

Long-term Vision for Newly Integrated Company (2021~2030)

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SHOWA DENKO K.K.

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- Long-term vision and synergy for newly integrated company (Business growth + Innovation)
- 2. Long-term numerical targets
- Short-to-medium-term synergy (Business portfolio restructuring, profit improvement + Asset streamlining, organizational integration)



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1. Long-term vision and synergy for newly integrated company **Purpose of newly integrated company**



Change society through the power of chemistry

Contribute to the sustainable development of global society by creating functions required of the times as an advanced material partner 1. Long-term vision and synergy for newly integrated company Ideal state of newly integrated company



Company that contributes to a sustainable global society

Company with a strong presence in the global market

1. Long-term vision and synergy for newly integrated company Understanding of external environment and significance of integration



Amid demand for materials innovation, contribute to a sustainable society by integrating midstream and downstream technologies



1. Long-term vision and synergy for newly integrated company Portfolio management to realize sustainable growth



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Achieve high growth with a highly complementary business portfolio of "Core Growth", "Next-Generation", "Stable Earnings" and "Fundamental Technologies/Materials"businesses

Business acquisitions in new areas through M&A etc.



1. Long-term vision and synergy for newly integrated company Post-integration business portfolio



Each of the 4 business categories possesses a competitive advantage commensurate with their respective roles and generates synergies mainly using technologies and materials from the "Fundamental Technologies/Materials" business to provide functions to the market



Highly universal business portfolio that can be deployed in promising markets in the future by continuously refining technologies and materials of "Fundamental Technologies/Materials" business in a wide range of businesses

Source: Researched by Showa Denko

1. Long-term vision and synergy for newly integrated company Market assessment and strategy for "Core Growth"/"Next-Generation" businesses



Compete with good understanding of differences in market stages and our position in each growth business



1. Long-term vision and synergy for newly integrated company Our position in the semiconductor-related materials market



Key products of Showa Denko Group

As the global No.1 semiconductor-related materials manufacturer, develop competitive business both in wafer/packaging processes to drive corporate growth

Global sales of key semiconductor-related materials players¹ (2020 forecast)



1. Long-term vision and synergy for newly integrated company Current trends and business development in Mobility



Capture growing needs for weight reduction and heat management with unique business models;

Draw on business portfolio to manage needs with high certainty and uncertainty



1. Long-term vision and synergy for newly integrated company Initiatives in Regenerative Medicine business



Leverage first-mover advantage as a front-runner in contract development and manufacture of regenerative medicines to globally develop a competitive business in growing market





1. Long-term vision and synergy for newly integrated company Projected innovation impact



(incl. synergy)

180

2025

0

2020

Expand growth businesses to a scale of 600 billion yen by 2030 through innovations including technological synergies resulting from integration of the two companies



1. Does not include operating income based on sales of non-innovations

480

2030

1. Long-term vision and synergy for newly integrated company Examples of synergy in growth business (Semiconductor wafer process)



Semiconductor wafer process business



Key related products

Functional polymers
Ceramics
High-purity gases
High-purity solvent
Polishing materials

Projected semiconductor wafer shipment area (100 mil. square inches)



: Showa Denko business

Medium-to-long term technical challenge: Arrival of technological innovation wall

With demand for higher performance, market is facing a wall of technological innovation

- Semiconductor performance is becoming faster and larger than ever before due to expansion of 5G, Cloud, automated driving, etc.
- GAFA, a leader in transformation, has started manufacturing key devices in house, and has approached material manufacturers in search of advanced components and new materials
- Meanwhile, the materials market is facing a wall of innovation; initiatives to achieve breakthroughs including new technical approaches are required

Our competitive advantage: Resolution of technology trade-offs through technological synergy

Integration of the two companies will make the resolution of technology tradeoffs possible and will lead to the creation of further innovations

Ex.) CMP slurry

- Utilize Showa Denko's abrasive technology (particle size homogenization, surface potential control) for nano-ceria for which Showa Denko Materials gained top share through its solution blending technology
- Break through technology trade-offs between high-speed polishing and low scratching to produce new products that support next-generation 2nm fine pitch

