



1st Half 2021 Financial Results / Full-year Performance Forecast for 2021 Tasks and Strategies



August 11, 2021

SHOWA DENKO K.K.

Kohei Morikawa, President & CEO

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1. Summary

<1st Half 2021>

- **Substantial uptick in information and communication business together with growth of the semiconductor market.**
- **Sales volumes of graphite electrodes continue to increase due to strong demand**
- **We are confident to obtain a certain level of results in business portfolio restructuring.**



<2nd half 2021>

- **Coupled with growth in information and communication business and a recovery in automotive parts, demand is expected to remain strong in graphite electrodes and petrochemicals. In HD media, demand for our high-capacity products is likely to increase.**
- **We will steadily implement PMI (post merger integration) in accordance with the long-term vision toward complete integration.**
- The growth of the semiconductor market outperformed our forecast, and the growth of the sales of our semiconductor related products exceeded market growth.
- In the mobility market, although we expect impact from an insufficient supply of semiconductors, there will be progress in the launch of new programs and we will continue to show good performance.
- In the graphite electrodes business, sales will increase owing to the solid performance at our customers' electric furnaces and their capacity utilization will rise to around 90% in the 2nd half.
- We have started specific operations for substantial integration, including setting up preparation offices for CXOs and new business headquarters.

2. 1st half 2021 financial results and 2021 performance forecast

Business performance and full-year performance forecast



(Unit: Billion yen)

	2020			2021 forecast		
	1st Half (Actual+ institutional*)	2nd Half (Actual)	Annualized basis*	1H (Actual)	2H (Forecast)	2021 forecast
Net sales	604.9	647.1	1,251.9	693.4	706.6	1,400.0
Operating income	-32.4	6.4	-26.0	47.6	37.4	85.0
Net income attributable to owners of the parent	-70.2	-21.7	-91.9	-13.4	-11.6	-25.0
EBITDA (Sales %)	13.0	76.7	89.7	106.3	96.2	202.5
	2.1%	11.9%	7.2%	15.3%	13.6%	14.5%
Annual dividend			¥65			¥65

*Showa Denko Materials's results for the period from the beginning of January 2020 to June 2020 combined with figures based on institutional accounting (including the amount equivalent to amortization expenses such as goodwill in 2H).

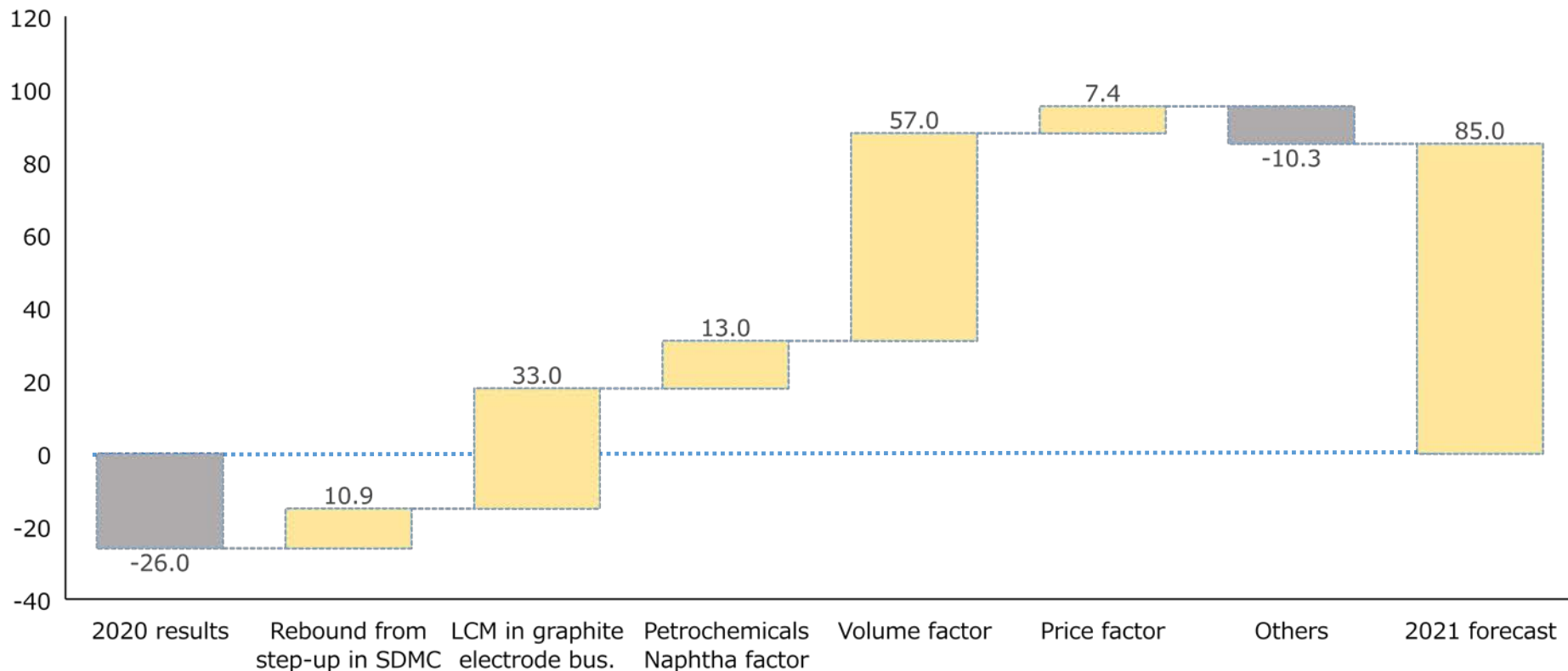
2. 1st half 2021 financial results and 2021 performance forecast

Operating income breakdown by factor (2020 actual results vs. 2021 forecast)



Volume factor: The demand for HD media for use in data centers and materials used in the semiconductor industry remain strong.

(Unit: Billion yen)



(Note: Operating income for 2020 is on annualized basis.)

2. 1st half 2021 financial results and 2021 performance forecast

Net sales & EBITDA by portfolio



(Unit: Billion yen)

"Core Growth" business "Next-Generation" business	2020		2021 forecast b	Annual increase/ decrease b-a (Change in %)
	Institutional accounting basis	Annualized basis* a		
Net sales	257.1	430.2	509.4	79.2 (+18.4%)
EBITDA	42.6	62.3	95.1	32.8 (+52.6%)
EBITDA margin	16.6%	14.5%	18.7%	(+4.2%)

"Stable Earnings" business "Fundamental Technologies/Materials" business	2020		2021 forecast b	Annual increase/ decrease b-a (Change in %)
	Institutional accounting basis	Annualized basis* a		
Net sales	716.6	821.7	890.6	68.9 (+8.4%)
EBITDA	15.9	27.4	107.4	80.0 (+292.1%)
EBITDA margin	2.2%	3.3%	12.1%	(+8.8%)

*Regarding the results for the period from the beginning of January 2020 to June 2020 for Showa Denko Materials, figures were combined based on institutional accounting (including the amount equivalent to amortization expenses, including goodwill in 2H).

