

Second Quarter of Fiscal Year Ending March 2024

# Management policy Update

November 9, 2023
Toyo Engineering Corporation
Eiji Hosoi, President & CEO







- 1. Summary of the 1st Half
- 2. Status of Major Projects
- 3. Main Topics for the 1st Half
- 4. Future Activities
- 5. APPENDIX



# Summary of the 1<sup>st</sup> half performance

- Year-on-year growth in both sales and profits and a 77% increase in net income to ¥2.3 billion
- Biomass power and petrochemicals in Japan and projects in India are driving net sales.
- Improved profitability of several overseas projects contributed.
- FPSO projects by OFS contributed positively, but an equity method loss of approximately ¥0.1 billion was incurred due to the deterioration in profitability of the Brazilian equity-method affiliate's projects.
- Orders received (including equity method) amounted to 361.1 billion yen, achieving the target at the beginning of the fiscal year.

Based on the above circumstances, the yearly outlook has been revised.

<sup>\*1</sup> In module fabrication projects, profitability deteriorated due to waiting/delay in schedule due to delay in providing drawings/materials by customers. Negotiating additional compensation with the customer. Module load out (shipment) is scheduled in the end of 2023 and the 1<sup>st</sup> half of 2024.



# The 1st half performance

Year-on-year growth in both sales and profits and a 77% increase in net income to ¥2.3 billion

Unit: JPY billion	(A) 1 <sup>st</sup> half results	(B) Forecast 2024/3	(C) Revised forecast 2024/3	(C)-(B) Difference	(A/C) Progress
Net sales	117.0	240.0	250.0	10.0	47%
Gross profit	13.2	24.0	26.0	2.0	51%
Gross profit margin	11.3%	10.0%	10.4%	0.4pt	<del>-</del>
SG & A expenses	10.0	21.0	21.0	0	48%
Operating income	3.2	3.0	5.0	2.0	64%
Non-operating income	0.8	1.5	0	△ 1.5	_
Ordinary income	4.0	4.5	5.0	0.5	80%
Profit attributable to owners of parent	2.3	3.0	3.0	0	77%
New orders	70.3	120.0	120.0	0	59%
New orders including the equity method affiliates	361.1	320.0	410.0	90.0	88%

Exchange rate for the forecast: 1US\$ = ¥140

**Dividends per share : None (Plan)** 

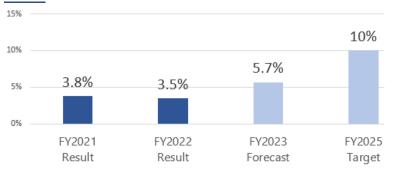
## KGI



### **Consolidated net income**



### **ROE**



### **Consolidated net sales**



#### Consolidated net income

Achieved 77% of progress due to high profitable projects in the 1<sup>st</sup> half of the year.

#### Consolidated net sales

Progress of projects mainly in India and China is expected to improve in the  $2^{nd}$  half of the year.

#### ROE

Improve profit levels toward ROE target in FY2025.



