



# **2019 Financial Results**

## **Tasks and Strategies for 2020**

- “The TOP 2021” in Progress -



February 14, 2020

**SHOWA DENKO K.K.**

Kohei Morikawa, President & CEO

# Contents of briefing



1. 2020/2021 world economic environment
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6. Contribution to SDGs

# 1. 2020/2021 world economic environment



**We expect hard economic environment for 2020**  
(Major slowdown in Chinese economy: New type pneumonia)  
→ **Full economic recovery will be delayed until 2021**

## Each country's economy

【China】 Major slowdown expected: New type pneumonia may damage global supply chain and logistics. Watching US-China trade friction

【USA】 Still booming, but stagnant production in automotive and steel industries due to trade frictions

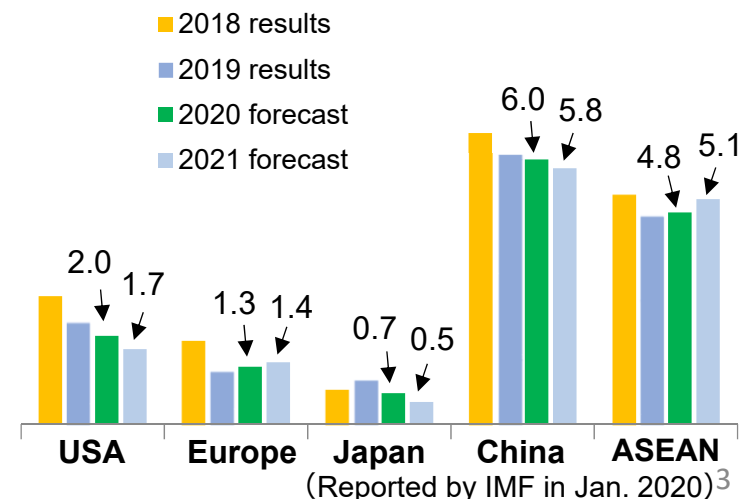
→ Watching presidential election (Nov. 2021)

【Europe】 Extended stagnant production of cars  
Watching progress in Brexit issue

【Japan】 Greatly affected by new-type pneumonia and business slowdown

Watching the situation in the Middle East  
Recovery in semiconductor and display industries will be delayed by the new-type pneumonia

**Growth rates of major economies (%)**



## Business environment around SDK



### Outlook for major businesses

#### 【Graphite electrodes】

- Reduced steel production  
Customers break into their GE inventories  
Bottoms out in 1H of 2020
- We optimize production capacity in Europe
- Depreciation of the inventory of high cost GEs will negatively affect our performance in 2020  
→ Production adjustment will end in 2021  
Full recovery will start in 2021

#### 【High-purity gases for electronics】

- Semiconductor memories are in recovery, but new-type pneumonia needs attention
- We will decide capital investments taking medium- to long-term growth in electronics industry

#### 【HD media】

- Sales of media for PCs will decrease. Recovery in sales of media for data centers will be delayed until 2H of 2020
- Start mass production of 1.8TB media, Develop and market MAMR/HAMR media  
→ In 2021, we will increase shipment volumes of HD media for use in data centers

### Weather forecast by business field

	2019	2020	2021 1H
Electronics			
FA・Industrial equipment			
Automotive			
Graphite electrodes			

## 2. 2020/2021 business environment

### 2019 financial results and forecast for 2020



(Unit: Billion yen)

	2018 results	2019 results a	2020 forecast b	Increase/ decrease b-a
Net sales	992.1	<b>906.5</b>	810.0	-96.5
Operating income	180.0	<b>120.8</b>	50.0	-70.8
Ordinary income	178.8	<b>119.3</b>	47.0	-72.3
Net income attributable to owners of the parent	111.5	<b>73.1</b>	15.0	-58.1
Annual dividend	¥120	<b>¥130</b> (planned)	¥130	—
Total return ratio	24.7%	<b>25.9%</b>	126.4%	

#### ◆ Notes for 2020 forecast

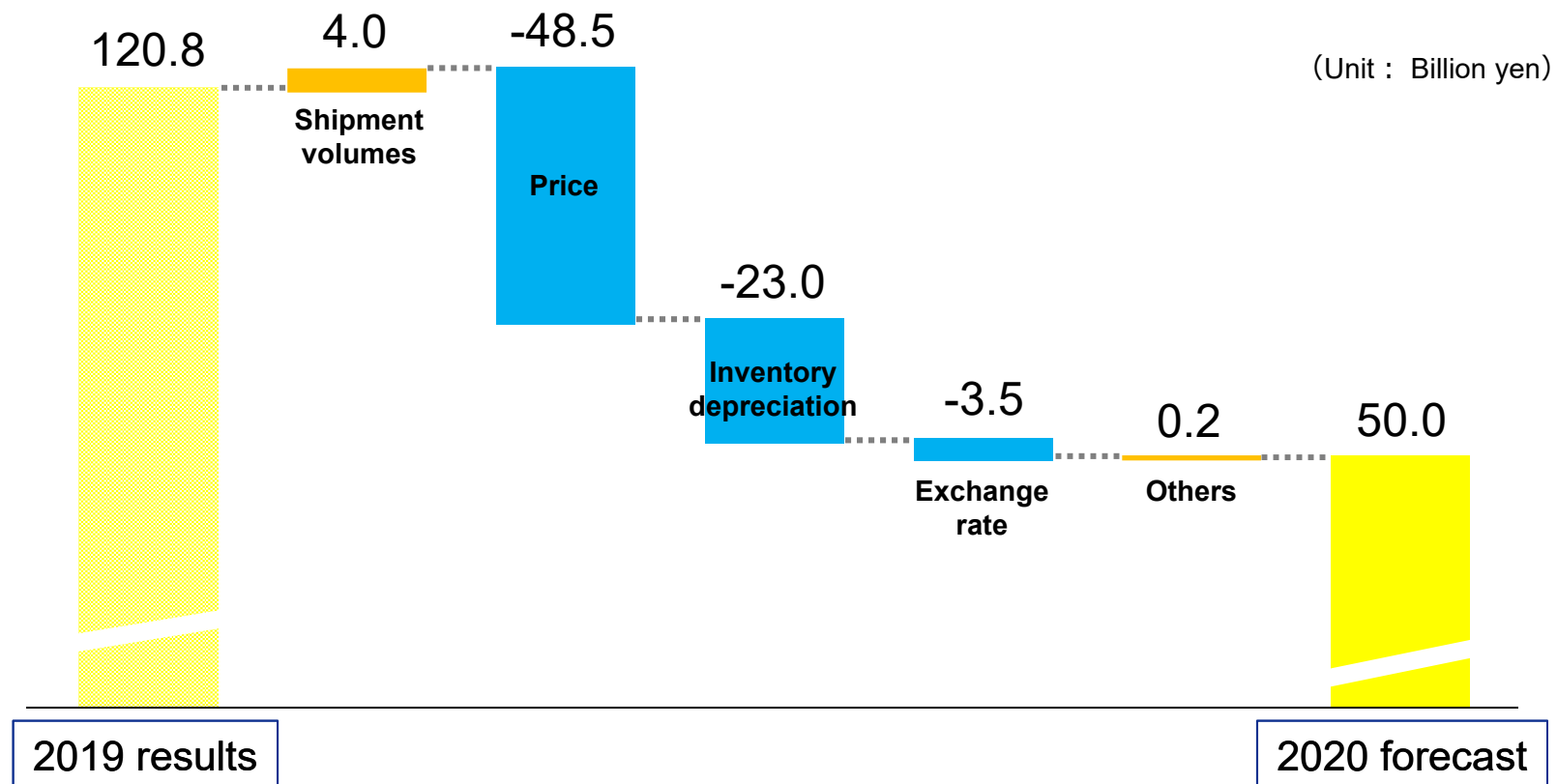
- Graphite electrodes: Reduced production in 1H. Depreciation of inventories of raw materials will have negative effect. We are optimizing our production capacity in Europe.
- Extraordinary loss: ¥22 billion (in order to promote business restructuring)

## 2. 2020/2021 business environment



### Factor analysis: Operating income, 2019 vs 2020

- ◆ Positive factors: Shipment volumes of high purity gases for electronics and HD media will increase
- ◆ Negative factors: Graphite electrodes, fall in sales prices, depreciation of raw materials  
Difference in exchange rate



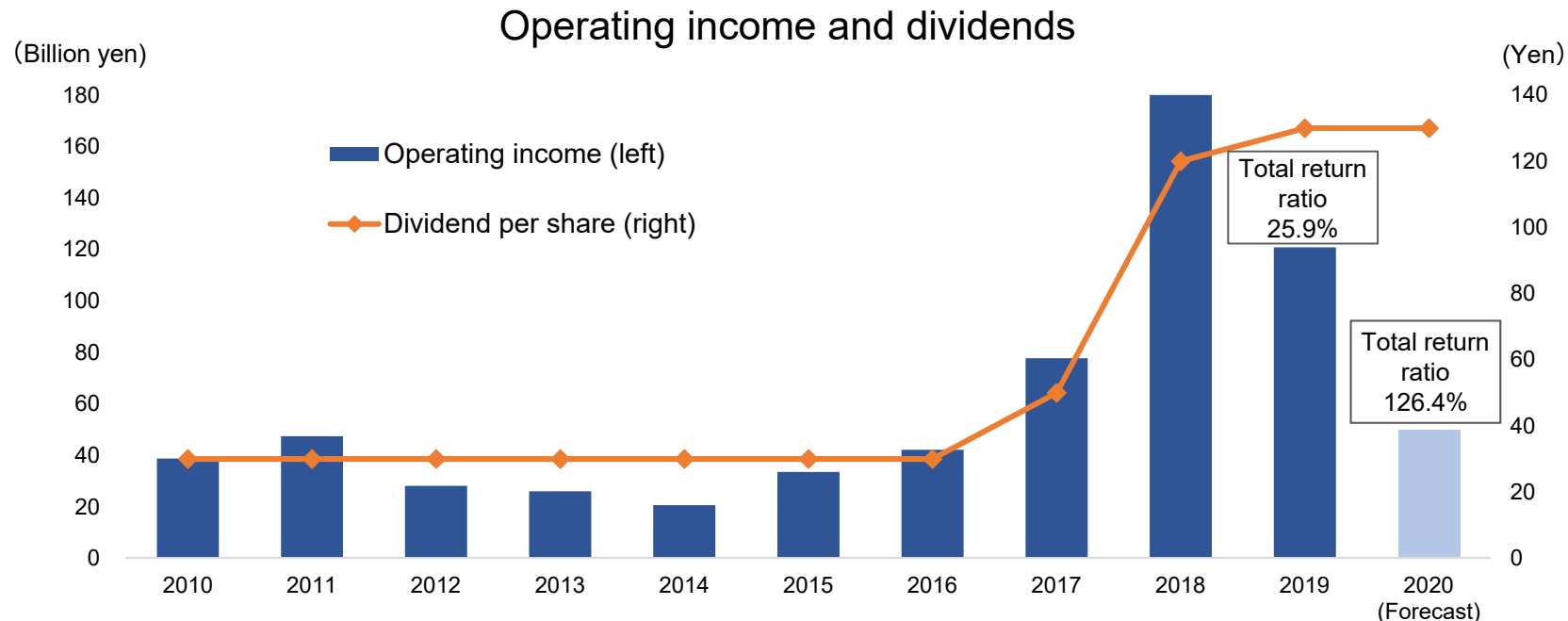
## 2. 2020/2021 business environment



# Policy on return to shareholders

### ◆ Policy on return to shareholders

- 2020: We will continue stable dividend of ¥130 per share  
Looking at income increase in 2021, we will maintain high-level dividend despite hard business environment in 2020
- 2021: We will aim to achieve total return ratio of 30%  
→ 2018: 24.7%, 2019: 25.9%, 2020: 126.4%



We consolidated ten shares into one share on July1, 2016. Above data are based on number of shares after consolidation, retrospectively.

