



# Value Up Challenge 2022 –

# Reference Material for New Medium-Term Management Plan (2018-2022)

February 14, 2018 **Toyo Tanso Co., Ltd.** 

### **Table of Contents**

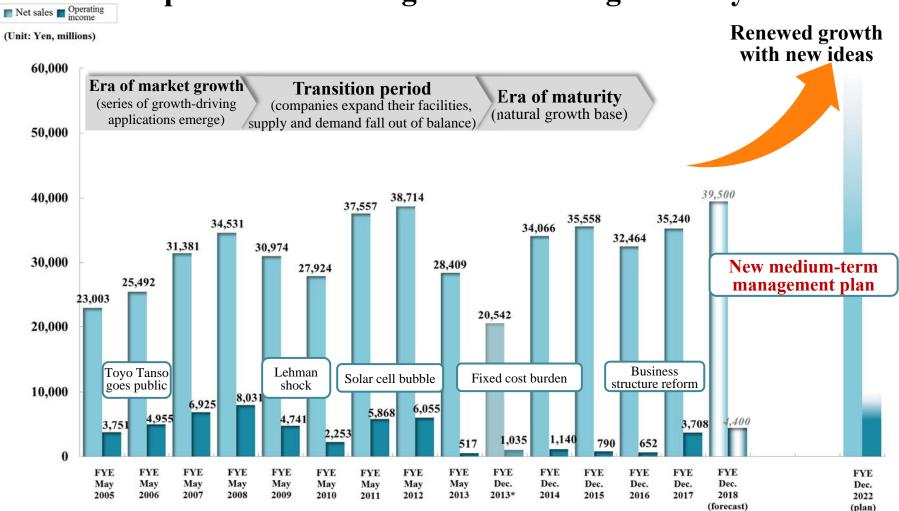


1. Opening: A Look Back	
2. Overview of New Medium-Term Management Plan TVC 2022	
(1) Its Significance	P. 4
(2) Basic Concept	P. 5
(3) Quantitative Targets	P. 6
3. Key Policies / Strategies	
(1) Expand Existing Core Businesses	P. 7
(2) Expand New Business Domains	P. 9
(3) Accelerate Development of Next Two Strategic Businesses	P. 13
(Porous Carbon, SiC Wafer Processing)	
(4) Investment Plan / M&A	P. 15
(5) Capital Policy and Shareholder Returns Policy	
(6) Strengthen Basics and Foundation as a Truly Global Company	
4. Closing: What We Should Value	

### 1. Opening: A Look Back



## **Experience of short growth and stagnation cycles**



<sup>\*</sup>End of accounting period changed from May 31 to December 31 starting with the fiscal year ended December 31, 2013. Therefore the fiscal year ended December 31, 2013 was an irregular 7-month fiscal year.

# 2. Overview of New Medium-Term Management Plan TVC 2022 (1) Its Significance



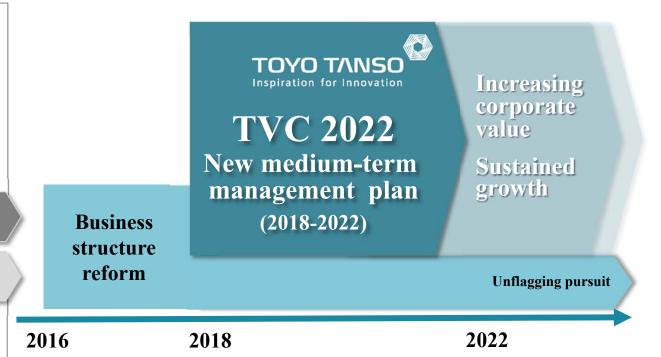
# -Transitioning from business structure reform to growth strategy-

- Existing markets have matured
- Supply and demand out of balance
- Arrival of manufacturers from emerging economies
- Little expectation of demand magically saving us
- Emergence of new domains / technologies •Rapid growth (EV, IoT, advanced forms of energy, etc.)

