

Medium-Term Management Plan

2022–2026

February 21, 2021
Toyo Tanso Co., Ltd.

1. Medium-Term Management Plan — Review of 2018

Onward and Perspective on the Business Environment

P. 3

2. New Medium-Term Management Plan 2022–2026

P. 9

3. Sustainability — ESG/SDG Initiatives

P. 24



1. Medium-Term Management Plan

— Review of 2018 Onward and
Perspective on the Business Environment

- The business environment has changed dramatically with unanticipated circumstances such as the economic slump due to the COVID-19 pandemic and supply chain chaos due to the impact of US–China trade frictions
- We do not expect to achieve the targets for FY2022, the final year of the Medium-Term Management Plan, in view of these changes in the environment

	FY2018	FY2019	FY2020	FY2021	FY2022 forecast (announced in Feb. 2022)	FY2022 target (Medium-Term Management Plan)
Net sales	41.1 billion yen*	36.4 billion yen	31.2 billion yen	37.7 billion yen	42.0 billion yen	50.0 billion yen
Operating income	7.0 billion yen	5.1 billion yen	3.4 billion yen	5.6 billion yen	7.0 billion yen	8.0 billion yen
Ratio of operating income	17.0%	14.2%	11.0%	15.0%	16.7%	16.0%
ROE	8.0%	4.6%	4.0%	6.4%	6.7%	8.0%

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

Achievements and Challenges from the Medium-Term Management Plan

Achievements

Challenges

Management

Established the earnings platform

- Generated profits with double-digit OPM and achieved a profit structure to earn a certain level of profits, even amid the COVID-19 crisis

Further enhance profitability

- Raise the level of earnings one notch and maintain stable profits

Business

Fostered growth drivers

- Rapid growth was experienced for SiC semiconductor applications, for which we have consistently provided and developed products through trial and error in close communication with our customers, with the market entering a period of expansion

Aggressively implemented capital investment

- Invested 19.1 billion yen in aggregate from FY2018 to FY2021
- Focused resources on high added-value/ high-growth fields (semiconductor applications and SiC-coated graphite products)
- Enhanced production efficiency (introduced automated equipment and renewed aging equipment)

Promote businesses in line with changes in the external environment

- It is vital to build firm and resilient business foundations to survive this period of transformation, including changes in industry structure, increasingly serious environmental issues, etc.
Pursue thorough labor saving and automation
- We must expand the implementation of automation and labor-saving measures progressively introduced for product manufacturing/processing stages to cover all possible processes

Sustainability

Established a system of sustainability management

- Set up administrative divisions and full-time sections for governance, and accelerated initiatives to contribute to solving social issues through business and respond to environmental issues

Strengthened governance

- Strengthened governance, including for overseas subsidiaries (procurement, quality, personnel, legal, etc.)
- Strengthened emergency response (enhanced global BCP)

Strengthen sustainability management

- The formulation of plans and implementation of concrete initiatives is urgently required to reduce greenhouse gas emissions

Awareness of the External Environment

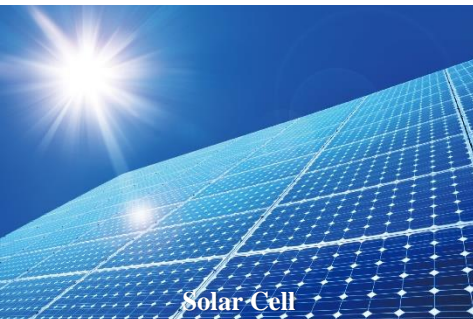
- Changes in industry structure and the advance of technological innovation
 - Development of digital technology infrastructures such as 5G, IoT, and AI
 - Advances in semiconductor manufacturing techniques

- Increased risk from climate change
 - Progressive shift toward electric vehicles (EVs)
 - Increasing momentum toward renewable energy

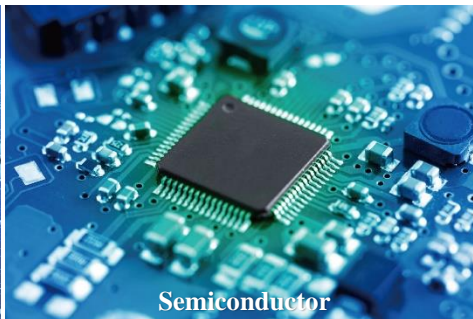
Appearance of new needs and the creation and growth of business opportunities

Emergence of new business opportunities finding solutions to social issues

Business opportunities arising from changes in the external environment



Solar Cell



Semiconductor



Automotive



Windmill generator

Semiconductor

Special (Electronics)

Special (Other)

Compound (SiC)

Compound (CC)

Compound (Sheet)

■ Si semiconductor

Semiconductor manufacturers are planning large-scale capital investments against the backdrop of demand from applications such as 5G and data centers, and the wafer market is forecast to grow by an average of 5% or more per year as a result.

Even higher growth is expected for Epi wafers in particular, due to increased demand for logic semiconductors.

■ SiC semiconductor

Adoption is progressing for applications such as EVs and high-voltage devices, and growth of close to 20% per year is anticipated in the market scale for SiC semiconductor devices.