### 3. Major businesses' strategy for 2020 and outlook for 2021

## Graphite electrodes

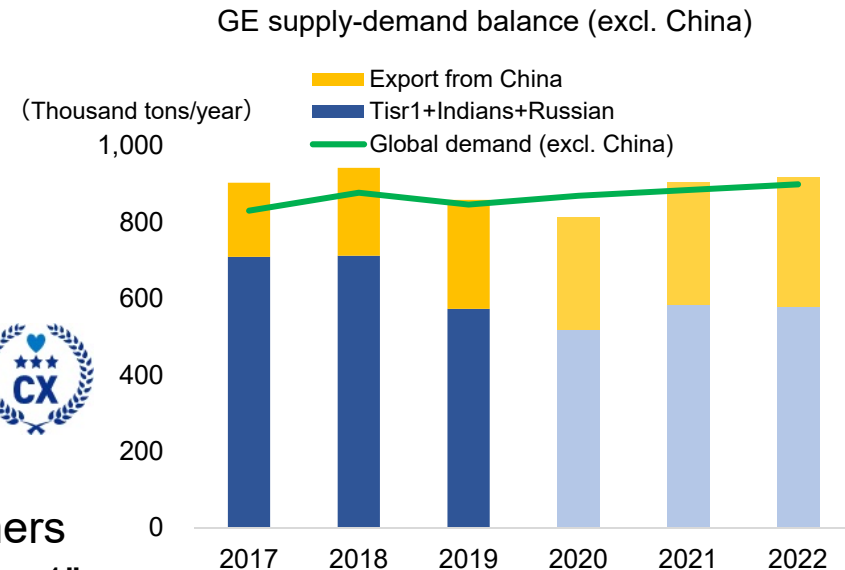


#### 【 Business environment in 2020 】

- Fall in global demand for steel prolongs customers' GE inventory adjustment  
Economic slowdown in Europe intensifies this trend. 1H is the bottom. Recovery in 4Q.
- Depreciation of raw material inventory significantly reduces our profit
- High operating rate of Chinese blast furnaces continues  
→Affects operating rate of electric furnaces

#### 【Policies to be enforced in 2020】

- Optimize capacity of our GE plants in Europe and reduce production further  
→We will stop operation of Meitingen Plant  
Layoff at Stieg Plant
- Continue capital investment to upgrade GE quality produced in Europe  
→Establish Tier 1 quality (customized products)  
Create win-win relationship with major customers  
Provide major customers with “Value in Use No.1”
- Increase number of customers who attach importance to Tier 1 quality, and make GE business realize sustainable high-level profitability



#### 【Outlook for 2021】

- Complete inventory adjustment by reducing production, increase shipment volumes, solve depreciation of raw material inventory, and increase operating income greatly.



### 3. Major businesses' strategy for 2020 and outlook for 2021

## HD media



#### 【Business environment in 2020】

- Market for HDDs for PCs will shrink, while that for surveillance cameras will expand.
- Shipment volumes will be levelled off until 1H 2020, but those for near line (NL) use will increase due to higher investment in data centers (DCs).

#### 【Policies to be enforced in 2020】

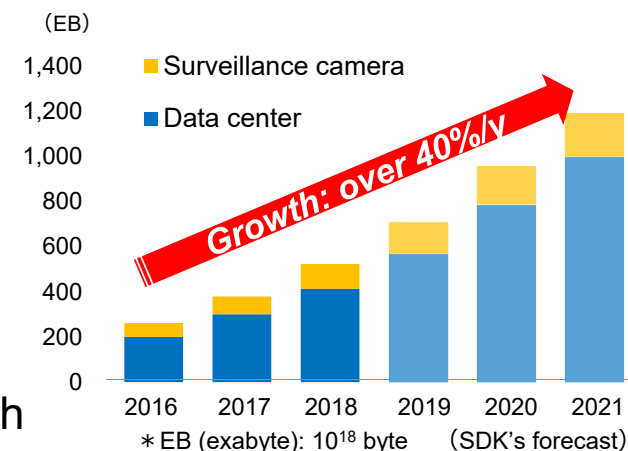
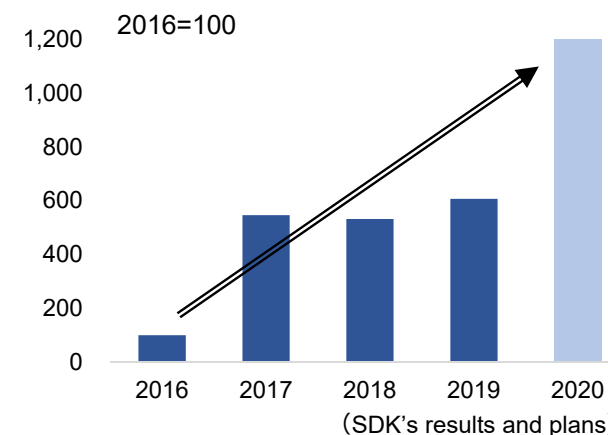
- Increase supply of mass storage media for NL use  
→ Continue development of “Best in Class” HD media
- Start mass production of next-generation MAMR media
- Development of HAMR media (announced on Feb. 6)
- Improve profitability through better productivity and cost reduction

#### 【Outlook for 2021】

- Spread of 5G will increase the amount of generated data  
→ Great increase in demand for media for NL use in DCs
- We will start mass production of HD media compatible with next-generation recording method (MAMR/HAMR)



SDK's shipment volumes of HD media for NL use



### 3. Major businesses' strategy for 2020 and outlook for 2021

## High-purity gases for electronics



### 【Business environment in 2020】

- Demand for semiconductors used in 5G devices will take off. Recovery of investment in DCs.  
→ The fundamental of the demand for semiconductors is toward recovery.  
Progress in micromachining and multilayer structure of semiconductor chips increases the demand for high-purity gases.
- New-type pneumonia may disturb production of semiconductors by our customers.

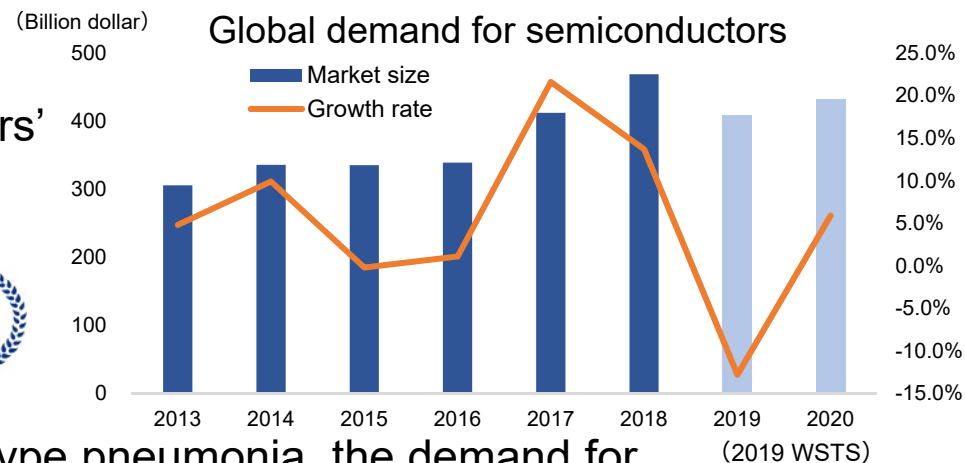
### 【Policies to be enforced in 2020】

- Increase shipment volumes of high-purity gases in order to respond to recovery of the demand for DRAM and NAND memory chips
- Execute capital investment to increase our production capacity, aiming to respond to demand increase caused by 5G and investment in DCs
- Continue investment in etching gas production/distribution facilities to respond to demand increase.
- Strengthen sales system by establishing supply system synchronized with customers' production capacity increase  
→ Investment in Shanghai and Taiwan
- Develop new etching gases
- Cultivate European market



### 【Outlook for 2021】

- After calming down of the spread of new-type pneumonia, the demand for memory chips will return to growth track, and our shipment volumes will increase.



### 3. Major businesses' strategy for 2020 and outlook for 2021

## SiC epitaxial wafer for power devices



### 【Business environment in 2020】

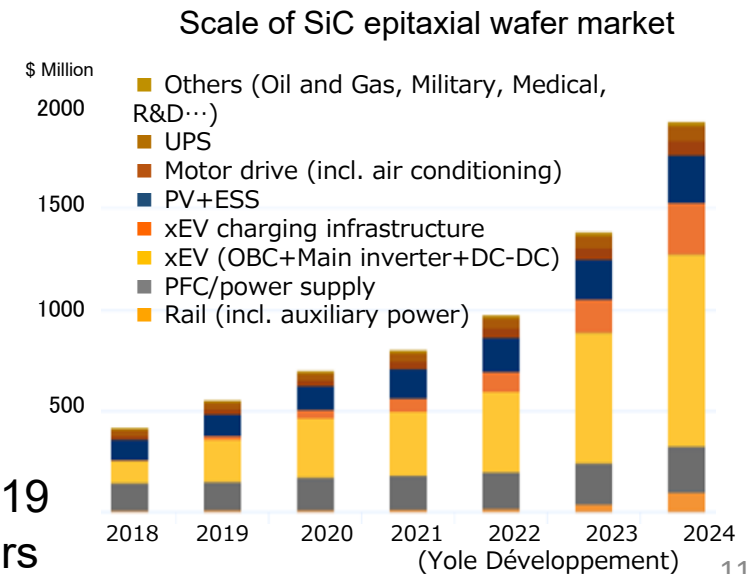
- Customers' breaking into inventories will continue, which were accumulated in 2018.
  - Decrease in demand for solar cells in China may level off the demand for epi-wafers. However, shipment volumes of epi-wafers for use in railcars remain strong.
  - In 2020, the spread of COVID-19 may depress the demand for SiC epi-wafers, but the increase in demand for epi-wafers to be used in EVs will gradually push up our shipment volumes.
- The market for high-value-added SiC epi-wafers will expand (SBD+MOSFETS with high breakdown voltage)

### 【Policies to be enforced in 2020】

- Start mass production of HGE-2G (next-generation SiC epi-wafer)
- Respond to advanced needs caused by the spread of EVs and related devices.
- Strengthen earning power of the business through improvement in productivity.

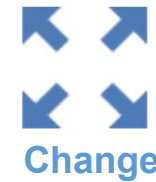
### 【Outlook for 2021】

- Full-swing recovery in the markets for industrial equipment and EVs due to quieting down of COVID-19
- Full-gear expansion of the market for SiC epi-wafers



### 3. Major businesses' strategy for 2020 and outlook for 2021

## Aluminum cans



#### 【Business environment in 2020】

- Vietnamese and Thai markets continue growing
- Shift to aluminum cans in progress worldwide due to environmental consideration

#### 【Policies to be enforced in 2020】

- Complete streamlining of domestic production capacity
- Promote introduction of formulae linked to aluminum-metal prices to calculate and determine sales prices of aluminum cans
- Establish system to produce multiple models in smaller lots
- Start operation of the third plant in Vietnam and added line to produce can ends as planned

#### 【Outlook for 2021】

- Restructuring of domestic operation of the business will contribute to improvement in our performance throughout the year. (streamlining of domestic production capacity and introduction of pricing formula)
  - Start-up of the third factory in Vietnam will significantly increase our production overseas
- Profit of aluminum can business will significantly increase



Conceptional drawing of Va Ria-Vung Tau factory 12

### 3. Major businesses' strategy for 2020 and outlook for 2021

## Aluminum rolled products Aluminum specialty components



#### 【Business environment in 2020】

- Aluminum rolled products: In Japan, sales of rolled products for FA and industrial equipment are stagnant. Recovery of Chinese market is delayed due to new-type pneumonia
- Aluminum specialty components: Car production remains sluggish worldwide. Production of industrial equipment is partially recovering in the fields related to 5G. But full-swing recovery will be delayed until 2021.