3. Overview of major businesses

Information and Communication (1)



1st half of 2021



Performance



Given the favorable trends in the market for semiconductor-related products, we achieved a sharp upturn from the initial forecast and promoted measures for future growth

- Increased production of copper-clad laminates for semiconductor packaging substrates at the new factory in Taiwan
- Prepared to launch a new plant in South Korea and expanded capacity of a plant in Taiwan, in order to further expand production capacity for CMP slurry, and increased production via a collaboration with the Shiojiri Plant
- In high-purity gases used for electronics, we poured energies into stable supplies through utilization of not only domestic sites but also overseas sites
- Aiming to make our next-generation semiconductor packaging the de facto standard, decided to create an advanced packaging evaluation platform consisting of substrate, equipment and material manufacturers (JOINT* 2). Regarding this project, SDK Group has been accredited by the Ministry of Economy, Trade and Industry and the New Energy and Industrial Technology Development Organization (NEDO) as an executor of “The Public Program to Promote Research and Development of the Basis for Post 5G Telecommunication Systems”

*JOINT: Jisso Open Innovation Network of Tops

3. Overview of major businesses

Information and Communication (2)



2nd half of 2021

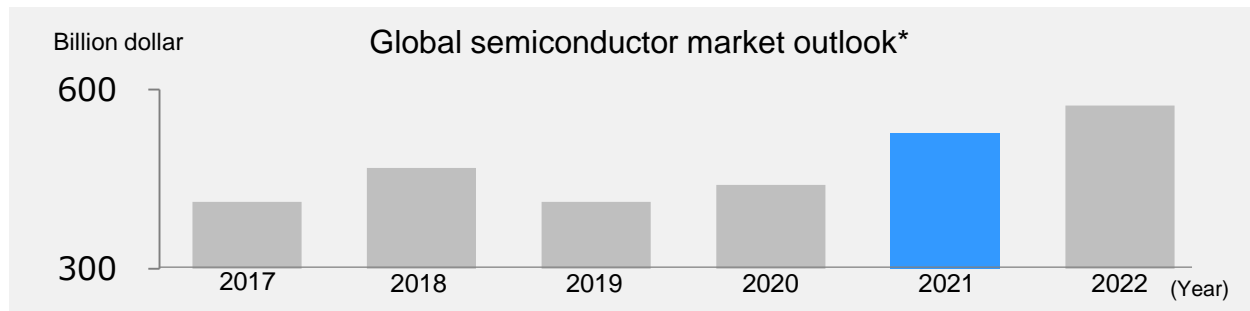


Market environment
/measures



Amid an ongoing favorable market, capture growth via aggressive investments

- Continue to actively invest while realizing growth that outperforms the market, given ongoing brisk demand
- Promote the “local production, local consumption,” by increasing production capacity
 - Start production of CMP slurry at the new plant in South Korea, and increase production capacity of the plant in Taiwan
 - Further reinforce supply strength for high-purity gases for electronics by launching overseas production sites and improving production facilities
- At the Packaging Solution Center, accelerate development of next-generation 2.xD and 3D semiconductor packaging materials by utilizing JOINT 2 as the basis of R&D



*Source: WSTS

3. Overview of major businesses

Mobility



Realize stable growth reflecting a steady launch ahead of the roll out of products for new models that have already been ordered

1st half of 2021



Performance



Although the automobile market recovered, there was an impact from a lack of semiconductor supply

- Upturn versus initial forecast for major products reflecting a sharper-than-expected recovery in automobile production volume
- Production reduction at automakers due to semiconductor supply shortage was a factor curbing earnings

2nd half of 2021



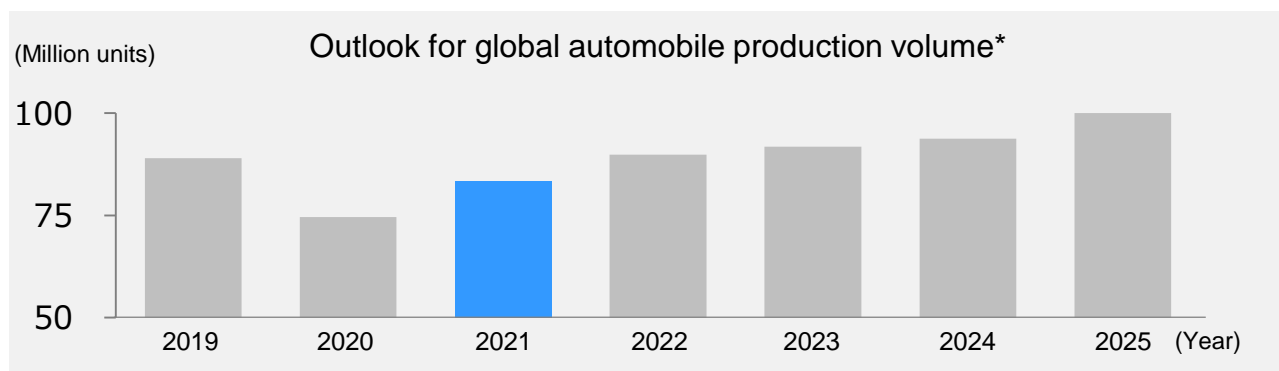
Although insufficient semiconductor supply is a risk factor, demand of products for new models drives growth

- Realize growth that outskirts market growth owing to earnings contribution from product sales for new models
- Closely monitor insufficient semiconductor supply which will impact auto production

- Rolled out backdoors for new models and copper-free disc pads for six models
- Established a production site for backdoors in Wuhan, China

- Steadily launch products for 11 new models for which orders have already been received
- Turn the Wuhan new backdoor plant into an asset
- Continue/strengthen development and the acquisition of certifications for products for next-generation automobiles

Market environment /measures



*Source: IHS Markit

3. Overview of major businesses

Graphite electrodes (1)

1st half of 2021



Performance

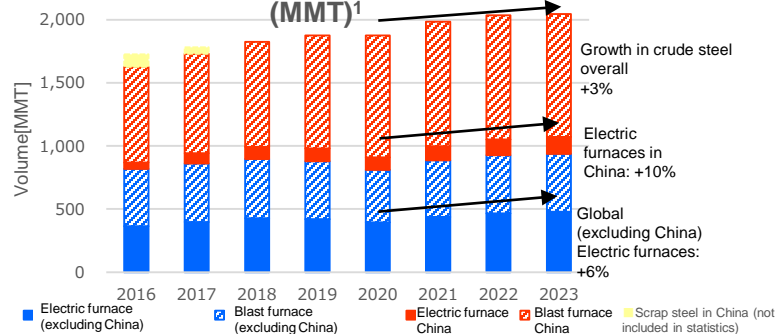


SDK's graphite electrode sales return to normal levels reflecting the tightening of supply and demand for graphite electrodes due to high steel demand and the completion of inventory adjustments at customers' electric furnaces

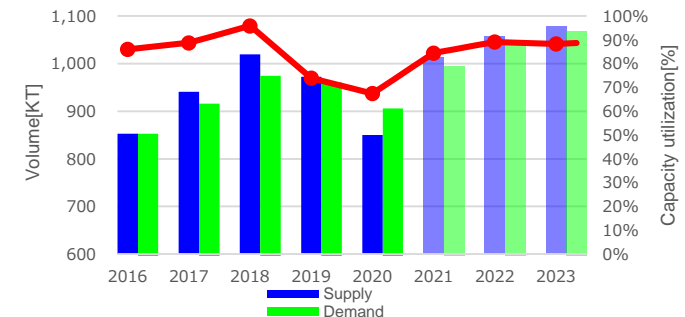
- Electric furnaces became to work at normal utilization rate due to recovery from COVID-19 impact, and SDK Group's production sites has been working at high utilization rate

