

# Medium-Term Management Plan

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2025–2029

February 21, 2025

**Toyo Tanso Co., Ltd.**

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# 1. Medium-Term Management Plan

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2025–2029

## **Point 1 FY2029 targets — net sales: 82.0 billion yen, operating profit: 22.0 billion yen, operating profit margin:27%, ROE: 12%**

- The adjustment phase in the SiC semiconductor market will cause delay in the sales plan
- Under this plan, net sales for FY2028 are just about 10% lower than under the previous plan\* (excluding the impact of exchange rates) \* Medium-term Management Plan (2024–2028) announced February 2024.
- An increase in sales of SiC-coated graphite products and other high-added-value products will contribute to improving profitability

## **Point 2 Control the balance of businesses in line with market changes and promote the establishment of new applications**

- Pioneer new applications centered on semiconductor and metallurgical fields and strengthen next generation nuclear power applications (high-temperature gas furnaces) and other businesses, while controlling the balance of applications to respond to market changes

## **Point 3 Capital investment to total 57.0 billion yen over five years**

- Continue to make capital investments in high-added-value domains in preparation for the medium- and long-term growth of the semiconductor market
- Strengthen and optimize production capacity Group-wide and maintain a top-level market share

## **Point 4 Optimize cash allocation**

- Pay enhanced shareholder returns with a dividend minimum payout ratio of 30%
- Implement sound and steady capital investment aimed at business expansion and profit growth
- Make effective use of funds, utilizing financial leverage through borrowings, and optimize cash allocation

# Targets for the Medium-Term Management Plan (2025–2029)

|                        | FY2024           | FY2025<br>(forecast) | FY2029<br>(target) | (Reference)<br>FY2028<br>(previous target*1) |
|------------------------|------------------|----------------------|--------------------|--|
| Net sales              | 53.0 billion yen | 52.0 billion yen     | 82.0 billion yen   | 88.0 billion yen                             |
| Operating profit       | 12.2 billion yen | 10.0 billion yen     | 22.0 billion yen   | 22.0 billion yen                             |
| Operating profit ratio | 23.1%            | 19.2%                | 27%                | 25%  |
| ROE                    | 11.2%            | 7.3%                 | 12%                | 12%  |

► Exchange rate

FY2024: ¥151.6/US\$, ¥163.9/€, ¥21.0/RMB

FY2025/FY2029: ¥145/US\$, ¥154/€, ¥19.5/RMB

FY2028 (at the time of the previous plan): ¥135/US\$, ¥149/€, ¥19/RMB

► EBITDA\*2 of approx. 31.5 billion yen in FY2029 (EBITDA margin of approx. 35%)

\*1 Medium-term Management Plan (2024–2028) announced February 2024

\*2 Operating profit + depreciation

## Silicon semiconductor market

- **Cutting-edge products for AI will continue to sell briskly in the device market. The market is expected to see a moderate recovery in FY2025, including for other applications.**
- **Growth is expected to continue throughout the term of the Medium-term Management Plan due to demand for AI, 5G, data centers, automotive, and other applications.**
  - **Special graphite products for electronics applications: Components for Si wafer manufacturing**
  - **Compound SiC-coated graphite products: Parts for Si epitaxial growth equipment**

## SiC semiconductor market

- **The SiC semiconductor market will enter an adjustment phase in FY2025 due mainly to a slowdown in BEV demand.**
- **Although sales are expected to be two years behind the original timeline, it is expected that a market recovery after the second half of FY2026 will enable a return to a growth trajectory, with growth expected in areas such as xEVs, automotive electrification, and the energy sector.**
  - **Special graphite products for electronics applications: Parts for SiC wafer manufacturing**
  - **Compound SiC-coated graphite products: Parts for SiC epitaxial growth equipment**

**Percentage of net sales from semiconductor applications in FY2029: about 50% (same level as FY2024)**

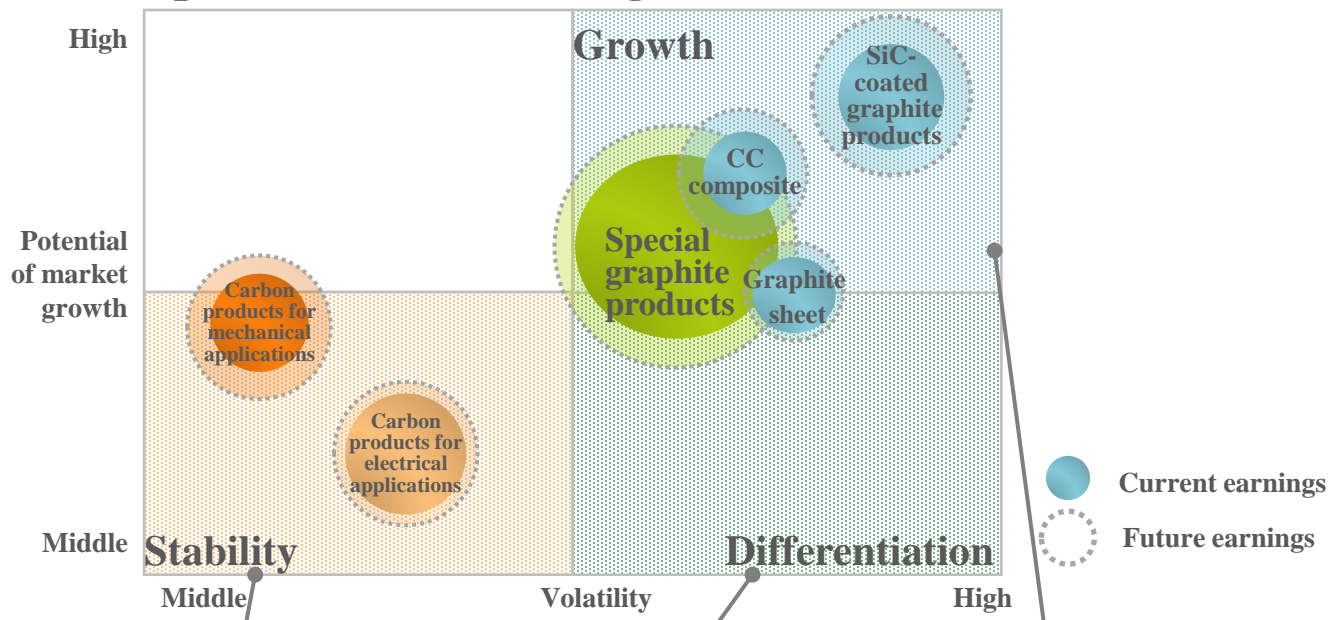
# Net Sales Targets by Product/Application

- Demand for SiC semiconductor applications is expected to recover after the second half of FY2026 after an adjustment phase in FY2025. There is no significant change in the market environment for other applications, with high growth expected to continue for special graphite products for electronics applications and compound material SiC-coated graphite products.