: Showa Denko Materials business

Source: Researched/estimated by Showa Denko

1. Long-term vision and synergy for newly integrated company Examples of synergy in growth business (Semiconductor packaging process)





: Showa Denko Materials business

1. Dk = Relative Permittivity, Df = Dielectric Dissipation Factor Source: Researched/estimated by Showa Denko

: Showa Denko business

1. Long-term vision and synergy for newly integrated company Examples of synergy in growth business (Heat management)



Heat management business (Power module)



Key related products

Aluminum specialty components			
Ceramics			
SiC epitaxial wafers			
Sintered materials			
Encapsulants			

Projected power module market scale (mil. units)



Medium-to-long term technical challenge: Complexity of heat challenges due to vehicle digitization

With a shift to electronic control of vehicles, new **heat challenges** of built-in electronic devices will occur and **partial outsourcing** by power module manufacturers will begin as a result of expansion of their frontlines

 However, as issues such as interfacial resistance and control of difference in co-efficient of thermal expansion need to be solved by combining materials, simulation and module evaluation technologies are also required in addition to the materials lineup

Our competitive advantage: Offering of heat management materials package

Leverage our unique product line-up and analysis/module evaluation technologies to demonstrate functions resulting from combining materials to customers and solve technical challenges

• Particularly for SiC power devices, leverage the fact that we are the only company that has SiC epitaxial wafers among heat management materials providers and make materials package proposals that draw out the potential of SiC, with the aim of gaining top share in the market

: Showa Denko business

: Showa Denko Materials business

Source: Researched by Showa Denko

1. Long-term vision and synergy for newly integrated company Integration of technologies of the two companies



Continuously provide the market with a wide range of functions by integrating and enhancing technologies, and enable the creation and development of new businesses through "self-directed portfolio reform"



1. Long-term vision and synergy for newly integrated company Examples of contributions to SDGs through diverse technologies and businesses



As a newly integrated company, contribute to SDGs through various technologies and businesses, and further strengthen ESG efforts





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2. Long-term numerical targets Thinking behind long-term numerical targets



Define TSR (Total Shareholders Return) as a comprehensive indicator of corporate value enhancement, with the aim of satisfying all stakeholders through various initiatives and synergy creation

Business philosophy

"We will satisfy all stakeholders"

• 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.



Perspective on management indicators

- Commit to "TSR" as a comprehensive indicator of corporate value enhancement
- As drivers for TSR (%) improvement, define EBITDA margin for business strategy and net D/E ratio etc. for financial strategy as KPIs

2. Long-term numerical targets Long-term numerical targets



As long-term numerical targets for 2025, set EBITDA margin of 20%, ROE of 15%, and net D/E ratio close to 1.0 times

		2020 ²		2025	2030
		(Institutional accounting basis)	(Annualized basis)		
TSR	(%)	Aim to be among	Top 25% in medium to	chemicals indu long term	stry over the
Sales ¹	(Tri. yen)	0.96	1.2	1.6	1.8~1.9
EBITDA ¹	(100 mil. yen)	500	900	3,200	
EBITDA margin	(%)	5%	8%	20%	
ROE	(%)	-22%	-	15%	
Net D/E ratio	(times)	1.9	-	Close to 1.0	

1. Approximate values in case of future sale of the business are not taken into consideration; 2. Institutional accounting figures include the results of Showa Denko Materials for the second half of the year (Jul. 2020-Dec. 2020) as of the 2Q financial results on August 12. Annualized figures are the combined figures of Showa Denko Materials' figures (Jan. 2020-Jun. 2020) and the institutional accounting figures (excluding an increase in COGS related to inventory step-up)

2. Long-term numerical targets **Profit improvement drivers through 2025**



Achieve EBITDA margin of 20% in 2025 through business growth and innovation, with a focus on Electronics/Mobility, as well as structural reform and recovery from COVID-19, etc.