- Steel production recovery: Excluding China, global¹ production rose more than 15% in the 1st half of 2021 (versus the 1st half of 2020)

Global crude steel production forecast (MMT)¹



Electrode supply-demand balance forecast (markets other than China)²



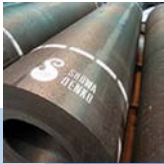
- Electrode quality improvement measures/streamlining production capacity: Completed construction of a global system
 - Fully terminated operations at the Meitingen Plant
- The impact from the application of lower of cost or market method for raw material needle cokes mostly completed in the 1st half
- Acquired shares in AMI Automation: We will execute value maximization project through close cooperation among customers, SDK and AMI

3. Overview of major businesses

Graphite electrodes (2)



2nd half of 2021



Market environment
/measures



Shipment volumes to remain high due to tight supply-demand situation and full-fledged recovery of sales prices is expected to start in 4Q

- Electrode demand is expected to remain strong and SDK's sales are also expected to be strong
 - Full-fledged acceleration of the electrification of furnaces is expected because of global efforts to achieve carbon neutrality by 2050
-
- Measures to improve earning power and secure proper spreads between costs and sales prices
 - Improve global production and quality control, and fortify the foundation for a global stable supply system
 - Realize effects of construction works to improve product quality
 - Realize cost reduction through streamlining of production capacity
 - Actively implement consulting to help customers solve SDGs-related problems
 - Full-fledged operation of consulting in the tie-up with AMI, to contribute to a reduction in customers' CO₂ emissions

3. Overview of major businesses

HD media



We lead the market through supply of HD media with technical advantages, and boost sales

1st half of 2021



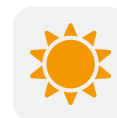
Strong demand for HD media for near-line servers¹, PCs, external HDDs, and surveillance²

Favorable trends in net sales and operating income

- Demand for HD media backed by teleworking, stay at home consumption and investment in data centers is strong
 - Demand for nearline servers remains strong, and we continue to capture the demand for HD media caused by this trend
- Although there are orders issued by overseas governments on movement restrictions at local subsidiaries due to COVID-19, there is no impact to plant operations but close monitoring is required

Performance

2nd half of 2021



Start sales of the HD media industry's largest-capacity products to all HDD customers

Increase both net sales and operating income

- Strong demand for large-capacity media for NL servers
- Launch sales of MAMR⁴ mass produced products

Market environment
/measures

- Entered into a joint development contract with Seagate on HD media for HAMR³, a next-generation recording technology
- Expand supply of high-quality large-capacity media
- Closely monitor operating rates of customers' factories and HDD part suppliers' factories which may be affected by the spread of COVID-19
- Strengthen cost competitiveness
 - Strengthen aluminum substrate production capacity and productivity

1. Abbreviated as NL hereinafter; 2. Monitoring systems 3. Heat Assisted Magnetic Recording technology;
4. Microwave-assisted Magnetic Recording technology

3. Overview of major businesses

Petrochemicals



Domestic demand is solid, and we will continue full-capacity operations ahead of shutdown maintenance in the 1st half of 2022

1st half of 2021



Sales and profit increased due to the recovery of domestic demand driven by the strong demand in Chinese economy

- Profit increased due to an improvement in the difference between receipt and shipment prices of raw naphtha caused by a rise in raw naphtha price, in tandem with a spread expansion
- Full-capacity ethylene production at SDK

Performance

2nd half of 2021



Strong demand trends will continue but supply and demand is likely to ease up in tandem with the materialization of an increase in ethylene supply, mainly in the US. and China

- Continue full-capacity ethylene production at SDK
- Spread squeezed due to a ease up in supply and demand, and a narrower difference between receipt and shipment prices of raw naphtha due to naphtha prices stuck at a high level

- Tight supply-demand continues in the East Asian market
 - Recovery of demand to the level prior to COVID-19, driven by favorable economic trends in China
 - Decline in the influx volume of off-shore products to Asia due to the impact of production reduction reflecting a cold wave in the US

- Ensured safety and stable operations
- Continued to operate ethyl acetate plants for two consecutive years through the improvement in catalysts
- Continued to implement measures to strengthen the revenue base to improve profitability and stability

Market environment
/measures

- We expect an ease up in supply and demand reflecting foreseen new plant operations in Asia and a recovery in production in the US

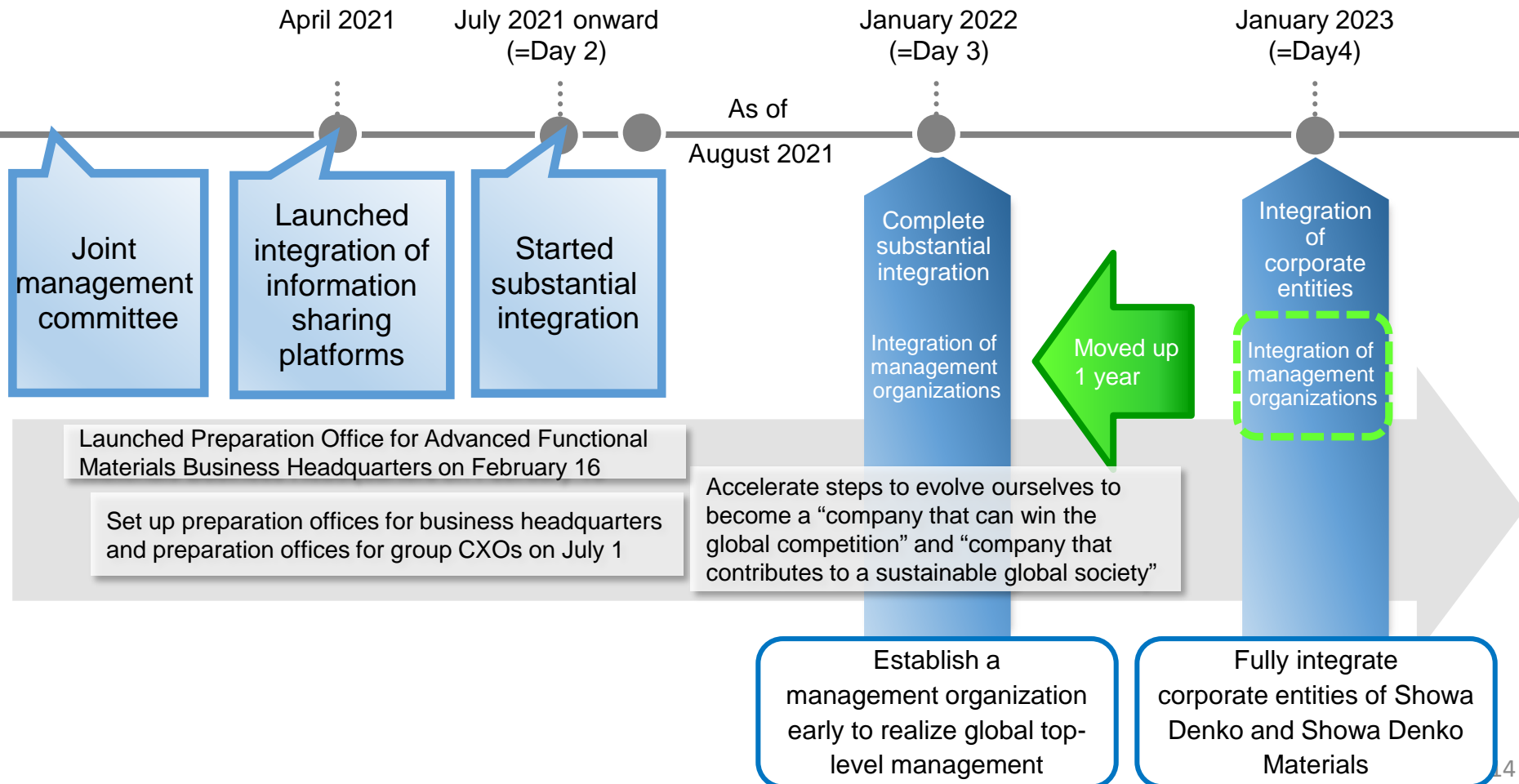
- Ensure safe and stable operations
- Continue to implement measures to strengthen the revenue base
 - Strengthen competitiveness of Oita Complex by expanding the derivative business
- Pursue optimization of the balance between inventory and production/sales ahead of the large-scale shutdown maintenance (scheduled for the 1st half of 2022)

