

Contributing to a Bright Future
for People and Nature



Comprehensive Manufacturer of Advanced Coatings

Mid-Term Management Plan

FY2022(Term 71) - FY2026 (Term 75)

November 2021

TOCALO Co., Ltd.

Representative Director,

President and Executive Officer

Noriyuki Mifune

(TSE1: 3433)

Contents

1. Overview of the Current Situation
(Our Business Environment)

2. Outline of Mid-Term Management Plan

3. Measures and Targets

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TOCALO Co., Ltd.

Business Category : **Surface Modifications**
(Thermal spray coating and other processes)

Head Office : Kobe City, Hyogo Prefecture

Established : July, 1951

Capital : JPY2,658,823,000

Net Sales : Consolidated JPY39,073 million (FY Mar. 2021)

Number of Employees : Consolidated 1,121 (as of Mar. 31, 2021)



Main Business Facilities

※JCC=Japan Coating Center



Head Office, Kobe Plant, Akashi Plant,
R&D Laboratories, JCC※ Akashi

Mizushima Plant



Kitakyushu Plant



JCC※ Sano



Miyagi Technical Service Center

JCC※ Head
Office

Tokyo Plant



Nagoya Plant
and
JCC※ Nagoya



Group Companies



Japan Coating Center Co., Ltd.

Established: April 1985
 Head Office: Kanagawa Prefecture
 Investment Ratio :100%
 Core Business: PVD processing

TOCALO USA, Inc.

Established: November 2015
 Headquarters: CA, U.S.A.
 Investment Ratio :100%
 Core Business: Thermal Spray Coating Services(SC, etc.)



TOCALO & HANTAI (KUNSHAN) Co., Ltd.

Established: May, 2011
 Head Office: Jiangsu Province, China
 Investment Ratio :90%
 Core Business: Thermal Spray Coating Services (SC, FPD)



TOCALO & HANTAI TAIWAN Co., Ltd.

Established: June 2011
 Head Office: Tainan, Taiwan
 Investment Ratio :50%
 Core Business: Thermal Spray Coating Services (SC, FPD)



TOCALO&HAN TAI Co., Ltd.

Established: April 2005
 Head Office: Guangdong Province, China
 Investment Ratio :70%
 Core Business: Thermal Spray Coating Services (Iron & Steel, etc.)



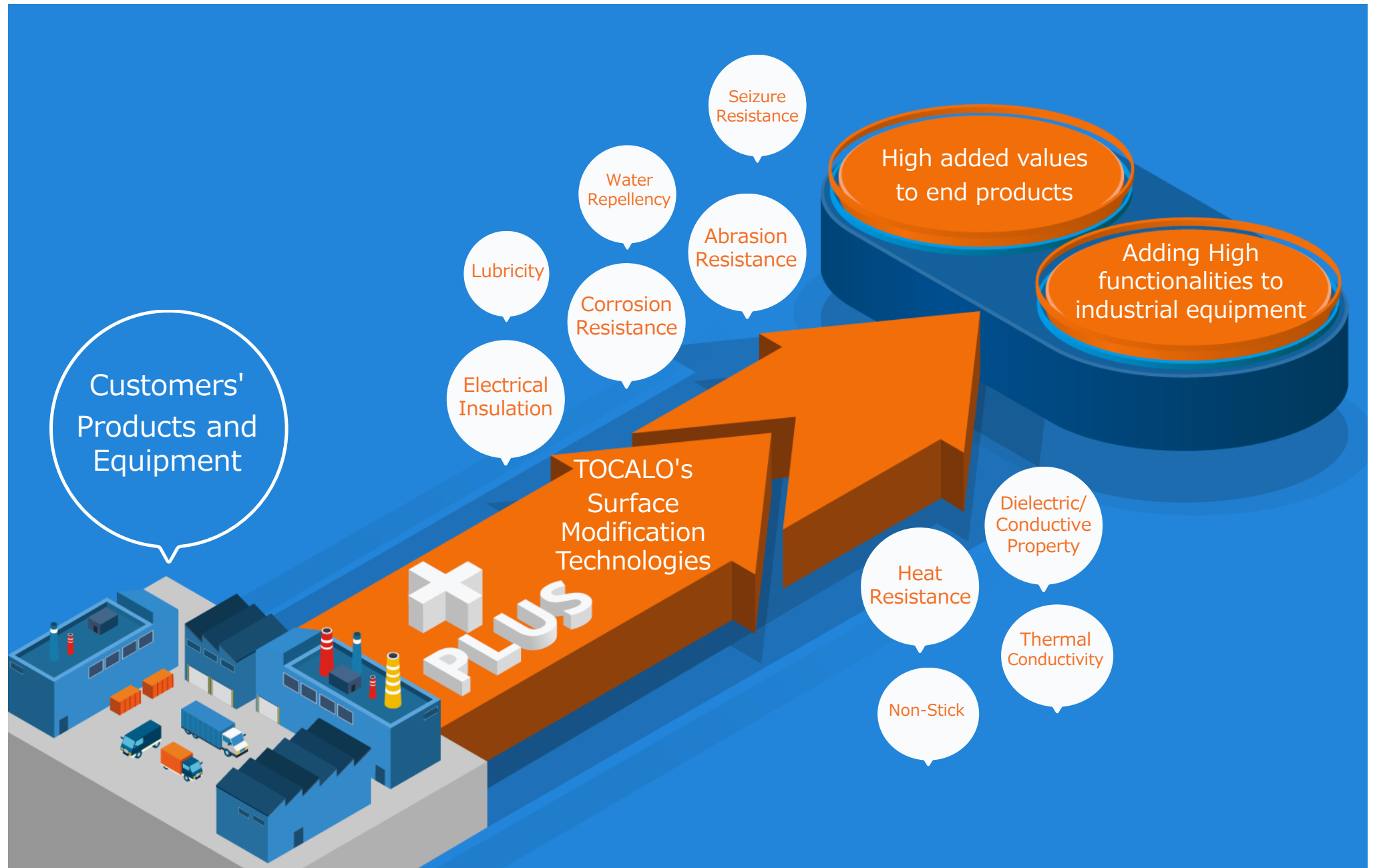
PT. TOCALO Surface Technology Indonesia

(Unconsolidated subsidiary, Equity method unapplied)
 Established: June 2017
 Head Office: Indonesia
 Investment Ratio : 100% (Including 1% indirectly held)
 Core Business: Thermal Spray Coating Services (Iron & Steel, etc.)

NEIS & TOCALO (Thailand) CO., Ltd.

(Affiliated company, Equity method unapplied)
 Established: October 2012
 Head Office: Thailand
 Investment Ratio :49%
 Core Business: Thermal Spray Coating Services (Iron & Steel, etc.)

TOCALO's Surface Modification Technologies



TOCALO's Surface Modification Technologies

Thermal Spray Technologies

Thermal spray technologies cover various processes for high-functional coatings formed by spraying molten materials onto the workpiece surface.

● Vacuum Plasma Spraying (VPS)



VPS is Plasma spraying inside the vacuum chamber to form coatings.

● Atmospheric Plasma Spraying (APS)



APS is Plasma spraying performed in atmosphere using high-temperature plasma jet of over 10,000C. to produce coatings.

● Electric Arc Wire Spraying Process



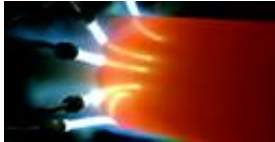
Electric arc is generated between two wires causing them to melt, then molten material sprayed onto substrate to form coatings.

● High Velocity Oxy-Fuel Spraying Process (HVOF)



HVOF spraying process generate high-speed flame that allows the formation of coating with extremely high density and high bonding strength.

● Powder Flame Spraying



Powder flame spraying process produces dense and low-porosity coatings enabled by fusing treatment.

● Rod Flame Spraying



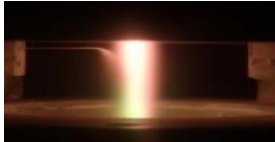
Rod flame spraying process is performed using ceramic rod material.

● Wire Flame Spraying



Wire flame spraying process uses metal/alloy wires as its materials and combustion gas flame to form thicker coatings.

● Suspension Plasma Spraying (SPS)



SPS is Plasma spraying using fine feedstocks in a form of slurry (suspension).

● SDC (thick coating)



SDC process forms hard and thick coatings resistant to high impact environment.