■ LED

In addition to demand for lighting and LCD backlight applications, demand is expanding for consumer applications such as micro-LEDs, expected to be used in next-generation displays, and the spread of UVLEDs for sterilization.

We will ensure that we capture the opportunities presented by market growth and increased demand and focus on high-growth, high-value-added fields, expanding these to account for 40% of net sales

(compared with 30% in FY2021)

*Average annual growth rates are based on our estimates.

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.



2. New Medium-Term Management Plan 2022–2026

Direction
Growth x
value expansion

Viewing changes in the environment as opportunities, and aiming for further growth as well as expansion of company value and societal value.

▶ Company policies



Become **a global**
company



For the world,
for society



Become **a strong**
company

▶ Strategy

- 1) Comprehensive global expansion and establishment of advantage in high-growth/high-added-value businesses.
- 2) Sustainable growth and increased competitiveness in core businesses / established businesses.
- 3) Greatly enhance workplace capabilities through process innovations, labor savings / energy savings.
- 4) Aggressively and strategically drive investment (including M&A)
- 5) Solidify governance structure and business foundation on a global basis
- 6) Contribute to the environment and society through business (expansion of ESG-compliant products, etc.)
- 7) Strengthen development of global human resources to support these strategies

Targets for the new medium-Term management plan

- 5-year plan spanning 2022 to 2026
- Expand core businesses, strengthen the shift to higher value-added products and promote globalization to achieve net sales above the 50 billion yen mark
- Further enhance profitability through the shift to higher value-added products, to achieve record-high profits and an operating income ratio of 20%

	FY2021	FY2022 (forecast)	FY2026 (target)
Net sales	37.7 billion yen	42.0 billion yen	54.5 billion yen
Operating income	5.6 billion yen	7.0 billion yen	11.0 billion yen
Operating profit ratio	15.0%	16.7%	20.2%
ROE	6.4%	6.7%	9.0%

Trend in Net Sales and Operating Income

Market growth
Progressive emergence
of leading applications

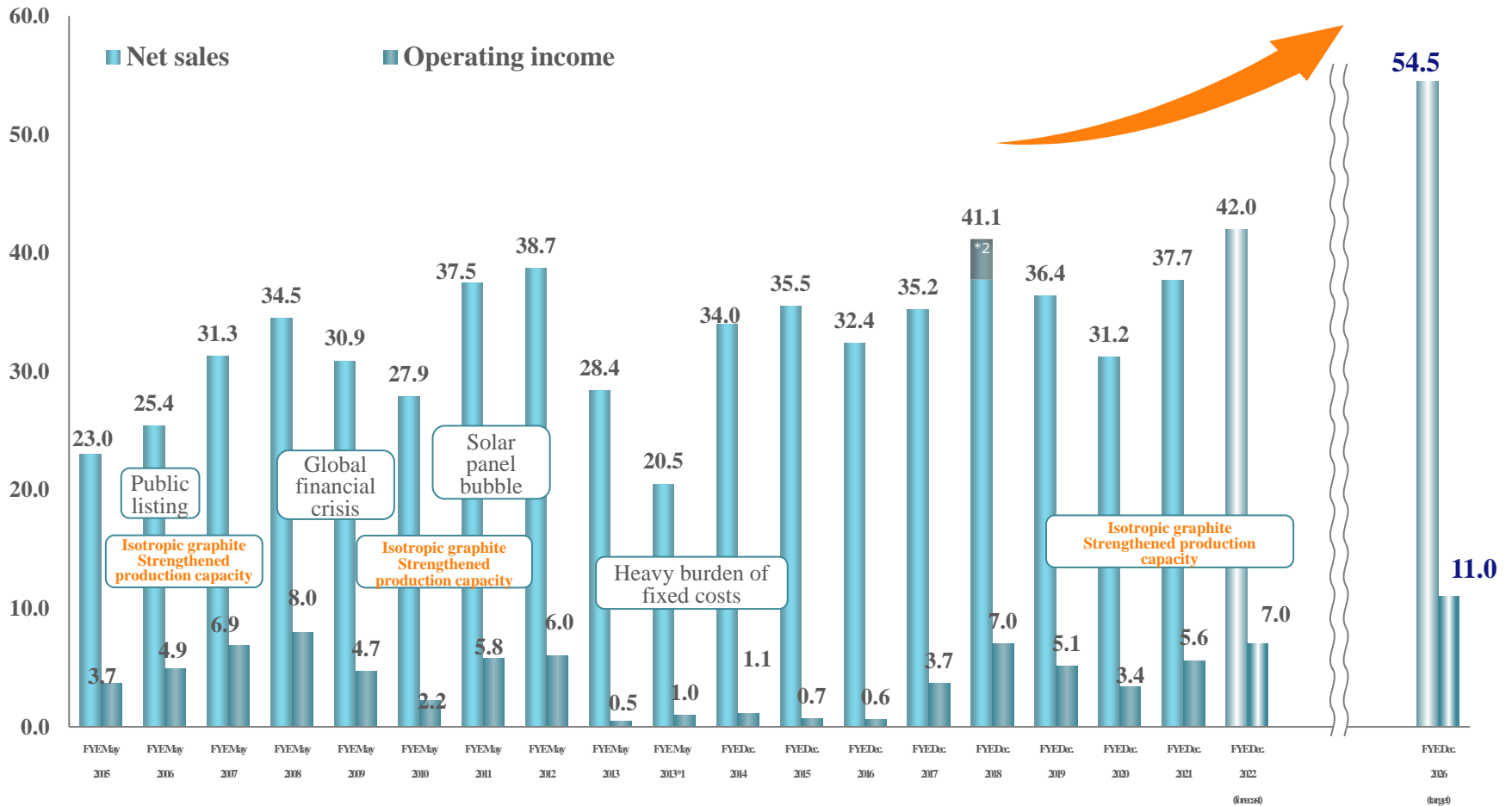
Transition stage to maturity stage
Facilities expansion by companies and
modulation of the supply-demand balance

