



1H 2020 Financial Results

2H Performance Forecast

Tasks and Strategies for 2H



August 13, 2020

SHOWA DENKO K.K.

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1. 2020 world economic environment

Pandemic of COVID-19 caused severe business recession. Recovery in 2H will be limited. Recovery in 2021 will be slow and uncertain.



Greatly affected by the pandemic

Inhibitive actions caused severe recession

Growth in 2020 will be -10.2%

Recovery in 2021 will be limited to 6.0%



Recovery has started, but uncertain

Economic indicators are in recovery due to resumption of businesses. But recovery is uncertain because increase in carriers may cause another rock down



May have severe business slowdown

Hit the bottom in 1Q 2020

Growth in 2020 will be 1.0%, quite low

Recovery in 2021 is expected. But growth rate will be limited to 4.6% (Average of 2020-2021)



Recovery in 2H, but slow

Severe recession in 1H 2020. Recovery is expected in 2H due to resumption of businesses, but growth rate will be -5.8%. Recovery is expected in 2021, but slow.

2. 1H 2020 financial results



(Billion yen)	1H 2019 results a	1H 2020 results b	Increase/ decrease b-a
Net sales	475.5	326.6	-148.9
Operating income	85.5	-25.8	-111.3
Ordinary income	84.8	-43.2	-128.1
Net income attributable to owners of the parent	65.8	-54.6	-120.4
Interim dividend (yen)	50 yen	0 yen	-50 yen

Special mention (Sum of the effect of special factors: -58.5 billion yen)

- ① Operating expense: -36.5 billion yen (Graphite electrodes, application of LCM: -21.7;
Petrochemicals, naphtha inventory depreciation: -8.5; COVID-19: -2.0;
Cost of acquisition of shares in Hitachi Chemical: -4.3)
- ② Non-operating expense: -17.3 billion yen (Cost of integration with Hitachi Chemical)
- ③ Extraordinary loss: -4.7 billion yen (Closure of Meitingen Site, graphite electrode business)

2. 2020 performance forecast



(Billion yen)	2019 results a	2020 forecast b	Increase/ decrease b-a
Net sales	906.5	960.0	53.5
Operating income	120.8	-30.0	-150.8
Ordinary income	119.3	-55.0	-174.3
Net income attributable to owners of the parent	73.1	-90.0	-163.1
EBITDA	158.6	49.8	-108.8
Yearly dividend (yen)	130 yen	Undecided	-

Operating income without temporary factors*: -4.0 billion yen

EBITDA = operating income + depreciation
of fixed assets + depreciation of goodwill

Temporary factors (operating expense) -26.0 billion yen:

Graphite electrodes LCM (yearly) -10.7, Cost of integration with Hitachi Chemical -15.3 (Advisory cost -3.5

Adjustment in sales cost following market valuation of inventories -11.8)

Net income attributable to owners of the parent without temporary factors*: -43.2 billion yen

Temporary factors (non-operating expense, extraordinary losses) -20.8 billion yen:

Cost of integration with Hitachi Chemical -16.1, Closure of Meitingen Plant in GE business -4.7

*Including effects of market factors, naphtha, COVID-19, continuous cost of integration with Hitachi Chemical (PMI, goodwill, dividend to preferred stock
(Depreciation of naphtha inventory -8.5, COVID-19 -20.0, decrease in demand for GEs -26.0, interest expense, depreciation of goodwill, etc. -37.4) 5

Countermeasures against bad economy



① Reduce assets

Careful investment selection ¥50 bn.

- Continue vital investment
- Selection of investment for growth

Squeeze assets ¥45 bn. or more

- Streamline working capital
- Sell stocks held for political reasons

Divestiture of businesses ¥200 bn.

- Sell non-core businesses

② Strengthen earning power

Cost reduction ¥20 bn. or more

- Synergy in cost
- Additional cost reduction

Change work style, unified head office ¥1 bn. or more

- Promotion of teleworking
(Presence rate in office 20%, satellite office)
- Head office with minimum cost

3. SDK Group's business environment and tasks



Make 3 changes lead to new evolution

Change in SDK



**Integration with
Hitachi Chemical**

**One-stop chemical
company covering
material and
application**

Change in economy



Utilize IT

**COVID-19 brought
historic changes in
business models**

Change in society



New lifestyle

**Pandemic changes
consumption and
industrial
structures**

3. SDK Group's business environment and tasks



SDK Group's task:

Show the Group's "sound present" and "promising future"

① Short term task: Put finances on a healthy footing

Improve asset efficiency and create CF

- Select capex carefully
- Squeeze working capital
- Sell assets with high liquidity

Efficient operation

- Optimize fixed cost to be in line with reduced demand
- Pursue cost synergy
 - Cooperative buying and logistics
- Cost reduction
 - Intensive investment in integration

Change business portfolio

- Sell non-core businesses

② Medium to long term task: Innovation

Create business synergy

- Vertical cooperation (Fuse "synthesize" and "formulate")
- Horizontal cooperation (One stop)
- Deepen R&D

Change business model

- Optimize business domain
- Switch to proposal oriented business operation
- Unified marketing strategy

Unify organization/ Reorganize

- Customer oriented reorganization
- Unify business sites. Improve competitiveness
- Strengthen global network

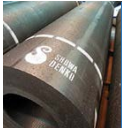

















4. Major businesses' trend and strategy

Overview of market environment



2020: Reduced sales and profit in 3 major businesses, but steady in semiconductor and electronics

2021: Recovery of performance due to market recovery and the effect of cost reduction in 2020