Changes in external environment

#### **Issues for Toyo Tanso**

- Strain from hasty expansion
- Swelling fixed costs
- Worsening asset / capital efficiency
- Stagnating functions, inc. new product development
- Limits of specializing and independence



**Challenge & Innovation** 

Copyright © Toyo Tanso Co., Ltd. All Rights Reserved

Initial targets met

ahead of schedule

for growth

**Start of preparation** 

# 2. Overview of New Medium-Term Management Plan TVC 2022(2) Basic Concept



## New Medium-Term Management Plan

TVC 2022 (Toyo Tanso Value Up Challenge 2022)

-Walk together, leap forward together, and create new corporate value-

#### **Basic Concept**

#### **Challenge & Innovation**

#### 3 Basic Policies

- 1. Strengthen competitiveness in existing businesses
- 2. Expand into new business domains (go beyond carbon specialization and independence)
- 3. Improve capital efficiency (increase ROE)

#### 6 Priority Measures

- 1) Exhaustively expand high value-added products
- 2) Create new core products for the next generation
- 3) Full-scale launch of the next two strategic businesses (porous carbon, SiC wafer processing)
- 4) Pursue M&A by utilizing strategic investment budget
- 5) Improve capital and asset efficiency and strengthening shareholder returns
- 6) Strengthen basics and foundation as a truly global company

## 2. Overview of New Medium-Term Management Plan TVC 2022





# Sound growth and greater competitiveness in existing businesses

- Exhaustively expand high value-added products
- Launch of the next two strategic businesses
- Advance new business domains
- Carry out M&A

Investment strategy budget of 30 billion yen (cumulative over 5 years)



**Profit growth** (numerator)

**ROE 8** %

(by 2022)

Capital efficiency improvements (denominator)

- Reconsider balance sheet
- Use leverage
  - Strengthen shareholder returns

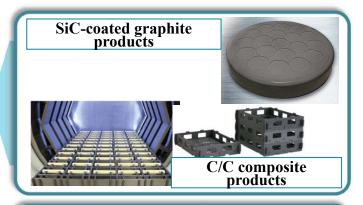
# 3. Key Policies / Strategies (1) Expand Existing Core Businesses - Directions for Business Development



#### <Take a decisive lead>

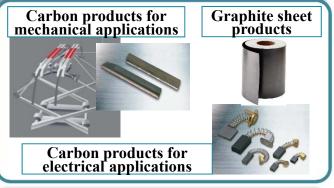
• Exhaustively expand high value-added products

Use large-scale facility upgrades and technological innovation to ensure overwhelming advantage



## <Newly expand>

- Assertively advance into new applications (transport machinery, energy devices...)
- Actively promote M&A, alliances



## <Optimize>

- Strengthen competitiveness through productivity improvements, production technology innovation
- Optimize production locations, globalize
- Also be aware of changes in industry structure



# 3. Key Policies / Strategies (1) Expand Existing Core Businesses —Basic Policy by Product



Special graphite products	<ul> <li>Maximize use of current facilities, improve productivity</li> <li>Strengthen competitiveness with an awareness of changes in industry structure</li> </ul>	Achieve sound growth Strengthen earnings
Carbon products for mechanical applications	<ul> <li>Use technological innovation to actively expand into new growth applications (automobiles, railroad, etc.)</li> <li>Also pursue opportunities for alliances, M&amp;A</li> </ul>	Expand new applications Expand globally
Carbon products for electrical applications	<ul> <li>Optimize, enhance global business system</li> <li>Expand new applications, pursue M&amp;A in light of industry maturity</li> </ul>	Deepen global operations  Expand new applications
SiC-coated graphite products	<ul> <li>Make exhaustive efforts in concert with semiconductor advances, innovation</li> <li>Expand in both scale and competitiveness with facility upgrades and technological innovation</li> </ul>	Exhaustively expand major- focus products
C/C composite products	<ul> <li>Expand in both scale and competitiveness with facility upgrades and technological innovation</li> <li>Cultivate new applications</li> </ul>	Exhaustively expand major- focus products
Graphite sheet products	<ul> <li>Use competitiveness of new factories, strengthen earnings</li> <li>Actively develop new applications (energy, life sciences, etc.)</li> </ul>	Increase added value Expand new applications