Structural Reform
Strengthened
management

**Medium-Term
management plan**
2018-

**New medium-Term
management plan**
2022-2026

(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.

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New Medium-Term Management Plan

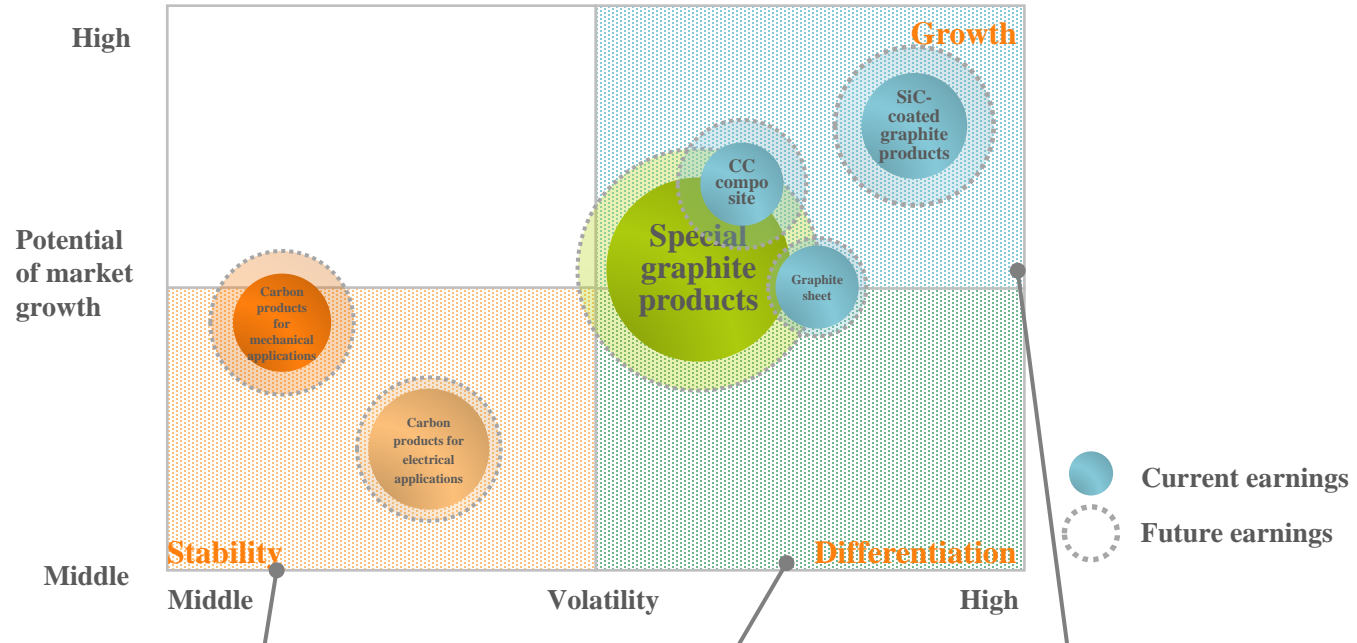
Net Sales Targets by Product/Application

- The electronics field is driving sales for special graphite products
- For compound materials, SiC-coated graphite products are seeing outstanding growth, and growth is also high for C/C composite products

(Unit: Yen, billions)	FY2021	FY2022 (forecast)	FY2026 (target)	CAGR FY2021–FY2026
Special graphite products	17.1	19.2	25.9	8.6%
Carbon products for general industries (for mechanical applications)	3.7	3.7	5.6	8.5%
Carbon products for general industries (for electrical applications)	5.7	5.4	6.7	3.2%
Compound materials [3 major products]	7.8	10.0	14.5	13.2%
Other*	3.3	3.5	1.8	(11.5)%
Total	37.7	42.0	54.5	7.6%

* “Other” includes “compound materials and other products [other products]” and “related goods.”