Other surface modification technologies

Surface modification technologies using chemical reactions and other processing methods

● WIN KOTE®



WIN KOTE is CVD process suitable for workpiece of 3-dimensional complex geometry and large/long-size components.

● CDC-ZAC coating



CDC-ZAC coating is a chemical densification process which produces a complex ceramic coating.

● TD process



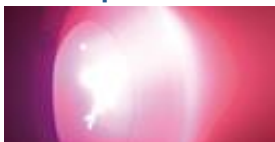
TD process produces a super hard coating with excellent wear and seizure resistance.

● PTA process



PTA process is performed by overlay-welding method using plasma to produce coatings with excellent bonding strength and shock resistance obtained by metallurgical formation.

● PVD process



PVD (*2) process has multiple coating options depending on base material and little thermal distortion of substrate.

● Laser Cladding Process



Laser cladding is an overlaying process using laser beam as its heat source. which forms coatings with excellent bond strength and wear resistance with little heat influence on substrate .

What is thermal spraying?

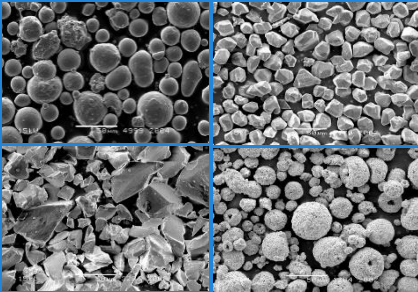
Thermal spraying is a coating process to produce a coating by spraying molten material onto workpiece.

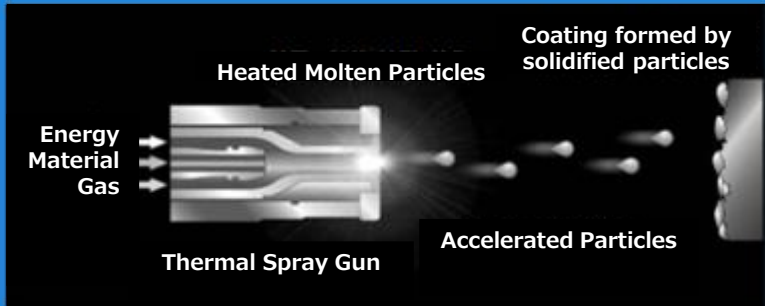
Heat Source

- Plasma Jet
- Combustion Flame
- Electric Arc

+

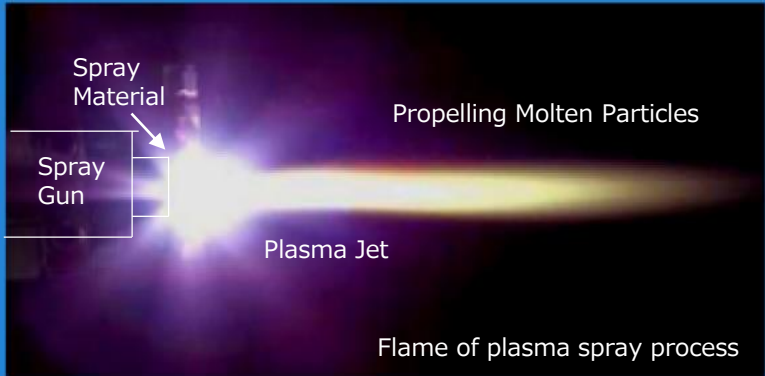
Spray Material



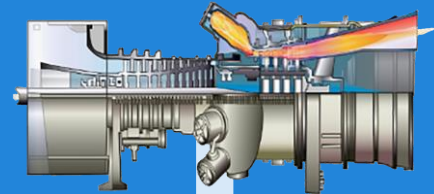



Thermal Spray Gun

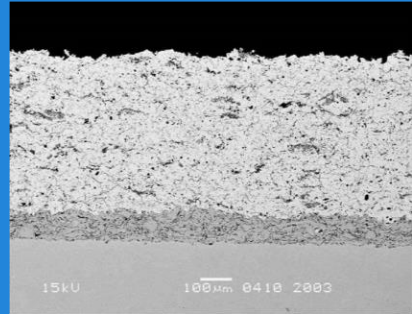
(from Japan Thermal Spray Society website)



Application Example: Gas Turbine Components







15kV 100µm 0418 2003

Cross-Sectional Structure of Thermal Barrier Coating

Business Areas Covering Various Industries

Others

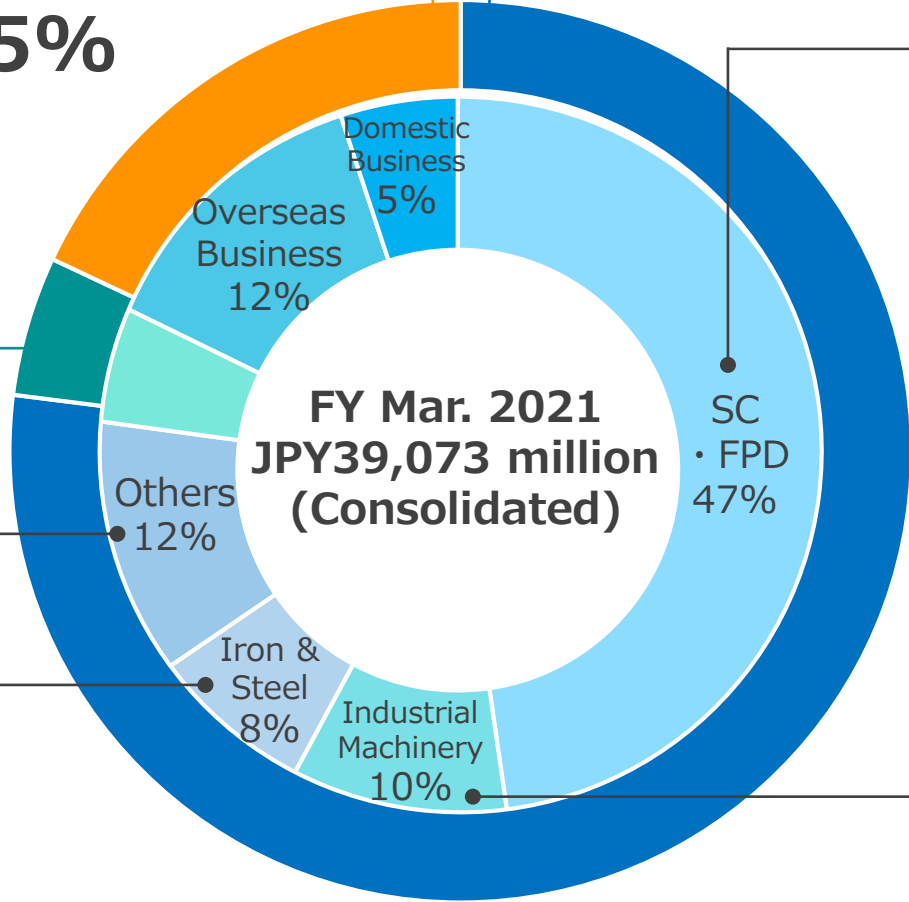


Iron & Steel



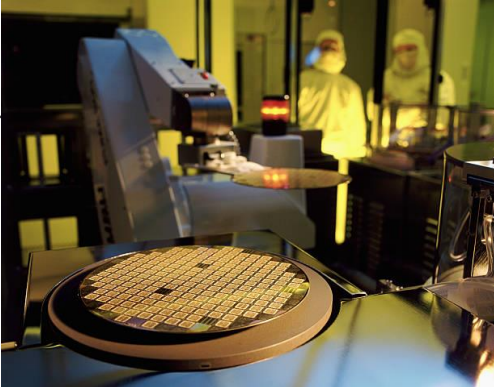
● Subsidiaries **18%**
 ● Thermal Spray (Non-Consolidated) **77%**

● Other Processes (TD/ZAC/PTA) **5%**



FY Mar. 2021
JPY39,073 million
(Consolidated)