| (Unit: Yen, billions)  | FY2024      | FY2025<br>(forecast) | FY2029<br>(target) | CAGR<br>2024→2029 | (Reference)                  |                   |
|--|-------------|----------------------|--------------------|-------------------|------------------------------|-------------------|
|  |             |                      |                    |                   | FY2028<br>(previous target*) | CAGR<br>2023→2028 |
| Special graphite products  | 23.9        | 23.4                 | 40.7               | 11.2%             | 41.9                         | 11.8%             |
| Carbon products for<br>general industries<br>(for mechanical applications) | 4.0         | 3.8                  | 4.8                | 3.6%              | 4.7                          | 3.0%              |
| Carbon products for<br>general industries<br>(for electrical applications) | 5.0         | 4.9                  | 6.1                | 4.2%              | 7.3                          | 10.6%             |
| Compound materials and<br>other products                                   | 18.1        | 17.6                 | 28.0               | 9.0%              | 31.2                         | 17.3%             |
| Related goods  | 1.8         | 2.1                  | 2.2                | 4.3%              | 2.6                          | 0.9%              |
| <b>Total</b>   | <b>53.0</b> | <b>52.0</b>          | <b>82.0</b>        | <b>9.1%</b>       | <b>88.0</b>                  | <b>12.3%</b>      |

\* Medium-term Management Plan (2024–2028) announced in February 2024.

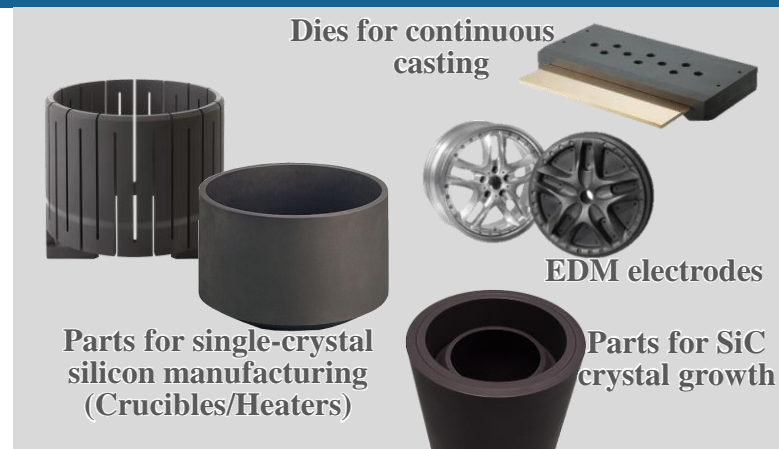
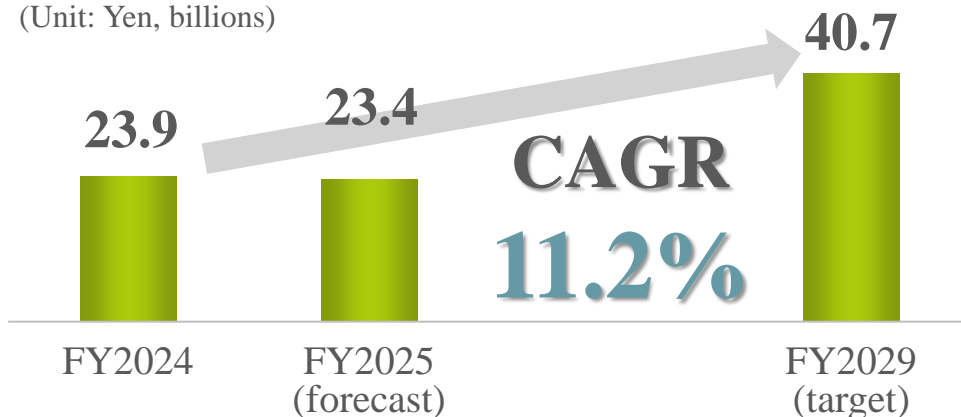
- Control the balance of the business portfolio and respond to change through the flexible implementation of strategies suited to the business environment



| Contribute to business stability, with little fluctuation in demand or profitability  | Business development focusing on high-added-value domains  | High-growth businesses driving earnings  |
|---|--|--|
| <ul style="list-style-type: none"> <li>■ <b>Carbon products for mechanical applications</b><br/>Become more cost competitive, and strengthen automotive applications and sales expansion in overseas markets</li> <li>■ <b>Carbon products for electrical applications</b><br/>Utilize strengths (delivery time, service) to pursue a higher share of growth markets (Asia, home appliances and power tools) and increase contribution</li> </ul> | <ul style="list-style-type: none"> <li>■ Expand market share in high-added-value domains such as semiconductors, which have high quality requirements</li> <li>■ Strengthen cost resilience and reduce the burden on domestic manufacturing through measures such as the utilization of contract manufacturing for more general-purpose domains</li> </ul> | <p>Sales expansion leveraging the features and strengths of each product</p> <ul style="list-style-type: none"> <li>■ <b>SiC-coated graphite products:</b><br/>Enhanced production capacity</li> <li>■ <b>C/C composite products:</b><br/>Technical service capacity, including design</li> <li>■ <b>Graphite sheet:</b><br/>Customization to customer specifications</li> </ul> |



(Unit: Yen, billions)



## ► Strategy

**Pursue greater competitive strength and secure profitability through stronger sales expansion in high-added-value domains**

### ■ Electronics applications

- Our global top market share has been maintained for Si wafers (products for single-crystal silicon manufacturing), and we aim to further increase the share through strategies appropriate to each region.
- For SiC wafers (products for compound semiconductor applications), we will build a firm position through products with high technological added value.

### ■ General industry applications

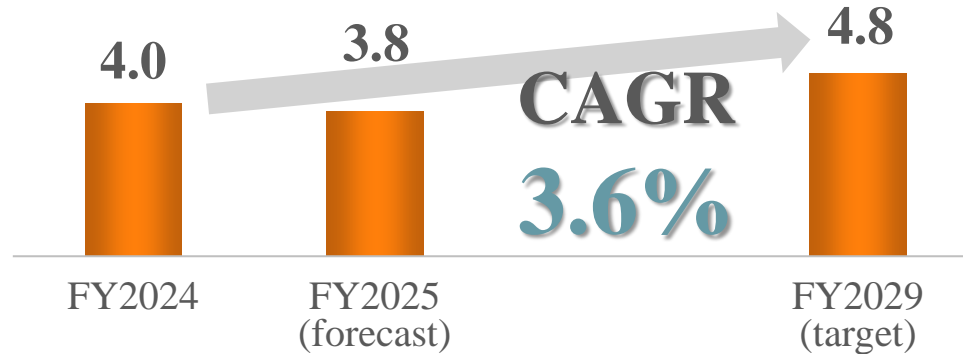
We aim to differentiate ourselves from other companies and expand profits through high-added-value sales (materials grade and processing).

### ■ Other

We will increase the contribution made by this business by expanding our market share of semiconductor applications (electrodes for ion implantation equipment, etc.) and focusing on next generation nuclear power applications (high-temperature gas furnaces).