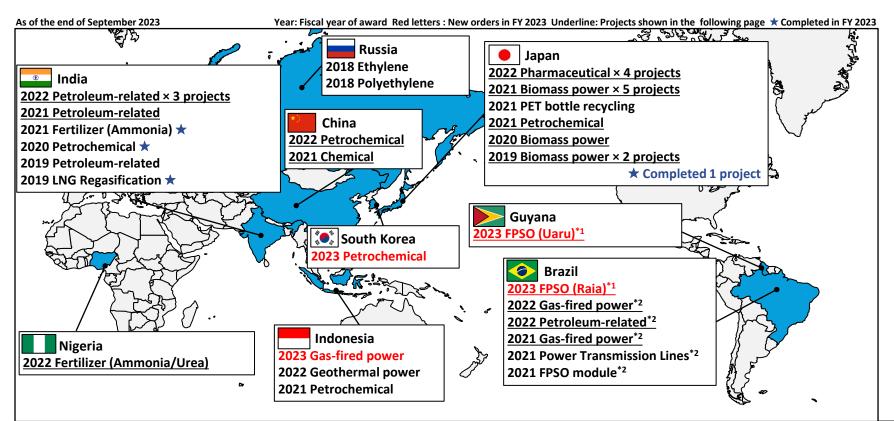


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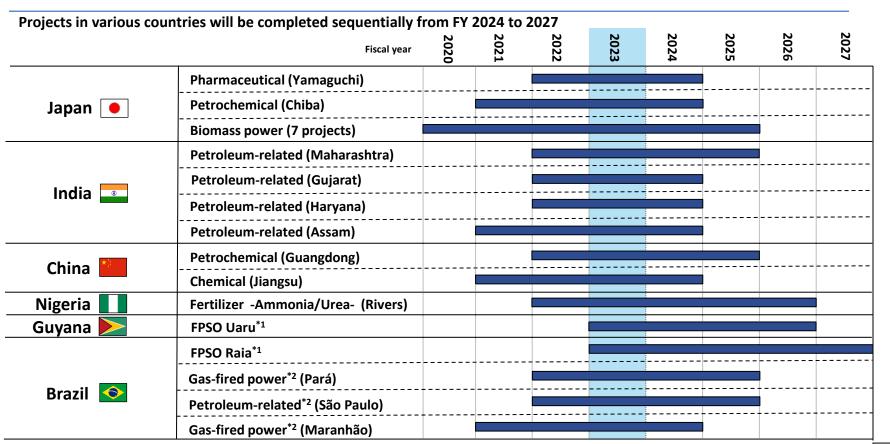
# Major ongoing projects

2 orders for large-scale FPSOs. Projects are ongoing in various countries and fields.





# **Progress of major projects**



<sup>\*1:</sup> Offshore Frontier Solutions Pte. Ltd., an 35% equity-method affiliate, \*2: 50% Equity-method affiliate



# **Progress of major projects (Japan)**

Yamaguchi: Pharmaceutical, order in 2022

E: final, P: peak, C: beginning



Chiba: Petrochemical, order in 2021

E/P: final, C: peak

### 8 biomass power projects (one of which was completed in the 1st half)

1) Aichi (Gamagori): order in 2019

Completed in the 1<sup>st</sup> half

2) Shizuoka: order in 2019

To be completed in this term

3) Chiba: order in 2020

To be completed in this term

6) Aichi (Tahara): order in 2021

E: final, P/C: peak



4) Niigata: order in 2020

E/P: final, C: peak



7) Hokkaido: order in 2021

E: completed, P: final, C: peak



5) Saga: order in 2021

E/P: final, C: peak



8) Wakayama: order in 2021

E: final, P: peak, C: beginning



<sup>\*</sup> E: Engineering, P: Procurement, C: Construction



# **Progress of major projects (Overseas)**

### India

Petroleum-related (Gujarat), order in 2022 E: final, P: peak, C: beginning



E: final, P: peak, C: beginning



Petroleum-related (Haryana), order in 2022 Petroleum-related (Assam), order in 2021 E: completed, P/C: peak



### Petrochemical\*1 (Guangdong), order in 2022

- (1) EPsCm\*2 E: final, P: peak, C: beginning
- (2) PMS\*3 E: final, P: peak, C: beginning
- (3) Project-wide management service Consigned operations are proceeding smoothly.

### China

Chemical (Jiangsu), order in 2021 E: almost completed, P: peak, C: civil work peak



<sup>\*1</sup> Different scope of orders were received for each facility

<sup>\*2</sup> Engineering, Procurement Support, Construction Management



# **Progress of major projects (Equity Method Affiliates)**

### **OFS**

FPSO Uaru (Guyana), order in 2023 E/P: peak, C: full-fledged from now on



FPSO Raia (Brazil), order in 2023 E/P: beginning, C: full-fledged from now on



### Brazil

Gas-fired power (Pará), order in 2022 E: final, P: peak, C: beginning



Petroleum-related (São Paulo), order in 2022 Gas-fired power (Maranhão) order in 2021 E: final, P: peak, C: beginning



E/P completed, C: peak







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# MOU for commercialization of low-cost, energy-saving ammonia synthesis technology

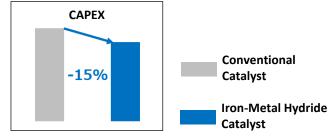


### Ammonia 1

### **Overview**

- Excellent performance at low temperature and pressure by using an innovative Iron-Metal Hydride catalyst.
- → Reduce energy consumption and CO<sub>2</sub> emissions during ammonia synthesis.
- Economical and stable supply is possible because of iron-based catalysts.