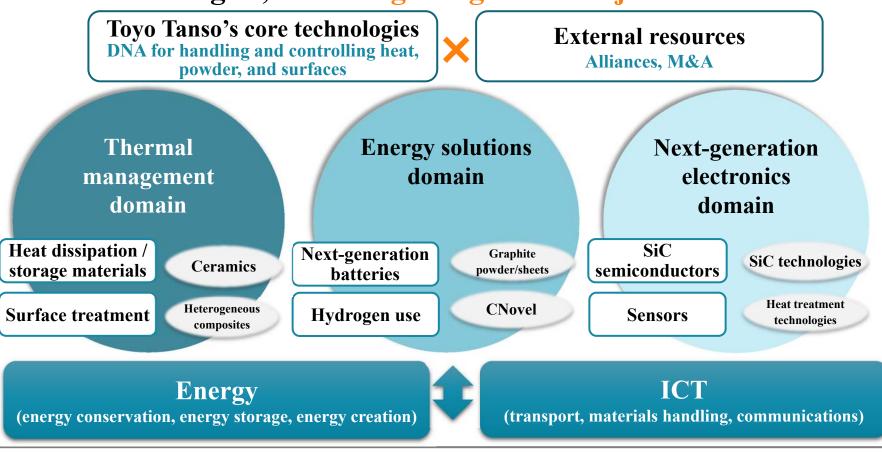
#### Nuclear power (outside framework of medium-term business plan)

Taking advantage of our position as the only business with a track record supplying high-temperature reactor-pebble-bed modules (HTR-PM) in China, strengthen and advance approach to subsequent large projects in Poland, US, Indonesia, Russia, etc.

# 3. Key Policies / Strategies (2) Expand New Business Domains —Target Domains



- Advance into new growth domains with new materials and technologies, without getting stuck on just carbon -



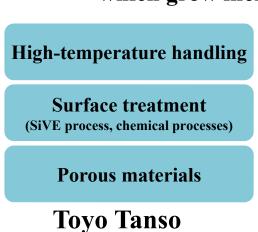
Automobiles (electrification of vehicles and their equipment), power semiconductors, the IoT, LEDs, automation/electrification ...

**Industry 4.0** 

## 3. Key Policies / Strategies (2) Expand New Business Domains -Start of Initiatives in Thermal Management Domain



-Solve the problem and use the phenomenon of heat sources, which grow increasingly hot as devices become more functional –