	2020	2021 and after	Measures
 Graphite electrode	 <ul style="list-style-type: none"> Demand reduced by COVID-19 and customers' prolonged inventory adjustment Big reduction in sales and profit 	 <ul style="list-style-type: none"> Recovery in steel production will increase demand Sales and profit will improve 	<ul style="list-style-type: none"> Reduce production capacity. Normalize inventory. Cost reduction. Depreciate book value of inventory
 HD media	 <ul style="list-style-type: none"> Increase in communicated data due to COVID-19 increased demand Steady sales and profit 	 <ul style="list-style-type: none"> Expansion of data centers will continue to increase demand Sales and profit will increase 	<ul style="list-style-type: none"> Improve productivity, cost reduction Increase supply of high-quality large-capacity media
 Petrochemicals	 <ul style="list-style-type: none"> Negative spread reduces profit in 1H Economic recovery in China will increase demand in 2H 	 <ul style="list-style-type: none"> Recovery of world economy will increase demand Sales and profit will improve 	<ul style="list-style-type: none"> Strengthen earing power Start production of new derivatives
 High-purity gases for electronics	 <ul style="list-style-type: none"> Booming semiconductor market pushes up demand Growth of 10%/y or more Rising income and profits 	 <ul style="list-style-type: none"> Growth of semiconductor market will increase demand Growth of 10%/y will continue 	<ul style="list-style-type: none"> Strengthen stability of supply system
 Information and communication¹	 <ul style="list-style-type: none"> Booming semiconductor market pushes up demand Rising income and profits 	 <ul style="list-style-type: none"> Continuous demand growth is expected toward 2025 High-level growth of performance is expected 	<ul style="list-style-type: none"> Increase capacity Develop new products
 Mobility¹	 <ul style="list-style-type: none"> Stagnant car market, but recovery in China Falling income and profits, but recovery is expected in 2H 	 <ul style="list-style-type: none"> Market will expand toward 2025 Sales and profit will improve 	<ul style="list-style-type: none"> Steadily start production of backlog new products R&D for development of products in line with the trend

Legends:  Growth or steady ;  Partial demand recovery ;  Stagnant market ;  Weak demand, adjustment of production

4. Major businesses' trend and strategy

Graphite electrodes



In 2020, we devaluated inventory of GEs to be in line with a decrease in demand caused by a decrease in steel production. The amount of inventory will be normalized by the end of 2020. We will make production of 60,000t in every half year a break-even point. In 2021, we will significantly increase profit by inventory clearance, cost reduction, and recovery of demand. In medium term, increase in demand will continue, and performance of our GE business will be steady.

2020



Performance/ Market environment



Demand decreased due to COVID-19
Prolonged inventory adjustment
High-price NC¹ inventory strains income

- Steel production was decreased due to COVID-19
 - Worldwide: -6.4%;
 - Other than China: -15%; China: 1%
- Customers' inventory adjustment was prolonged. Sales significantly decreased due to low demand. However, recovery of demand is expected to start at the end of 2020

Measures

- Normalize inventory
 - Reduce inventory significantly, and realize proper inventory by the end of 2020
- Reduce cost. Realize production system with break-even point of 60,000t in every half year in the 2H of 2020.
 - Application of LCM. Layoff
- Improve profitability through inventory adjustment

2021 and after



Production capacity reduction
Normalization of inventory
Cost reduction

Devaluation of book value of inventory

- In 2021, demand will increase 50,000t from the previous year
 - Recovery of demand due to economic recovery and end of customers' inventory adjustment
- Demand will increase steadily in medium to long term
 - Worldwide: 3.7%; Increase in the ratio of electric furnace in China will increase demand.

- Normalize inventory
- Cost reduction
- Realization of the effect of low-cost NC inventory
- Streamline production capacity
 - We will close Meitingen Site. Closure will start from upper process. The site will be closed completely in the 1H of 2021.
 - ⇒ We will realize cost reduction effect.

4. Major businesses' trend and strategy

HD media



HD media business continues steady growth due to the increase in demand for media to be used in servers for data centers

2020



Increase in telecommunication supports demand for HD media
Sales and operating income are strong

- Demand for HD media for PCs decreases. However, data communication increases due to teleworking and staying at home caused by COVID-19. Steady investment in data centers.
 - HDD for near-line servers increases. More than 60 million units.
- At a overseas subsidiary, governmental restriction on movement negatively affected operation of plant

2021 and after



Expansion of data centers continuously increases demand for HD media
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

Performance/
Market
environment

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
- Start mass production of MAMR media
- Continue development of HAMR media

Petrochemicals



Optimize balance of products and utilize export in order to preserve high operating rate and secure profitability

2020



Decrease in sales and profit
Recovery in 2H is expected due to recovery of Chinese economy

- Demand decreased due to COVID-19. Low operating rate. Negative spread in naphtha price and crude-oil prices depressed profit in 1H
- Staying at home increases demand for packages for food and daily necessities. But decrease in production of cars negatively affected performance
- Demand will recover in 2H due to recovery in Chinese economy
- Low operating rate in 1Q. Export was strong. Operation at full capacity comes back in July.

2021 and after



Recovery of global economy will increase demand

Sales and profit will recover

- Negative impact of establishment of additional plants in Asian and Middle East countries will be eased by recovery in world economy

Performance/ Market environment

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
 - Active export. Extend life of catalysts. Predict equipment failure and execute preventive maintenance. Develop new derivatives
- Thorough execution of safe and stable operation.
- Continue strengthening of revenue base
 - Optimize balance of products, strengthen export taking advantage of location, and maintain high operating rate.

4. Major businesses' trend and strategy



High-purity gases for electronics

Continue two-digit growth rate, and promote establishment of supply system corresponding to strong demand



Performance/
Market
environment

2020



Booming semiconductor market increases demand

Increase in sales and profit

- Demand for high-purity gas is strong due to recovery of semiconductor market, despite weak market in 2019.
- Spread of teleworking and staying at home increased demand for electronic devices and investment in data centers
⇒ Increase in demand for semiconductors
- Progress in micromachining technology for semiconductor circuits and multi-layering of 3D-NAND flash memory chips increases demand for high-purity gases.

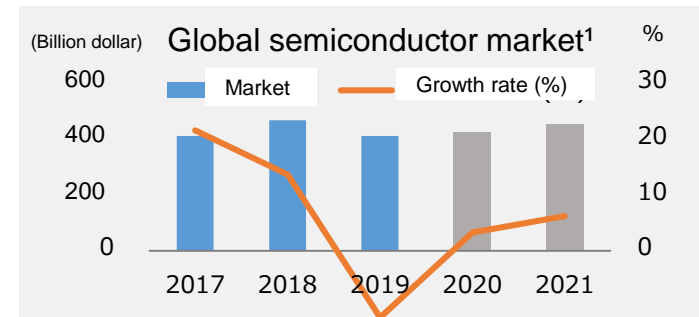
2021 and after



Growth of semiconductor market will increase demand

Growth more than 10% will continue

- Demand for semiconductors will continue to increase
- Demand for high-purity gas will continue to increase due to startup of new production lines, which was delayed by COVID-19, and progress in multi-layering of 3D-NAND



Measures

- Continue to strengthen stability of supply system in order to respond to strong overseas demand
 - Decided to establish additional production facilities in Shanghai and Taiwan
- Continue to strengthen stability of supply system

4. Major businesses' trend and strategy

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

2020

2021 and after



Performance/
Market
environment



Demand for semiconductor used in servers is increasing
Demand for smartphones will recover in 2H 2020