(EBITDA margin)



2. Long-term numerical targets Shareholder return policy



For the time being, strive to pay out dividend as stably as possible, while prioritizing necessary growth investment and bringing net D/E ratio close to 1.0 times, and after that, aim for total return ratio of 30% over the medium to long term



In view of the post-integration situation, it's necessary to prioritize debt repayment and growth investment to a certain degree in order to increase profits Medium-to-long-term policy on shareholder return

- For the time being, prioritize repaying debt to <u>bring</u> <u>net D/E ratio close to 1.0 times</u> as well as investing in growth businesses, while striving to pay dividend as stably as possible
- Once net D/E ratio is brought close to 1.0 times in the medium term and a certain level of business growth is achieved, <u>aim for total return ratio of 30%</u> once again

2. Long-term numerical targets Thinking behind compensation system



Link a portion of executive compensation to management indicators to ensure that management is committed to achieving results (specific indicators and weighting for each item are under consideration)

Thinking behind compensation system

- With the business philosophy "We will satisfy all stakeholders," all executives are committed to realizing it
- Link executive compensation to management indicators to enhance corporate value so as to ensure that management is committed to delivering results

Example KPIs linked to compensation



 Target KPIs, weighting for each item, and performance-based compensation ratio are under consideration



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3. Short-to-medium-term synergy Overview of short-to-medium-term initiatives



As short-to-medium-term initiatives, we will steadily restructure our business portfolio, improve profit structure, streamline assets, and fully integrate organizations

Business portfolio restructuring

 Restructure business portfolio, and sell off businesses with EV (enterprise value) equivalent to 200 bil. Yen

Improvement of profit structure/ asset streamlining

- Cut direct/indirect costs through integration
- Reduce working capital, sell off marketable securities, etc.





Organizational integration

- Substantively integrate organization in 2021
 - Unify chain of command in July, integrate head office in October
- Fully integrate as a corporate entity in 2023

3. Short-to-medium-term synergy Initiatives to improve profit structure (1/2)



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With cumulative initiatives, we're on track to achieve an impact of 28 billion yen on the current profit structure

	Initiative description	improvement
		(FY23, 100 mil. yen)
Sales-related profit improvement	 Review sales policy for customers/agents, etc. 	30
Procurement/logistics cost reduction	 Consolidate common materials/ logistics-related suppliers Share transportation vehicles, warehouses, staff, etc. 	30
Productivity improvement	Improve productivity of production lines	20
Rent reduction	 Reduce rent by integrating head offices 	10
Reduction of other costs	Reduce common costs, SG&A, etc.	70
Operational optimization	 Carry out structural reforms through organizational integration and operational efficiency improvement 	120 (1,500 staff)

Companywide total 280

3. Short-to-medium-term synergy Initiatives to improve profit structure (2/2)



Achieve a cumulative impact by steadily implementing the following initiatives

Example of improvement initiatives



Profit increase through new product development/ cross-selling

 Increase profits through development of Showa Denko Materials' products by utilizing Showa Denko's materials, and cross-selling between the 2 companies



Further reduction of materials cost through integration

• Realize further synergy through integration of procurement organizations, and evolve cost reduction activities



Consolidation of operational sites

• Reduce rents by consolidating sites in Japan and abroad, with the exception of head offices



Productivity improvement for post-integration organization

• Raise productivity by improving operations, including digitization, and reviewing management systems

3. Short-to-medium-term synergy Asset streamlining



	Forecast 50 billio deterioratin Also need to consider	on yen for immediate countermeasures against og economic environment (through 2021); r additional initiatives over the medium to long term	
		Initiative description	Expected amount
\frown			(100 mil. yen)
	Reduction of Working capital	 Compress inventory through supply chain improvement, etc. 	250
S	Sell-off of marketable securities	 Sell off cross-shareholdings 	200
	Sell-off of other assets	 Sell off shares of affiliates Sell off excess assets 	50

Companywide total 500

3. Short-to-medium-term synergy Organizational/business integration and restructuring



Integrate/restructure Showa Denko's and Showa Denko Materials' businesses, based on strategic business positioning



3. Short-to-medium-term synergy Organizational integration-Cooperation among head office functions (Research & Development)



Institute for Integrated Product Development aims to create synergy by fusing diverse and dispersed technologies from Showa Denko and Showa Denko Materials

"Stage for Fusion" overview (Kanagawa Ward, Yokohama City)