core technologies **Incorporate X Combine** 

Non-core technologies

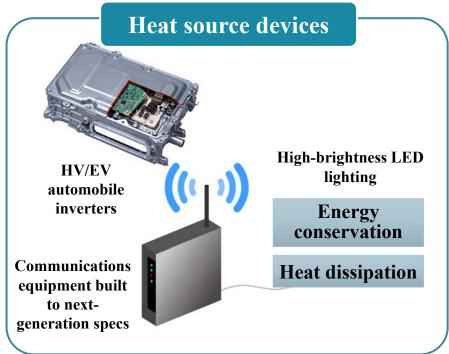
New technologies

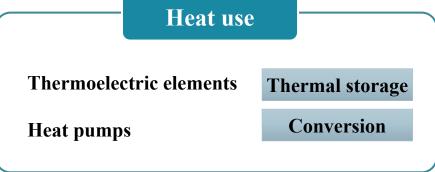
Ceramics/resin

New materials



**Compound** materials

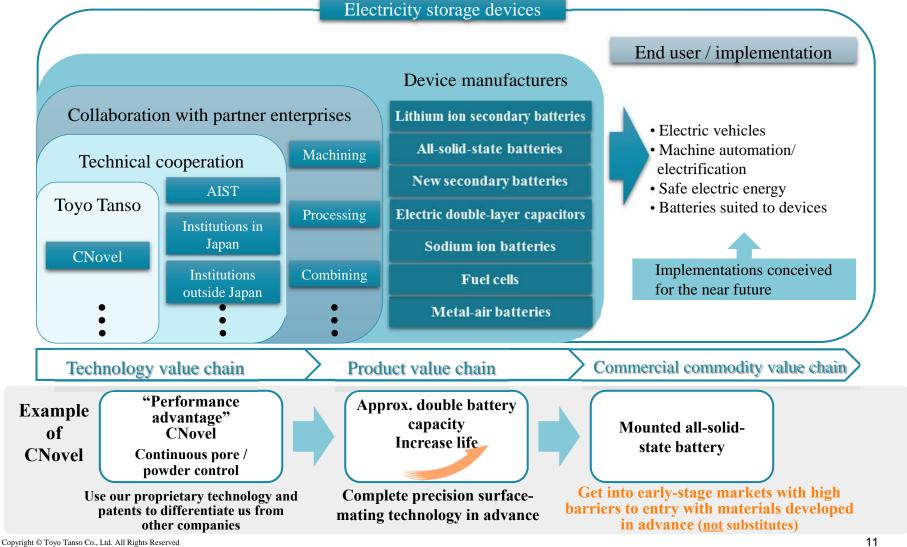




### 3. Key Policies / Strategies (2) Expand New Business Domains -Actively Expand into Electricity Storage Devices



- Start taking specific initiatives with research institutes and end users, using advanced technologies and materials —



# 3. Key Policies / Strategies (2) Expand New Business Domains — Strengthen Collaboration Based on Energy / ICT







#### **Electric energy**

Electric power generation (solar/wind/nuclear) Electricity storage (batteries/capacitors) Conversion (SiC semiconductors/sensors)

#### **Transport/information**



Technical partnerships
Implementation of new
technology





# Build cooperative system M&A



#### Thermal energy

Heat dissipation (energy conservation / sensors) Thermal storage (air conditioning / electric power generation) Use of unused heat (cogeneration / electric power generation)



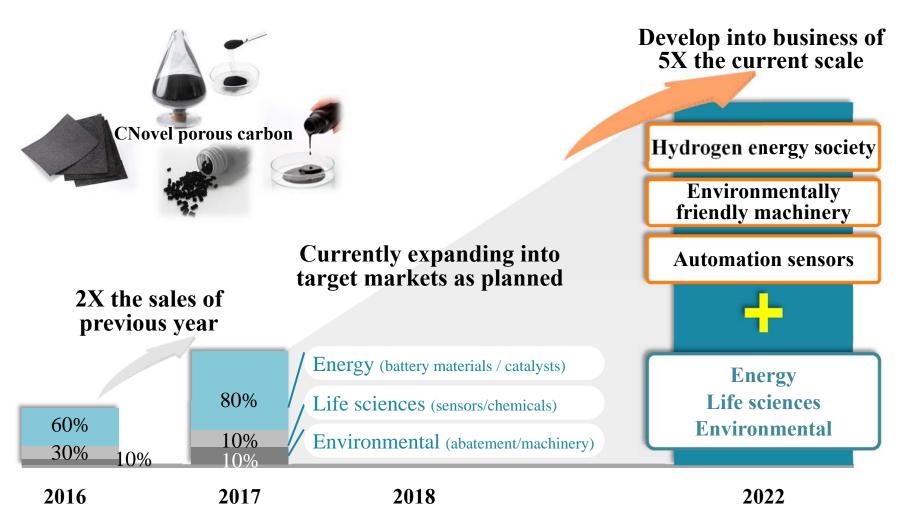
#### Hydrogen energy

Transport (materials handling) Storage (tanks/sensors) Electric power generation/conversion (chemical catalyst)