4. Progress of Integration with Showa Denko Materials Progress in PMI



We will carry out the integration of management organizations in January 2022, one year earlier than scheduled

Start substantial integration in July 2021, and complete head office integration in August



4. Progress of Integration with Showa Denko Materials Progress in PMI

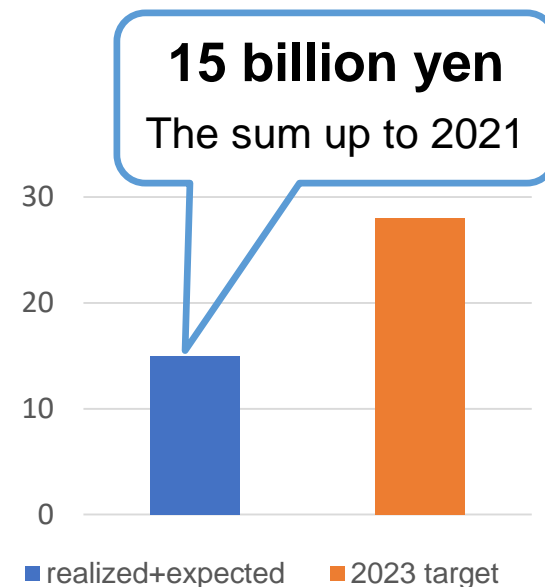


Moved forward the business portfolio restructuring

- Aluminum can and aluminum rolled products business
- Transfer shares in SHOKO Co., Ltd.
- Food wrap film business
- Printed circuit board business
- Ceramic business
- Energy storage devices and systems business

Smooth progress in the improvement of profit structure

- Cut direct/indirect costs through integration

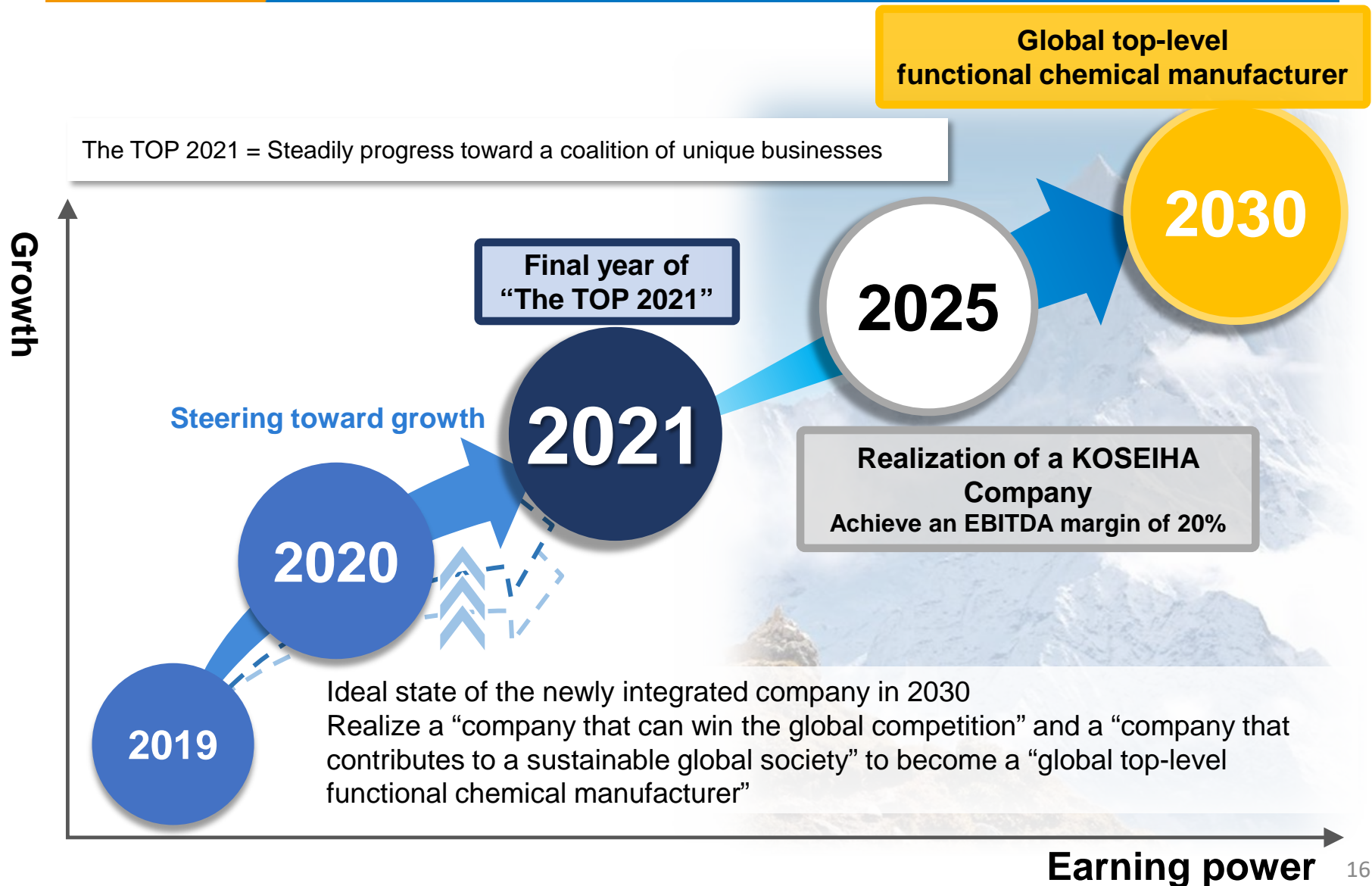


5. Progress of long-term vision

Medium-term business plan “The TOP 2021”