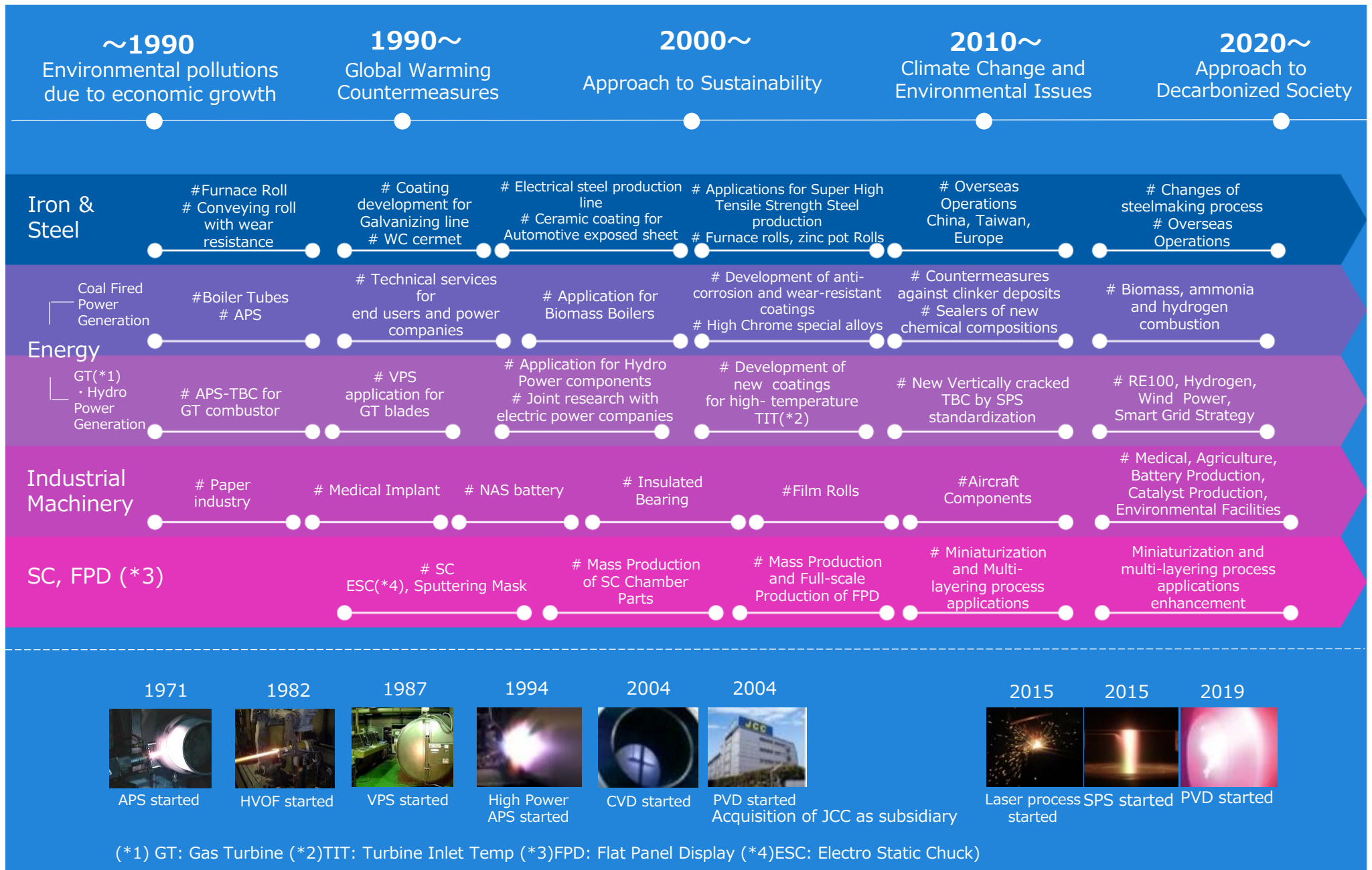
SC FPD
 (Flat Panel Display)



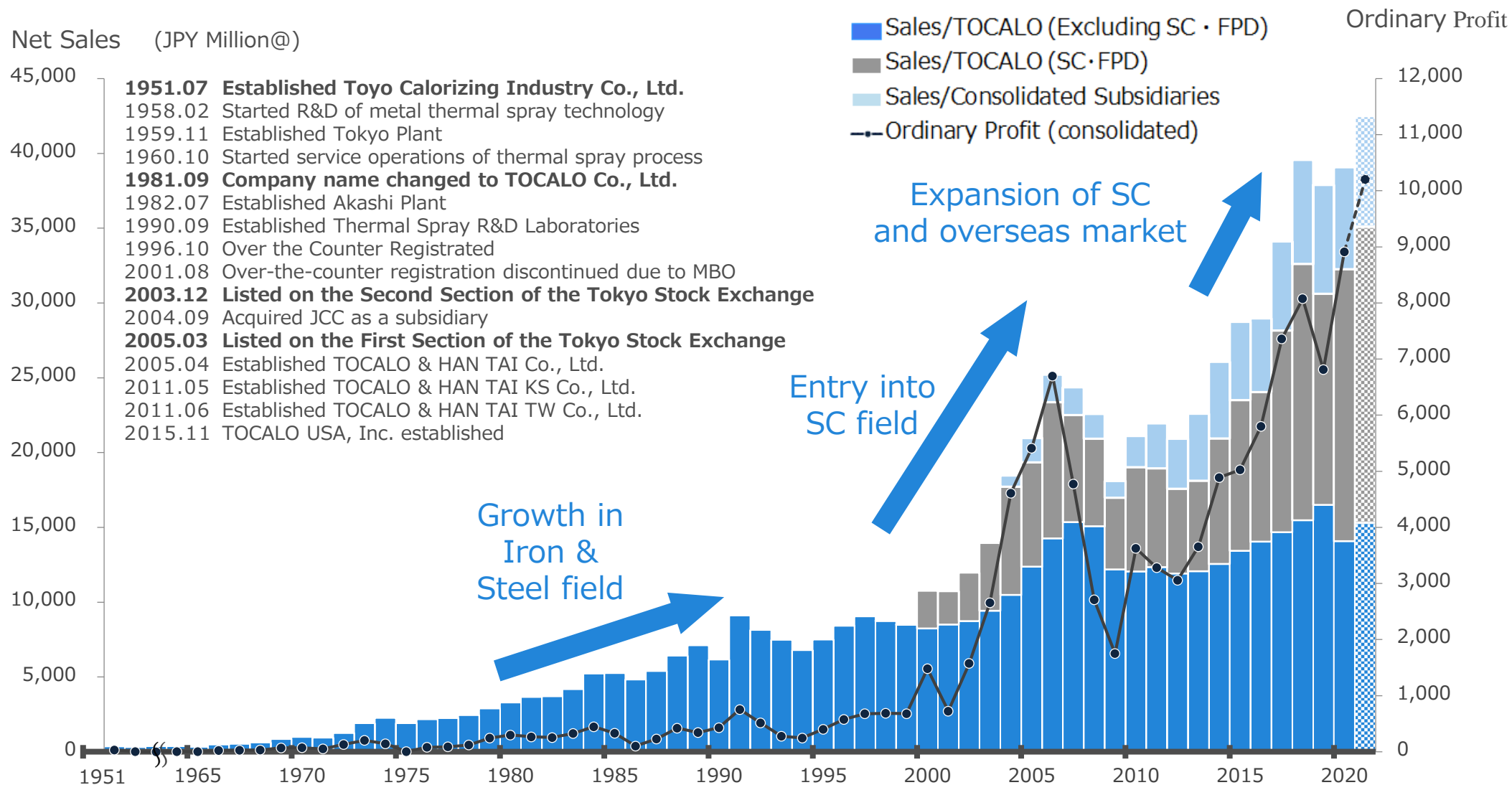
Industrial Machinery



Transition of Application Development



History and Business Performance (Since FY1951)