#### 【Policies to be enforced in 2020】

- Aluminum rolled products: Secure market share of 40% for high-end products used in high-voltage capacitors. Consider expansion of Nantong Plant in China to start integrated production of aluminum foil from aluminum ingot.
- Aluminum specialty components: Prepare for mass production of new models of heat radiators for EVs and HVs, and start mass production of weight-saving parts for SUVs.

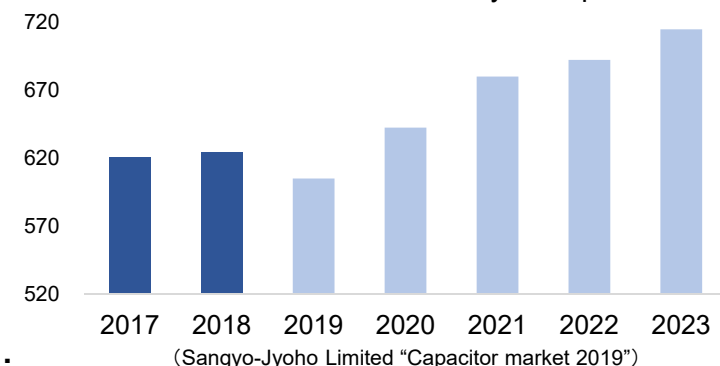
#### 【Outlook for 2021】

- Gradual recovery in automotive market will increase demand for our products.
- CASE will be in rapid progress. Focus our resources on development and sale of heat radiation components for EV/HV and weight-saving parts including suspension.



Heat radiator for HVs

(Billion yen) Market for aluminum electrolytic capacitors



### 3. Major businesses' strategy for 2020 and outlook for 2021

## Petrochemicals



### 【Business environment in 2020】

Demand in East Asia is sluggish due to demand decrease in China. We continue taking measures to stabilize profit of the Petrochemicals segment.

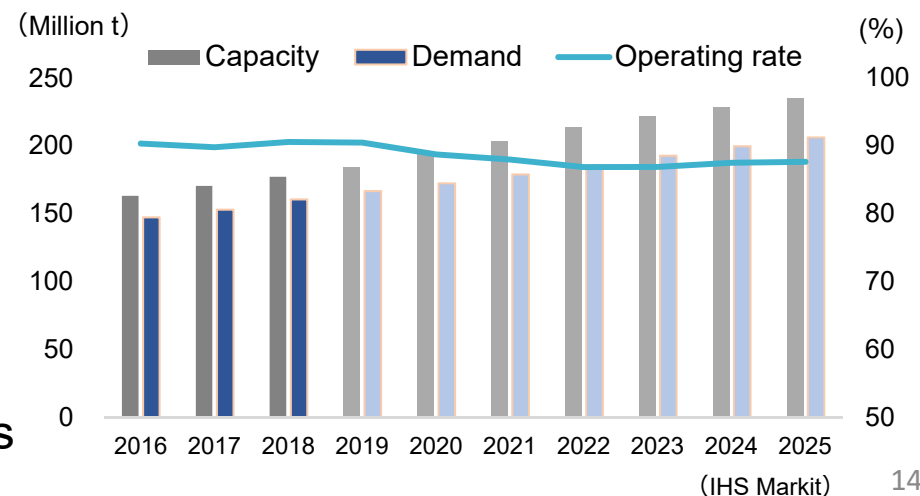
### 【Policies to be enforced in 2020】

- We replaced naphtha cracker in 2010 and established highly efficient production system. We will expand the lineup of derivatives and improve profitability of our petrochemicals business.
- We will start production of new derivative (1,3-BG) in April 2020.
- Improve catalysts to ensure two-year continuous operation of ethyl acetate plant.

### 【Outlook for 2021】

- Hard business environment in East Asia. But we will maintain high-profitability of our petrochemicals business.
- Continue to investigate opportunities to expand lineup of highly-profitable products

Global supply and demand for ethylene





### 3. Major businesses' strategy for 2020 and outlook for 2021

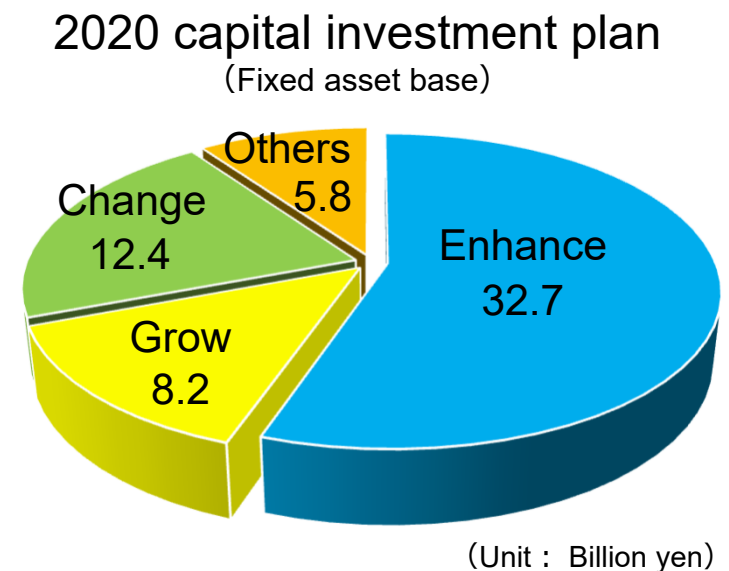
Carefully select investment and promote structural reform of businesses



#### **Capital investment: Continue carefully selected investments, aiming to strengthen competitiveness**

- Increase capacity to produce high-purity gases for electronics  
Promote aggressive marketing in China
- Consider increasing capacity to produce titanium oxide for MLCC
- Investment to improve quality of GEs (continued)
- Construct “Stage for Fusion,” a composite facility for R&D

⇒ 2019: ¥50.2 billion    2020: 59.1 billion    Total: ¥109.3 billion



#### **Structural reform of businesses**

- Optimize GE production capacity in Europe (announced on Feb. 5)
- Stop production of anode material (SCMG) for LIBs
- Concentrate domestic production of unsaturated polyester resin and vinyl ester resin (announced on Jan. 20)

#### 4. Important policies under “The TOP 2021”

### “The TOP 2021”



To realize our Vision, “KOSEIHA Company,” we draw our road map toward long-term growth under “The TOP 2021”





#### 4. Important policies under “The TOP 2021”

## To realize KOSEOHA Company



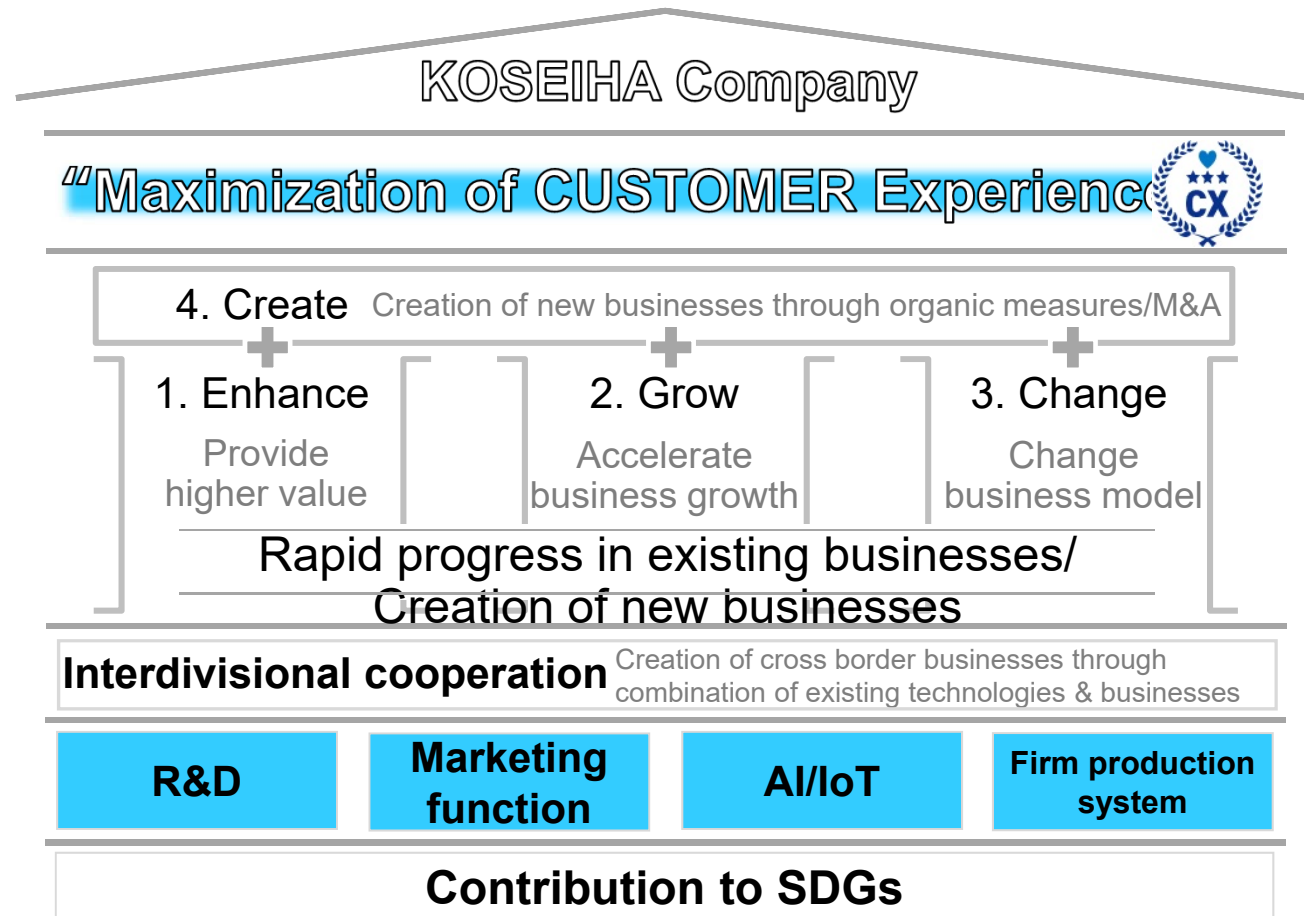
Our goal (Vision)

Means to realize  
Vision (Value)

Pillars of  
Group strategy

Strengthen business  
foundation

Corporate social  
responsibility



4. Important policies under “The TOP 2021”  
Draw road map toward growth  
Strictly examine investment plans



## **Promote strategy and measures toward growth**

- ◆ Investment toward growth, M&A, Enrich return to shareholders
- ◆ Establish and strictly apply capital investment evaluation criteria consistent with business plan and business portfolio  
(DCF method: Utilize hurdle rate considering WACC)
- ◆ Promote important policies
  - Maximization of CUSTOMER Experience
  - Marketing anticipating market growth driver and technical trend
  - Promote R&D and utilize AI/IoT
- ◆ Draw road map to make each business KOSEIHA Business
- ◆ Strengthen business foundation for global operation

#### 4. Important policies under “The TOP 2021”

## Maximization of Customer Experience



Draw road map to make each business KOSEIHA Business

→ Establish overwhelming competitiveness through maximization of Customer Experience, acquire high position in the market and stabilize profit at high level (Provide solution with high cost performance, and establish customer-friendly supply system)

### Specific examples of “Maximization of Customer Experience”

#### ① Graphite electrodes



- Customizes GEs for each user's furnace and way to use

#### ② High-purity gases for electronics



- Rich lineup of gases corresponding to the variety of customers' use  
We deliver right gases in a timely manner