- Demand for semiconductor memory chips for servers and CPUs continues to increase
 - Spread of teleworking and staying at home increases investment in data centers
- In the smartphone market, replacement demand for smartphones equipped with 5G technology will increase in 2H of 2020

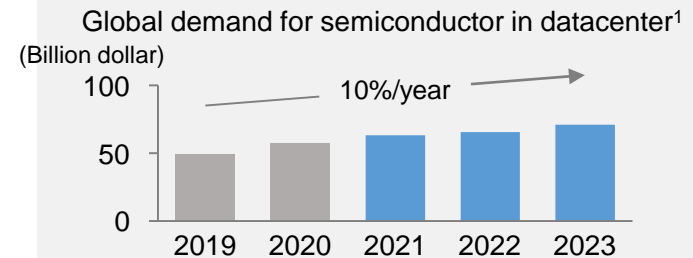
Measures

- New plant in Taiwan starts operation
 - Can produce substrate for high-performance multilayer semiconductor chips
- To maintain growth and leading position in the industry
 - Continue aggressive investment in semiconductor related technologies. Develop next-generation package at the Packaging Solution Center



Investment in 5G technologies leads to growth of the market

- Investment in 5G technologies will increase demand for servers. Recovery in market prices of smartphones is expected.



- Establish overwhelming brand power in the field of semiconductor packaging material

4. Major businesses' trend and strategy

Mobility (Showa Denko Materials)



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

2020



Performance/
Market
environment



Stagnant car market continues

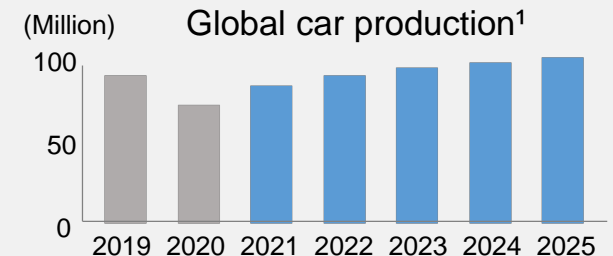
- Though stagnant car market continues, mild recovery will realize in the 2H of 2020, starting from Chinese car market.

2021 and after



Mild recovery of car market is expected

- Recovery of car market and existing order for products for new models will lead recovery of our business performance



Measures

- Start production of parts for new models
 - Back doors, copper free disc pads, etc.
- Develop products for next-generation cars
 - Respond to the demand for weight reduction, electrification, and heat management
- Promote sales activities of products for promising next-generation models
 - Respond to the demand for weight reduction, electrification, and heat management
- Products for new models will contribute to recovery of performance
- Start production of backlog products for new models steadily
- Continue development of products for next-generation cars. Strengthen marketing effort to promote sales of products for next-generation cars.

Changes in the market and image of desired company



Changes in the market are in progress. Customers' requirements are at high level. Material manufacturer must aim to be **"One-stop Advanced Material Partner"** that can respond to customers' various requests through innovation, in order to survive.

Changes in the market

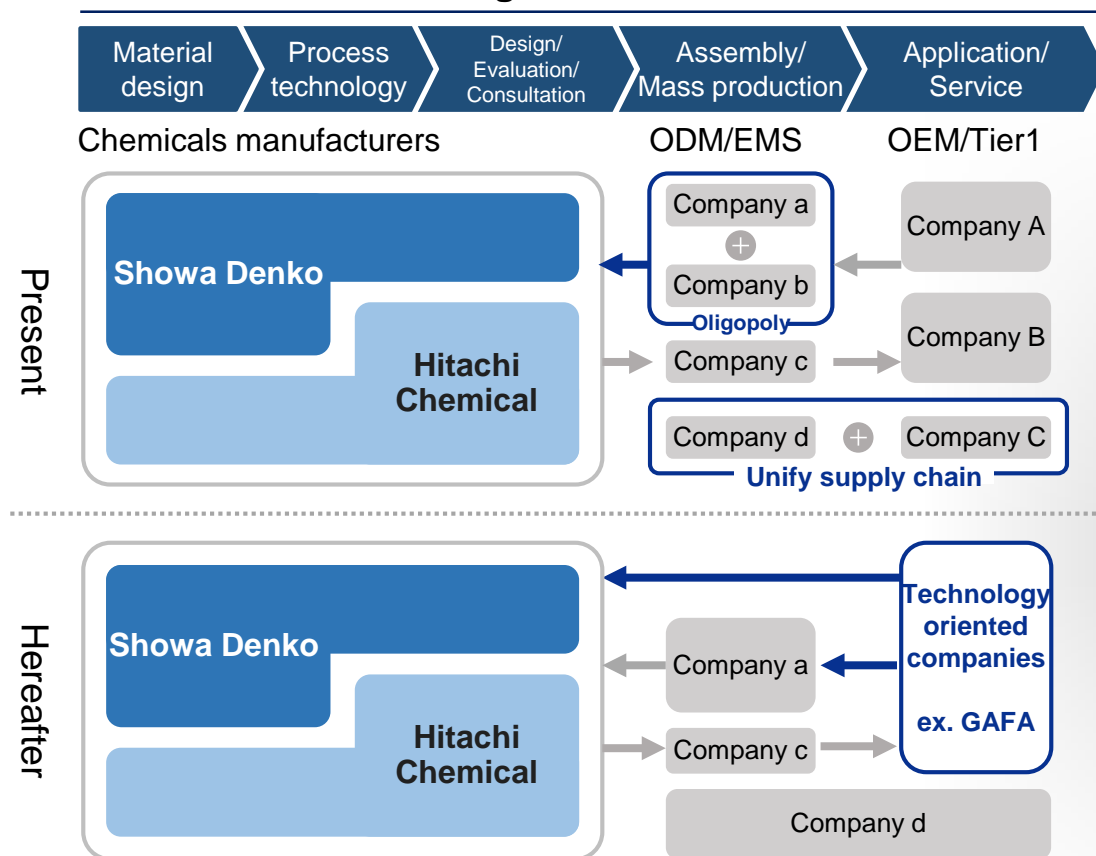


Image of desired company



To respond to high-level customer needs through various materials and suggestion of comprehensive solutions