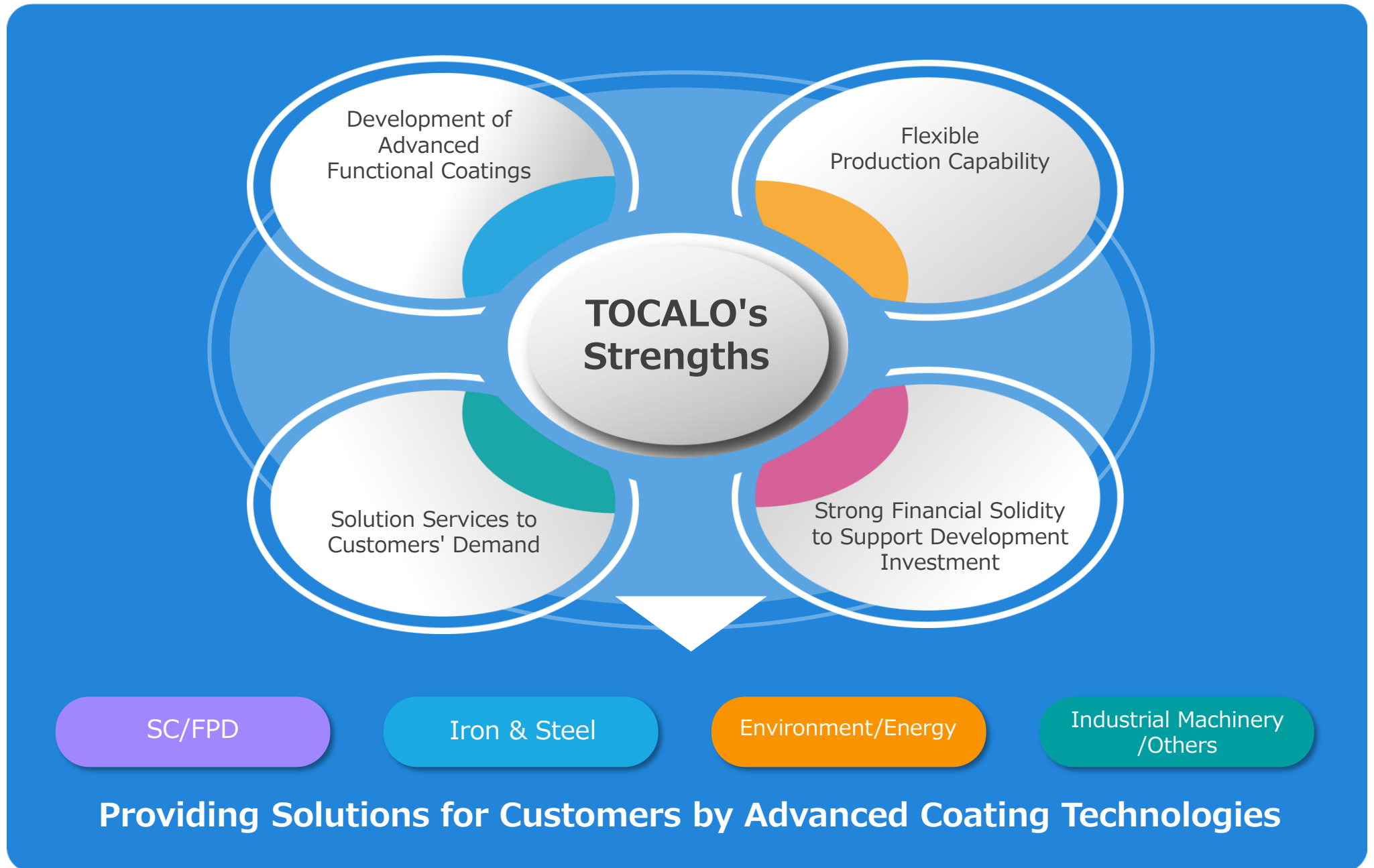


(Note 1) The results of FY1990 is a 9-month period due to a change in the fiscal year-end.

(Note 2) Consolidated financial results from Fiscal Year 2005

(Note 3) Figures for FY2021 are forecasts.

TOCALO's Business Perspective

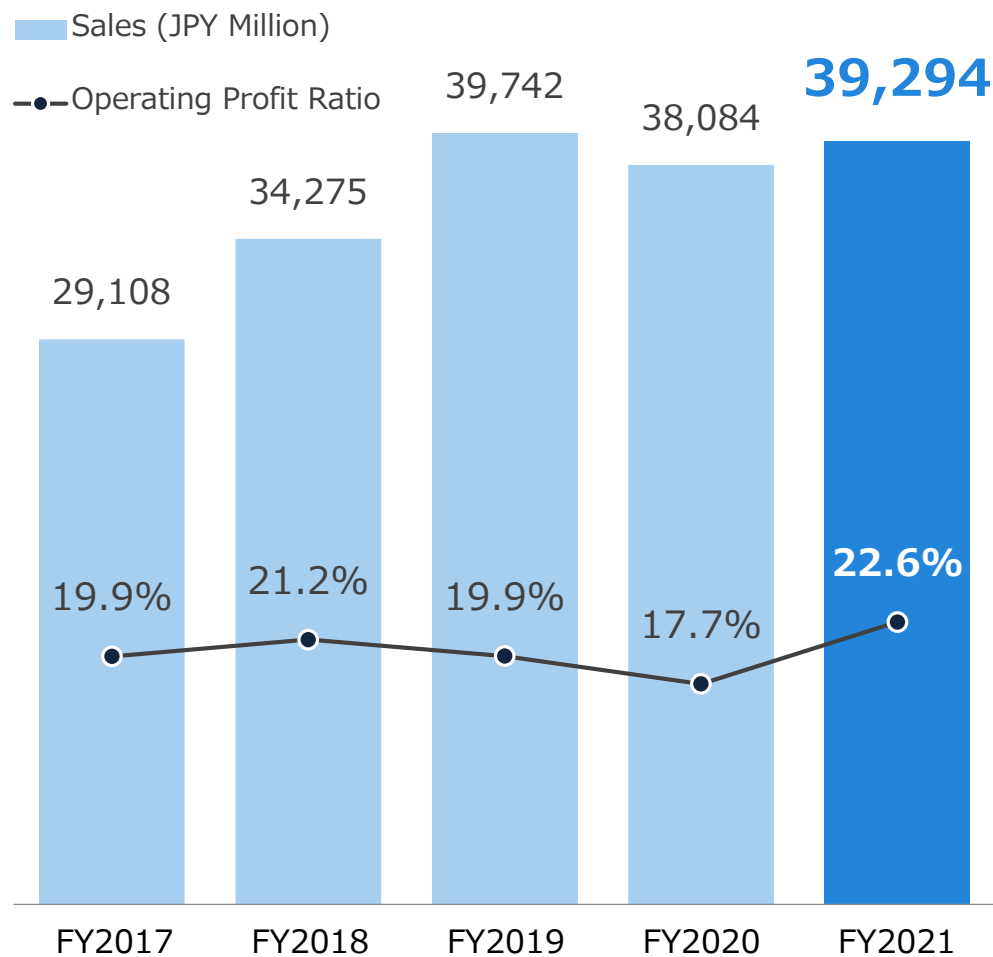


TOCALO's Challenges (10 tasks)