SHOWA
DENKO

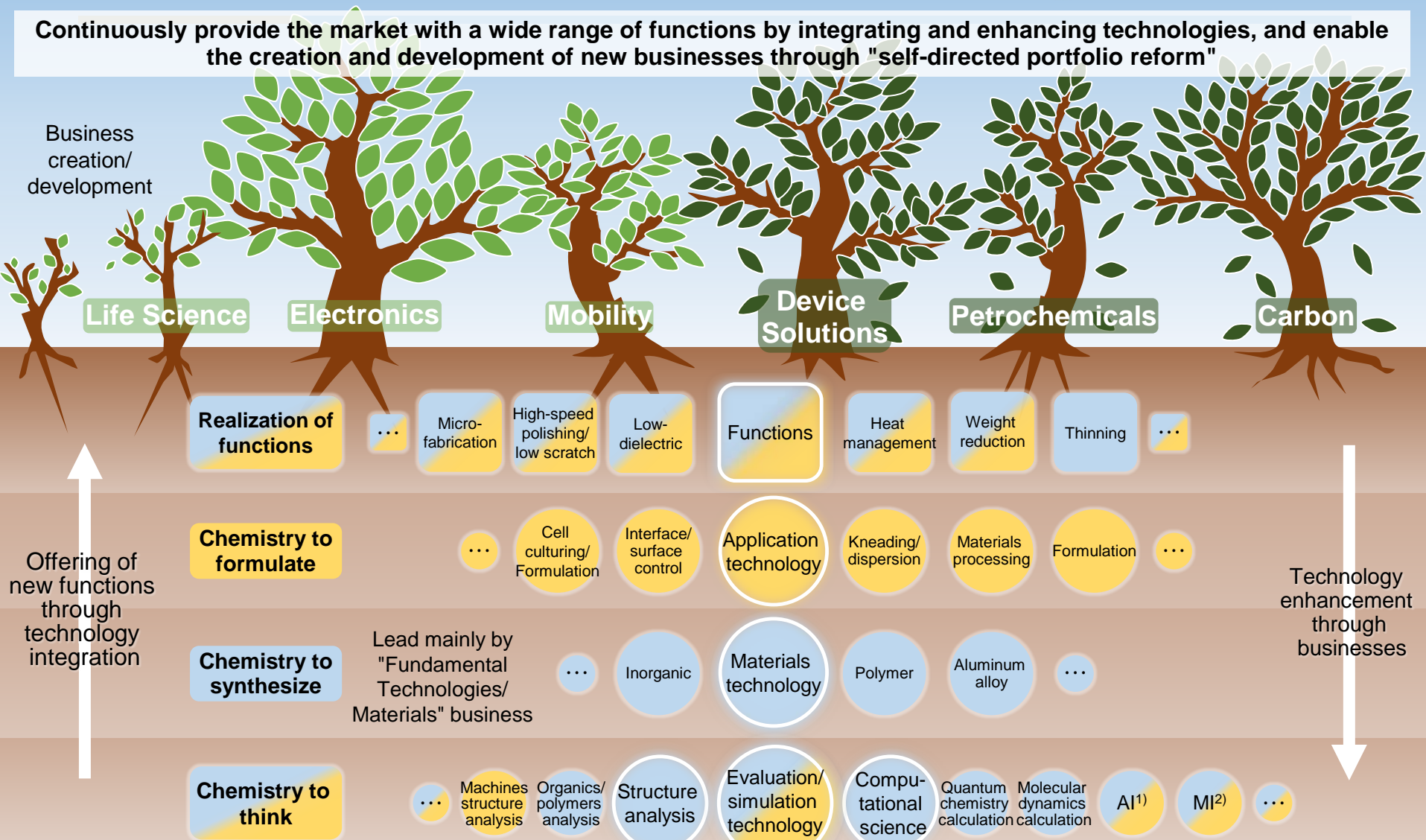


5. Progress of long-term vision

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"



□ : Showa Denko driven □ : Showa Denko Materials driven

1. AI = Artificial Intelligence 2. MI = Materials Informatics

5. Progress of long-term vision

R&D: Progress in pursuing synergies (short term)



SDK proposes technological solutions to issues related to product groups where SDMC has strength



Realize synergies in the short term for specific cases by utilizing the resources of both companies

CMP slurry

Expand production capacity by launching production at SDK sites



CMP (Chemical Mechanical Polishing)
Polish the unevenness occurred in the circuit formation process for semiconductor devices, using planarizing technology

“ANISOLM™”: anisotropic conductive film

Launch sample shipments by improving conduction properties through utilization of SDK materials



Anisotropic conductive film: A film-type material used to form circuits when mounting electronic parts on substrates

5. Progress of long-term vision

R&D: Progress in pursuing synergies (medium/long term)

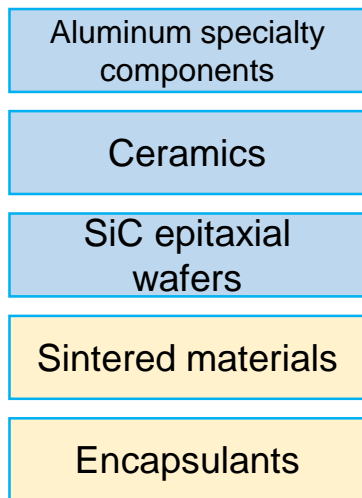


Establish the Power Module Integration Center

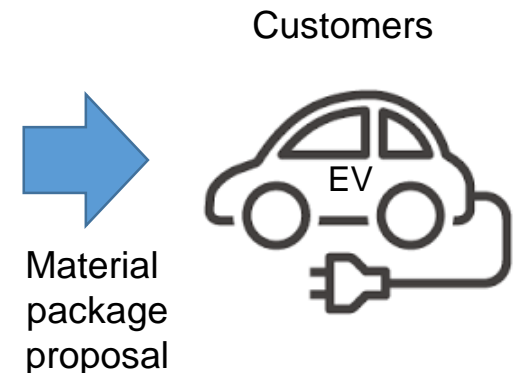
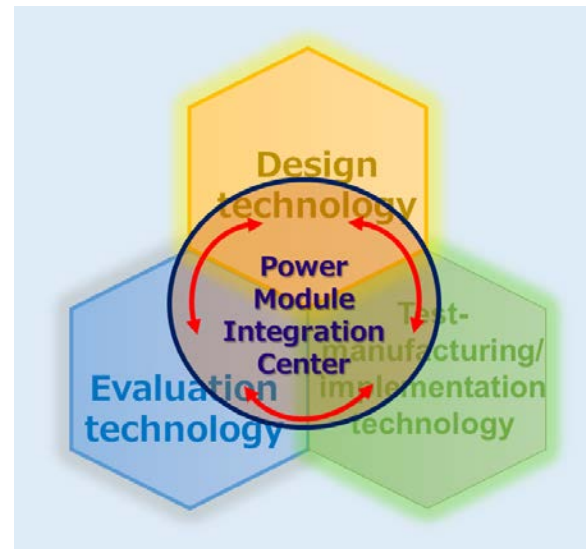


Strengthen technical synergy creation function for heat management

Major related products



Parts/
materials
Evaluation
results



Deepen power module evaluation, design, and test-manufacturing/implementation technologies, make proposals to customers on material packages, as a function to collectively compile power module related products of the Showa Denko Group.