Identify businesses as growth, stable, and differentiation businesses to implement flexible and appropriate strategy



Contribute to business stability, with little fluctuation in demand or profitability

- **Carbon products for mechanical applications**
Become more cost competitive, and strengthen automotive applications and sales expansion in overseas markets
- **Carbon products for electrical applications**
Utilize strengths (delivery time, service) to pursue a higher share of growth markets (Asia, home appliances and power tools) and increase contribution

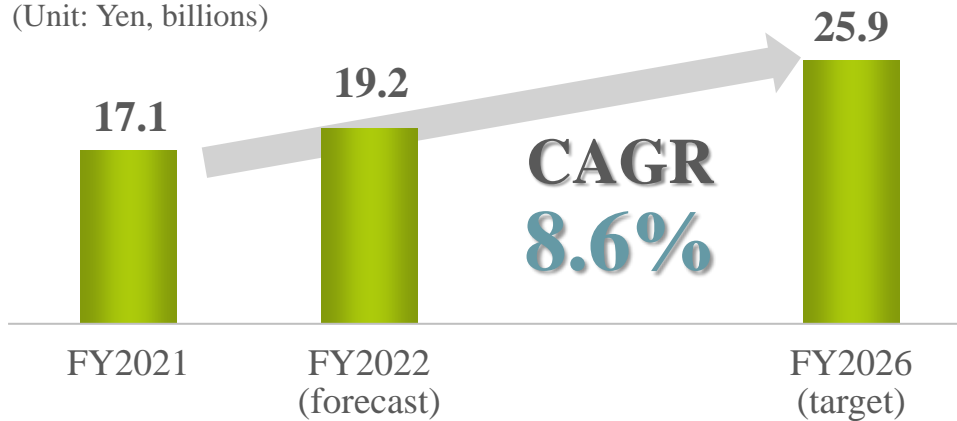
Business development focusing on high added-value domains

- Expand market share in high added-value domains such as semiconductors, which have high quality requirements
- Strengthen cost resilience and reduce the burden on domestic manufacturing through measures such as the utilization of contract manufacturing for more general-purpose domains

High-growth businesses driving earnings

- Sales expansion leveraging the features and strengths of each product
- **SiC-coated products:**
Enhanced production capacity
- **C/C composite products:**
Technical service capacity, including design
- **Graphite sheet:**
Customization to customer specifications

(Unit: Yen, billions)



► Strategy

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

■ Electronics applications

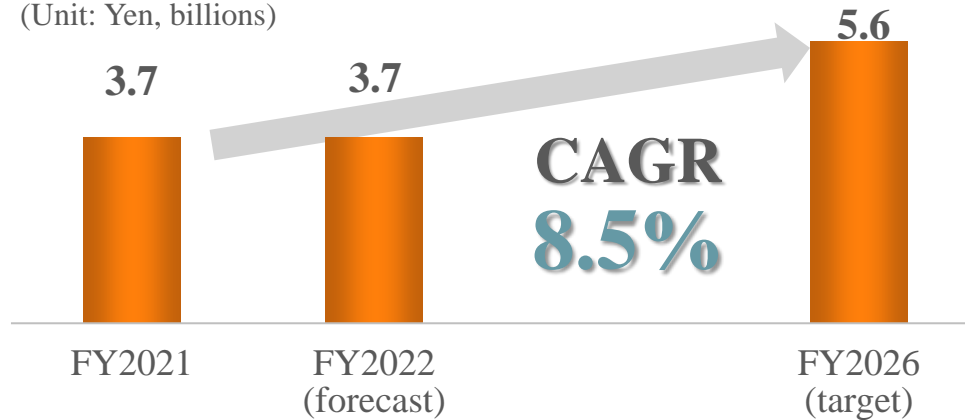
- Some degree of market share has been attained for products for single-crystal silicon manufacturing, but with regional differences, and we aim to increase the share through strategies appropriate to each region
- We will build a firm position in growing markets for products for compound semiconductor applications, by leveraging our global sales network to swiftly ascertain customer needs
- For products for solar cell manufacturing applications, we will pursue differentiation from Chinese graphite makers, including in the sale of value-added products, firmly premised on securing profitability

■ General industry applications

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

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

(Unit: Yen, billions)



► Strategy

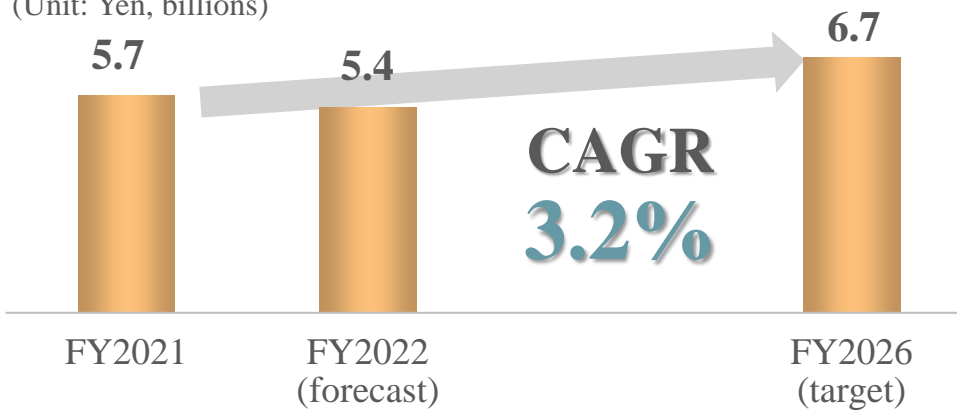
Strengthen technological and production initiatives as a Group, including overseas subsidiaries, through measures such as enhancing manufacturing techniques (materials, processing, etc.), the automation of manufacturing, and cost reductions