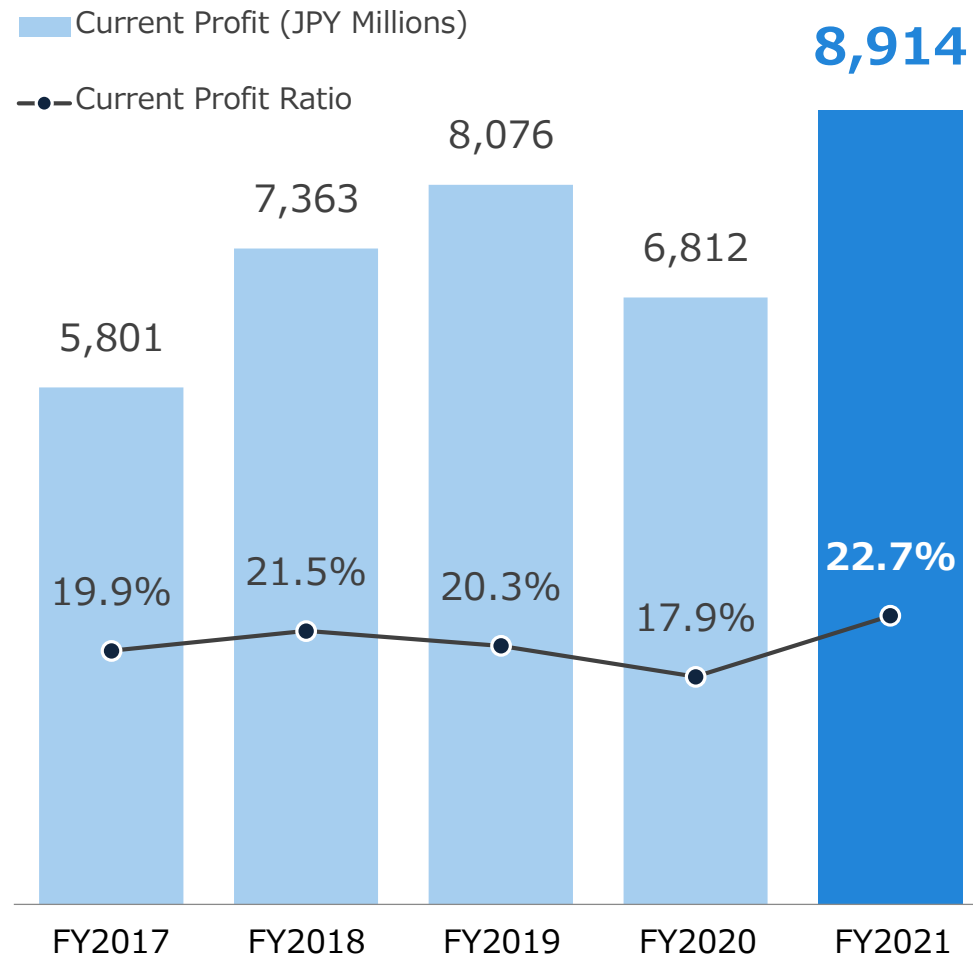
		① Partnerships with Customers	② Target Market Strategy for Diversification of Revenue Sources				
		SC/FPD Field	Iron & Steel Field	Environment/Energy Field	Industrial Machinery /Other Fields		
Market Development		Synergistical Business Promotion with Engineering/Manufacturing Division			③ Sophistication of Service Structures		Management and Administration Human Resource Development Diversity Work Style Reform DX Promotion Safety and Health ⑨ Improvement of Working Environment Compliance Corporate Governance ⑩ Sophistication of Internal Control
		Technical Know-How (Collaborations with Customer R&D and Production Engineering Teams)					
		Technical Assistance ④ Global Operations Reinforcement of Maintenance Services					
R&D	Applications for Miniaturization	Individual Applications New Spec Development	Material Development	⑤ Technological Superiority			
Manufacturing	Enhancement of Production Capacities	⑥ Improve Production Efficiency		Production Efficiency	On-Site Job		
		Improve TOCALO Quality Level		⑦ Reinforcement of Quality Control System			
		Decarbonization (Carbon Neutrality)		⑧ Reduction of Environmental Impact			

Overview of Consolidated Results

Sales and Operating Margin Ratio



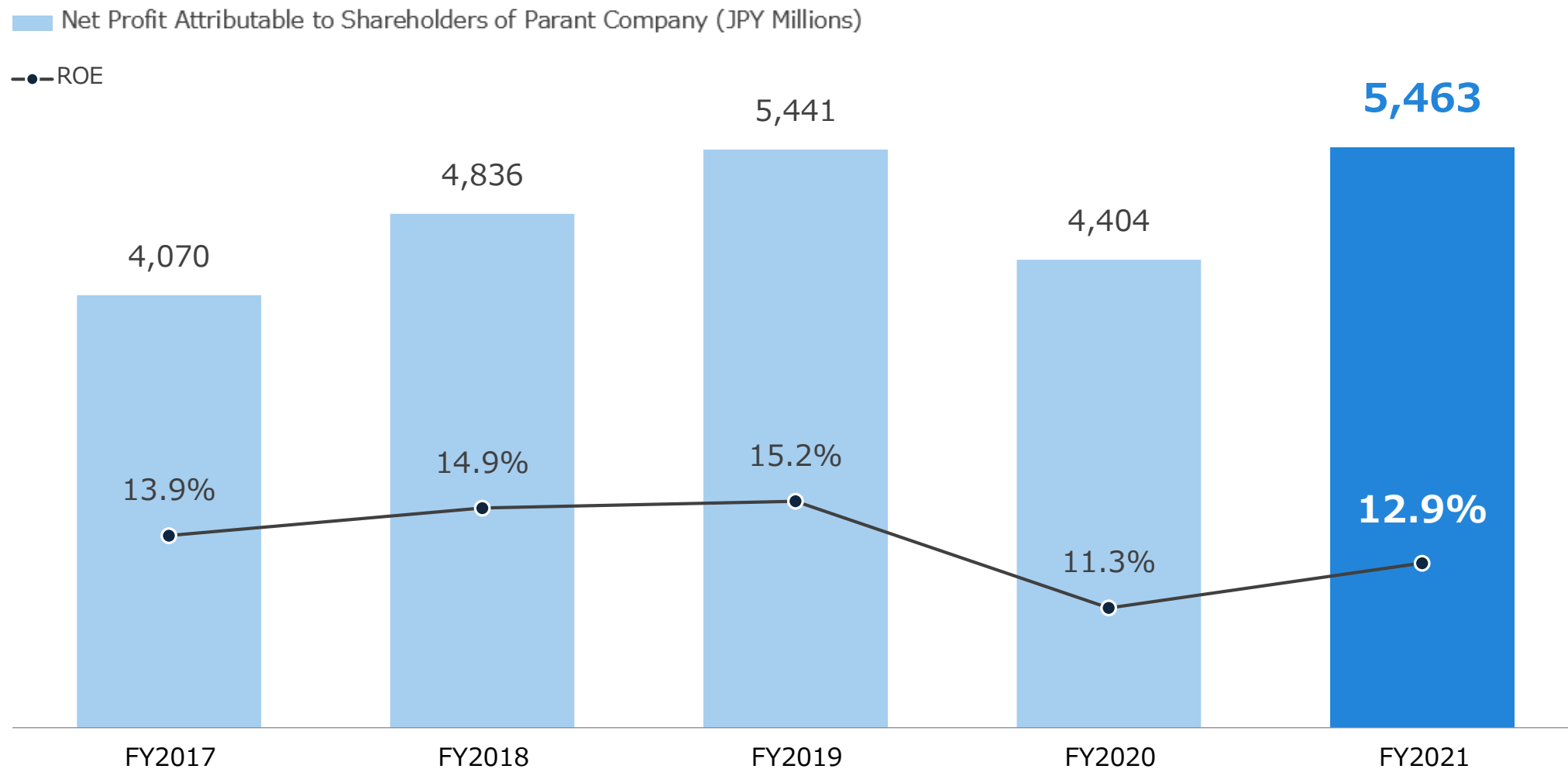
Ordinary Profit and Ordinary Profit Ratio



(NOTE) Since Fiscal Year Ended March 31, 2022, the category of "Royalties Received, etc." has been changed from "Non-Operating Revenue" to "Sales". Therefore, figures after reclassification reflecting this change are indicated for also the previous fiscal year.