#### ③ Aluminum specialty components



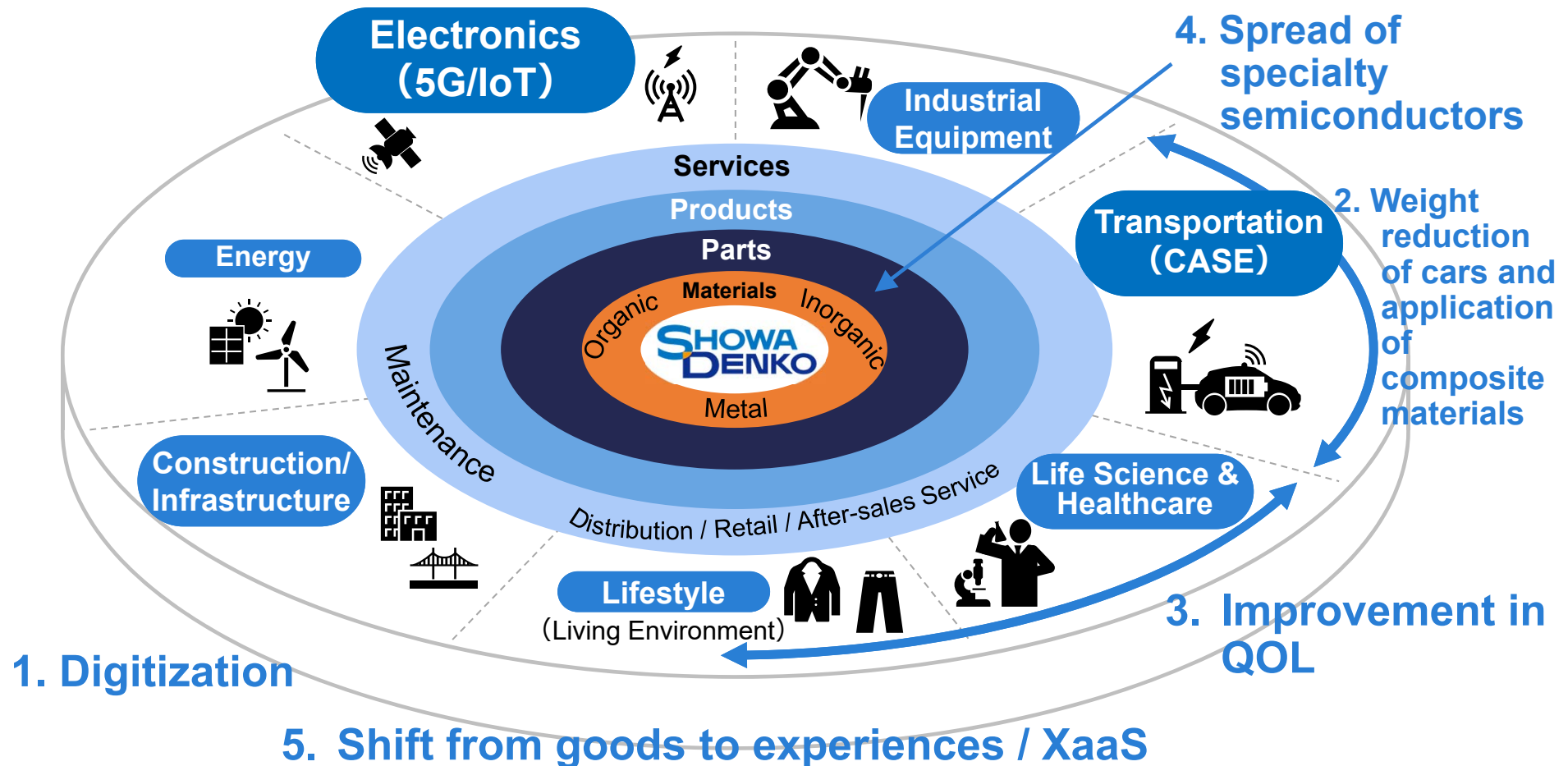
- On the basis of advanced simulation of heat radiation, we offer optimum solution for aluminum composite material for application to automotive heat radiation component

#### 4. Important policies under “The TOP 2021”

## Business domains and growth drivers



We set 5 growth drivers in 7 business domains as presupposition of the new medium-term business plan



#### 4. Important policies under “The TOP 2021”

### Actions in the business domain of “Transportation”



**As the first case of inter-business cooperation, we have launched a project to create new composite materials for cars utilizing aluminum as key material**

**By counting backwards from the future of automobile industry, we anticipate changes in the industry’s needs for materials**

**Light weight/  
rigidity**

**Heat radiation/  
Heat storage**

**Electrical  
insulation**

**Adhesion between  
different materials**

### Composite-material solution utilizing our original materials/technologies

#### Wide-ranging portfolio of materials / Progress in technologies to produce materials

##### Aluminum

- Designs for alloys
- Plastic working
- Surface/interface reforming

##### Organics

- Designs for high polymers
- Forecast of properties

##### Inorganics & Electronics

- Nano-carbon materials
- Crystallization/particles
- Analysis of properties
- SiC epitaxial wafer for power devices
- Optical semiconductors
- Materials for capacitors



#### Process design / Evaluation technologies

- Parts structure analysis / simulation
- Heat radiation analysis / simulation
- Development of technologies to bond materials

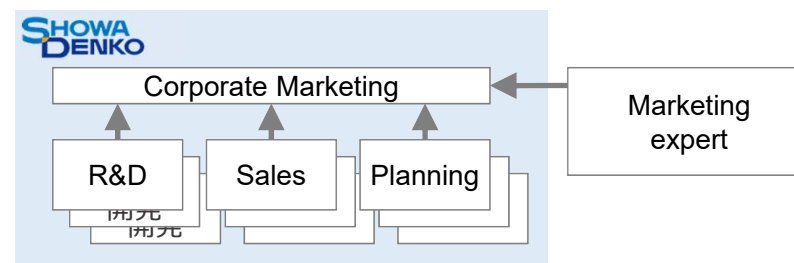
#### 4. Important policies under “The TOP 2021”

## Strengthening marketing function



We set up Corporate Marketing Team within the Corporate Strategy Department,

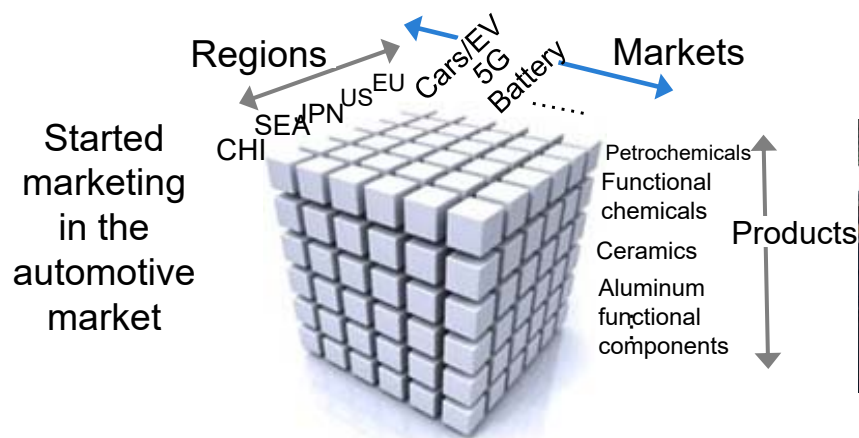
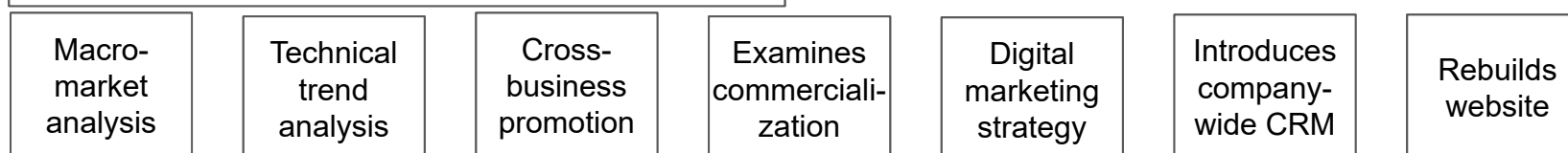
It is a cross functional multitasking team



### Corporate Marketing Team's mission

Plans and implements cross-business marketing strategy at the early stage of the market

Establishes company-wide marketing platform



Booth at a cross-business exhibition  
The Battery Show 2019 in Stuttgart



Website to introduce new technologies  
<https://www.sdk.co.jp/innovation/>





#### 4. Important policies under “The TOP 2021”

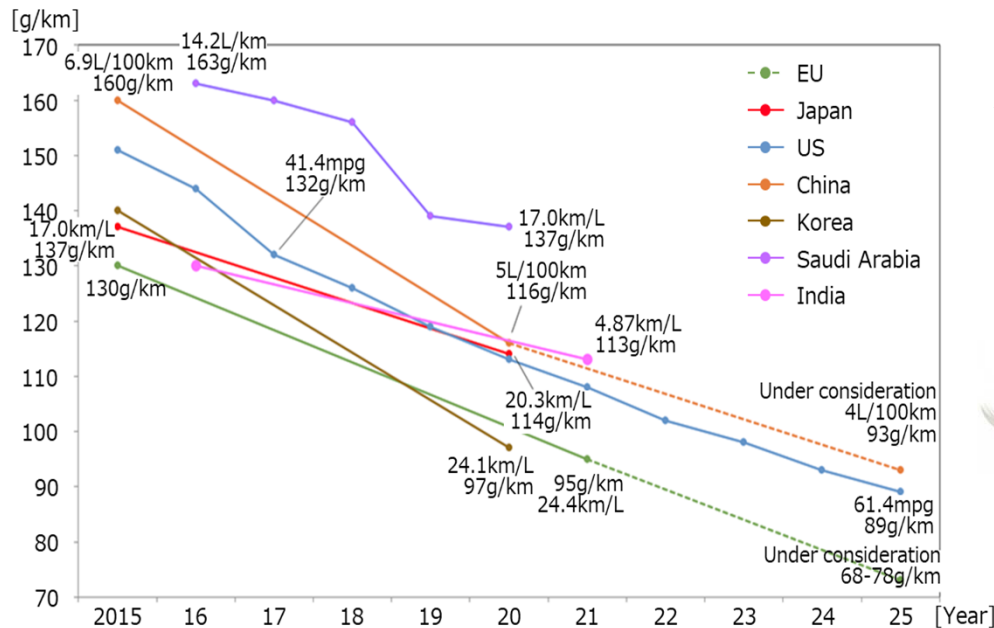
### Progress in composite automotive parts project

Responding to social needs



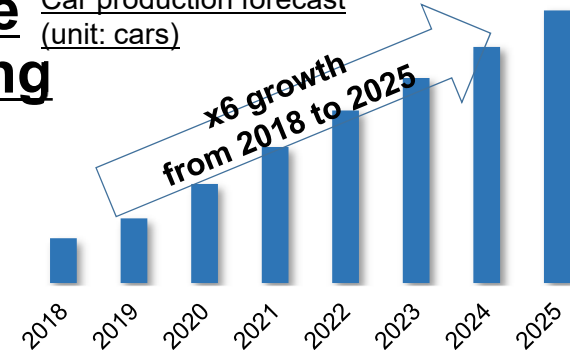
## Reduction of CO<sub>2</sub> emission

Automotive industry's social issue



## xEVs are spreading

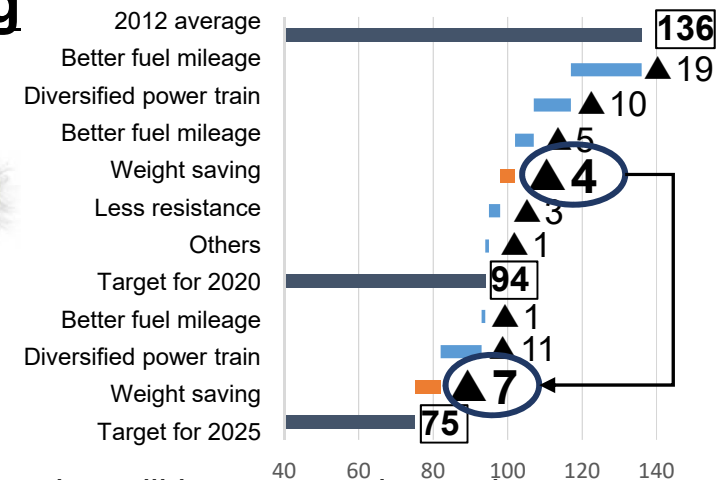
Car production forecast  
(unit: cars)