One-stop Advanced Material Partner

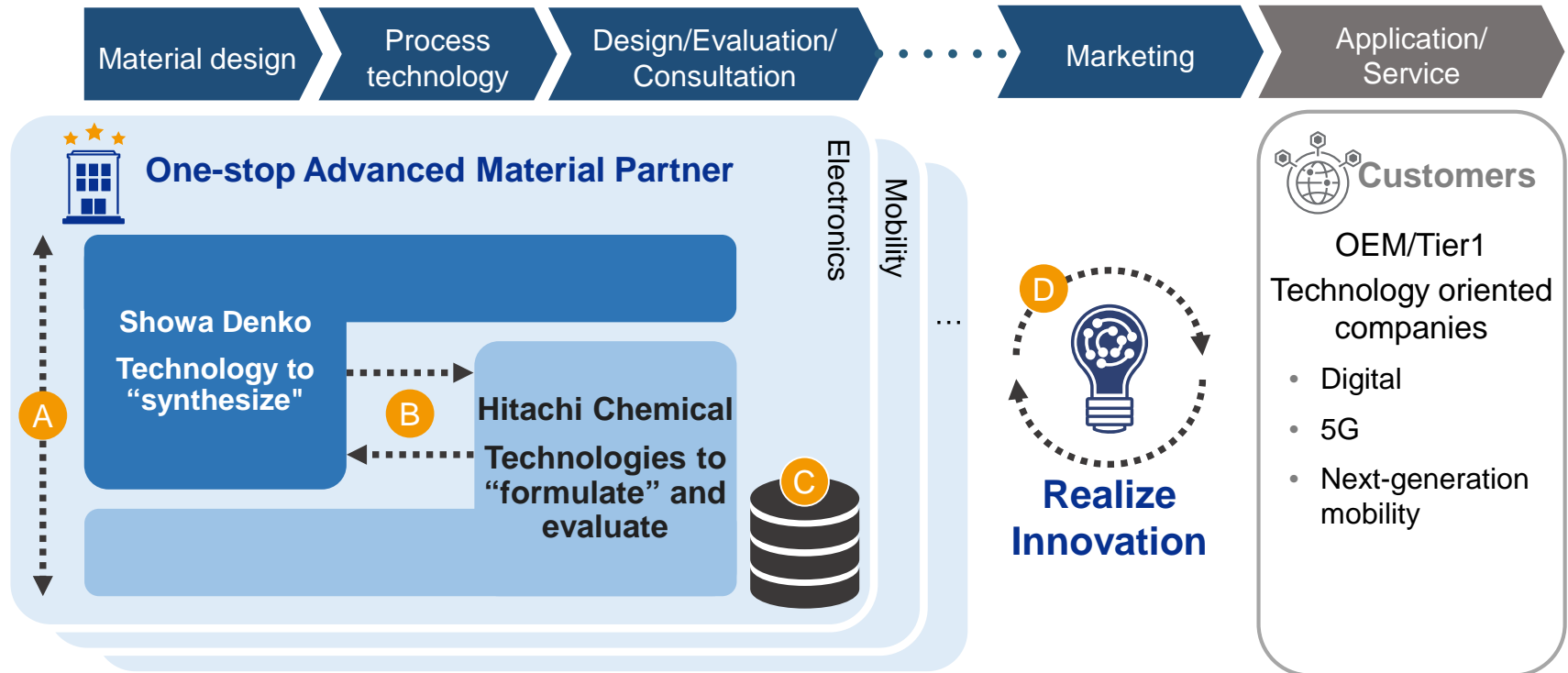


To respond to quick changes in technology oriented companies,

Realize Innovation

Strategies to integrate groups

Integration with Hitachi Chemical enabled us to strengthen our businesses in four points



- A** We realize **a system that can respond to customers' various requests flexibly** with wide-ranging materials and resources
- B** Showa Denko's products **thoroughly fulfill customer needs** Hitachi Chemical's products realize **development with sophisticated material design**
- C** Application of AI-based analysis process to both companies' products will **accelerate development of materials and practical implementation**
- D** **We draw technology road map based on market/customer needs**, and realize optimum allocation of resources for R&D and marketing.