# Strategies by Product/Application: Carbon Products for General Industries [Carbon Products for Mechanical Applications]

(Unit: Yen, billions)



Contact strips for pantograph



Bearings

Sealing rings



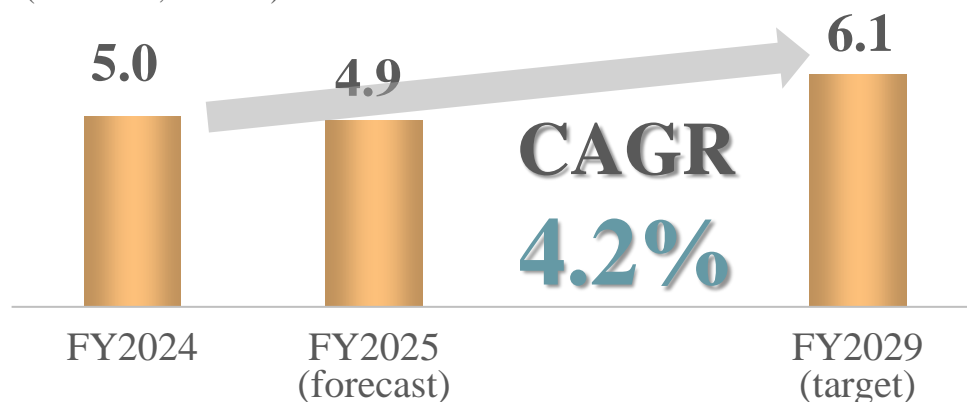
## ► Strategy

**Strengthen cost competitiveness through measures such as quality improvement and automation and promote the development of new applications and customers, primarily overseas**

- Aim to acquire new customers and develop new applications through stronger cost competitiveness
- We will also raise the proportion of overseas sales from its current low level, and strengthen the processing capabilities of local subsidiaries.
- Strive for higher profitability through cost reductions and pursue appropriate resource allocation with a focus on profitability and market trends

# Strategies by Product/Application: Carbon Products for General Industries [Carbon Products for Electrical Applications]

(Unit: Yen, billions)

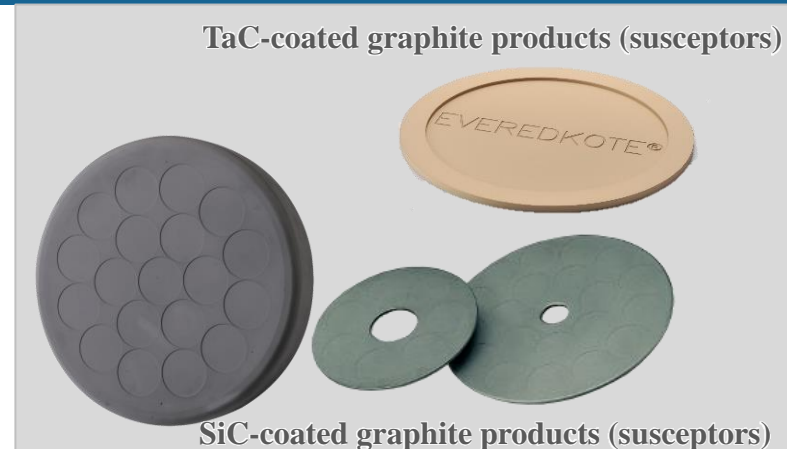
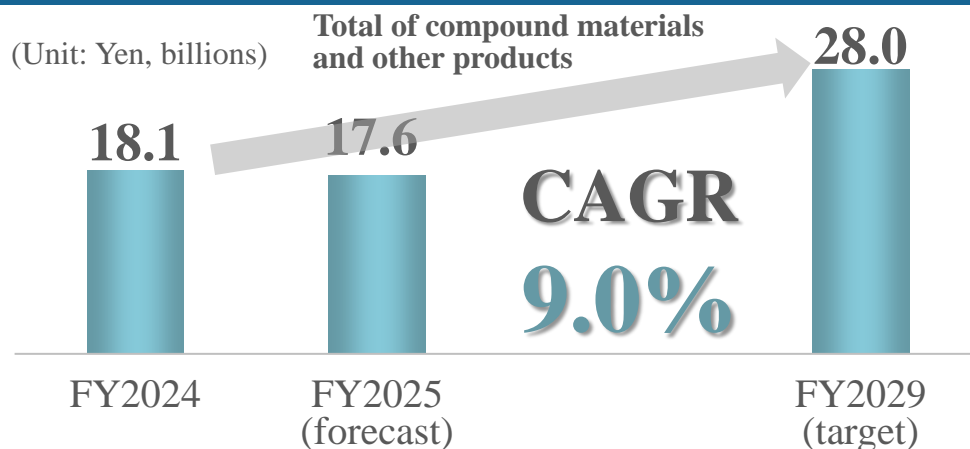


## ► Strategy

**Strengthen production technologies, including materials development and automation, to achieve high quality and low costs**

- The market for home appliances and power tools bottomed out in FY2024 and has entered a moderate recovery trend. Moderate growth is expected to continue until FY2029, and we will leverage our strengths in delivery and services to expand market share through the global optimization of systems for materials development, production, etc.
- For automotive and industrial applications, we will progressively provide our unique engineering services centered on xEVs and renewable energy (wind power, hydroelectric power, etc.). At the same time, consider business expansion, including alliances, to boost the scale of sales.

# Strategies by Product/Application: Compound Materials and Other Products (SiC-Coated Graphite Products)

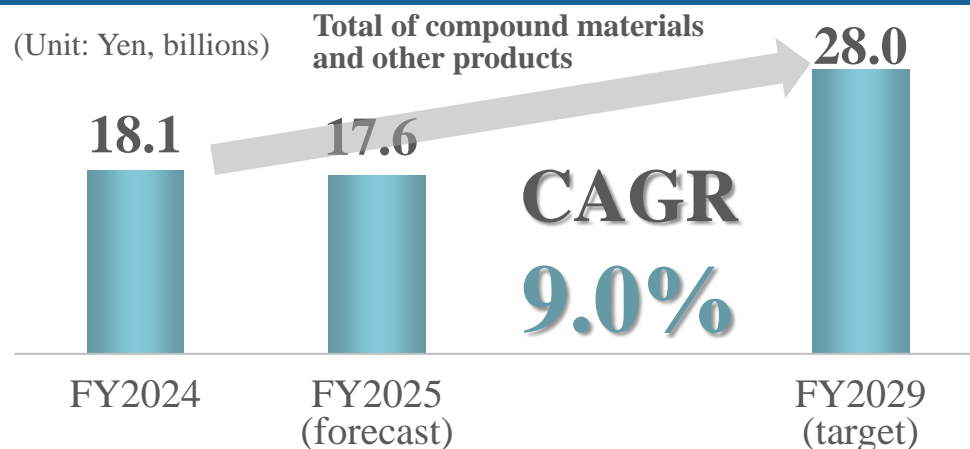


## ► Strategy

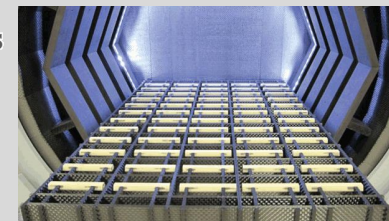
### Double the size of net sales from core value-added businesses in the next five years through an increase in capacity

- For Si-epitaxial, we aim to maintain and expand our global top market share, responding to the technological demands of our main customers.
- For SiC-epitaxial, demand is expected to decrease in FY2025 due to an adjustment phase in the xEV market, then recover after the second half of FY2026 onward. We aim to maintain and expand our market share by capturing user demand for consumables in addition to existing sales channels.
- For LED applications, we will expand our market share, targeting large MOCVD equipment (GaN-epitaxial) for mass production in the key Chinese market.
- We will continue to strengthen our SiC/TaC coated products in preparation for a recovery in demand while maintaining a high market share through our industry-leading capabilities.
- We will promote innovations in manufacturing techniques in pursuit not only of quality but also cost saving and productivity, in anticipation of the next decade.