- We anticipate market growth of around 5% in automotive applications, and higher for applications related to the shift to EVs, and we will position these as a focus in completing a reduction in internal combustion engine-related applications
- We will also raise the proportion of overseas sales from its current low level

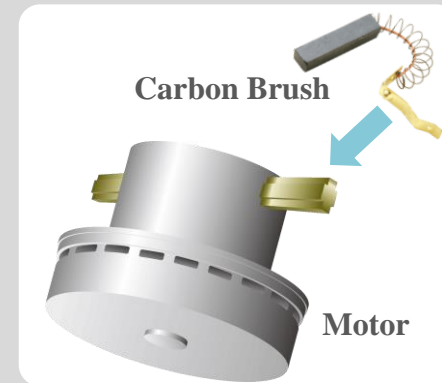
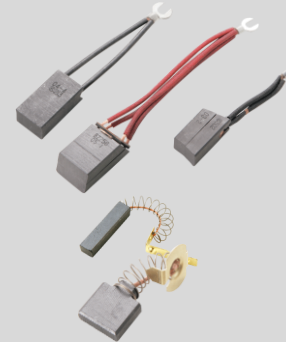
Note: Average annual growth rates are based on our estimates

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

(Unit: Yen, billions)



Carbon brush

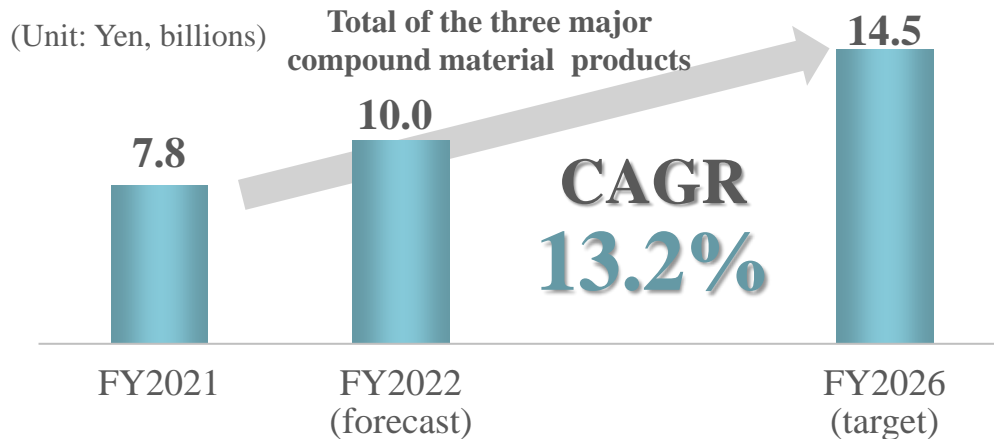


► Strategy

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

- Despite a progressive shift to brushless motors, there remains a persistent level of demand for cheaper motors with brushes, and we forecast a moderate increase in demand for carbon brushes for home appliance and power tool applications, our main existing focus. We will use the strength of our delivery times and service to pursue a higher market share in Asia
- We aim to expand sales of products for automotive and industrial applications, for which sales volumes are low at present, by grasping opportunities such as the shift to EVs and the spread of wind power generation to develop our businesses, including through alliances

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



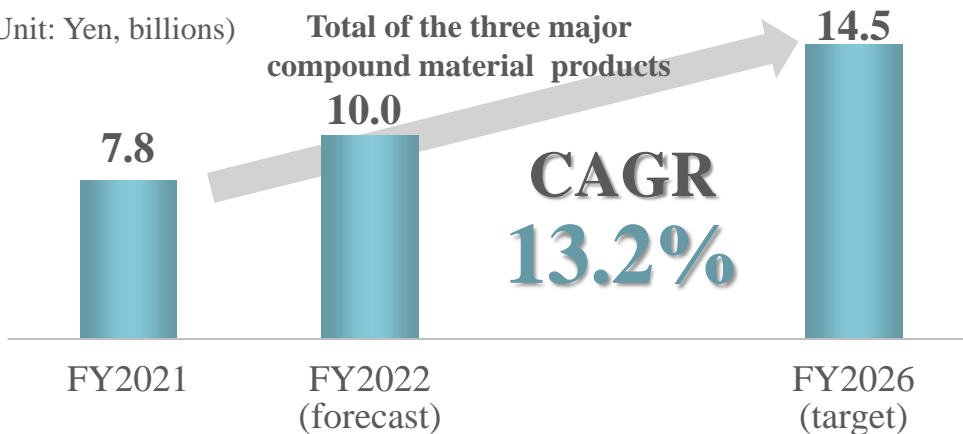
► Strategy

Fully utilize increased capacity (completed in 2021) to achieve rapid growth as a core value-added business