Growth rate of EV production is expected to surpass that of total car production

## Weight saving

Measures and their degrees of contribution to CO<sub>2</sub> reduction (g/kg)



Weight saving will be more and more important

#### 4. Important policies under “The TOP 2021”

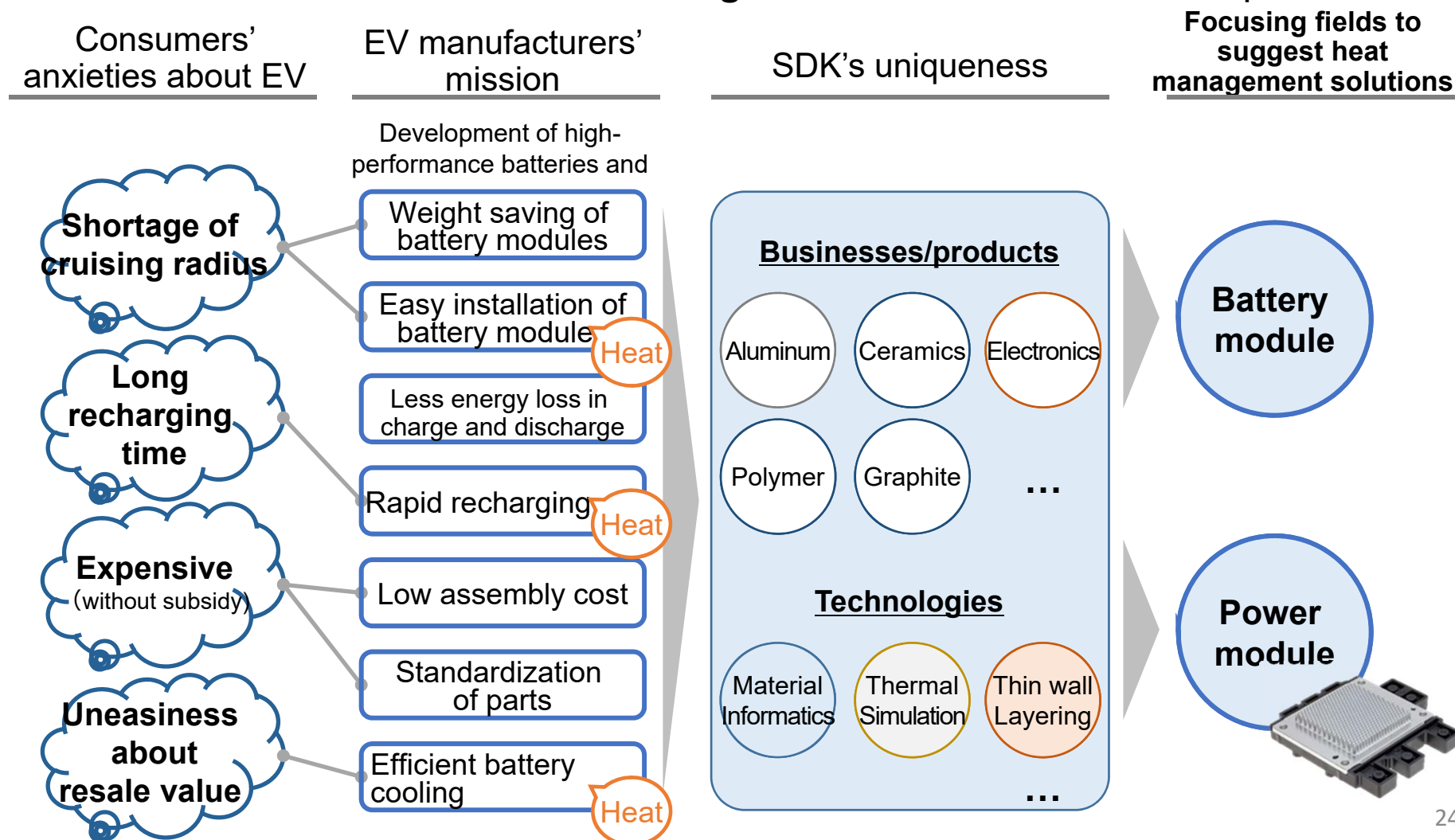
## Responding to market trend

Spread of xEVs



Spread of pure EVs still requires solution of many problems

→We can offer solution to **heat management** that becomes more important





#### 4. Important policies under “The TOP 2021”

### Solution concept xEVs/Battery module



#### Battery module

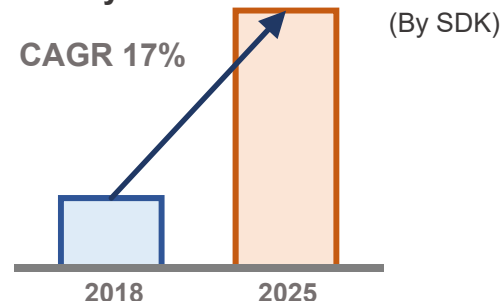


SDK offers solution to manage increasing heat and other **contradictory issues** through combination of **our proprietary material and simulation technologies**

#### Growing market

Market in 2025 will be **3.5 times** as large as that in 2018

#### Expected growth of the market for EV battery module materials



#### Automotive industry's issues

Contradictory issues

Effective heat radiation

Trade Off

Downsizing of batteries

Standardized parts

Trade Off

Various models

Efficient heat radiation

Trade Off

Simple assembly process

#### Solution concept

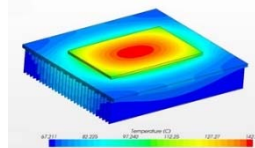
Integrated module with heat radiation function

Heat radiation with coolant

Direct heat radiation from battery cells

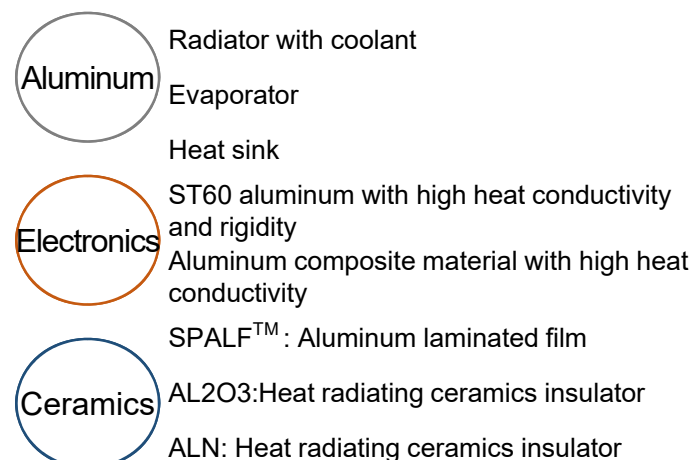
Composite heat radiation plate

Rigid aluminum case



#### SDK's originality

We realize breakthrough to solve contradictory issues through combination of various materials



We strengthen our proposal with heat radiation simulation technology 25

#### 4. Important policies under “The TOP 2021”

## Solution concept xEVs / Power module



### Power module

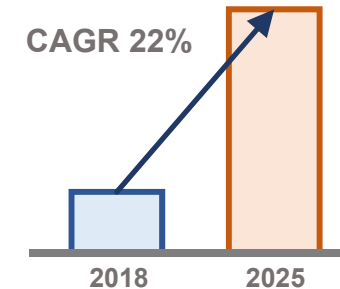


SDK offers solution to manage increasing heat and other **contradictory issues** through combination of **our proprietary material and simulation technologies**

### Growing market

Market in 2025 will be **4 times** as large as that in 2018

Expected growth of the market for power module heat radiator



### Automotive industry's issues

Contradictory issues

High operational temperature

Trade Off

Higher reliability

Better heat radiation

Trade Off

Downsizing & weight-saving

Heat-resistant & reliable

Trade Off

Simple assembly

### Solution concept

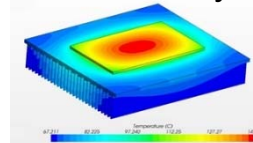
Select material with optimum expandability

Insulating substrate with high thermal conductivity

High-performance heat sink

Heat-resistant sealing resin

SiC with low defect density



### SDK's originality

We realize breakthrough to solve contradictory issues through combination of various materials

- Aluminum: Heat sink/Heat pipe  
ST60 aluminum with high heat conductivity and rigidity
- Polymer: Low linear expansion aluminum composite material
- Ceramics: Insulating heat radiant ceramics BN  
Insulating heat radiant ceramics AL203
- Electronics: Insulating heat radiant ceramics ALN  
SiC epitaxial wafer

We strengthen our proposal with heat radiation simulation technology<sup>26</sup>

#### 4. Important policies under “The TOP 2021”

## Responding to market trend Weight reduction



Spread of multimaterial based equipment will accelerate

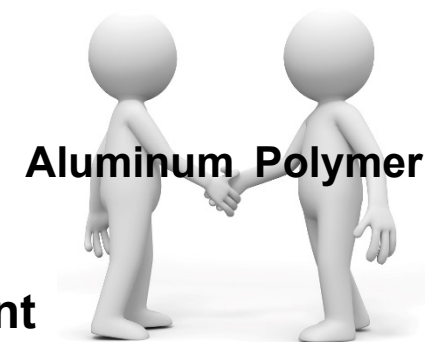
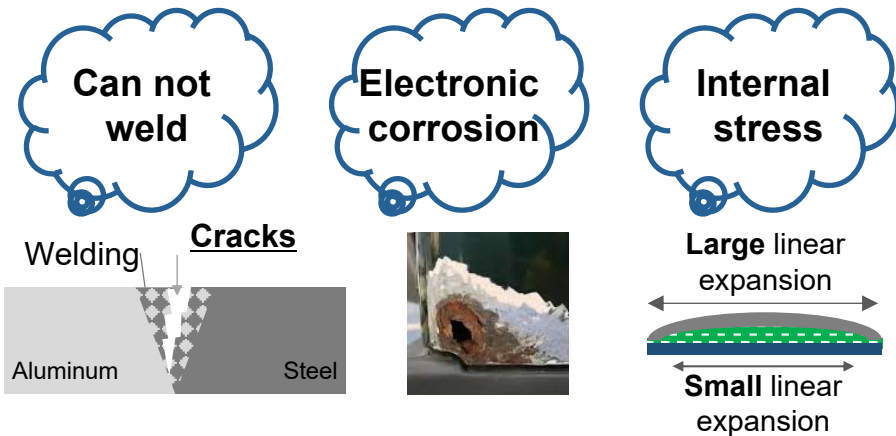
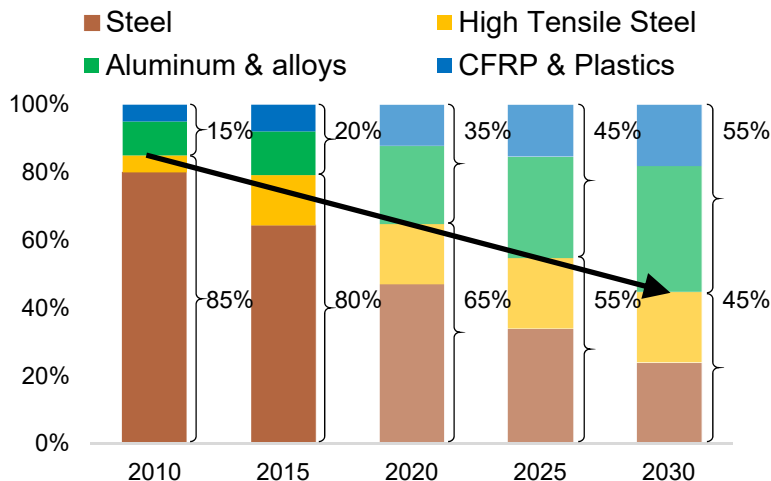
Shift from steel based materials to low-specific-gravity materials will proceed, including shift to aluminum, CFRP and plastics