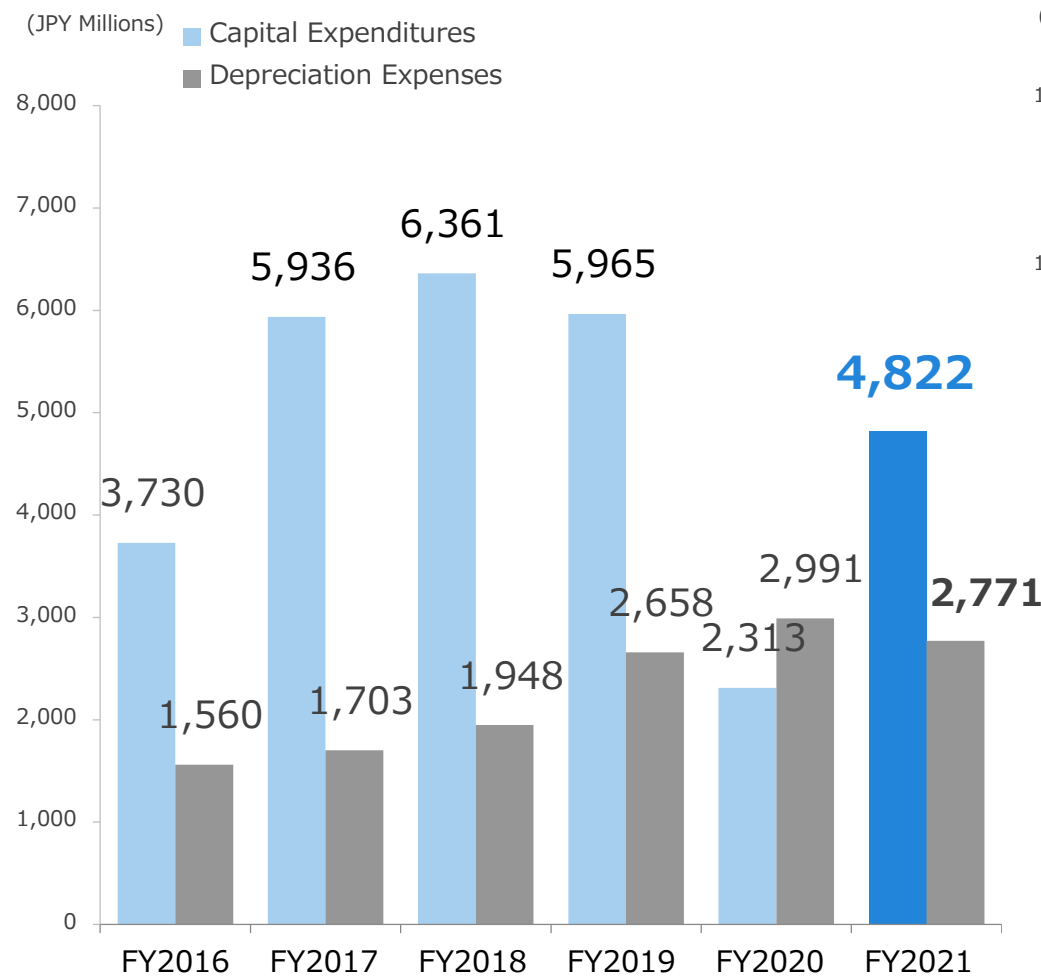
Overview of Consolidated Results

Net Profit Attributable to Share holders of Parant Company and ROE

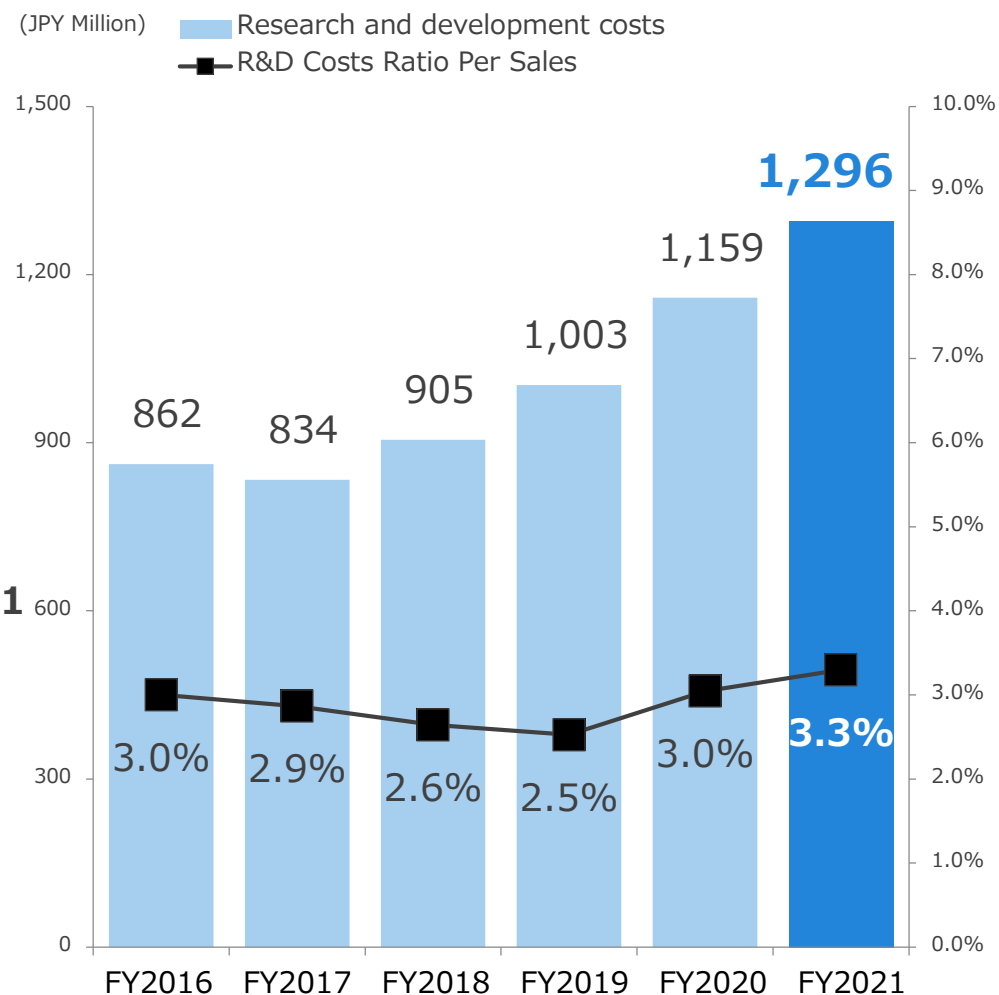


Overview of Capex, Depreciation Expenses, R&D Expenses

Capex and Depreciation Expenses



Research and Development Expenses



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Our Management Philosophy & Vision

Management Philosophy

Based on our corporate mottoes; "Technology and Ideas", "Youth and Passion", "Harmony and Trust" and "Good Services", we build strong relationships with all of our stakeholders including shareholders, business partners, employees, and local communities.

Taking advantages of our coating technologies, we contribute to society through conservation of resources, energy and reduction of environmental impact.

As a specialized manufacturer of surface treatment focusing on thermal spray coating, we aim to realize "a well established corporate group with Advanced technologies and High Profitability".



Our Vision (Goal for 2030)

"Contributing to a Bright Future for People and Nature"



Our Mission

Provide high quality and high value added products (coatings) to customers



To be always trusted by customers, shareholders, business partners, and local residents



Our Mission

Enhance corporate value through continuous growth focusing on ESG

Contribute to Environmental Friendly Technologies



To be a company that all employees and their families are proud of, and to create a safe working environment where employees can enjoy working for



TOCALO's Growth Strategies from the View of Mega Trends

The world is drastically moving toward realization of carbon neutral society by 2050.
We will contribute to the world in both technologies and the environment.



TOCALO's Growth Strategies from the View of Mega Trends

Key Trends for TOCALO's Growth

Escalating Environmental Problems

- Non-Fossil Fuels
- Renewable Energy Power Generation
- Smart Grid (Off-grid Power Source)

Shortage of Resources & Food Population Growth

- Development of Smart Agriculture
- Advanced Medical Services
- Diversification of Recycling Technologies

Technology Shift To ICT/ Digitization

- Innovative Changes to Big Data Era
- High-speed Communications
- Popularization of EV

Growth Strategies

2 Main Approaches

People

[SC and FPD]

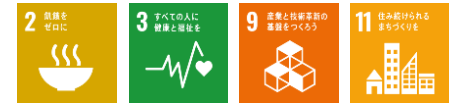


Environment

[Energy & Materials]



Growth Strategies (1)

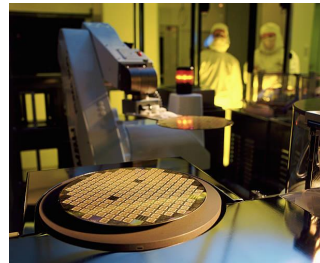


People



Application Fields

Application Development and Target Items



Semiconductors

- ESC: Expand development of thermal spray applications
Accelerate development of multifunctional coatings
- Chamber Parts:
Next-gen coating development to meet the requirement of diversified miniaturized processes
Next-gen coatings suitable for the multi-layering process and high aspect shift



FPD

- Large-size FPD and organic EL displays with high functions
: Promote development of optimal coatings and mass productions

Others

(Medical, Agriculture, Food, etc.)

- Medical Instruments
(non-stick, corrosion resistance, controlled wettability, etc.)
- Agricultural Equipment: Application development
- Food Processing Machinery
(wear resistance, non-stick, anti-biofilm, corrosion resistance, etc.)

Growth Strategies (2)

Environment (Nature)

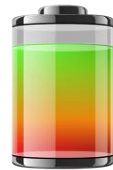


Application Fields

Application Development and Target Items



- Renewable energy power generation (meeting increasing demands of Hydro and Wind power generation, improving durability of solar and geothermal energy, etc.)
- Non-fossil fuels (Alternative fuels such as hydrogen, ammonia, and biomass. CO₂ Emission control techniques, etc.)
- Creation of projects in the environmental businesses



Materials

- Off-grid power source (secondary battery components such as LIB(*1) and NAS(*2), fuel-cell components (SOFC (*3)), etc.)
- Expand applications for Recycling facilities (electric furnace, non-ferrous refining, petrochemical production field, etc.)