Ideal image of the integrated company



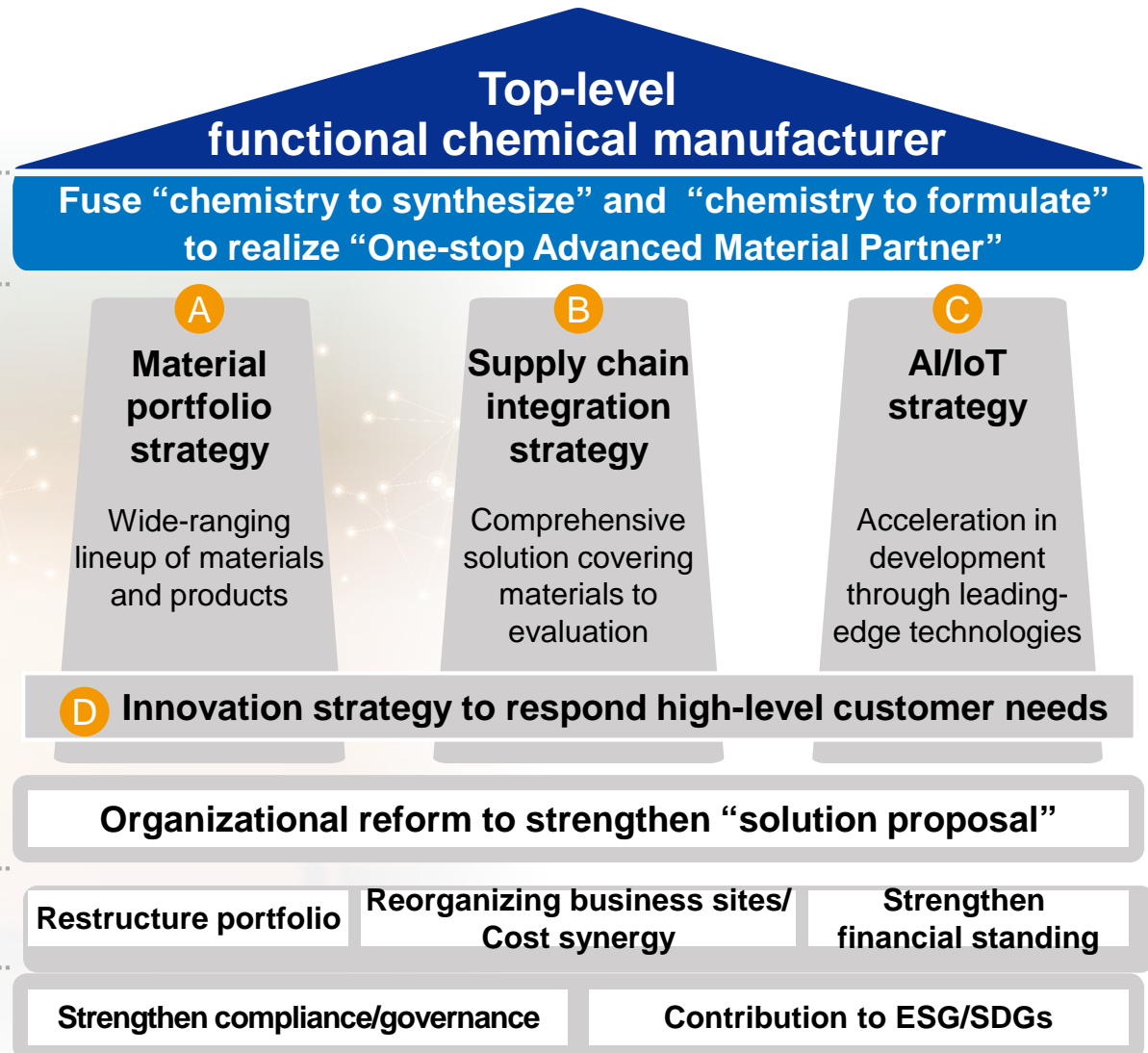
Ideal image

How to realize

Strategies to integrate groups

Strengthening business foundation

Corporate Responsibility



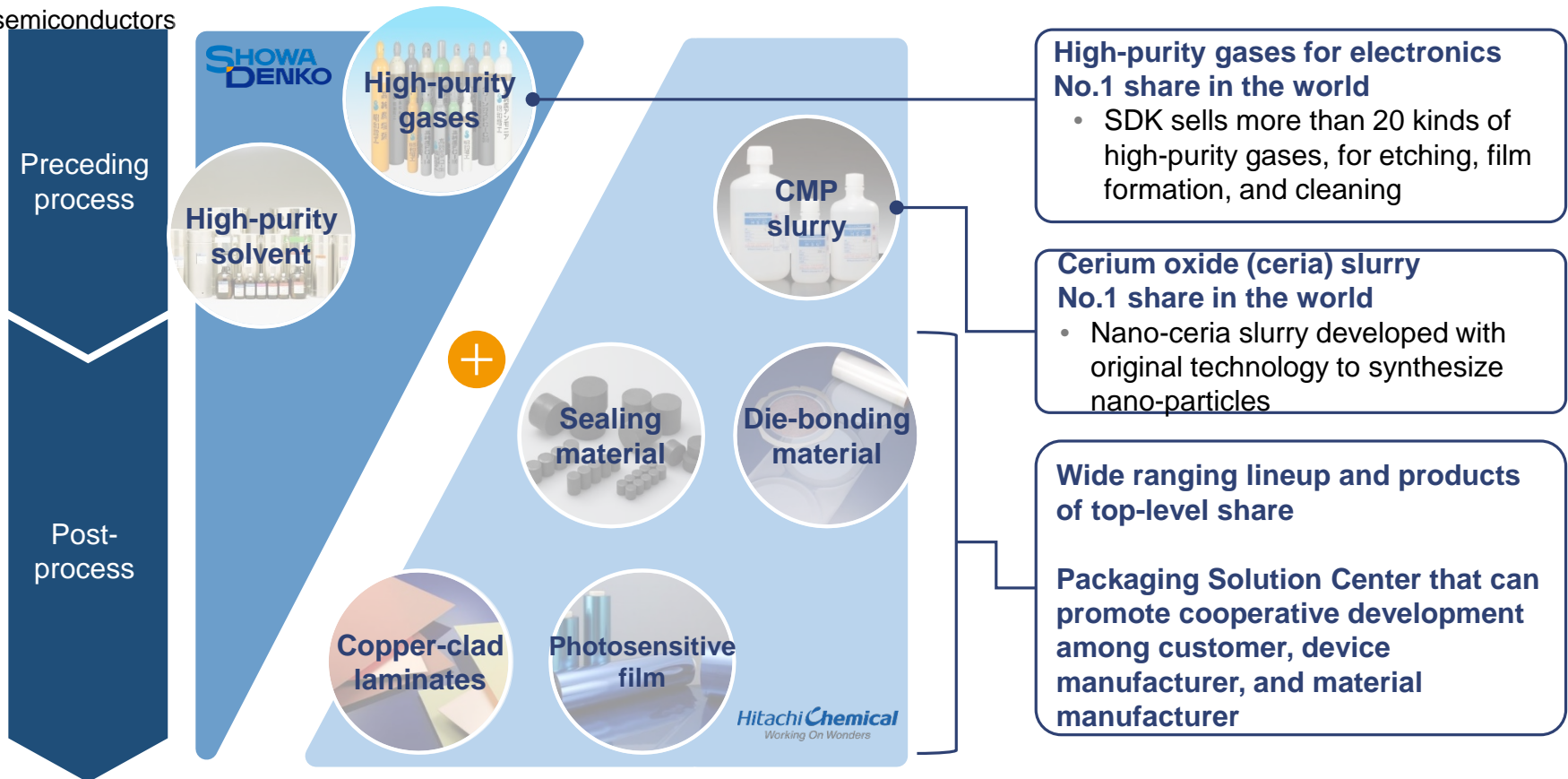
5. Integration with Hitachi Chemical

Business synergy ① Materials for semiconductors



We acquire power to offer materials for semiconductors and customer-friendly solutions by utilizing wide-ranging product portfolio covering the whole semiconductor manufacturing process