Key technology for multimaterialization is

**technology to bond different materials**

**However**, we have to solve many problems

Component ratio of materials for cars



We will merge technologies to treat polymers and surface of aluminum products and develop **technology to join/bond different materials**, thereby contributing to weight saving of parts

#### 4. Important policies under “The TOP 2021”

## Solution concept Weight reduction / multimaterialization



### Technology to join/bond different materials



We suggest next generation technology to join/bond different materials:

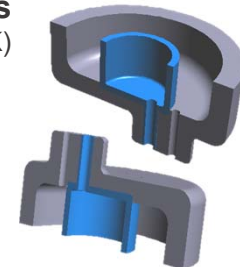
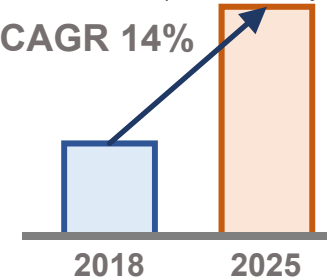
#### Direct joining/bonding technology

Growing market

2018→2025, **Market will expand to 2.5 times**

Market for adhesives for cars  
(Estimated by SDK)

CAGR 14%



3D models of direct joining/bonding

#### Automotive industry's problems

Contradictory problems

Bonding multimaterials

Trade Off

Standardize bonding processes

Reliable bonding

Trade Off

Simple bonding process

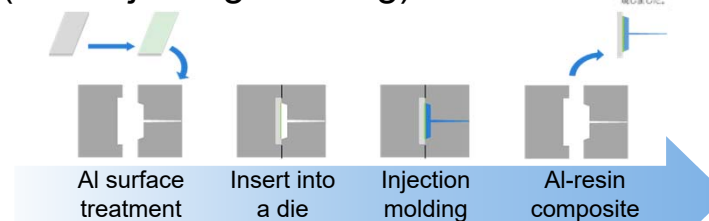
Easy to handle

Trade Off

Low assembly cost

#### Solution concept

Simple joining/bonding process  
(Direct joining/bonding)



News release in Aug. 2019



アルミ/樹脂直接接合  
非晶性樹脂や熱硬化性樹脂と金属の直接接合を実現しました。

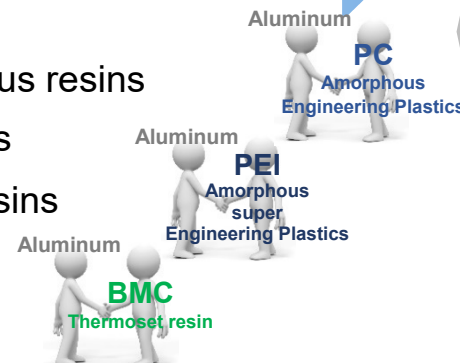
Applicable to various resins

Amorphous resins

Thermosetting resins

General purpose

PP resins



#### SDK 's originality

Hybrid use of aluminum surface treatment and polymer design technologies



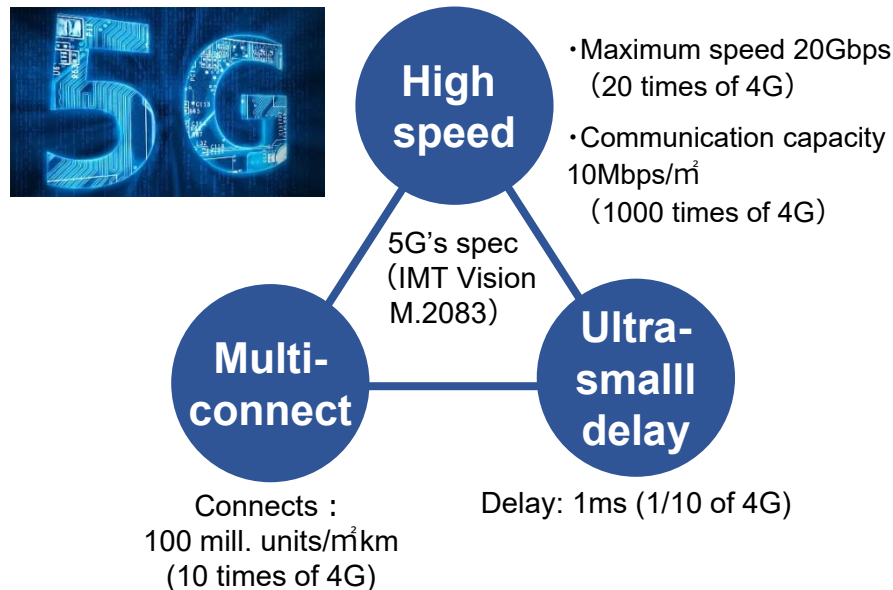
#### 4. Important policies under “The TOP 2021”

### Expanding cross-business marketing function



Application of success factors in composite automotive parts to mobile communication

#### 5G mobile communication



5G technology will have two generations

2020~

**5G Sub6**

Frequency 3.5Ghz

Discontinuous change in technology

2022~

**5G Millimeter Wave**

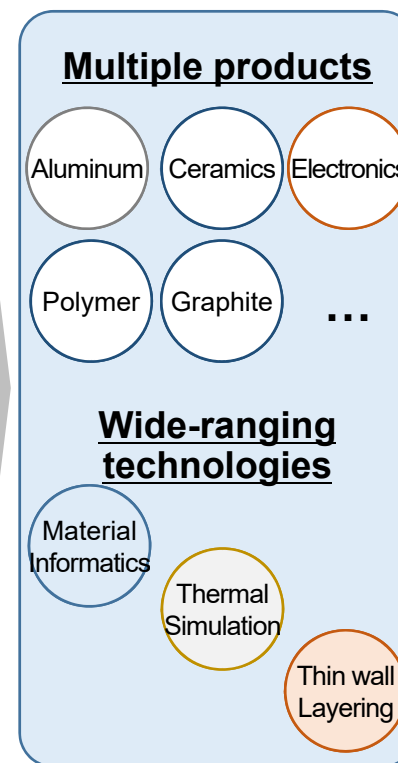
Frequency 28Ghz~

Telecom companies' issues

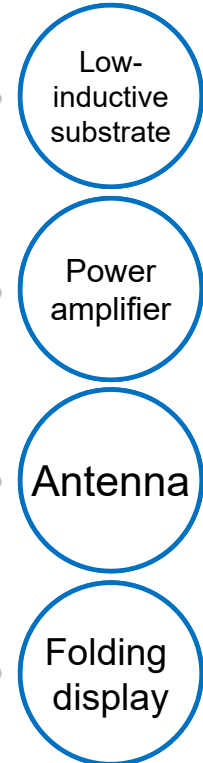


Technical issues of Millimeter wave = EHF's technical issues

SDK's originality



Major use



We've started to develop new solution concepts

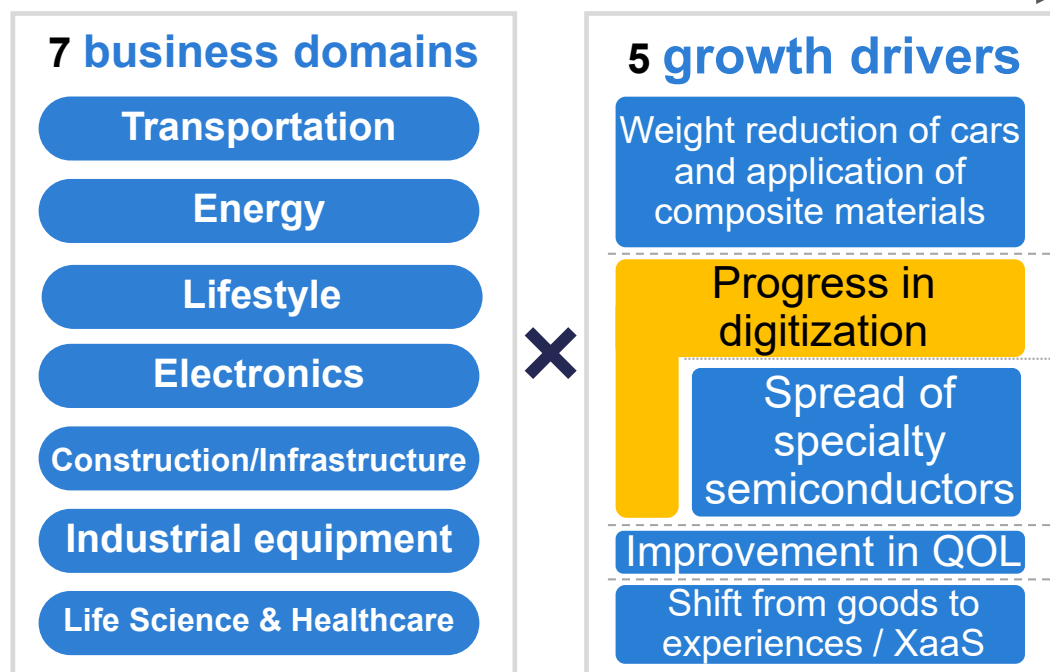
#### 4. Important policies under “The TOP 2021”

## R&D and active use of AI/IoT

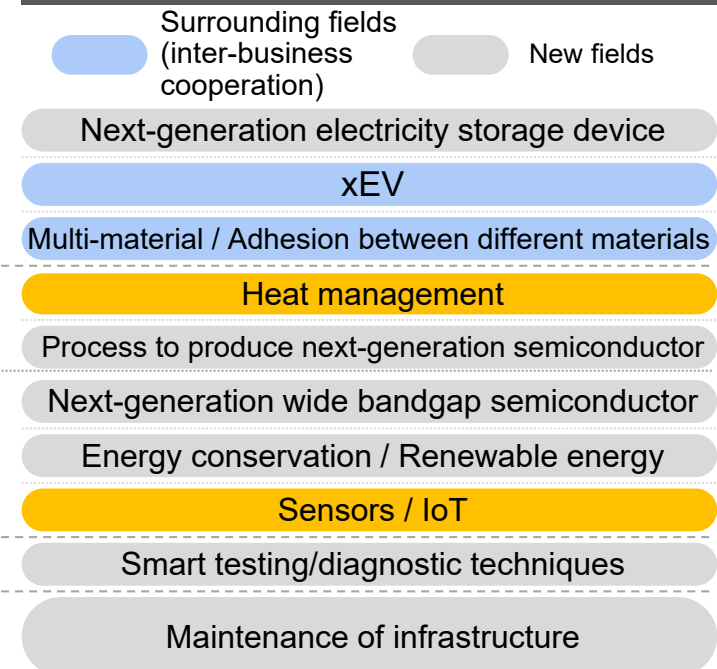


Focus resources on 10 technical fields corresponding to priority domains  
Accelerate creation of value-adding pipelines

### Priority domains



### R&D 10 notable technical fields



To achieve these, we increase R&D personnel for about 10% and R&D investment for about 30%  
We will build a new R&D complex, “Stage for Fusion”



#### 4. Important policies under “The TOP 2021”

## Active use of AI/IoT in production sites



### Active use of AI/IoT in production sites

Use AI to analyze big data obtained through sensing and IoT, and improve productivity and product quality

#### System to forecast calking of ethylene plant



AI continuously monitors condition of the plant in operation, and forecast the best timing of de-caulking.  
→ **AI can forecast the best timing equivalently with skilled operator and contribute to productivity improvement**

#### System to examine aluminum can production lines



The system conducts image diagnosis of aluminum can production lines to monitor cans remaining in the lines at the timing of product change. The system enabled us to change products within 1 minute, which took 30 minutes before.