# 3. Key Policies / Strategies (3) Accelerate Development of Next Two Strategic Businesses - Porous Carbon TOYO TANSO Inspiration for Innovation

## —Be early to get into growth markets that will drive new business domains and macrotrends—



# 3. Key Policies / Strategies (3) Accelerate Development of Next Two Strategic Businesses — SiC Wafer Processing TOYO TANSO Inspiration for Innovation

# —Transition period from developmental phase to mass production phase—

2017 2018 2020 2022 2025

Phase I (completed)

<u>Establish technology,</u>

<u>enter the business</u>

#### ✓Invest in pilot line ✓Establish technology

- Confirm SiVE technology
- Reduce epitaxial defects
- Increase strength

Phase II

Make progress on

vertically integrated
alliances

#### **✓**Operate pilot line

- Ship samples
- Confirm advantage
- **✓Build alliances**

#### Phase III

Accelerate growth, with on-board as mainstay

## ✓Establish mass production system

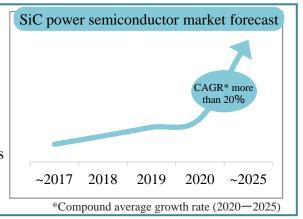
- Get customer certification
- Establish mass production capacity, cost advantage
- Capital investment for mass production

High

electric

power

**√Build supply chain** 



Seed crystal substrate

Mechanical polishing ► Steam pressure etching ► Epitaxial growth ►

Activation annealing
Trench formation

Semiconductor process

Manufacturer of final products

Toyo Tanso key technologies helping solve problems with conventional processes



On-board

Lighter More Energy-conserving

Semiconductor device

High speed Low loss

**Epitaxial** wafers

Wide Low defect

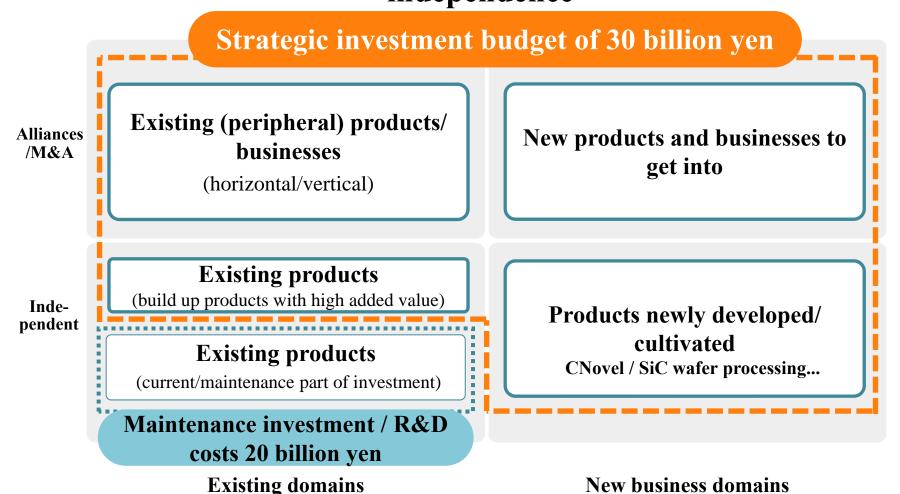
Low cost

14

### 3. Key Policies / Strategies (4) Investment Plan / M&A



# —Total investment of 50 billion yen \*Cumulative for 2018-2022— Shift course from concentrating on core businesses and independence