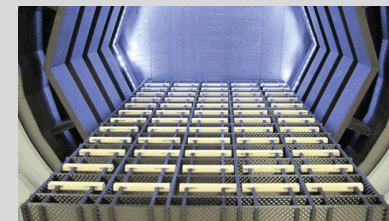
- Establish a top-level share of the market globally, responding to strong expectations from our main customers for Si-Epi for semiconductors
For SiC-Epi, which is seeing rapid market growth, we will aim to maintain and expand our market share by capturing consumables demand, in addition to demand for installation in new equipment
- For LED applications, we will aggressively expand to target large MOCVD equipment for mass production in the key Chinese market
- We will promote innovations in manufacturing techniques in pursuit of productivity, quality, and cost savings, to further strengthen profitability
We will also take on the challenge of developing manufacturing methods and quality to match the needs of the market for the next decade
- We plan to further reinforce capacity during the period of the Medium-Term Management Plan

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

(Unit: Yen, billions)



Graphite sheet products



C/C composite products (basket / base tray)



► Strategy

■ C/C composite products

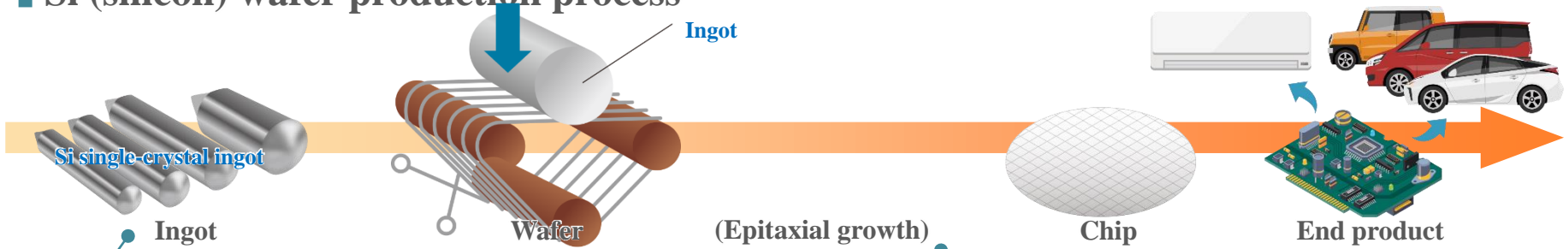
- For the three main applications (semiconductors, solar cells, and industrial furnaces), we will use a proposal-based approach, including design and usage methods, to capture demand for substitutes for other materials and potential demand
- In products for industrial furnace applications, C/C composite materials have better characteristics than the metal jigs most often used at present, and replacement will be boosted by the acceleration of labor-saving and automation
Despite some damage from a decline in the number of parts handled due to the shift to EVs, we expect this to be more than offset by replacement demand

■ Graphite sheet products

- We will leverage our strength in “customization to customer specifications” to boost applications overseas and in heat dissipation application, where volumes are currently low, to meet and exceed market growth (automotive, manufacturing jig applications, etc.)
- We are engaged in improving thermally expandable graphite (raw material) at our JV (established in 2020) that produces raw materials, aiming to enhance quality and pioneer new applications

(Reference) Graphite products used in Semiconductor wafer production process

Si (silicon) wafer production process



Graphite products used

Parts for single-crystal silicon manufacturing equipment

- Special (Electronics)** Crucibles, heater, jigs
- Compound (CC)** Crucibles
- Compound (Sheet)** Protective materials

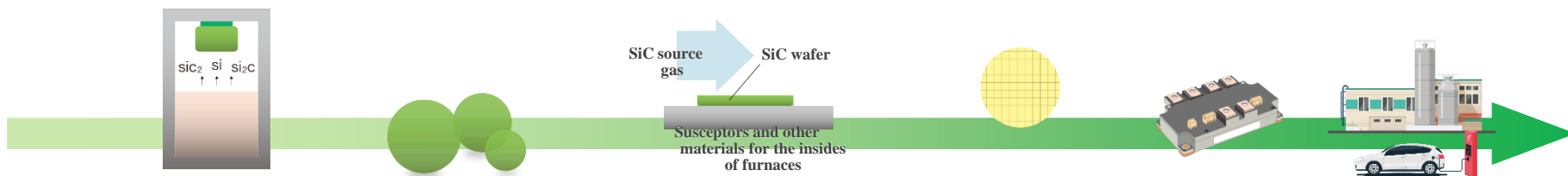
Parts for SiC crystal manufacturing equipment

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

Parts for Epitaxial growth equipment

- Compound (SiC)** Susceptors

Ingot manufacturing Wafer manufacturing Epitaxial growth Dicing Modularization Application



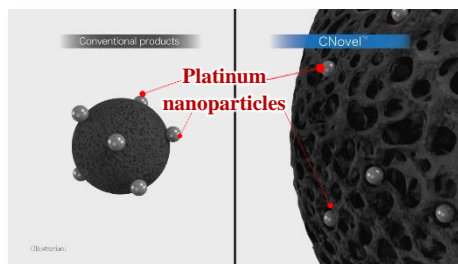
SiC wafer production process

We will promote research and development activities to ensure the success of the Medium-Term Management Plan and achieve rapid growth beyond