→ **The system increased productivity by 3%**

#### 4. Important policies under “The TOP 2021”

## Active use of AI/IoT in production sites



### Active use of AI/IoT in production sites

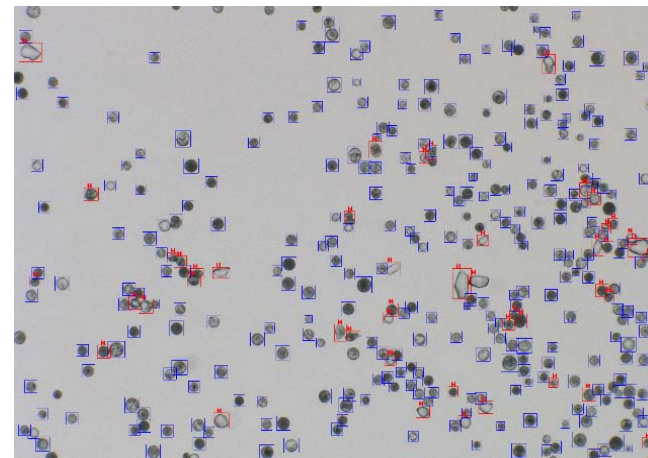
Use AI to analyze big data obtained through sensing and IoT, and improve productivity and product quality

#### Introduction of IoT to casted aluminum-rod cutter



The system automatically analyzes data on electric current, load factors, etc., detected by sensors on the cutter, and predicts occurrence of poor cutting.  
→ **Drastically reduces occurrence of inferior products**

#### System to examine image of spherical alumina



AI judges fineness/inferiority of products equivalently with skilled inspector, gives evaluation feedback to the production section, and realizes optimization of production conditions.  
→ **Improves ratio of fine products and productivity**



#### 4. Important policies under “The TOP 2021”

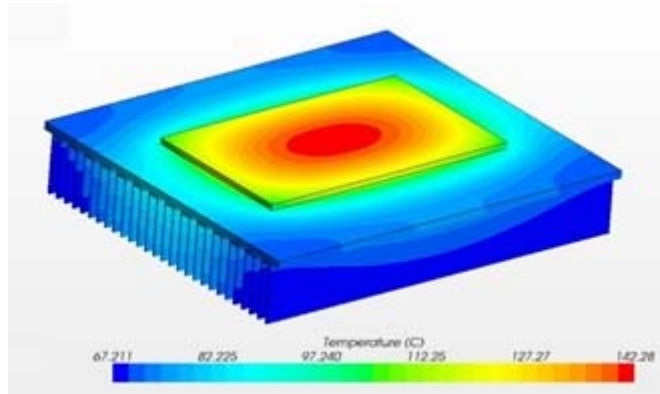
## Active use of AI/IoT in R&D



### Active use of AI/IoT in R&D

Improve speed and efficiency of product development, and respond to advanced/complicated needs of the market

#### A package to evaluate simulation of heat radiation



Result of evaluation of heat radiation capability by thermal fluid analysis package

The evaluation package can forecast data on heat radiation. This enables customers to estimate capacity of the heat radiation component prior to production of specimen.

→ **Customers and SDK cooperatively accelerate development of products**

#### AI-assisted development of aluminum alloy



Aluminum alloy products  
Continuously cast aluminum rods (SHOTIC™)

Utilize AI in development of materials for parts that contribute to weight reduction of cars and development of xEVs. This enables us to shorten development period of new products.

→ **Used in development of new aluminum alloys, and shortened development period to 1/3.**

5. What we aim to achieve through integration with Hitachi Chemical

## Target for 2025 and beyond



**We will integrate with Hitachi Chemical,  
and climb higher mountain**

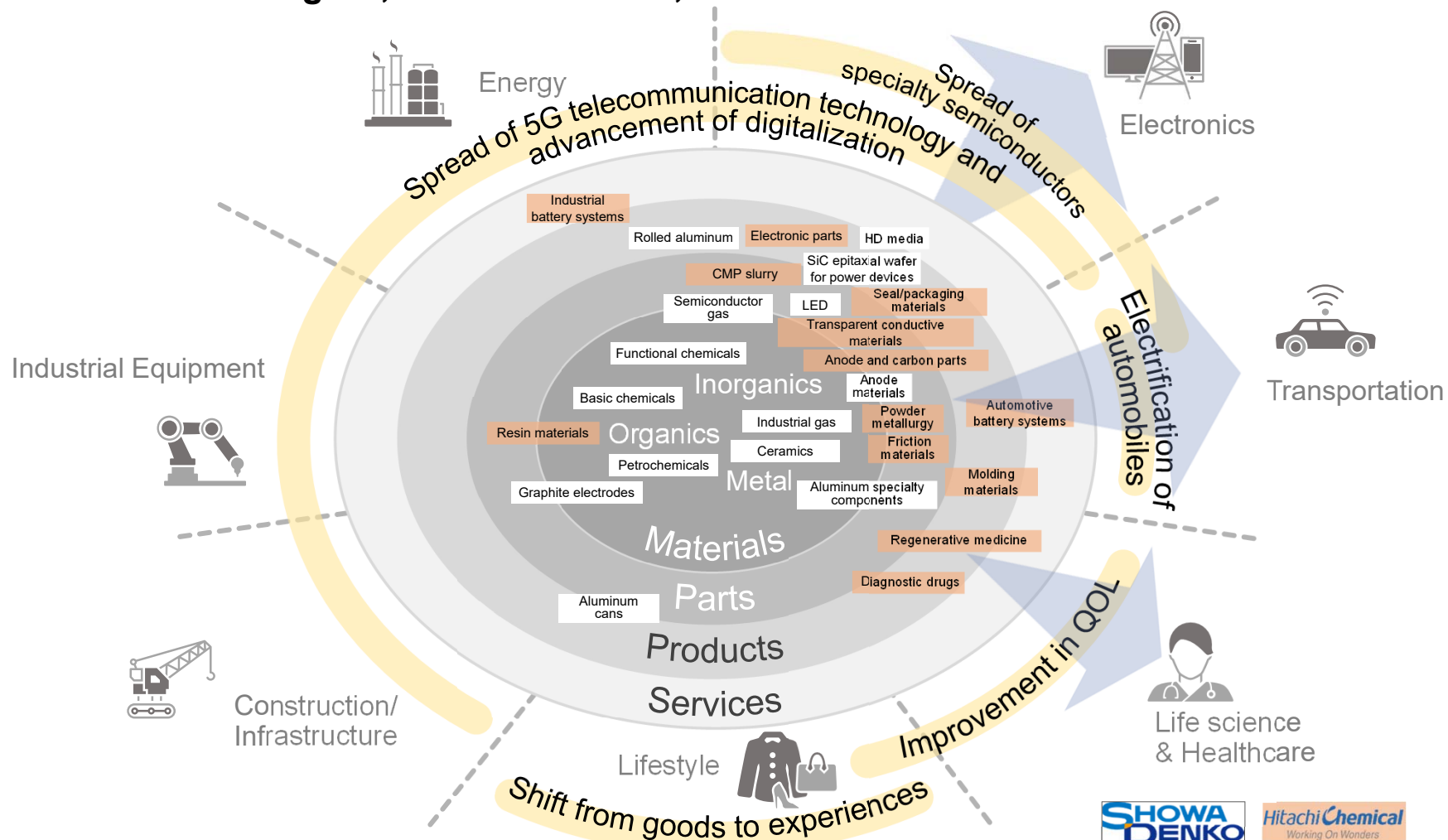
**Higher mountain**  
**Leading functional**  
**chemical manufacturer**



## 5. What we aim to achieve through integration with Hitachi Chemical Business areas to pursue and notable growth drivers



**By combining the core technologies of SDK and Hitachi Chemical, the two companies will together aim to grow in 7 business areas including 5G, semiconductors, and electrification of automobiles**



5. What we aim to achieve through integration with Hitachi Chemical

## Expand business model through integration



**We will realize 3D business model innovation through integration**

### ● Expand face-to-face market

We acquire wide-ranging customer base including automotive, energy, electronics, life-science and other general industries.

Face-to face market

Expand

### ● Expand value chain

Strong ties among value chains for various products including materials, compound, membrane formation, assembly and services

Expand

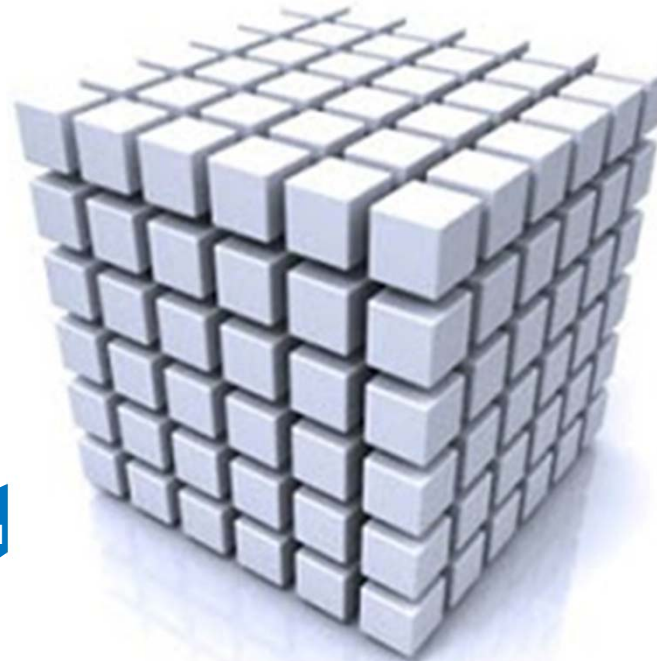
Value chain

### ● Expand lineup of products

We will expand lineup of application products including organic, inorganic, aluminum and electronic products.

