with Best In Class products which they require by improving our grinding and membrane formation technologies.

c) Petrochemicals

We expect that the demand for petrochemical products in Asia will remain strong due mainly to the rises in economic and income levels in that area, despite the inflow of petrochemical products made from shale gas/oil and construction of new/additional petrochemical plants in Asia. In 2018, SDK achieved full-capacity operation of its ethylene plant for four consecutive years while implementing the policy to give priority to the safe and stable operation of the plant, though many of petrochemical plants in Japan require renewal/replacement of facilities and equipment due to deterioration over time. We will continue contributing to stable supply of petrochemical products, and promote development of new derivatives and cooperation with other plant operators inside and outside the Oita Complex.

d) High-purity gases for electronics (Electronic chemicals)

The tight supply-demand situation of high-purity gases for electronics is expected to continue due to strong growth of the markets for semiconductor memory chips and LCD panels and increase in the amount of high-purity gases used in production of 3D-NANDs resulting from the increase in numbers of layers in 3D-NAND flash. The Showa Denko Group is a leading manufacturer of specialty gases providing more than 20 kinds of gases including ammonia, chlorine and fluoride gases. During the period of Project 2020+, we promoted establishment and expansion of facilities to produce gases for etching and sales bases in the US and China, and strengthening of our distribution, procurement and marketing functions. In and after 2019, we will continue developing and launching high-value added new gases, capital investment and formation of business alliances with other gas manufacturers, aiming to achieve growth of more than 10% per year, which exceeds the expected growth of global semiconductor market.

e) SiC epitaxial wafer for power devices

SiC-based power devices are attracting public attention because they are recognized as key devices for energy conservation. The demand for SiC epitaxial wafers for power devices, which contribute to energy conservation, is expected to continue increasing in medium to long term due to the spread of motor-operated cars and automatic driving.
SDK has been supplying SiC epitaxial-wafer for power devices with the best quality in the world, and promoting expansion of its facilities to produce “High-Grade Epi.” We will continue contributing to the spread of SiC-based power devices through acceleration of development of technologies to realize commercial use of Full-SiC modules and leading-edge epitaxial wafer production technologies.

For further information, contact:
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Note: Performance forecast and other statements pertaining to the future as contained in this presentation are based on the information available as of today and assumptions as of today regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the economic conditions, costs of naphtha and other raw materials, demand for our products such as graphite electrodes and other commodities, market conditions, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.