Establish superiority

Develop products to pursue product strength and competitive dominance

- Expand the CNovel™ business in the hydrogen energy field
- Strengthen technology marketing strategy



A catalyst for hydrogen fuel cells developed in collaboration with a catalyst company (CNovel™ is used as a catalyst support)

Enhance productivity

Reform processes and reduce costs

- Expand and enhance production techniques to respond to customer demands that cannot be fulfilled through the extension of existing techniques
- Establish molding techniques to reduce processing times, and techniques to reduce processing waste

Strengthen the foundation

Establish technologies to make full use of raw materials

- Expand and enhance multifaceted analytical technologies
- Reveal relationships of cause and effect between characteristics of products and raw materials
- Raw materials analysis (mineral oil and coking coal) to respond to increasingly diverse procurement resources
- Pursue the potential of materials design (materials informatics)

Take challenges

Strengthen the research environment and personnel base

- Actively take on technical challenges such as waste materials recycling toward realizing a sustainable society
- Dispatch researchers to external research bodies in Japan and overseas to gather experience and expand insight (including research into carbon sequestration technology with the National Institute of Advanced Industrial Science and Technology, etc.)

A prototype recycled graphite material made of waste graphite



We will continue to reinforce our foundations through the implementation of growth strategy during the period of this Medium-Term Management Plan, under our policy of “engaging in proactive and strategic investment”

Total capital investment
(2022–2026)
37.0 billion yen



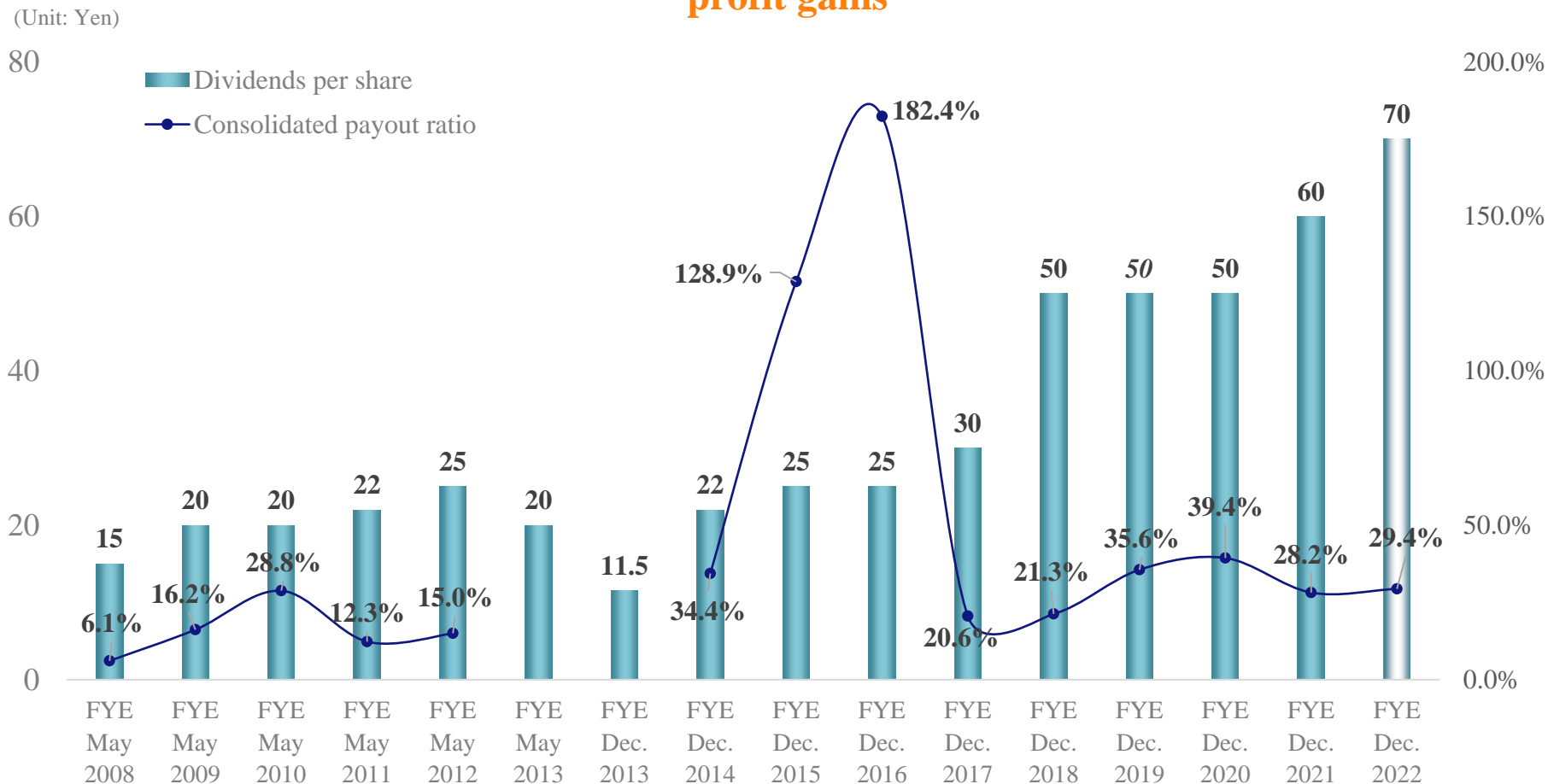
Trajectory of capital investment based on the strategies of Medium-Term Management Plan