Expand

Lineup of products



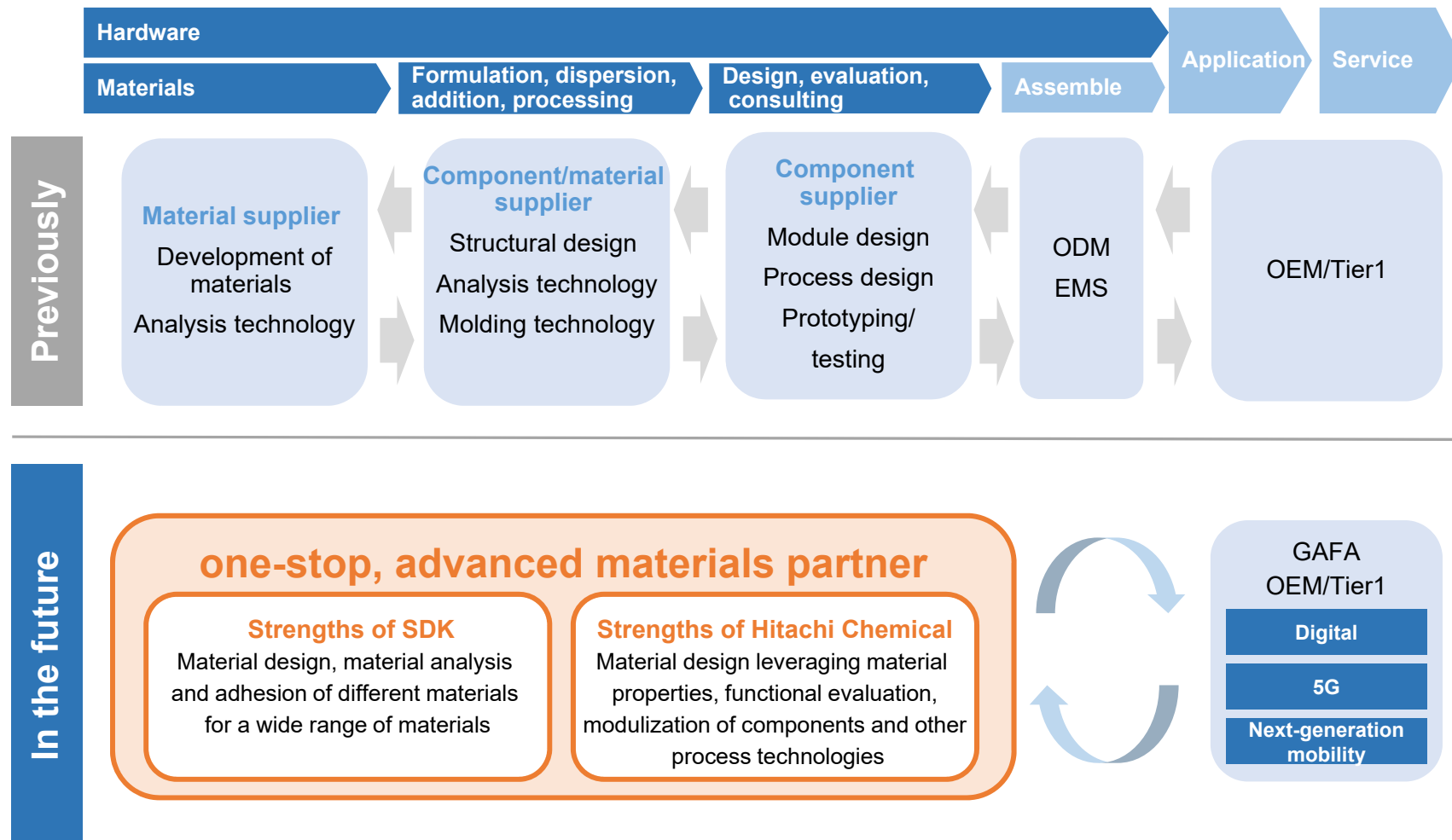
Systematic and strategic integration of two companies will  
**expand business model at cubic speed**

## 5. What we aim to achieve through integration with Hitachi Chemical

# One-stop advanced materials partner



**Technology companies** will become more directly involved in each level of the value chain in the future. SDK and Hitachi Chemical will fuse to acquire the **ability to propose a consistent and total solution** covering from the **material level** to **design and evaluation**



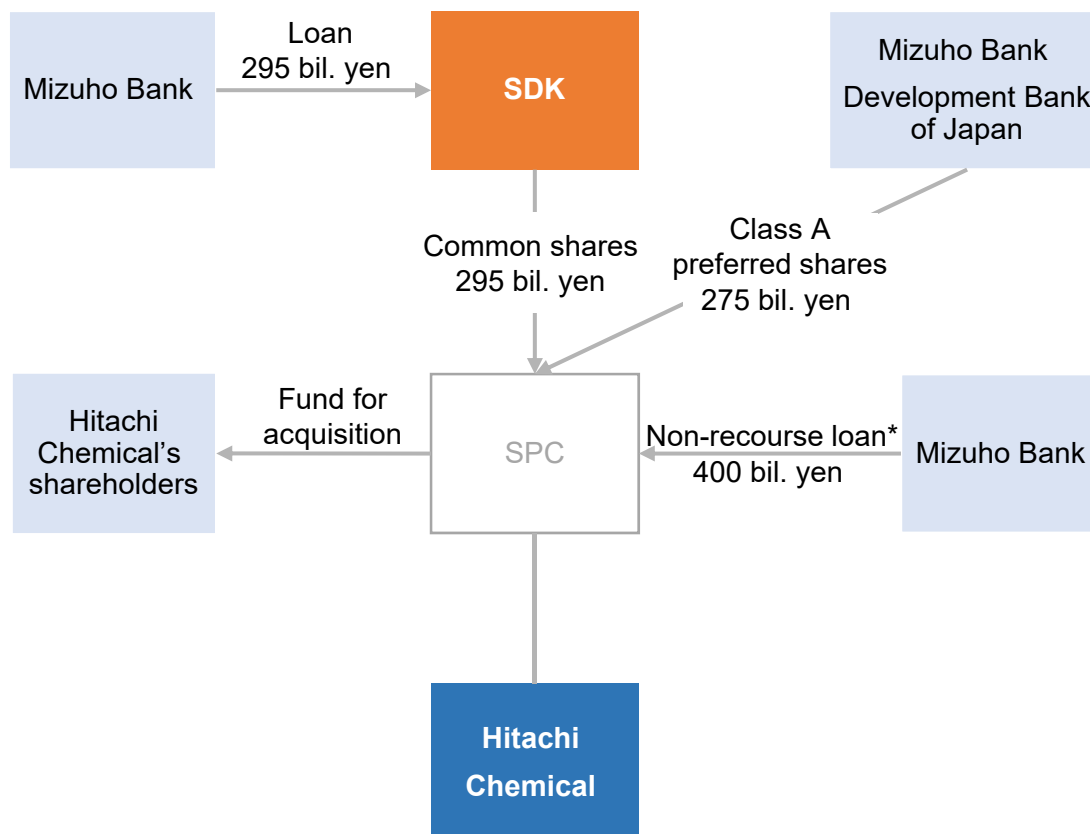
## 5. What we aim to achieve through integration with Hitachi Chemical

### Fund procurement structure and financial policy



Procure funding in a way to avoid a decline in capital efficiencies due to the dilution of shares and with consideration for maintaining financial soundness by utilizing preferred shares and non-recourse loans

#### Fund procurement structure



#### Background

- It will be possible to **hold down direct investment** by SDK by utilizing preferred shares and non-recourse loans
- Plan to receive **certain equity content from a rating agency** for the preferred shares
- While net D/E ratio may increase temporarily following the acquisition, the **mid term target will be around 1.0x**
- Will aim to **maintain A rank zone** in the rating agency
- SDK does not plan to engage in fund raising activity involving the issue of common shares and thus **equity dilution will not occur**

\* A non-recourse loan is a financing method based on the repayment capacity of the target company (Hitachi Chemical), and the risk of Showa Denko is limited to the investment amount at the time of acquisition

## 6. Contribution to SDGs

### SDK Group's business philosophy and CSR policy



#### 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.



#### Showa Denko Group's CSR Policy (revised in May 2019)

We at the Showa Denko Group will aim to make ourselves a social contribution company that satisfies all stakeholders by contributing to solving issues concerning SDGs through its business activities, and ensuring all employees' conduct conforming to "Our Code of Conduct."

Core  
issues

Contribution to  
SDGs through  
business activities

Environment  
protection

Sustainable  
development of  
human resources and  
working environment

We specified 14 material issues including "Provision of products, technologies and services."



## 6. Contribution to SDGs

# Actions taken in 2019



### ◆ We revised CSR Policy

Clarified our policy to contribute to SDG's through business activities

Summarized our 14 material issues into 3 core tasks

### ◆ We set medium-term GHG reduction target

- We will reduce our GHG emission to 11% of that in 2013 (base year)
- Adopted “GHG Protocol” as global standard to calculate GHG emission
- We will utilize internal carbon pricing (ICP) as a criteria to judge investment

### ◆ We endorsed the opinion offered by TCFD

We will disclose the effect of climate change on our business in a positive manner

### ◆ Declaration of voluntary action to execute “White Logistics”

### ◆ Social actions

Acquired naming rights to athletic facilities of Oita Sports Park (including Showa Denko Dome Oita)

Contracted with Oita Trinita to be a uniform sponsor to have our corporate logo on the right clavicular position





## 6. Contribution to SDGs

# Policies to contribute to SDGs in 2020

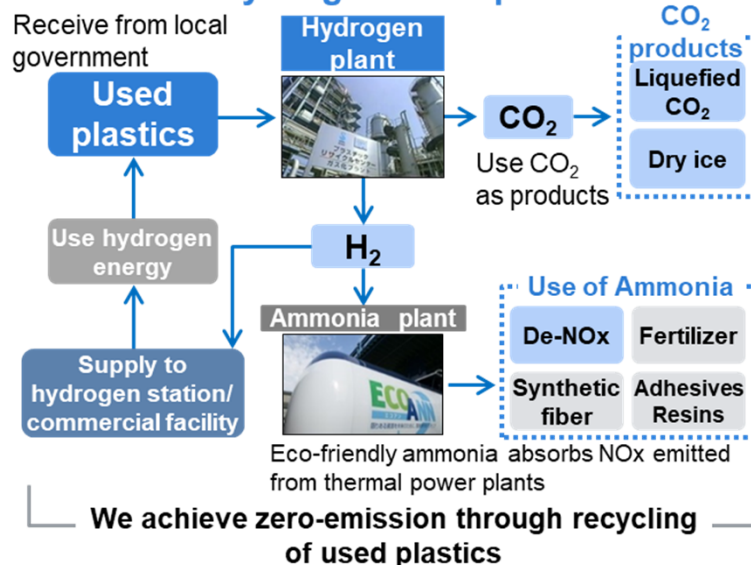


- ◆ Set project team to solve issues on SDGs and promote information disclosure in conformity with TCFD's opinion
- ◆ Expand lineup of products recognized as “products contributing to achievement of SDGs”

### Case①: Chemical recycling of plastics

Basic chemicals

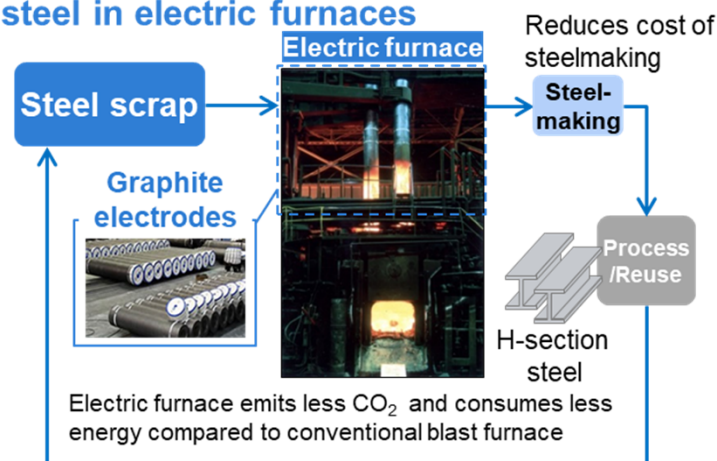
#### Chemical recycling of used plastics



### Case②: Graphite electrodes

Carbon

#### We produce graphite electrodes to melt steel in electric furnaces



#### Graphite electrodes contribute to recycling of steel



- ◆ Analyze relation between “parameters suggested by TCFD for disclosure” and climate change scenario → Disclose information in a positive manner
- ◆ Set KPIs on material issues and monitor progress → Disclose information in a positive manner
- ◆ Revise “Our Code of Conduct”

### 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.

Tender offer for Hitachi Chemical is not being made, directly or indirectly, in, or to, the United States, and is not being conducted through the United States Postal Service, or other means or instrumentality of interstate or international commerce, or through security exchange facilities in the United States. No tender to the Tender Offer will be accepted by said means, instrumentality, through said facilities, or from the United States.