5. Progress of long-term vision

Promote the merger of strategies and collaboration
(strengthen marketing)

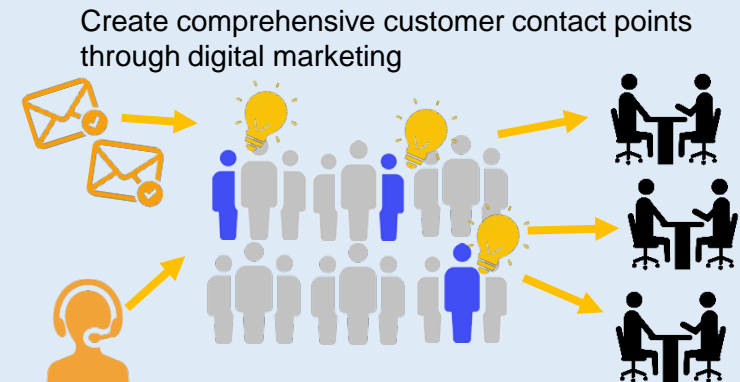


As a part of marketing strengthening measures, we are implementing ABM* measures that utilize digital channels

*Account Based Marketing = Marketing aimed at in-depth cultivation of major customers and cultivation of “unplowed land”

■ Approach key customers through SDK & SDMC collaboration

- Customer information
- Information on sales promotion products (technical synergies)
- Implement efficient marketing by sharing market needs grasped by both companies

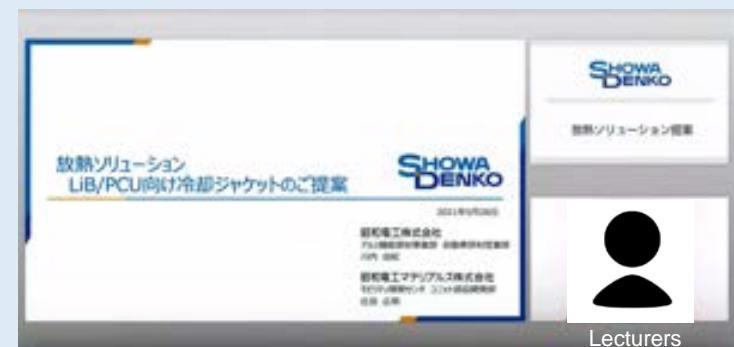


ABM website (website disclosed to limited customers)



Centering around several solutions for product groups of both companies, prepare a website + send out email magazines to create new interviews/visits

Webinar implementation screen



Strengthen ties with key customers without being impacted by COVID-19 by advertizing synergetic technologies and product groups at live events

5. Progress of long-term vision

DX promotion

(Progress in strategy to enhance IT beyond integration)



Smooth progress in the rebuilding of the business and operational infrastructure that conforms to the new normal society
Define domains that maximize the SDK and SDMC integration synergies and pursue an improvement in productivity

1

Global management information

- ✓ Timely decision-making using common criteria in the group
- ✓ Enhance data analysis and provide to the group overall as a dedicated service

2

Finance & accounting

- ✓ Reduce costs by ensuring compliance and improving operational quality and efficiency
- ✓ Execute sophisticated operation support for the group overall by centralizing knowledge related to business activities and IT

3

Human resources management

- ✓ Visualization of human-resource information to achieve highly efficient organizational operations and to optimize personnel allocation and exchanges
- ✓ Nurture personnel to become professionals that can compete globally

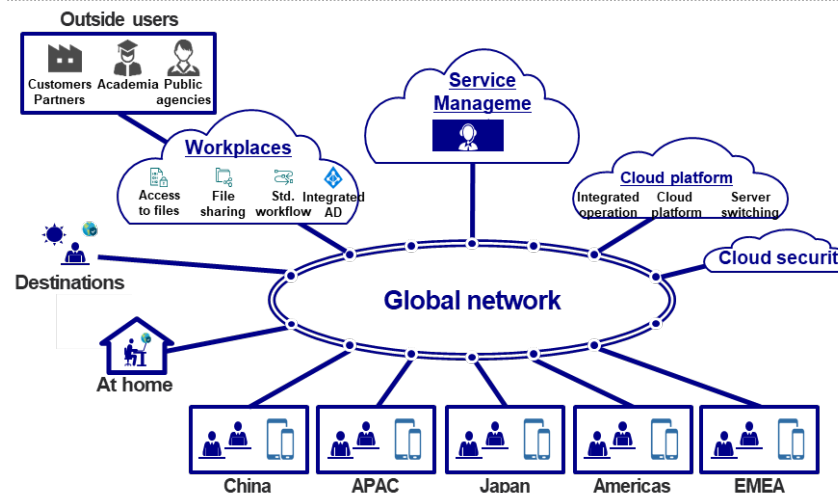
4

Purchasing indirect materials

- ✓ Reduce indirect material costs by leveraging the economies of scale via the integration
- ✓ Realize strategic procurement by centralizing operational knowhow

5

IT infrastructure



- ✓ Potential to execute sophisticated operations “anytime,” “anywhere,” and “from anywhere”
- ✓ Enhancing security, conforming to the laws of each country and strengthening of a support system
- ✓ Realize safe information sharing with outside users to support open innovations

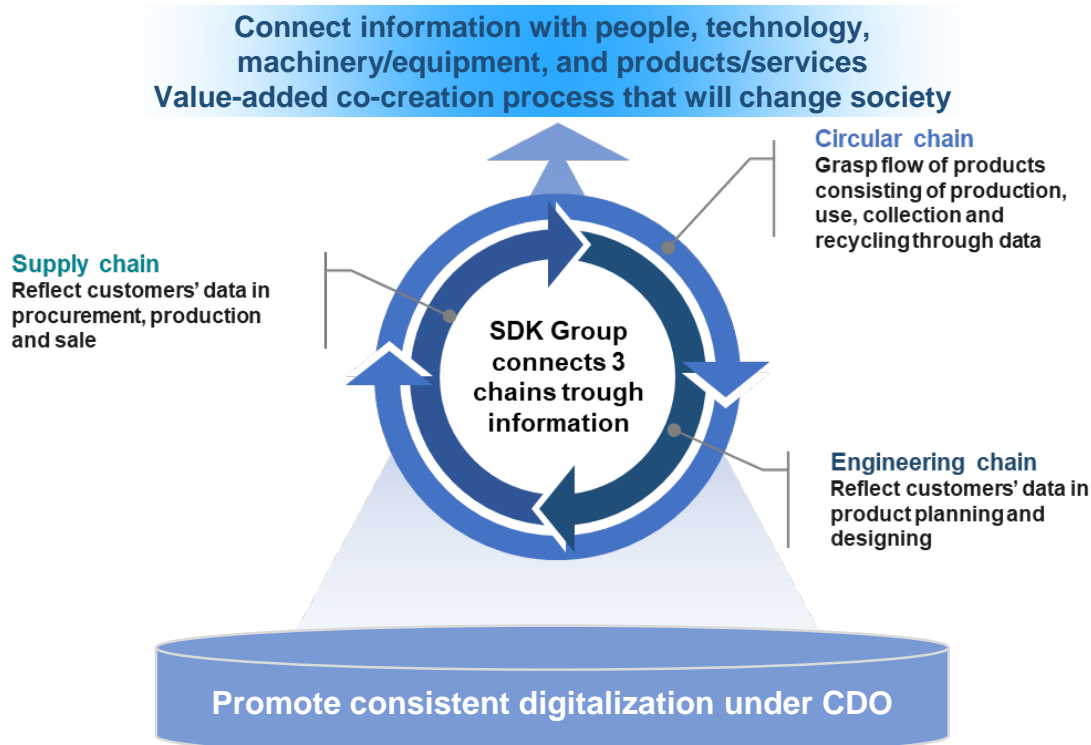
5. Progress of long-term vision

Promote DX (Realize our purpose via the group CDO¹)