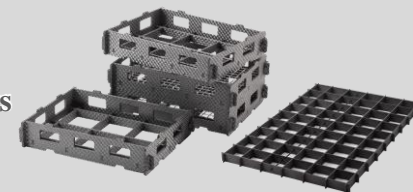
# Strategies by Product/Application: Compound Materials and Other Products (C/C Composite Products, Graphite Sheet Products)



Graphite sheet products



C/C composite products (baskets / base trays)



## ► Strategy

### ■ C/C composite products

**For our focus applications (industrial furnaces and semiconductors), we will use a proposal-based approach, including development, design, and usage methods, together with stronger cost competitiveness, to capture demand for substitutes for other materials and potential demand.**

- In products for industrial furnace applications, C/C composite materials have better characteristics than the metal jigs most often used at present, and replacement will be boosted by the acceleration of energy conservation, labor saving, and automation. Soaring energy prices will provide a tailwind for the shift to C/C composite materials, which enable more efficient manufacturing.

### ■ Graphite sheet products

**We will leverage our strength in customization to expand high-added-value products and new applications.**

- We are engaged in improving thermally expandable graphite (raw material) at our joint venture company that produces raw materials, aiming to enhance quality and pioneer new applications.

- For isotropic graphite materials / machining / high-added-value processes and processing capacity at subsidiaries, we will build robust production systems to ensure that we capture demand for semiconductor applications.

**Total capital investment**  
(FY2025–FY2029)

**57.0 billion yen**

**Trajectory of capital investment based on the strategies of Medium-term Management Plan**

- Boost production capacity in high-added-value businesses globally, including semiconductor applications
- Reinforce competitive strength in core/established businesses
- Labor saving, energy saving, process integration, automation, process innovation, etc.

Major investments  
Start of operation  
Increased capacity (vs. FY)  
Location  
Investment amount



Q3(Completed) Q1 → Q1 (Progressively)  
Japan (Takuma Division, Iwaki Plant), U.S., Europe  
11.0 billion yen (FY2025-FY2029)

**Purification**

**1.9 times**  
(vs FY2023)

**SiC-coated graphite products**

**3 times**  
(vs FY2023)

Q3 (Completed) Q3 → Q1 (Progressively)  
1.5 times (vs FY2022) Twofold (vs FY2024)  
Japan Japan  
2.0 billion yen 5.5 billion yen\*

**TaC-coated graphite products**

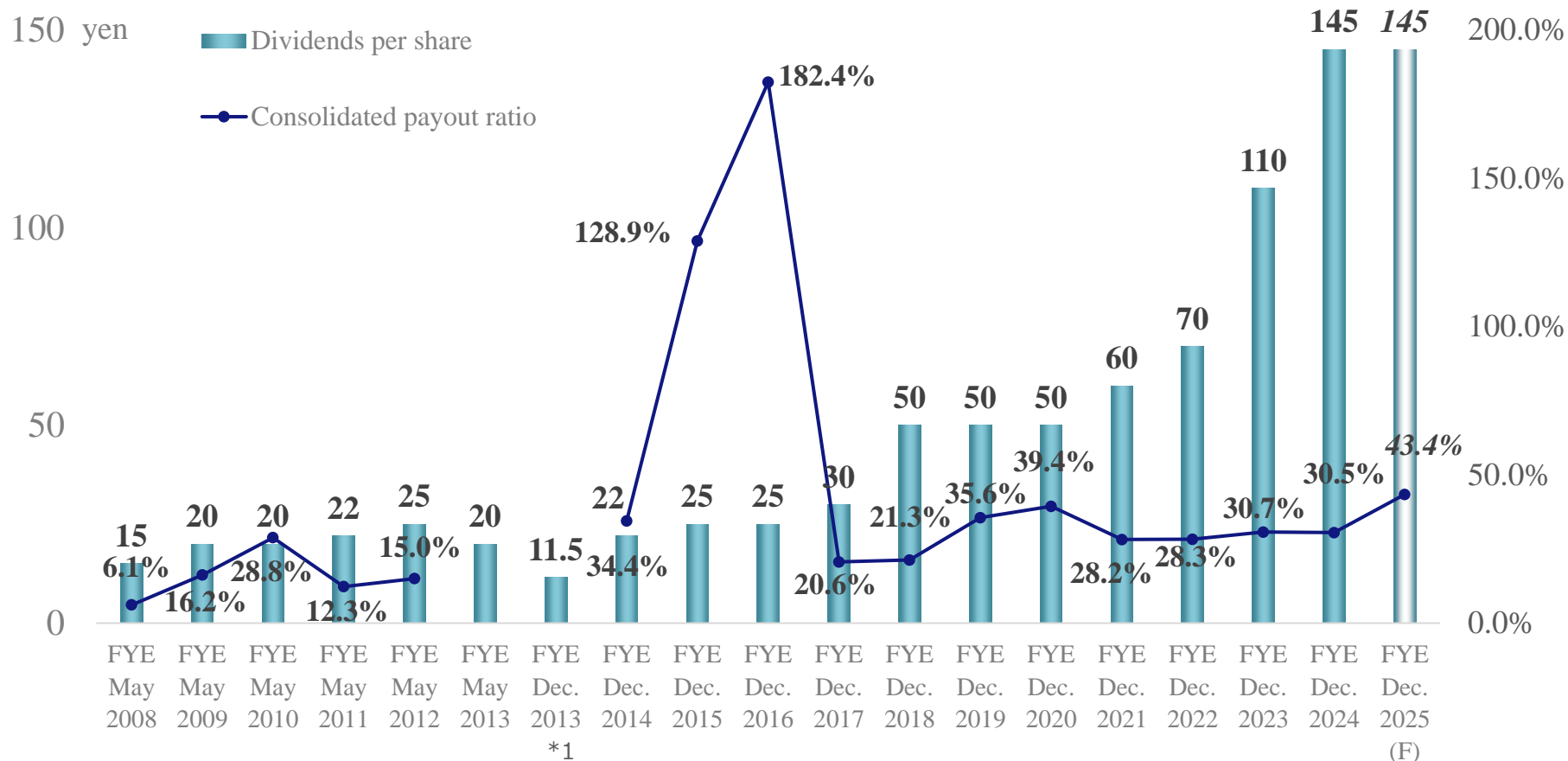
**6 times**  
(vs FY2023)

Q4 (Completed) Q2 → Q1 (Progressively)  
Twofold (vs FY2023) 3 times (vs FY2024)  
Japan Japan  
Undisclosed amount Amount\*

\*Investment amount in TaC-coated graphite product capacity to commence operation in 2025–2026 has been included in investment amount in SiC-coated graphite product capacity to commence operation in 2025–2026.