Process to
manufacture
semiconductors



5. Integration with Hitachi Chemical

Business synergy ② Materials for cars

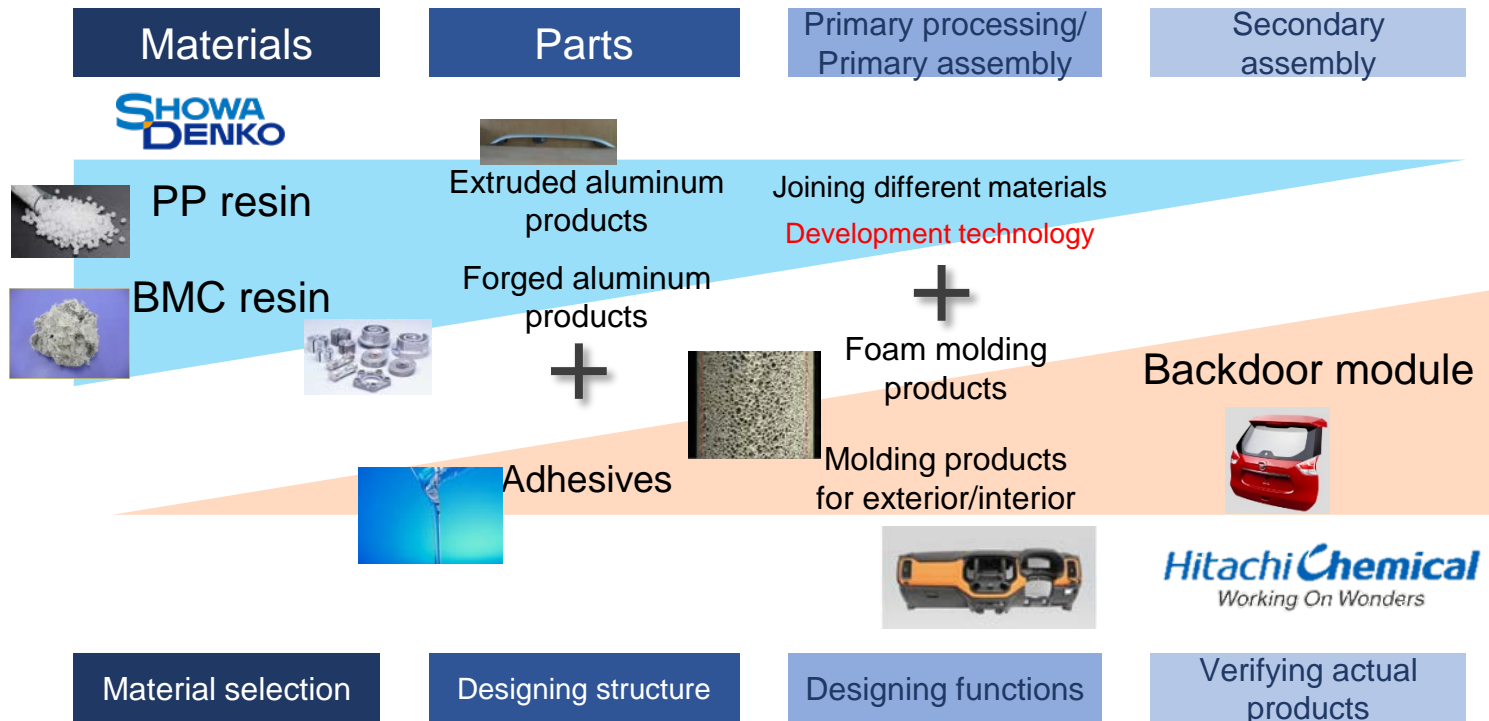


Deepening value chain and expanding product portfolio

→ Feedback from needs of end users to materials

Realization of breakthrough by development of composite materials

Product value chain



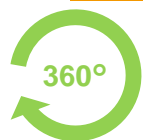
OEM cars
at home
and abroad

Development value chain

We start to investigate development of light-weight high-performance exterior modules

5. Integration with Hitachi Chemical

Business synergy ③ LIB materials



Expansion of product portfolio

→ Strengthen power to offer solutions that respond to sophisticated needs

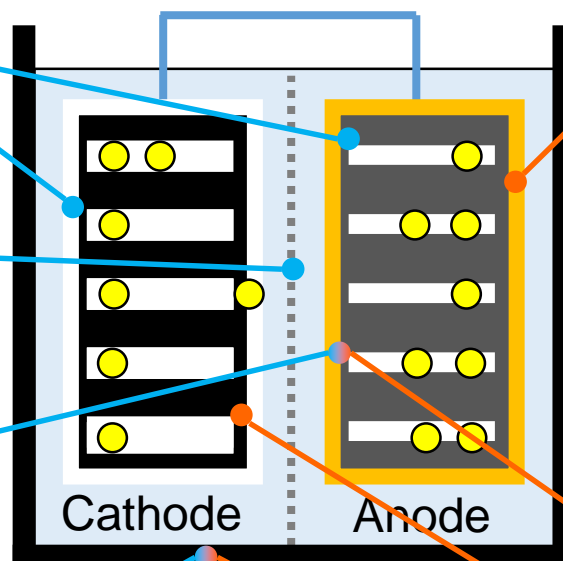


Conductive assistants for
anodes/cathodes
VGCF™-H

Separator
Binder for coating
Poly-N-vinylacetamide (PNVA)

Anode binder
POLYSOL LB series
(acrylic, aqueous)

LIB packaging material
Aluminum laminate film SPALF™



Anode active materials
Artificial graphite
MAG series, HPG series
Natural graphite
SMG series
Soft carbon
SMC series
Si-based anode materials
CRZ series

Anode binder
HPC series (polyamide-imide, solvent)

Cathode binder
LSR series (acrylic, solvent)

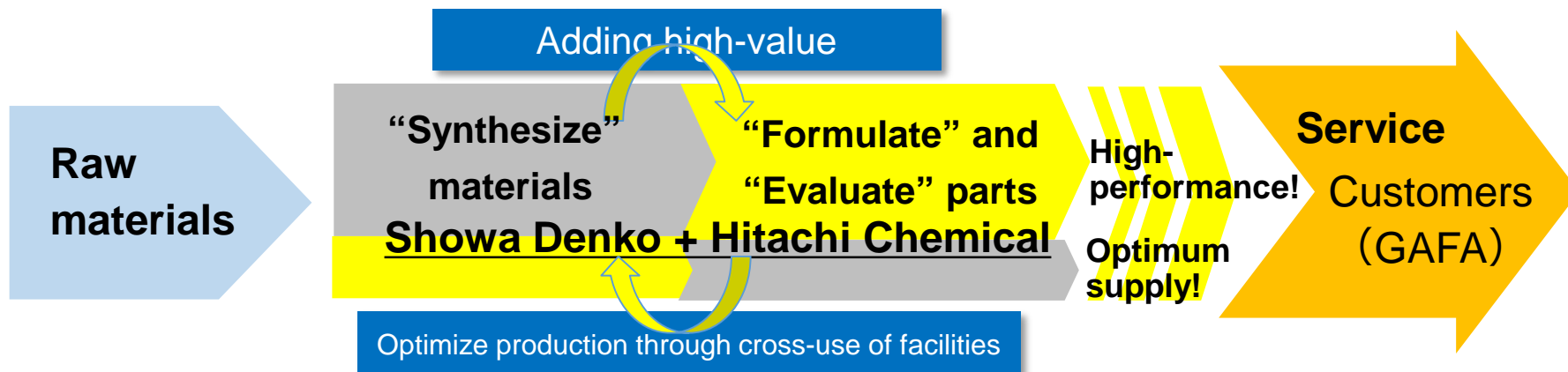
Adhesive for LIB packaging
AL/PP adhesive 9715-4