Overview the entire value chain for digital technology under CDO
Promote DX that transverses management, the frontline, departments, global operations, and the group

SDK Group's goal using DX



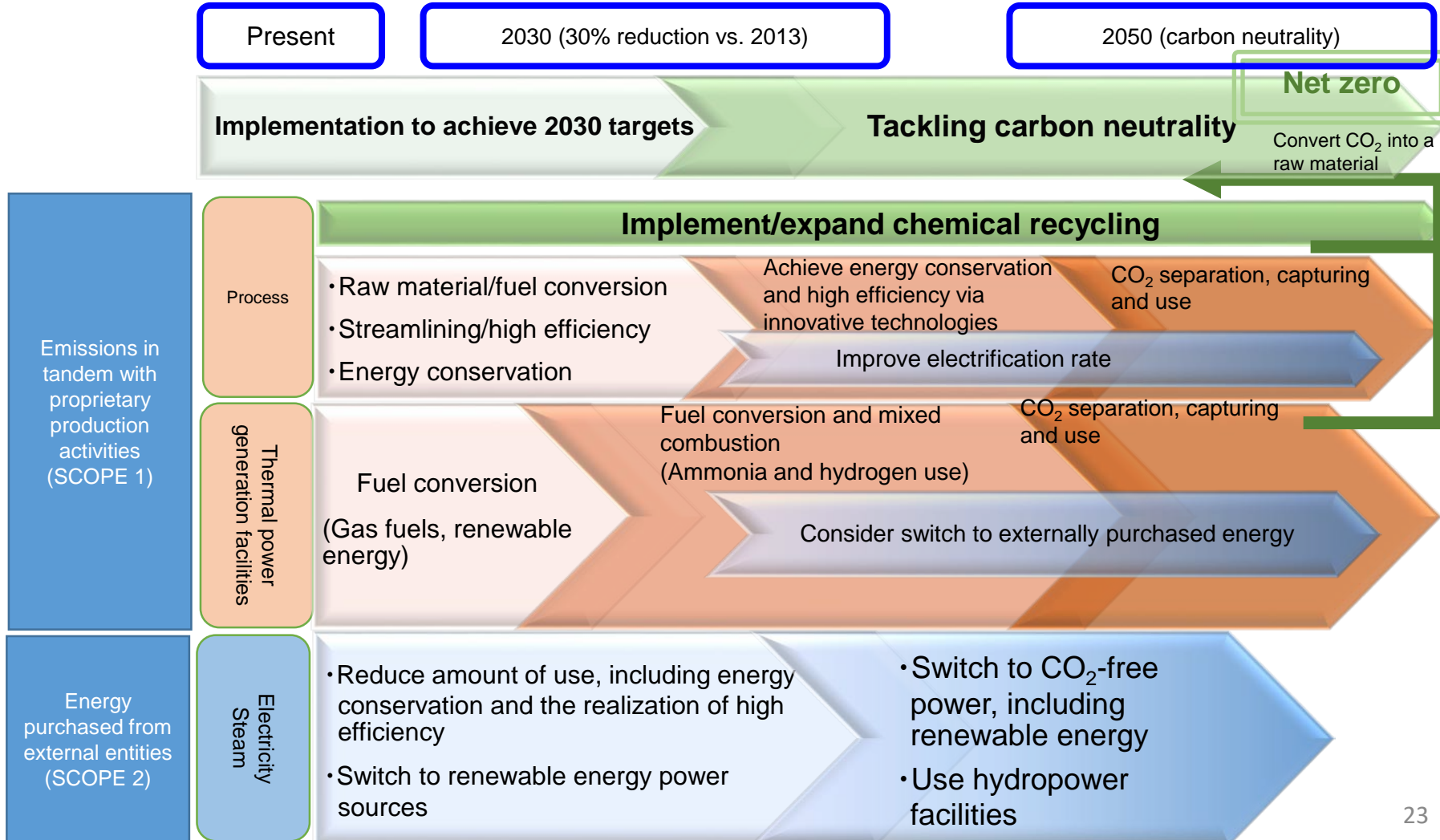
- In January 2022, establish the **group CDO which will be the CoE² for digital transformation**
- Along with strengthening “defense” through the acceleration of the creation of integration synergies, and launch an “offense” leveraging digital technologies
- “Change society through the power of chemistry,” by linking three chains that include information on goods in the “supply chain,” information on technology in the “engineering chain,” and the “circular chain,” which contributes to sustainability

6. Contribution to sustainable society

Roadmap to carbon neutrality by 2050



Achieve a low carbon society by 2030 in part by raw material/fuel conversion and energy conservation, and take on a challenge to realize carbon neutrality by 2050 by promoting GHG separation, capturing and use technology, and plastic chemical recycling.