▶ In addition, we have decided on or are considering a range of investments to boost our supply capacity and competitive strength in strategic applications, such as the development of innovative methods for manufacturing isotropic graphite materials and processing capacity enhancements in Japan and overseas.

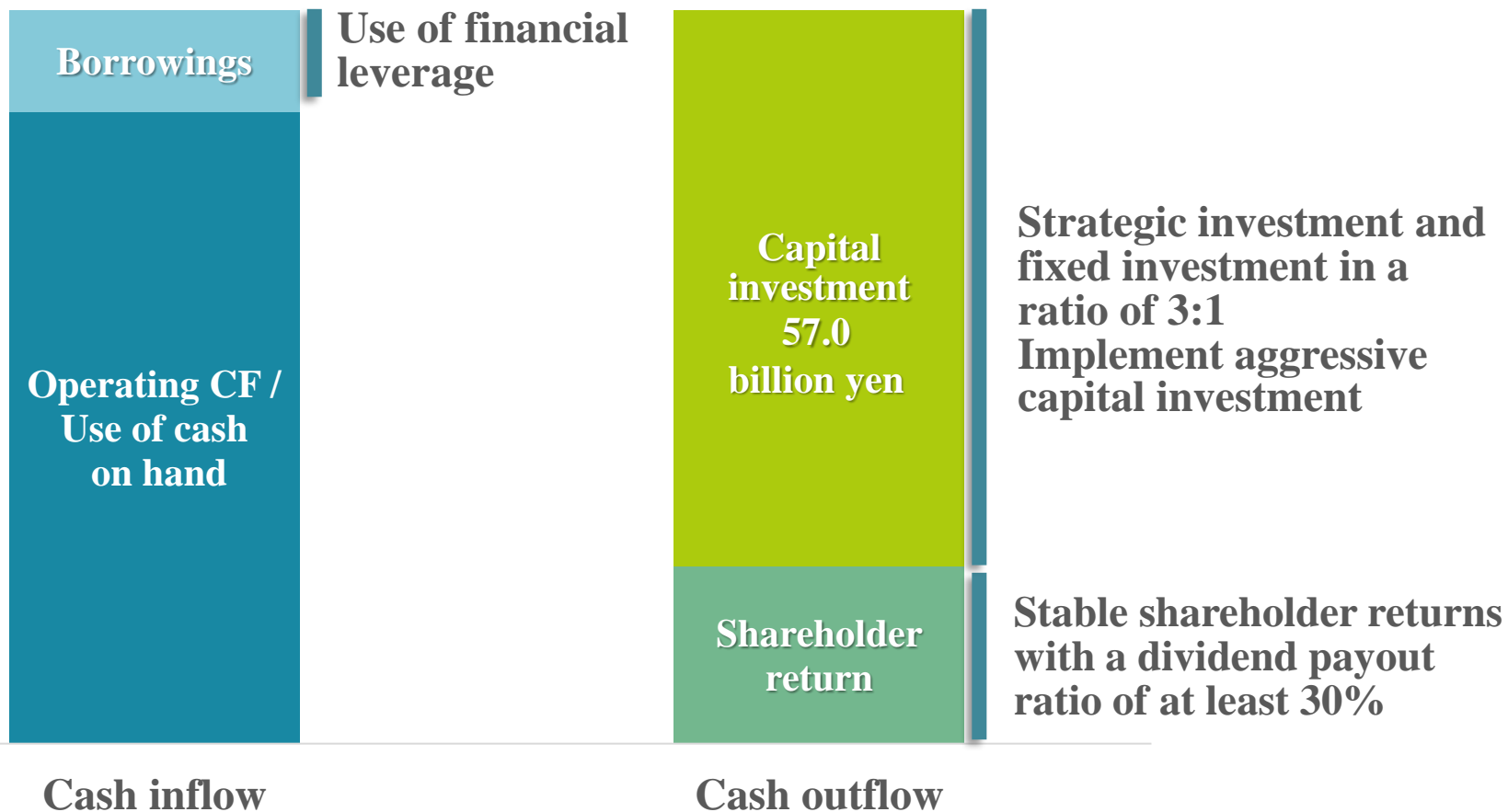
- We will return profits to shareholders in a stable fashion, maintaining a dividend payout ratio of at least 30%, balanced with capital investment geared to growth against a backdrop of ongoing profit gains.



\*1 The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013. For this reason, the fiscal year was an irregular seven-month fiscal period (nine months for some subsidiaries).

\*2 Since profit was negative in the fiscal year ended May 31, 2013 and the fiscal year ended December 31, 2013, information on consolidated payout ratio is excluded here.

- We will implement shareholder return and strategic investments in business expansion through the cash generated from our high earning capacity and the use of financial leverage.



- ▶ Achieve business expansion and profit growth and enhance capital efficiency through the effective use of cash for strategic investment, etc.





## 2. Sustainability

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■ Adopted double material issues (focusing on both the impact that the environment and society have on Toyo Tanso and the impact that Toyo Tanso has on the environment and society)

|   |   |   |
|---|---|---|
| <p><b>E</b></p>      | <p><b>Contribution to reducing climate change risk and environmental protection</b></p>                               | <ul style="list-style-type: none"> <li>• Reducing greenhouse gas emissions, including through energy savings and creation</li> <li>• Contributing to the reduction of greenhouse gas emissions through products</li> <li>• Using Earth-friendly raw materials and avoiding procurement risk</li> <li>• Complying with various countries' environmental laws and regulations and reducing environmental impacts</li> </ul> |
| <p><b>E</b></p>      | <p><b>Pursuing product development and manufacturing technologies to resolve social issues and customer needs</b></p> | <ul style="list-style-type: none"> <li>• Developing products and improving manufacturing processes to help realize a recycling-based society</li> <li>• Complying with increasingly sophisticated quality requirements</li> <li>• Developing new products and improving services in partnership with stakeholders</li> </ul>  |
| <p><b>S</b></p>     | <p><b>Creating safe, secure workplace environments where all employees can flourish</b></p>                           | <ul style="list-style-type: none"> <li>• Improving safe, healthy workplace environments and increasing productivity</li> <li>• Ensuring all stakeholders' human rights are respected</li> <li>• Offering human resources development, training, and education programs</li> <li>• Respecting workforce diversity</li> </ul>   |
| <p><b>S G</b></p>  | <p><b>Undertaking corporate activities that inspire trust</b></p>   | <ul style="list-style-type: none"> <li>• Compliance</li> <li>• Strengthening crisis management capabilities</li> <li>• Undertaking community service activities</li> </ul>  |