We aim to strengthen our power to offer solutions through combination of materials

Business synergy ④ Product: CMP slurry



Adding high-value



Showa Denko: ceramics and additive technologies

- ✓ Abrasives
- ✓ High-temperature control technology
- ✓ Clean room technology
- ✓ High-purity solvent
- ✓ High-purity additives



Additives for electronics

Hitachi Chemical: Technologies to control surface and interface

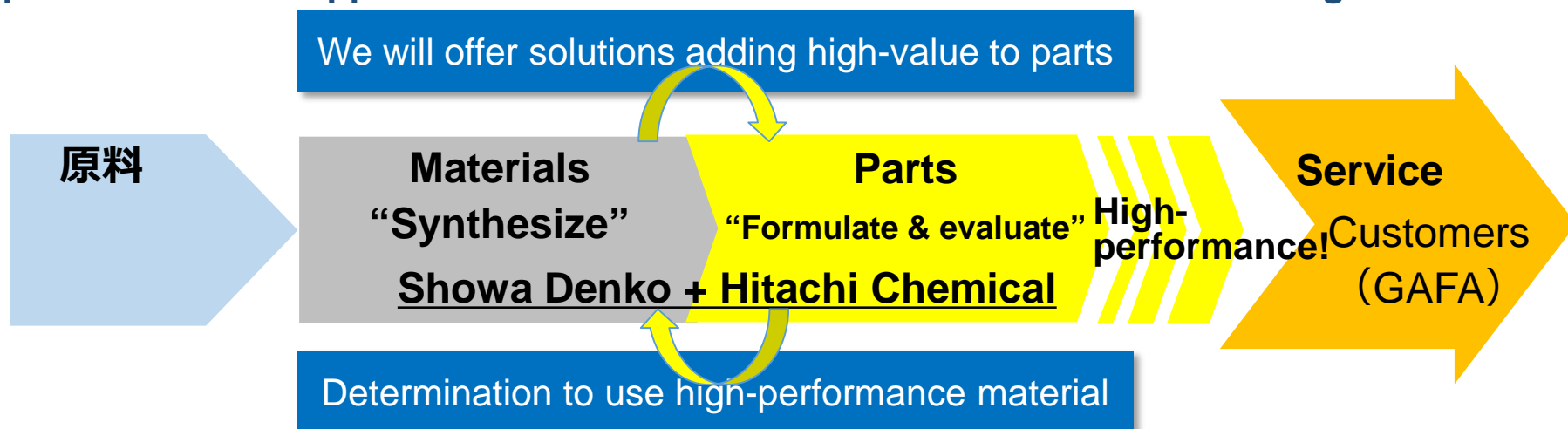


CMP slurry

5. Integration with Hitachi Chemical
Business synergy
⑤ Development (Copper-clad laminates)

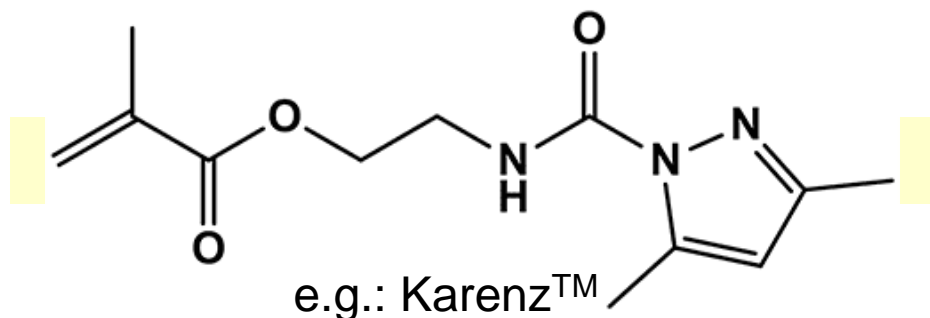


We will utilize Showa Denko's organic-molecule design and high-polymer technologies, and improve performance of resin for laminating, aiming to improve performance of copper-clad laminates in which Hitachi Chemical has strength.



Showa Denko: Technology to design organic/high-polymer molecules

Hitachi Chemical: Technology to design electronic parts



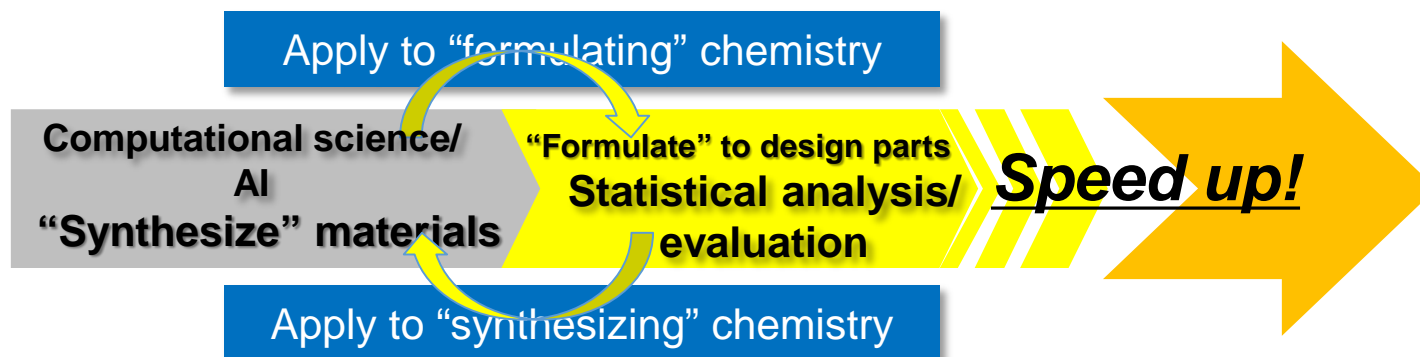
Copper-clad laminates

5. Integration with Hitachi Chemical
Business synergy
⑥ Development (Computational science)



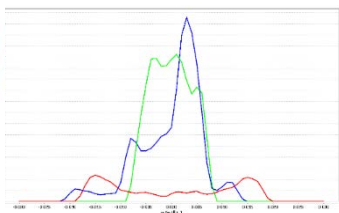
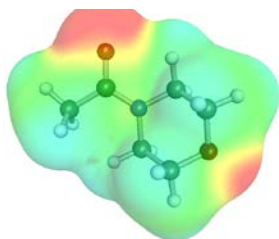
SHOWA
DENKO

We will accelerate development cycle by applying Showa Denko's computational science and AI technologies to Hitachi Chemical's "formulating" technology, and Hitachi Chemical's statistical analysis technology to Showa Denko's "synthesizing" technology.