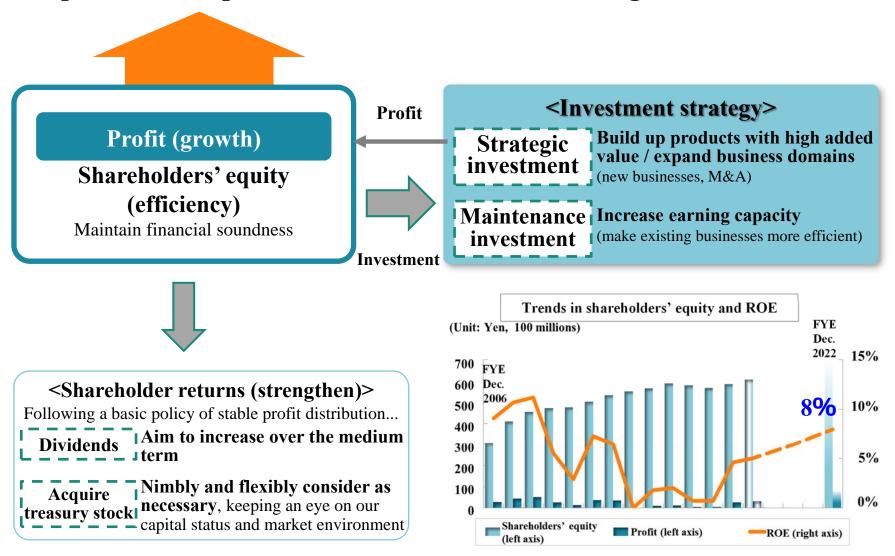


#### 3. Key Policies / Strategies



### (5) Capital Policy and Shareholder Returns Policy

### Grow profit and expand shareholder returns, aiming to achieve 8% ROE



#### 3. Key Policies / Strategies



### (6) Strengthen Basics and Foundation as a Truly global company

#### Vision and targets

# 1. Establish "global business management system"

Corporate governance, risk compliance, CSR, global resources (HR, IT)

- 2. Lower costs to achieve earnings targets / become a high-productivity business / secure the "competitive advantage"
- 3. Cultivate a "corporate culture brimming over with trust and building together"

  Continually enhance customer and employee satisfaction Raise organizational invigoration index
- 4. Contribute to becoming the "Industry's No. 1 in Customer Satisfaction"

  Global quality assurance system putting the highest priority on product quality and safety

#### **Measures**

#### Strengthen corporate governance system

- Establish and enhance global business management system
- Reconsider global compliance / risk management system
- Develop human resources for global business

#### Promote cost reductions and operational improvements

- Build Group-collaborative system for procurement / external expenditures
- Reconsider Group employees and personnel cost control system
- Promote labor savings / BPR by making advanced use of IT

#### **Reform corporate culture**

- Promote reform of employee awareness and behavior
- Promote work style innovation and build a safe working environment that gives peace of mind
- Promote diversity and career design
- Practice long-term HR development

#### Strengthen global quality control system

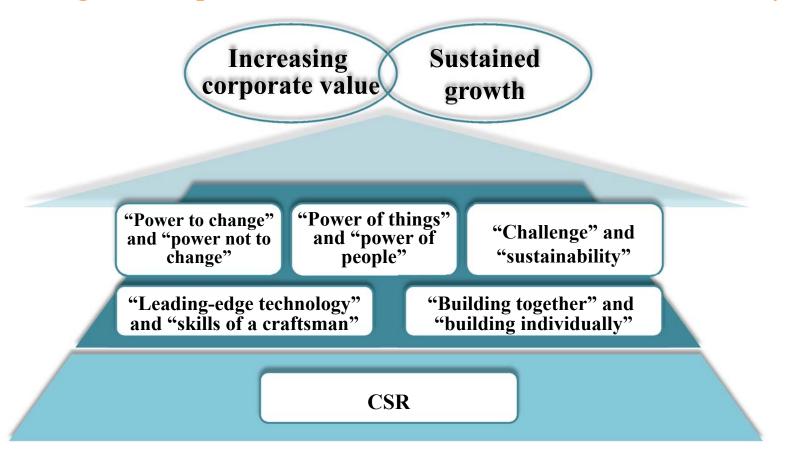
- Establish Group quality control system
- Establish global quality control standards

### 4. Closing: What We Should Value





### Becoming an enterprise with value to all its stakeholders and society







(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.

**IR Contact** 

E-mail: ir@toyotanso.co.jp