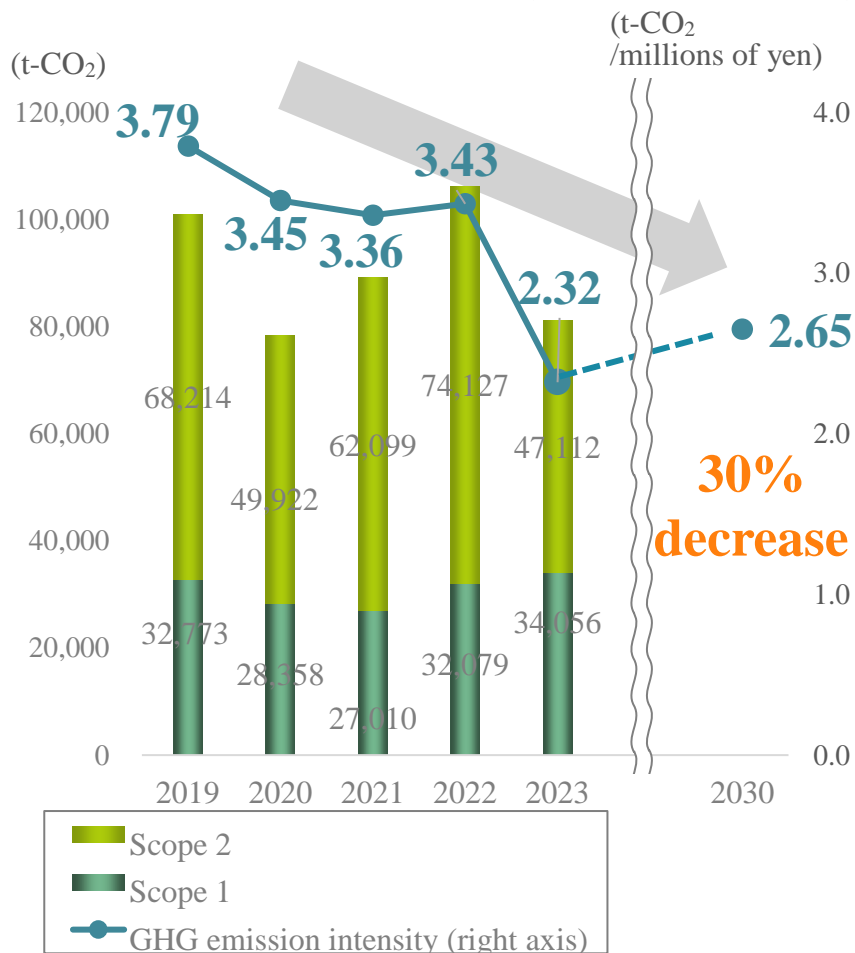
Note: Please see our homepage for the links between each item and the SDGs. <https://www.toyotanso.com/sustainability/>

# Reduce Greenhouse Gas Emissions, Including Through Energy Saving and Generation

**2030 reduction target for greenhouse gas (GHG) emission intensity (non-consolidated)**

**30%**  
(vs. 2019)

## ■ Trend in GHG emissions (non-consolidated)



## ■ Progress on our GHG emissions reduction roadmap




Large = 50% or more Medium = 30% to less than 50% Small = less than 30%  
 ◎ = 100% or more ● = 90% or more ▲ = 80% to less than 90% × = Less than 80%

| Target Indicators  | Load factor in 2030 emission reductions | FY2023 actual target achievement level | Examples of measures   |
|--|---|--|--|
| <b>(1) Introduction of energy-saving equipment</b>                             | Small                                   | ◎                                      | <ul style="list-style-type: none"> <li>Introduction of high-efficiency compressors</li> <li>Installation of LED lighting</li> </ul>  |
| <b>(2) Introduction of energy with low CO<sub>2</sub> emission coefficient</b> | Large                                   | ◎                                      | <ul style="list-style-type: none"> <li>Purchase of electricity from renewable energy sources (J-Credits, etc.)</li> <li>Purchase and introduction of electricity from renewable energy sources (solar power generation, etc.)</li> </ul> |
| <b>(3) Switching to baking furnace with smaller energy units</b>               | Small                                   | —                                      | <ul style="list-style-type: none"> <li>Fuel conversion</li> <li>Furnace renewal</li> </ul>   |
| <b>(4) Optimization of furnace operation time</b>                              | Small                                   | ◎                                      | <ul style="list-style-type: none"> <li>Promotion of energy conservation</li> <li>Improvement of existing facilities</li> </ul>   |
| <b>(5) Optimization of furnace loading efficiency</b>                          | Small                                   | —                                      | <ul style="list-style-type: none"> <li>Improvement of yield</li> <li>Implementation of AI for furnace loading instructions</li> </ul>  |

\* The “-” in the fiscal year target achievement levels will be implemented sequentially from FY2024 onwards.

**2030 target for percentage of net sales from products that contribute to the environment (consolidated)**

**35%**  
(FY2024 result: 29.7%)

| Field   | Related applications and products   | Proportion*                 |
|---|---|-----------------------------|
|  <p><b>Energy saving</b></p>      | <ul style="list-style-type: none"> <li>• Products for use with power semiconductors (silicon/SiC)</li> <li>• Products for use with LEDs (compound semiconductor manufacturing materials)</li> <li>• Products for use with industrial furnaces (C/C composite products)</li> </ul>                                     | <p><b>94%</b><br/>(84%)</p> |
|  <p><b>Energy generation</b></p> | <ul style="list-style-type: none"> <li>• Products for use in wind power, hydroelectric, and geothermal power generation</li> <li>• Products for use in solar power generation</li> <li>• Products for use in the next generation of nuclear reactor</li> <li>• Products for use in nuclear fusion reactors</li> </ul> | <p><b>5%</b><br/>(15%)</p>  |
|  <p><b>Electrification</b></p>  | <ul style="list-style-type: none"> <li>• Pump parts for use in electric vehicles</li> <li>• Products for use in fuel cells (Catalyst-supported CNovelTM)</li> </ul>   | <p><b>1%</b><br/>(1%)</p>   |

\*FY2024 results are shown on the top, with FY2023 results in parentheses underneath

For some products and applications where the final markets are diversely spread, the proportion of sales attributable to each field of environmental contribution is calculated by multiplying net sales by a proportion of sales predetermined for each application, based on various statistical data.