Showa Denko: strength in computational science and AI

Designing molecule structure/
catalytic actions



Hitachi Chemical: strength in statistical analysis

Designing "formulating chemistry"



Integration/
cooperation

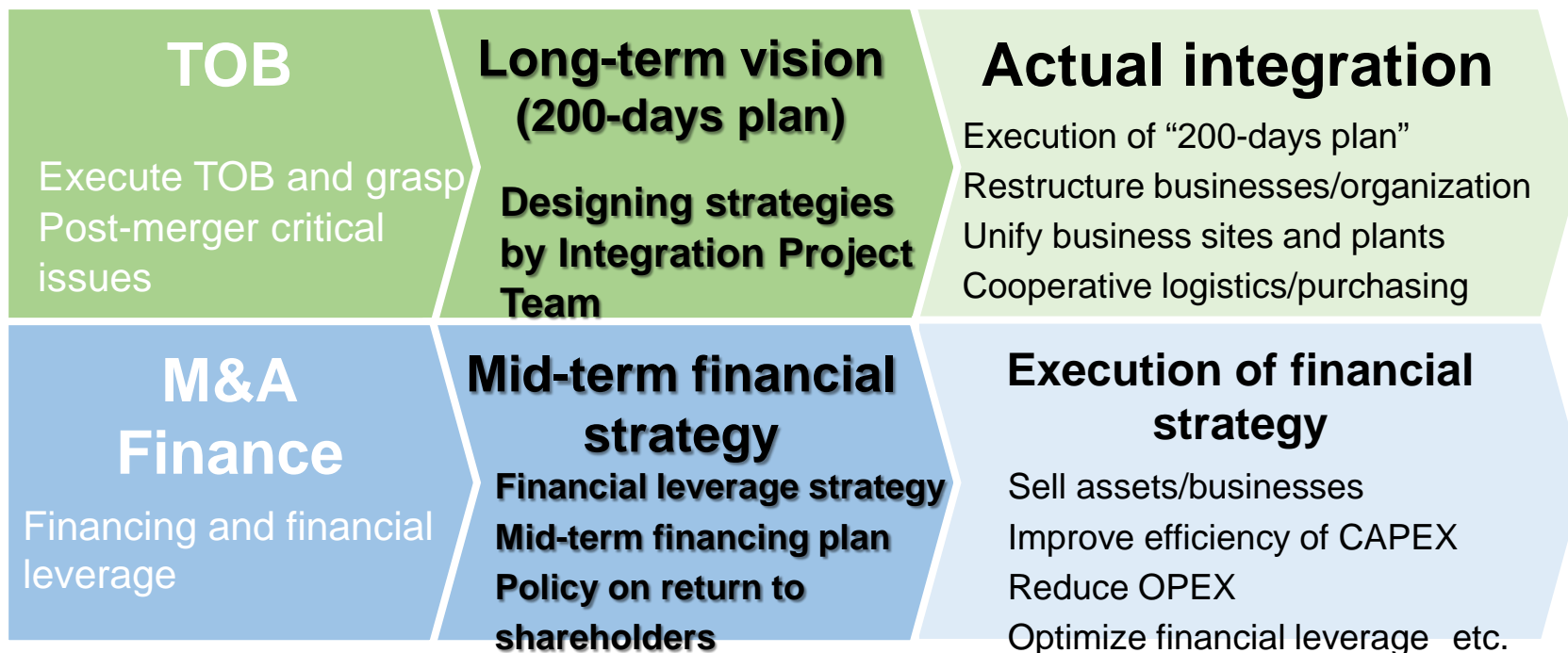
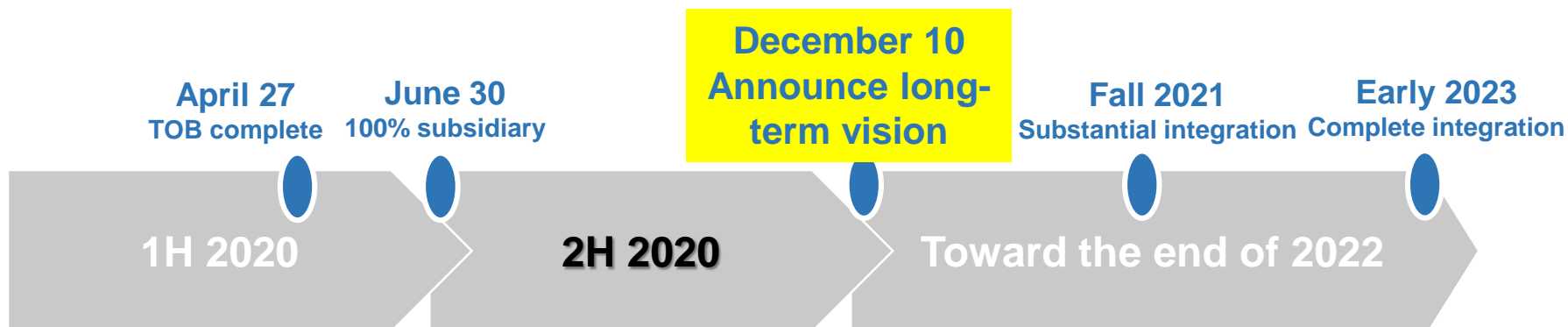
- ✓ Joint development
- ✓ Cross-use of platforms
- ✓ Personal exchange

We will promptly pursue synergy and start joint development in 3Q 2020

5. Integration with Hitachi Chemical



Road map toward integration



7. Briefing on long-term vision of the newly integrated company



We will have a briefing about the newly integrated company on December 10, 2020.

【Strategic issues】

- Long-term vision (200-days plan)
- Business portfolio / Plan to divest businesses
- Business synergy
- Innovation strategy
- Cost reduction plan
- KPI (Management performance indicators including profit, C/F plan, DE ratio, etc.)
- Policy on return to shareholders
- ESG to be pursued by the newly integrated company

【Financial issues】

- Policies on goodwill, depreciation of goodwill, and accounting
- Profit planning, Cash flow plan

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 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.