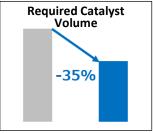
#### **Comparison with conventional catalysts**



# Roles of each company







# MOU for hydrogen production technology by Ammonia cracking as the first EPC partner with KBR

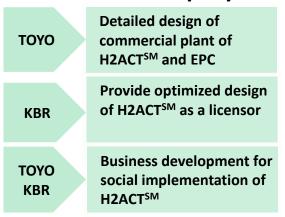


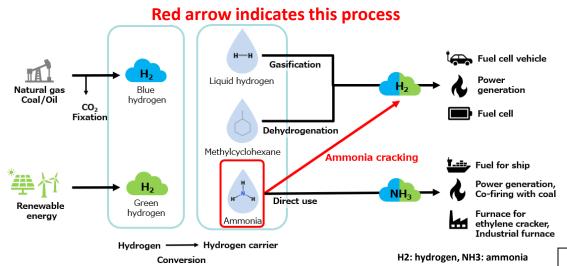
### Ammonia 2

## Advantages of ammonia as a hydrogen carrier

- Easy to transport and store.
- Cost advantages are expected over other delivery methods.
- Direct use of ammonia, such as thermal power generation and ship fuel, is also possible.
- Depending on the need, hydrogen is extracted and can be applied to power generation and fuel cell vehicles.

# Roles of each company





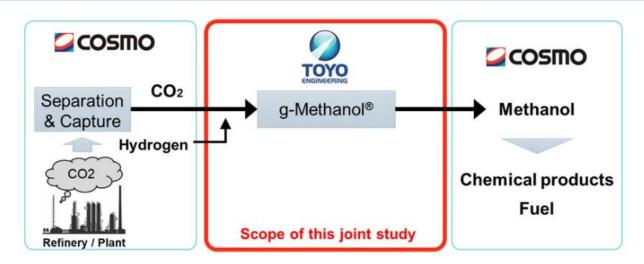
# MOU for joint study on direct synthesis from CO<sub>2</sub> to methanol signed with Cosmo Energy



### g-Methanol®

### **Points/Objectives**

- Targets for production of sustainable products derived from CO<sub>2</sub> emitted from refineries and other Cosmo Energy Group facilities.
- Using TOYO's licensed technology (g-Methanol®) to synthesize methanol directly from CO<sub>2</sub>.
- Methanol converted from CO<sub>2</sub> is an important raw material for chemical products and fuels (marine fuels, e-fuel).



# MOU for Joint research on the comprehensive use of geothermal energy in Indonesia



### **Geothermal power generation**

### Joint research with GDE Inc.\*1

- Geothermal closed loop technology\*2.
- Recovery of valuable minerals such as lithium contained in geothermal water.
- Green hydrogen production using geothermal power generation.
- Other comprehensive use of geothermal energy.

### **Significance**

- Additional development of existing fields with reduced air volume.
- New development of previously undeveloped fields.
- Geothermal power generation is one of the renewable energy sources for base load\*3.



Signing ceremony

<sup>\*1</sup> PT Geo Dipa Energi. Indonesia's state-owned geothermal development company.

<sup>\*2</sup> A power generation system that uses underground thermal resources by installing a loop connecting the ground and the underground and circulating fluid inside the loop.

<sup>\*3</sup> Power supply that can be operated continuously, has a low unit price for power generation, and is expected to provide a stable supply.

# New order for energy efficiency and decarbonization consulting services (HERO) in Thailand



### HERO/SUPERHIDIC®

### **Overview**

- Investigation of energy efficiency and GHG reduction of paraxylene and phenol plants of PTGCC\*1.
- Feasibility Study (FS) and provision of the design package for the facility modification.