# 3. Appendix

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## ■ Establishment of the 2030 Management Vision

The vision shows the future of the Toyo Tanso Group, the direction of challenges we will take, and the value we provide to society, to achieve further growth from the core of our founding DNA of “manufacturing completely unique products” and our pioneering spirit

### 2030 Management Vision

“Creating products with unprecedented potential”  
Becoming a leading company through Earth-friendly  
products and technologies

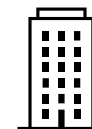
#### Company policies



Become a **global**  
company



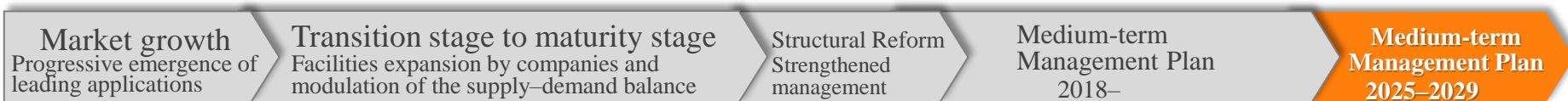
For the world,  
for society



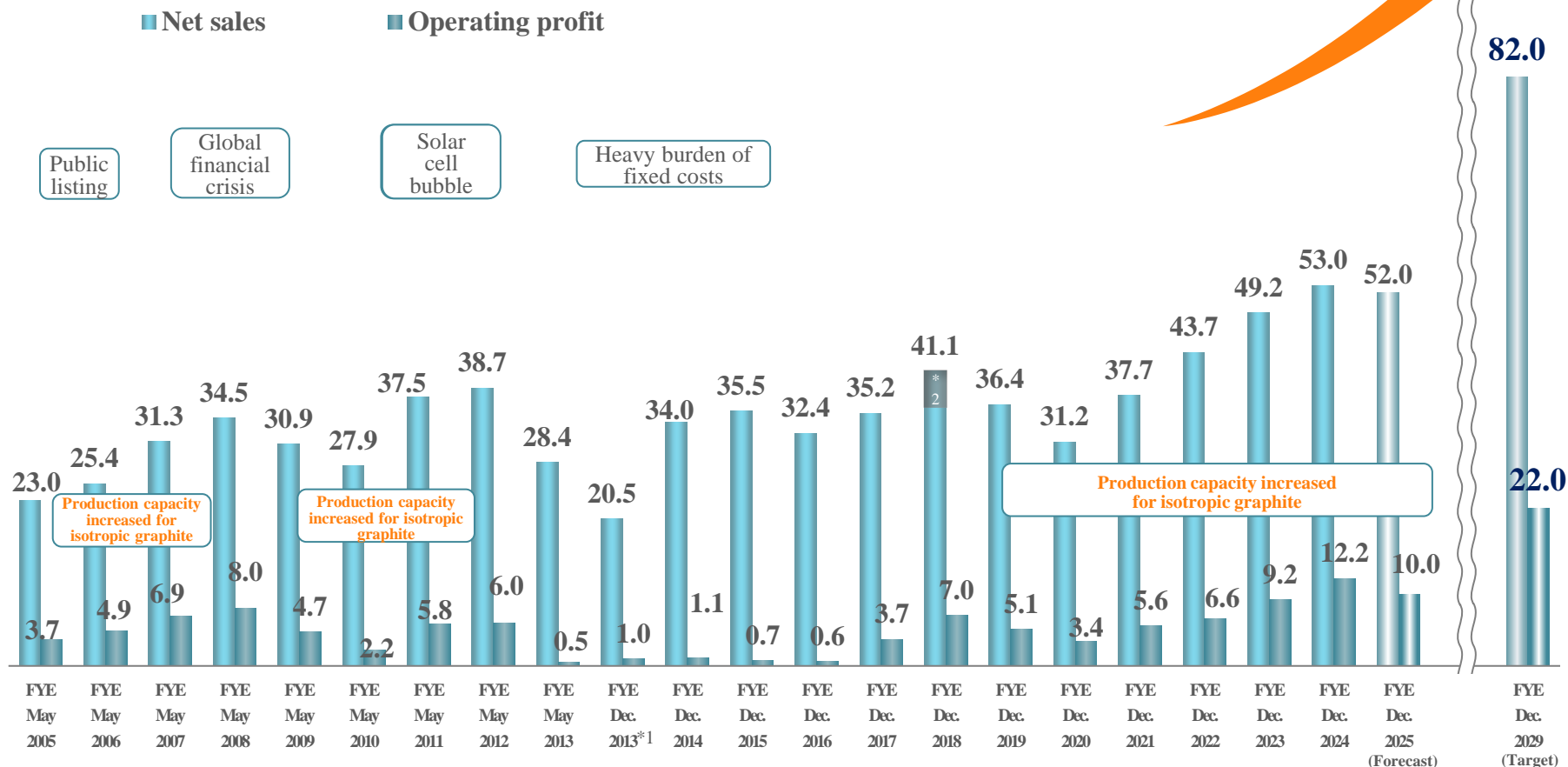
Become a **strong**  
company

## Medium-term Management Plan

# Trend in Net Sales and Operating Profit



(Unit: Yen, billions)



\*1 The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013.

For this reason, the fiscal year ended December 31, 2013 was an irregular seven-month fiscal period.

\*2 Net sales for FY2018 include 3.2 billion yen in net sales for China's high-temperature reactor-pebble-bed modules (HTR-PM).

## Solar cell

Special (Electronics)

Compound (CC)

Production is restarting and expanding, even in regions outside China, with the impact of increasing momentum towards renewable energy and US–China trade frictions.

## Automotive

Special (General)

General  
(Mechanical)

General (Electrical)

Compound (CC)

Compound (Sheet)

The progressive shift toward EVs has led to the expansion of electronic equipment-related markets, including an increase in the number of motors used and enhanced safety features. In addition, demand for the use of carbon in automobile parts is rising, partly due to an increasing focus on weight reduction. At the same time, some markets are being impacted by the shift away from internal combustion engines and the decrease in the number of parts used.

## Home appliances / power tools

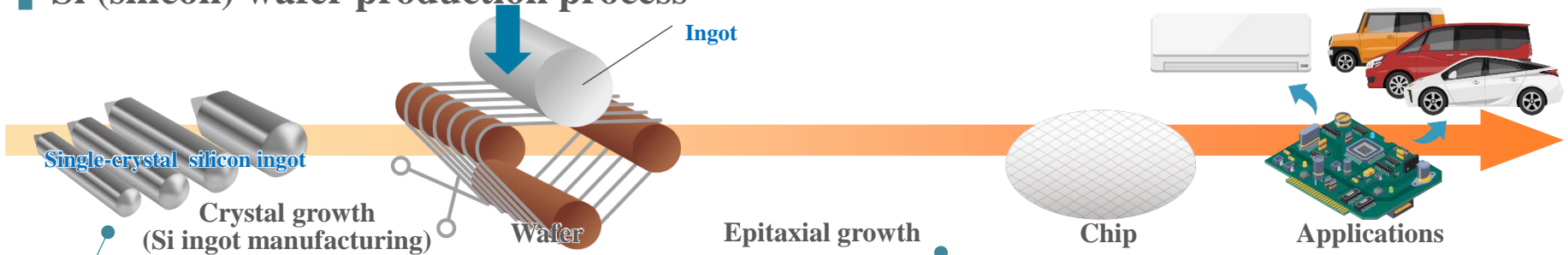
General (Electrical)

Demand for household washing machines and vacuum cleaners is increasing in developing countries with the rise in disposable incomes, progressive regional electrification, lifestyle changes, and increasingly advanced home appliances. Demand is also anticipated for power tools for household use and associated with capital investment in factories, and the home appliances and power tools markets are both expected to experience moderate growth.