Others (Transportation, etc.)

- Aircraft components coating application development
- Coating development for EV related items in Automotive industry

(*1) LIB: Lithium Ion Battery (Lithium-Ion Batteries) (*2) NAS: NAS Batteries
(*3)SOFC: Solid Oxide Fuel Cell

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Evolution of Business Models (1)

Theme		Measures for Business Expansion	Measures for Internal Management
Reinforcing Market Development	Sophistication of Service Structures	<ul style="list-style-type: none"> ● From a Supplier to a Partner ● Providing Optimal Solutions to Customers ● Establishing Projects in Key Areas (Diversification of revenue sources) 	<ul style="list-style-type: none"> ● Promotion of DX (Digital Transformation) ● Cultivating Problem-solving Expert Solution Advisor
	Global Operations	<ul style="list-style-type: none"> ● Restructuring Maintenance Service Business ● Promotion of Localization (Collaborations with excellent local companies) ● Technical Assistance (Reinforcement of licensing business) 	<ul style="list-style-type: none"> ● Reinforcing Global Risk Management System ● Development of Well-planned Global Human Resources
Reinforcing Technological Development	Ensuring Technological Superiority	<ul style="list-style-type: none"> ● Investment Focused on Advanced Coating Development ● Promotion of Cooperation Among Government, Industry and Academia 	<ul style="list-style-type: none"> ● Enforcing Intellectual Property Strategy ● Sophistication of Human Resource Development Plans ● Enhancing Technical Databases

Evolution of Business Models (2)

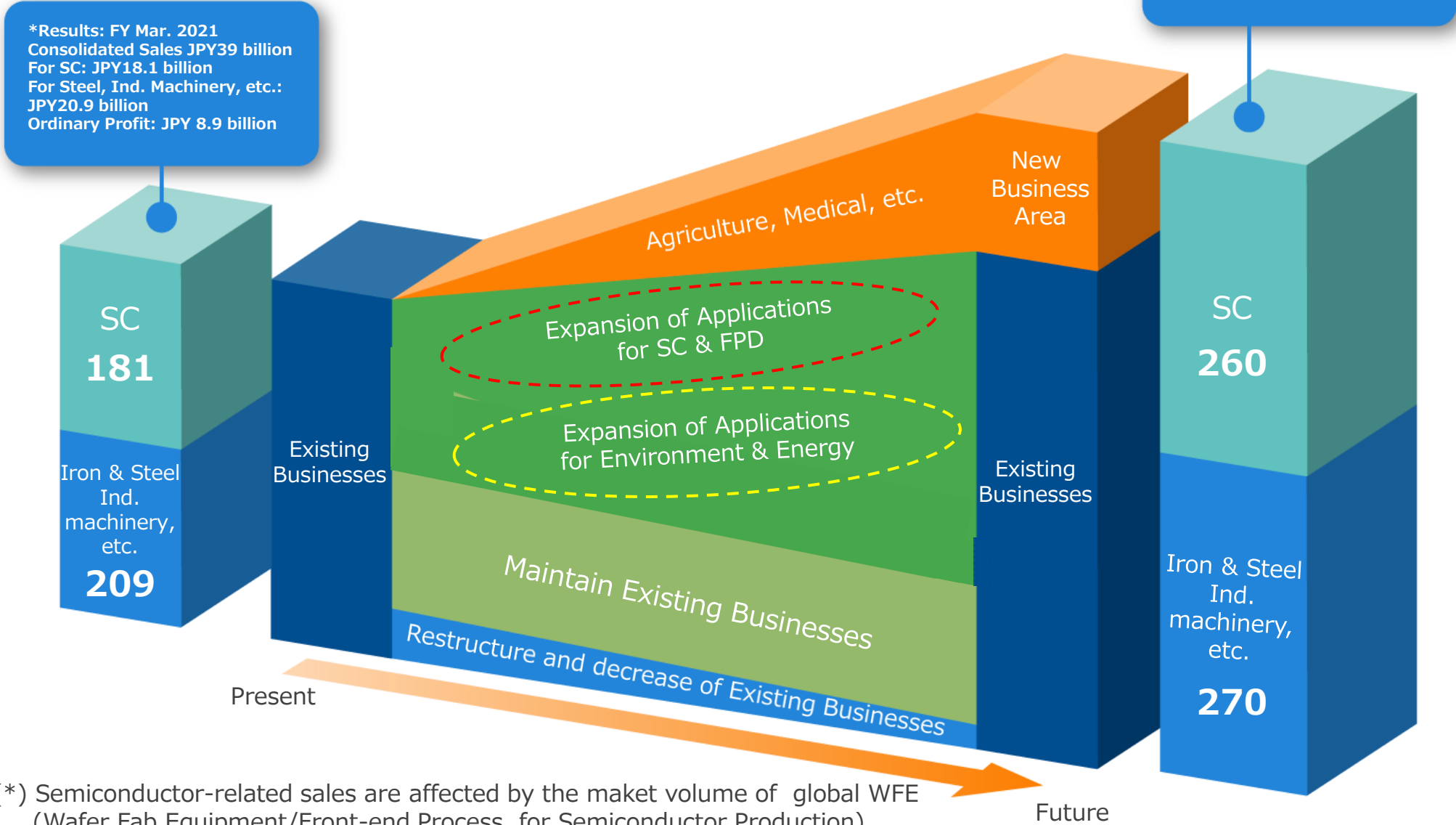
Theme		Measures for Business Expansion	Measures for Internal Management
Sophistication of Manufacturing	Sophisticating and Improving Efficiency of Manufacturing Processes	<ul style="list-style-type: none"> ● Reinforcement of Production Capabilities ● Optimization of Cost & Delivery ● Practical Application of New Coating Technologies ● Smarting up On-Site Processing 	<ul style="list-style-type: none"> ● Safety First Commitment ● Human Resource Development and Technology Transfer ● Promotion of Automation and IoT
	Reinforcing Quality Control System	<ul style="list-style-type: none"> ● Reinforcement of Process Control ● Address and establish Product Performance Assurance 	<ul style="list-style-type: none"> ● Ensuring Smooth Operation of Quality Control System (ISO and others) ● Establishment of PQP(Product Qualification Plan/Product Quality Assurance Plan)
	Reducing Environmental Impact	<ul style="list-style-type: none"> ● Strategy Building of Decarbonization (Carbon Neutrality) ● Development and Implementation of Green Growth Strategy 	<ul style="list-style-type: none"> ● Improvement of Process Methods for Reduction of Electric Power Consumption ● Utilization of Renewable Energy ● Prevention of Water and Air Pollutions
Sustainable Growth Aiming to Become a 100-Year Company	Human Resource Development & Better Working Environment	<ul style="list-style-type: none"> ● Diversity Promotion (Values talents of women, persons with disabilities, mid-career employment, etc.) 	<ul style="list-style-type: none"> ● Promotion of Work Style Reforms ● DX Promotion ● Formulation of Medium and Long term human resource development plan
	Sophisticating Internal Control	<ul style="list-style-type: none"> ● Implementing ESG Initiatives ● Promotion of Engagement with Domestic and Overseas Investors 	<ul style="list-style-type: none"> ● Conformity to Corporate Governance Code ● Commitment to Compliance

To be The Best Partner for Customers



Sustainable Growth Vision

Future Business Structure



(*) Semiconductor-related sales are affected by the market volume of global WFE (Wafer Fab Equipment/Front-end Process for Semiconductor Production)

<Maintaining Strong Financial Solidity>

- Maintain Capital Ratio (Approx. 70%) (No-Debt Management)

< Maintaining High Profitability>

- Maintain ROE (Return On Equity) (Target: 15%)
- Maintain Ordinary Profit Ratio (Target: 20%)
- Maintain and Improve EPS (Earnings Per Share)

<Dividend Payout Ratio>

- Pay stable dividends targeting more than 1/3 of net profit
- Maintain DOE (Dividend On Equity Ratio) (Target:5%)

<Capital Expenditures>

Continuous invest to maintain technological superiority and improvements

Total JPY25-35 billion (JPY5-7 billion/year)

For mass production of semiconductor components, new technology processes, production efficiency and others.