%Scheduled to be completed in spring 2022

- Create and promote research and development themes that connect diverse technology fields through fusion of information across businesses
- Also functions as a center for collaboration with external domestic/overseas partners

Example themes



Development of materials and composites for next-generation high-speed communication

 Leverage Showa Denko's ceramic and organic synthesis technologies and Showa Denko Materials' composite technologies to create elemental technologies and new materials required in the 5G era



Creation of a platform from the perspective of SDGs/ ESG investment

• Ensure that the perspective and philosophy of SDGs/ESG investment takes root across the Showa Denko Group, and create new themes from a technological perspective

3. Short-to-medium-term synergy Organizational integration-PMI progress, integration milestones



We're making steady progress on PMI, with the milestone of integration as a corporate entity in January 2023 (Day 3), following substantive integration in July 2021 (Day 2) and integration of head office in October of the same year







Image of group performance for 2021/ Major businesses' short-term trends

Image of group performance for 2021



For 2021, we aim to achieve net sales of ¥1,250 billion or more, operating income of ¥40 billion or more, and EBITDA of ¥150 billion or more



1. Performance forecast for full-year 2020, including expected results of Showa Denko Materials for the second half of 2020, announced on August 12, 2020 concurrently with the financial results for the first half of 2020

2. EBITDA = Operating income + Depreciation expense + Depreciation of goodwill

Major businesses' market environment & trends

2020: Sales and profit dropped due to COVID-19, but steady in semiconductor and electronics business 2021: Recovery of performance due to market recovery in 2H and the effect of cost reduction in 2020

	2020	2021 and after	Measures
Graphite	Customers' inventory adjustment prolonged by COVID-19 ends	Recovery in steel production will increase demand Sales and profit will improve	 Reduce production capacity. Normalize inventory. Cost reduction.
electrode	J • Big reduction in sales and profit	• Sales and profit will improve	 Depreciate book value of inventory
HD modia	Failed to achieve sales plan due to COVID-19	• Expansion of data centers will continue to increase demand	 Start to supply next- generation MAMR media
	Watch US-China trade friction carefully	Sales and profit will increase	 Accelerate development of HAMR media
Petro-	Sales/profit decreased due to COVID-19 and a fall in naphtha	 Additional plants will be established outside Japan, but our plant will 	 Start full-scale production of new derivatives
chemicals	price. Recovery in China in 2H improved sales/profit.	to increased demand.	 Continue to strengthen earning power
High-purity	Growth of the demand for semiconductors returns. Market	• Expansion of semiconductor market will continue. Demand	 Strengthen supply system in Asia and promote local consumption of
electronics	ctronics for a continues under COVID-19.	for high-purity gases will maintain two-digit growth rate.	locally produced productsCultivate US/European market
Information	Steady growth of demand due to strong semiconductor market	• Through continuous response to the progress in 5G	Promote development of new products
and communication ¹		technology, we will achieve high growth rate.	 Invest positively in promising fields
Mobility ¹	Demand for cars in the world is recovering following the	Through solid launch of products for new models, we	 Steadily start production of backlog new products
	recovery in China. Recovery started in 2H.	will realize business growth that exceeds market recovery.	 R&D for development of products in line with the trend
ends: 💓 Growth or st	eady; 🔆 Partial demand recovery;	Stagnant market ; 🛧 Weak den	nand, adjustment of production
1. Showa Denko Materials			

Graphite electrodes: Demand bottoms out and recovers



In 2020, we devaluated inventory of GEs in the 1H to be in line with a decrease in demand caused by a decrease in steel production, and achieved normalization of inventory at the end of the year. In 2021, we will improve sales and profitability through reduction of inventory, cost reduction and complete adjustment of supply and demand. In a medium term, demand will continue to increase, and our GE business will show good performance.