# Graphite Products Used in the Manufacturing Process of Semiconductor Devices

## Si (silicon) wafer production process



Graphite products used

**Parts for single-crystal silicon manufacturing equipment**

- Special Graphite (Electronics)
- Crucibles, heaters, jigs
- Compound (C/C) Crucibles
- Compound (Sheet) Protective materials

**Parts for SiC crystal manufacturing equipment**

- Special Graphite (Electronics)
- Materials for the insides of furnaces

**Parts for epitaxial growth equipment**

- Compound (SiC-coated) Susceptors

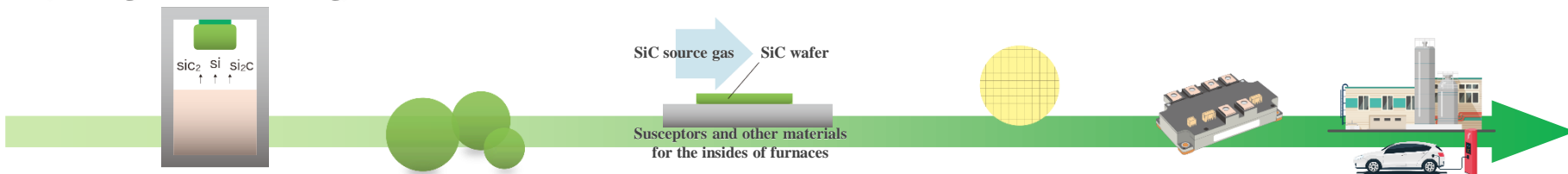
## Crystal growth (SiC ingot manufacturing) Wafer manufacturing

## Epitaxial growth

## Dicing

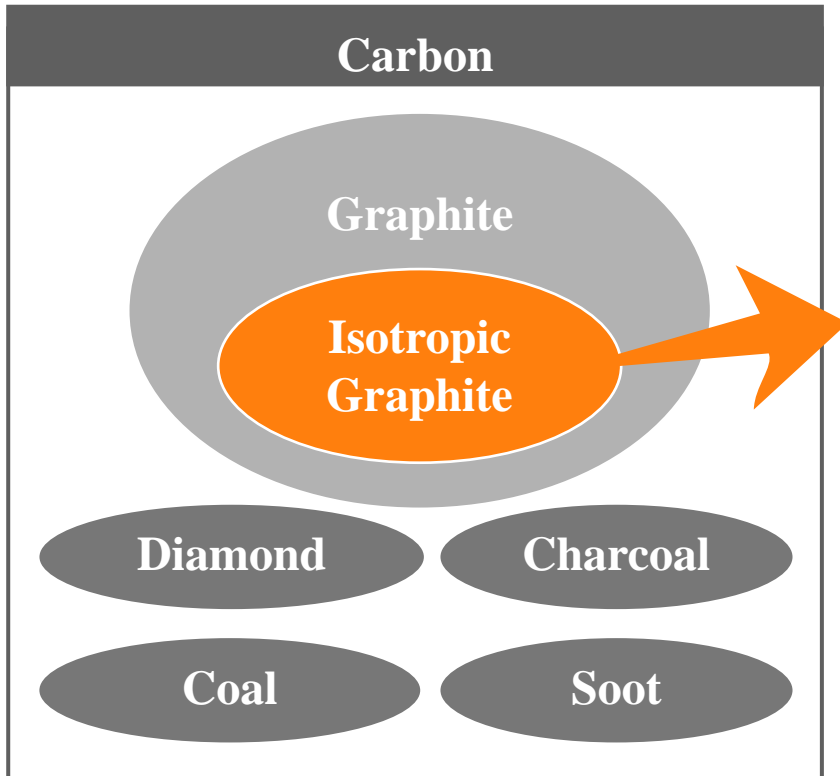
## Modularization

## Application



## SiC wafer production process

### Properties of Isotropic Graphite



#### Features of graphite

High heat resistance  
Excellent thermal and electrical conductivity  
Lightweight and easy to machine  
Friction and wear are less likely to occur

- Properties such as thermal expansion are uniform in all directions
  - Temperature changes are unlikely to damage graphite parts
- High density and high strength with fine grain structure
  - Low consumption
- Very small variation in material properties
  - Contributing to customers' stable production and yield improvement



Heat treatment in a halogen gas atmosphere to remove impurities contained in graphite materials

**High purity and stable quality under high temperature  
= Essential for semiconductor manufacturing processes**

### Properties of SiC-coated graphite products

#### SiC-coated graphite products

SiC coating

Isotropic  
Graphite

\* Dense SiC film coated on graphite surface using thermal CVD (chemical vapor deposition)

Features of  
SiC film

Excellent oxidation, corrosion, and chemical resistance  
Extremely hard film, stable at high temperatures  
High purity for graphite base materials as well  
High thermal conductivity and excellent heat uniformity

- Coated with a dense SiC film
  - Prevents release and dispersion of graphite powder and release of gases and impurities from the graphite base materials.
- Material design enables use at high temperatures
  - Prevents cracking and peeling of the SiC film through the selection of a graphite base material with temperature variation equivalent to that of the SiC film, and maintains high dimensional accuracy even at high temperatures.



Materials that do not affect the quality of semiconductor products  
(Si: silicon and C: carbon)

**Higher purity than isotropic graphite, stable quality under high temperature  
= Essential for semiconductor manufacturing processes**

**Toyo Tanso will help seek solutions to social challenges by developing technologies that are closely aligned with its customers.**



**SUSTAINABLE DEVELOPMENT GOALS**

Toyo Tanso aims to help bring about achievement of the Sustainable Development Goals (SDGs).

### Electronics

[Semiconductor]  
Parts for crystal growth  
Parts for wafer processing  
[Electronic component]  
Jigs for electronic component manufacturing



### Energy

[Power generation]  
Grounding brushes for power generators  
Parts for solar power generation device manufacturing  
Core parts for next-generation atomic reactor  
[Fuel cells]  
Catalyst carriers



### Mobility

[Trains]  
Pantograph sliders  
[Aircraft]  
Engine parts manufacturing (electrodes for EDM, jigs for heat processing)  
[Automotive]  
Carbon brushes for fuel pumps  
Gaskets



### Social infrastructure

[Communications]  
Parts for optical fiber manufacturing  
Parts for cable manufacturing  
[General industry]  
Packing  
Sealing ring bearings



### Life science

[Medical care]  
Target materials for CT devices  
Analytical column filler  
[Home appliances]  
Parts for LED manufacturing  
Carbon brushes for cleaners  
Parts for compressors





# TOYO TANSO

## Inspiration for Innovation

**(Note) This document has been translated from the Japanese original for reference purposes only.**

**In the event of any discrepancy between this translated document and the Japanese original, the original shall prevail.**

**Business forecasts, plans, etc. contained herein are based on information and assumptions of economic conditions, etc. available at the time of writing. Actual business results may vary from forecasts, plans, etc. because of a wide range of factors going forward.**

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