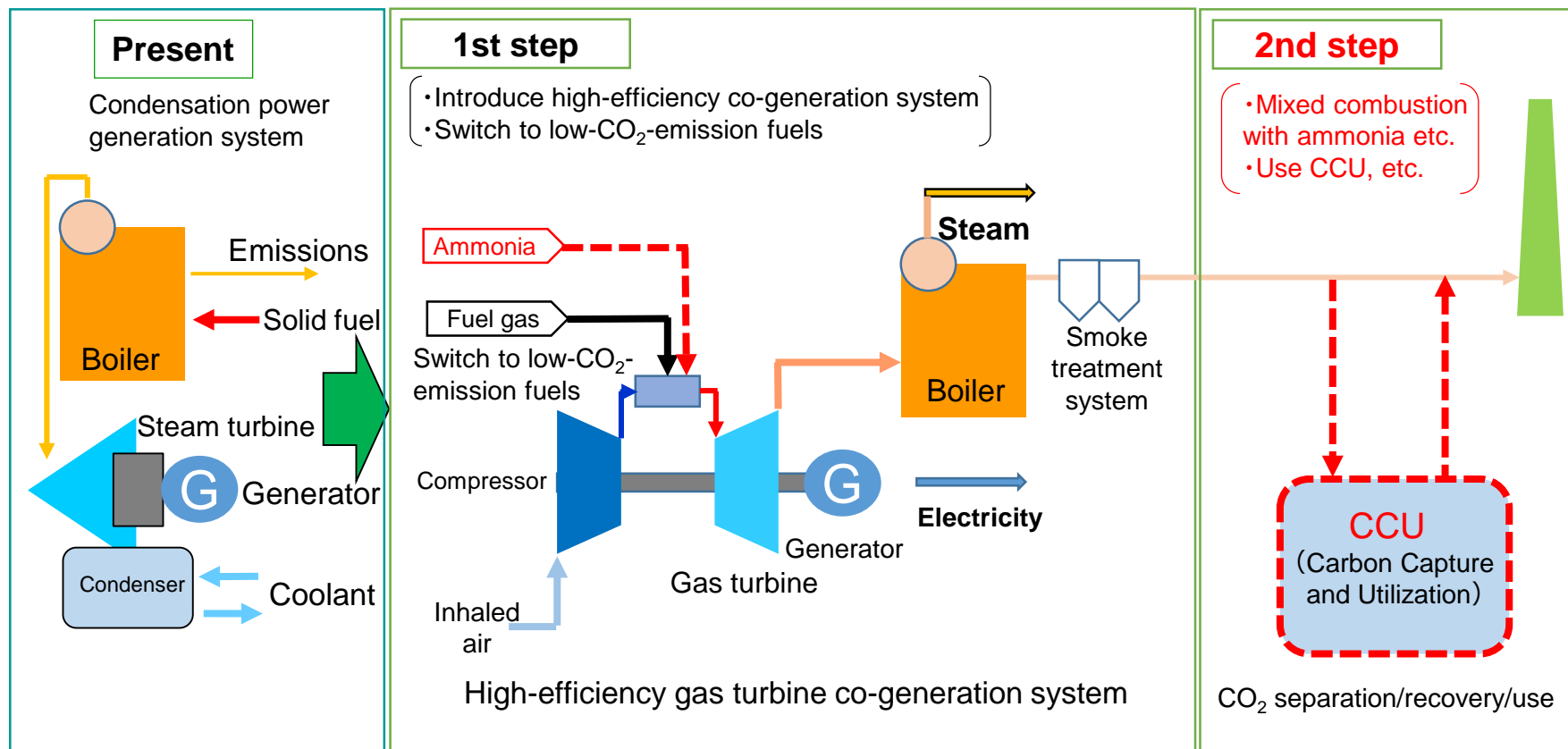
6. Contribution to sustainable society

Initiatives aimed at carbon neutrality (Highly efficient co-generation system)



First step is the introduction of a highly efficient co-generation system by 2030.

Second step is the achievement of carbon neutrality by 2050 through use of CCU or switch to renewable energy.



Total efficiency: about 45%
(Losses:
Emissions+condensation)

Total efficiency: about 75%
(Losses: Emissions)

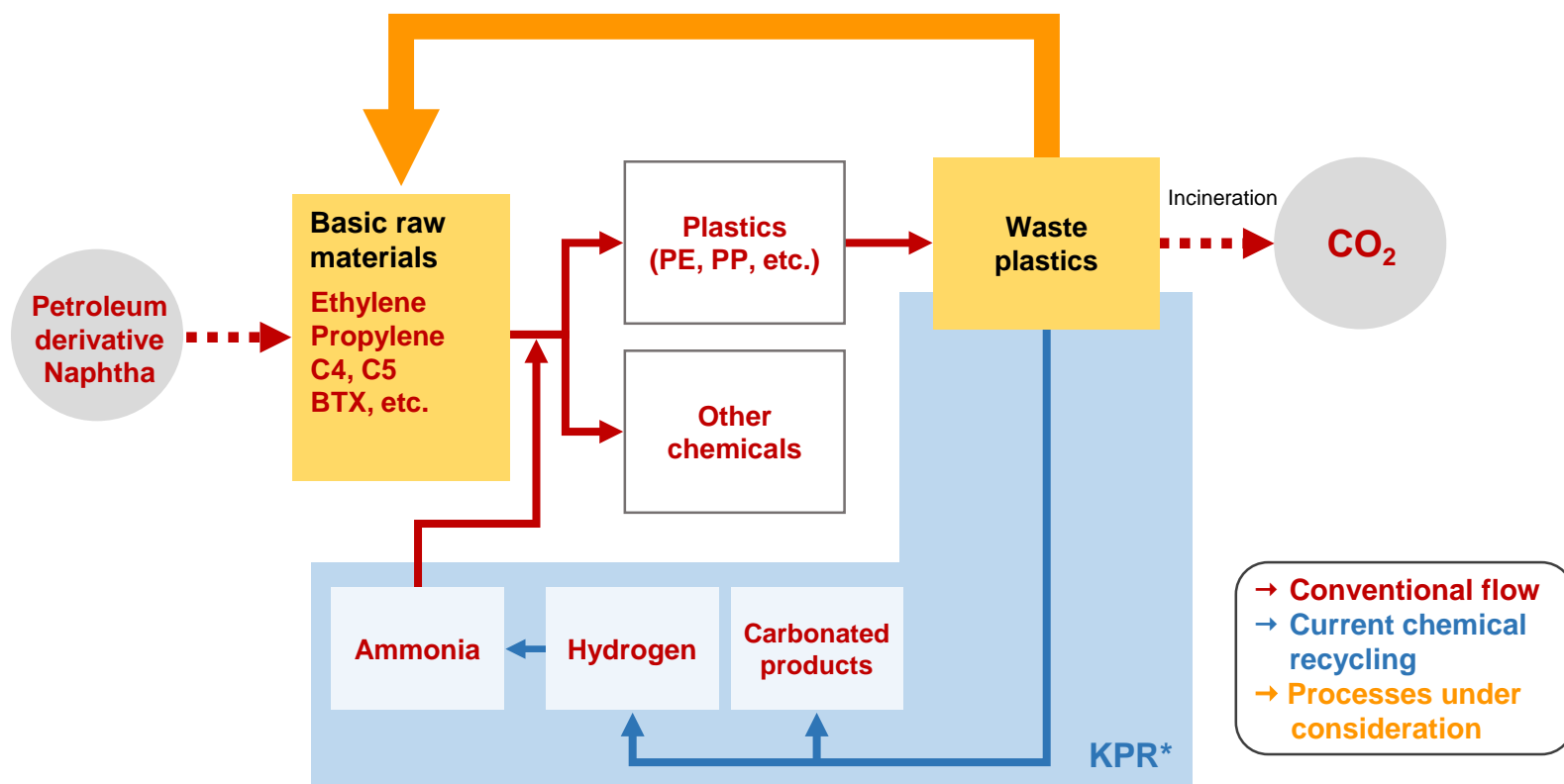
6. Contribution to sustainable society

Carbon neutrality challenge

(Expand and promote chemical recycling)



In addition to chemical recycling to produce hydrogen and ammonia from waste plastics, we will move forward with the consideration of processes to produce basic raw materials, including ethylene and propylene.



SDK possesses knowhow for using waste plastics

*KPR: Business program to recycle waste plastics into raw material, which is operated at Kawasaki Plant

Note

Forward-looking statements, including performance forecasts as contained in this presentation, are based on the information available as of the time of the release date of this presentation and assumptions as of the date of release of this presentation regarding uncertainties that could impact our future performance.

Note, there is no obligation to update the content based these forward-looking statements, unless stipulated by laws and ordinances. There is a possibility that actual performance will sharply differ due to various factors going forward. Factors that impact performance include but are not limited to the impact to the global economy from the spread of COVID-19, economic climate, raw material prices including naphtha prices, demand and market trends for graphite electrodes and other products, and foreign exchange translation rates.