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

<ul style="list-style-type: none"> ■ Boost capacity for SiC-coated graphite products 	<p>Implement further capacity increases during the period, to double capacity together with the increases completed in 2021</p>
<ul style="list-style-type: none"> ■ Enhance facilities for carbon products for mechanical applications 	<p>Renew and enhance facilities to expand manufacturing capacity for next-generation automobiles</p>
<ul style="list-style-type: none"> ■ Boost processing capacity globally 	<p>Implement enhancements focusing on processing for high added-value products at each subsidiary</p>

Examples of capital investment projects

We will implement stable dividend increases while striking a balance between profit distribution and 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 ended December 31, 2013 was an irregular seven-month fiscal period (nine months for some subsidiaries).





*2. Since net income 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.



3. Sustainability

ESG/SDG Initiatives

■ We have identified material issues, and are in the process of formulating targets, KPIs and concrete initiatives to address them

<p>E</p> 	<p>Contribution to mitigating the risks of climate change and protecting the natural environment</p>	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions, including through energy - saving and generation • Contribute to reducing greenhouse gas emissions through products • Respond to environmental regulations in each country and reduce environmental burden • Use earth-friendly raw materials and avoid procurement risk
<p>E</p> 	<p>Pursuit of product development and manufacturing techniques to resolve social issues and customer needs</p>	<ul style="list-style-type: none"> • Develop products for a recycling-oriented society, and improve production processes • Respond to more sophisticated quality demands • New product development and service improvement in collaboration with stakeholders
<p>S</p> 	<p>Creation of safe, secure, and work-friendly workplaces for all</p>	<ul style="list-style-type: none"> • Improve workplace environment to ensure safety and health, and boost productivity • Uphold the human rights of all stakeholders • Implement personnel development/training and education • Respect diverse human resources
<p>S G</p> 	<p>Trustworthy corporate activities</p>	<ul style="list-style-type: none"> • Ensure thorough compliance • Strengthen crisis management and response • Promote social contribution activities

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

Risks and Opportunities Based on Changes in the External Environment Due to Climate Change

- We have declared our support for the TCFD*¹ (in July 2021) and we are considering and implementing measures to ensure full disclosure of information related to climate change
- We recognize some risks associated with social and market changes; however, we expect significant opportunities from environment- and energy-related markets

Risks and opportunities with the potential to significantly affect management of the Company

Risk	Policies and regulations	<ul style="list-style-type: none"> • The establishment of strict standards regulating greenhouse gas emissions make it necessary to invest and improve technologies to reduce emissions
	Changes in markets and customers	<ul style="list-style-type: none"> • Decline in demand for engine-related products due to the shift in automobiles to EVs • Decline in demand for products due to the spread of next-generation solar panels*²
	Industry changes, including changes in other industry players	<ul style="list-style-type: none"> • Competition with competitors may intensify due to revisions to achieve more environmentally friendly production systems
	Procurement	<ul style="list-style-type: none"> • The price of raw materials (coke and pitch) may increase significantly due to a collapse in the supply–demand balance • The price of purchased goods may increase significantly due to the introduction of a carbon tax or to adjust to the environment
	Manufacturing	<ul style="list-style-type: none"> • Increasingly intense natural disasters may increase costs through the suspension of operations, etc. • Increases in the cost of improving manufacturing processes to meet environmental response requirements
Opportunities	Policies and regulations	<ul style="list-style-type: none"> • Demand may increase for products related to the environment such as renewable energy
	Industry changes, including changes in other industry players	<ul style="list-style-type: none"> • Demand will increase for power semiconductor-related products and other graphite components due to the shift in automobiles to EVs • Demand for power feed and earthing brushes will increase due to higher demand for wind power generation • Demand for graphite may increase for nuclear applications associated with reducing CO₂ emissions

*1 Task Force on Climate-related Financial Disclosures *2 Next-generation solar panels that do not use graphite products in manufacturing and other processes

Strengthening and Revitalizing the Foundations of Our Organization and People

- We will strengthen and revitalize the foundations of our organization and people globally, and build a base to achieve our management vision

Creating safe and healthy workplace environments, and enhancing employee engagement

Promoting diversity and integration

We aspire to be a work-friendly company, a company with a dream, a company that is good for society

Promoting human rights initiatives

Strengthening personnel development



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



Energy

[Power generation]
Grounding brushes for power generators
Components for solar power generation device manufacturing
Core components for next-generation atomic reactor
[Electronic component]
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]
Components for optical fiber manufacturing
Components for cable manufacturing
[General industry]
Packing
Sealing ring bearings



Life science

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



TOYO TANSO



Inspiration for Innovation

(Note) Business forecasts, plans, etc. contained herein were 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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