HD media



Demand for HD media for use in data centers is strong We will increase supply of high-quality large-capacity media

	2020	2021 and after
	Though market was affected by COVID-19, demand for HD media for use in data centers remained strong	Expansion of data centers continuously increases the demand for HD media
Performance/ Market environment	 Due to COVID-19, demand for HD media decreased and we failed to achieve sales plan. We pay close attention to US-China trade friction Demand for HD media for use in near-line servers increased steadily. However, shift from HDD to SSD in the demand for storage for PCs and game machines was accelerated. →Demand for external HDDs for PCs is strong Shipment volume of HDDs for use in near-line servers in 2020 will be an all-time record exceeding 60 million units 	 Sales and profit will increase Increase in demand for data centers will continue, and the demand for large capacity media for near-line servers will be strong Largest-ever shipment volumes of HD media is expected
Measures	 Increase supply of high-quality large-capacity HD media Continue development of "Best in Class" products Prepare for mass production of next-generation MAMR technology media Develop media for HAMR technology Continue productivity improvement and cost reduction 	 As preparation to increase the supply of high-quality large-capacity media, we will increase our capacity to produce aluminum substrates and strengthen supply chain Start mass production of MAMR media and accelerate development of them Continue development of HAMR media We will improve productivity and reduce cost through utilization of IoT/AI

Petrochemicals



The plant has been operating at full capacity since mid 2020 We ensure profitability by taking the advantage of recovery of demand

ALER	2020	2021 and after
	Sales and profit decreased. However, sales and profit started to recover in 2H due to the recover of Chinese economy	Recovery of global economy will increase demand Sales and profit will recover
Performance Market environmen	 In the 1H, operating rate decreased due to a decrease in demand caused by COVID-19. In the 2H, the plant has been operating at full capacity due to the recovery of Chinese economy Negative spread in naphtha and crude-oil prices in 1H depressed yearly profit In addition to the increase in demand for packages for food and daily necessities, recovery of car production has been increasing demand for petrochemicals 	 Though there will be negative impact of establishment of additional plants in Asian and Middle East countries, we will continue full-capacity operation since we anticipate increase of demand for petrochemicals in East Asia Crude-oil and naphtha prices will be stable. Spread between production cost and sales price of major products including ethylene will increase.
Measures	 Start production of new derivative (1,3-BG) Improvement in catalysts enabled us to continue operation of ethyl acetate plant for 2 years Continue effort to strengthen revenue base, improve profitability and stability Cultivate new customers. Extend life of catalysts. Predict equipment failure and execute preventive maintenance. Develop new derivatives Thorough execution of safe and stable operation. 	 Establish sales portfolio which is resistant to income fluctuation Improve profitability of organic products through improvement on catalysts and operation management Implement flexible procurement of raw material responding to changes in market environment Strengthen export taking advantage of location, and maintain high operating rate.

High-purity gases for electronics



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Two-digit growth rate of high-purity gas business will continue due to the increase in demand for semiconductors



1. Source: 2020WSTS

Information and communication (Showa Denko Materials)

Rapid growth of semiconductor market will continue. Recovery of smartphone market will also help us to expand the business

2021 and after

2020



Mobility (Showa Denko Materials)



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Ensure steady start of production of backlog products for new models, and aim to achieve more-than-market-average growth

2021 and after 2020 Though car market was Mild recovery of car stagnant in the 1H, it is market is expected recovering in the 2H Recovery of car market and existing order for Worldwide production of cars significantly products for each manufacturer's new decreased in the 1H due to the pandemic of models will lead recovery of our business COVID-19 performance Performance/ In the 2H, market prices of our products are Market Global car production¹ (Million) environment rapidly recovering due to an increase in the About 6%/year demand for cars in China, Europe and the US 100 and the start-up of production of new models 50 0 2019 2020 2021 2022 2023 2024 2025 Start production of backlog parts for new models • Products for new models will contribute to Back doors, copper free disc pads, etc. recovery of our performance Develop products for next-generation cars Start production of backlog products for new Respond to the demand for weight models steadily reduction, electrification, and heat Measures Continue development of products for nextmanagement generation cars. Strengthen marketing effort Promote sales activities of products for to promote sales of products for nextpromising next-generation models generation cars. Respond to the demand for weight • Expand customer base, and increase sales to new customers in North America and Japan reduction, electrification, and heat 1. Source: LMC Automotive management



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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 effect of the pandemic of COVID-19 on the world economy, 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.