<R&D Expenses + Technology Development Expenses>

R&D Expenses: Maintain approx. 3% of consolidated sales

Technology Development Expenses:

Continuous investment in production technology divisions at each plant

<Reduction of Environmental Impact>

● For Zero Greenhouse Gas Emissions

- Consider coating method without using fossil fuel
- Reduce electric power consumption by improving manufacturing processes
- Utilization of Renewable Energy

※Target: 46% reduction in greenhouse gas emissions by the end of FY2030 compared to FY2013 (Government target)
(2 years preparation period from 2021 to 2022)

● Prevention of Water and Air Pollution

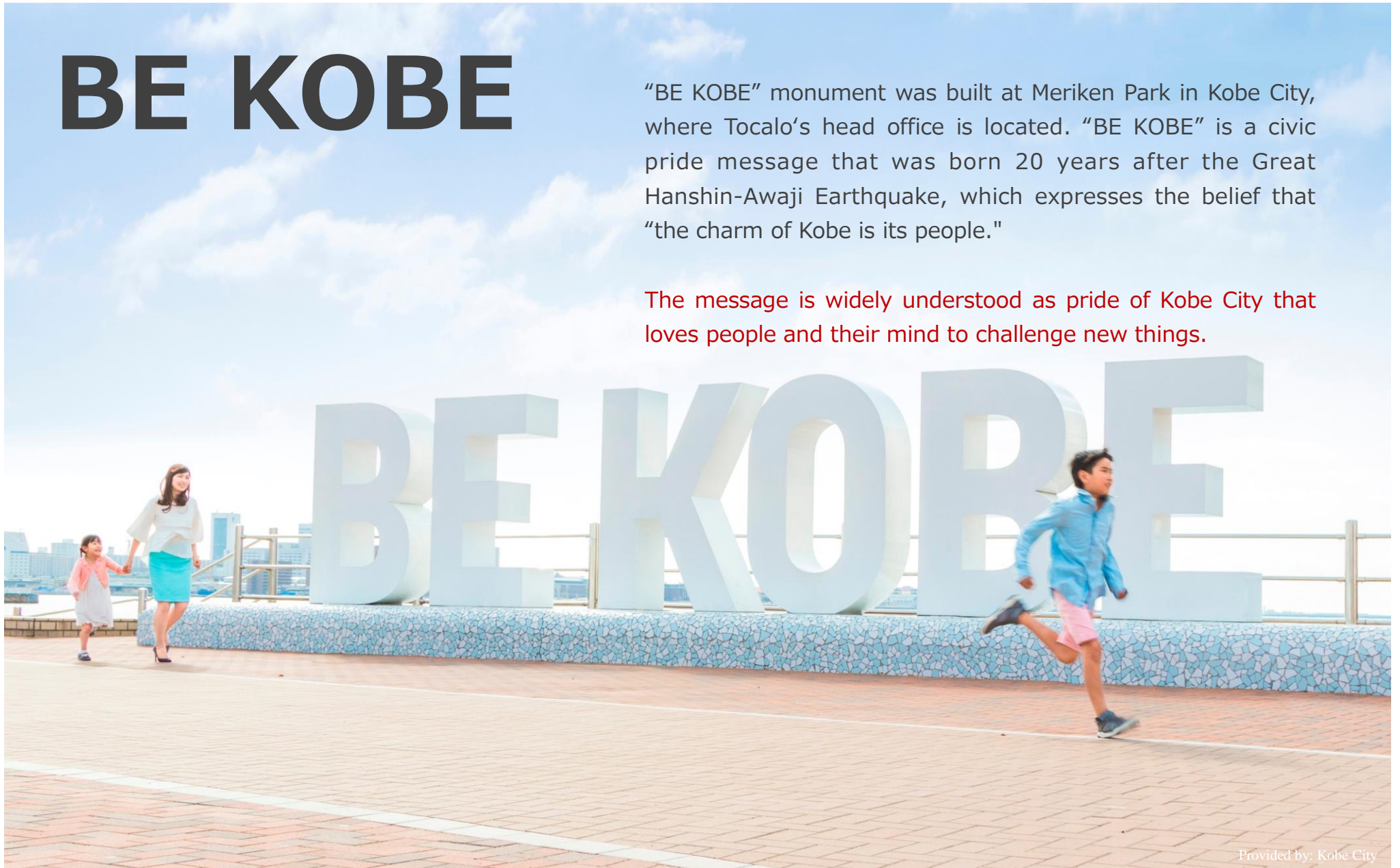
Assess the status and improve situations at all processes of our business activities.

To All TOCALO Employees, “BE TOCALO”

BE KOBE

“BE KOBE” monument was built at Meriken Park in Kobe City, where Tocalo’s head office is located. “BE KOBE” is a civic pride message that was born 20 years after the Great Hanshin-Awaji Earthquake, which expresses the belief that “the charm of Kobe is its people.”

The message is widely understood as pride of Kobe City that loves people and their mind to challenge new things.



Provided by: Kobe City

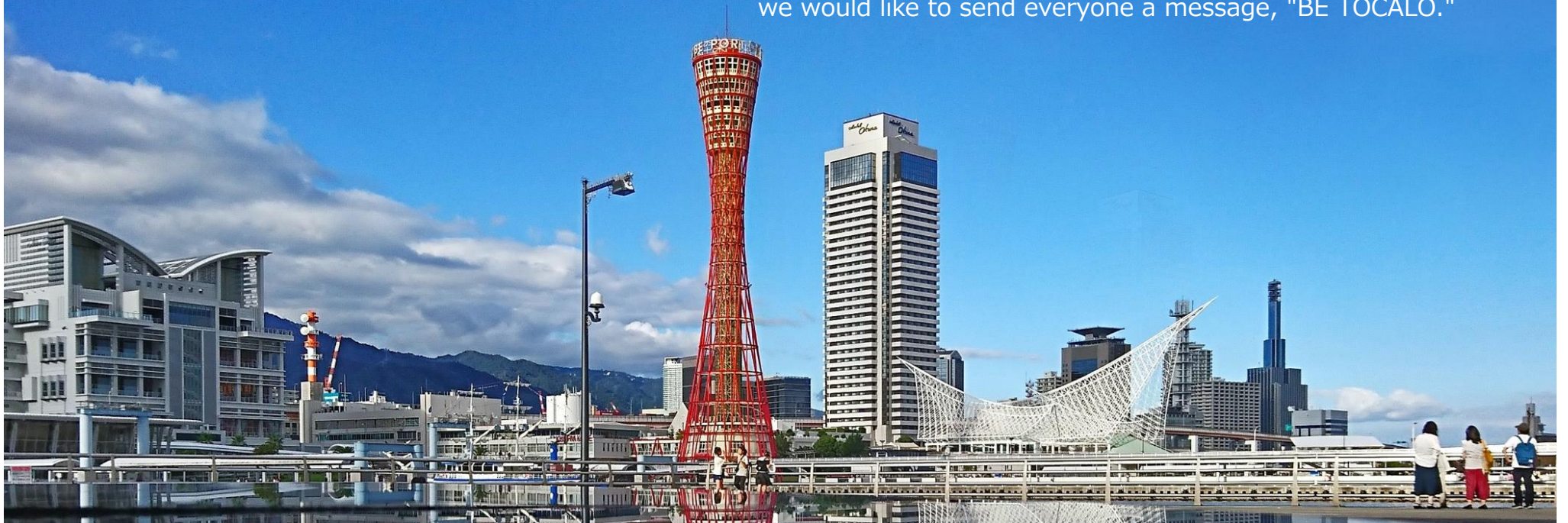
To All TOCALO Employees, "BE TOCALO"

BE TOCALO

The charm of TOCALO is its employees. With full efforts of the employees, TOCALO had overcome many crises, such as the Great Hanshin-Awaji Earthquake, hostile take over from an oversea company, the Lehman Shock, and the Great East Japan Earthquake.

Our society will undergo changes over the next 5 to 10 years. Let's work together as one team to address changes positively.

Expressing our pride of being TOCALO employees, we would like to send everyone a message, "BE TOCALO."



Thank you for your continued support.

We will strive to achieve new goals with our collective efforts.



Comprehensive Manufacturer of Advanced Coatings