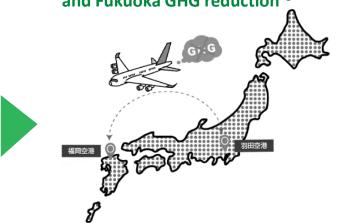
## Results of paraxylene plant FS

- Steam consumption reduction: Approximately 20%.
- GHG emissions reduction: Approximately 55,000 tons/year\*2.

# HERO/SUPERHIDIC®\*4 cumulative data\*5

- Number of orders received: 7 HERO, 2 SUPERHIDIC®.
- Cumulative GHG reductions: Approximately 105,000 tons\*2.





<sup>\*1</sup> PTT Global Chemical Public Company Limited.

<sup>\*2</sup> Projects in which design packages were delivered by HERO/SUPERHIDIC®.

<sup>\*3</sup> Calculated based on domestic flights (Haneda-Fukuoka) greenhouse gas emissions per round trip of aircraft with the premises that 180 kg/person x 95 passengers/aircraft = 17.1 tons/aircraft.

<sup>\*4</sup> A distillation system that enables more than 50% energy-saving performance.

<sup>\*5</sup> Includes orders received this time.





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# Initiatives to achieve the targets of the Medium-term management plan

Initiatives are taken for steady accumulation of orders for profitable projects and transformation of the business portfolio into CN\*1 and non-EPC projects

Several large scale FPSO projects Receive orders and execute

High profit rate and low risk projects Receive orders selectively

EPC group companies located countries Receive orders for medium-scale profitable projects

Non-EPC (customer support service) projects To secure stable profits

Carbon neutral projects (Fuel ammonia/SAF/High performance chemicals, etc.)
Pre-FEED / FEED ⇒ EPC

Recruiting of human resources
To provide high value and strengthen functions

- 2 FPSO orders received in the 1st quarter. (Guyana and Brazil)
- A total of approximately 400 employees (including approximately 40 TOYO members) are performing their duties at OFS.
- Several orders for urea license.
- Orders for engineering of petrochemical plant.
- Orders for gas-fired power generation in Indonesia.
- Orders for petrochemical plant in Korea.
- Phase 2 of the BASF project in China is expected in the future.
- Orders for energy conservation/GHG reduction service HERO.
- FS and Pre-FEED are being implemented around the world.
- Working on projects that will proceed to FEED this year and EPC in next year.
- FY2023: 22 mid-career hires. (as of October 2023)
- Rapid and flexible deployment of human resources through organizational reforms that abolished the business unit system.

\*1 carbon neutral



# Outlook for the future business environment - New business fields (1)

### Hydrogen/Ammonia

Japan's introduction target 2030 2040 2050

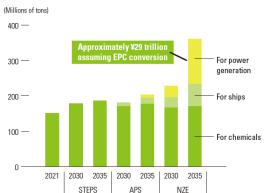
Hydrogen 3 million tons 12 million tons 20 million tons

Ammonia 3 million tons - 30 million tons

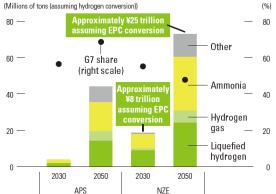
- Hydrogen demand target of 150 million tons in 2030 at the Ministerial Conference on Hydrogen\* held in September 2023.
- The Government of Japan will consider a price difference support system for ammonia/hydrogen companies up to 20 years.
- Consideration for commercialization of manufacturing facilities/receiving terminals accelerated both in Japan and overseas. Expected transition to FEED in FY2023

\* Twenty-three countries, regions, and international organizations participated

#### Demand outlook by ammonia application (global)



### Demand Outlook by hydrogen carrier (for G7 member countries)



Note) The names of each scenario are as follows

The State Policies Scenario (STEPS)
The Announced Pledges Scenario (APS)

Net Zero Emissions Scenario by 2050 Scenario (NZE)

Source: IEA "Towards hydrogen definitions based on the air emissions intensity"

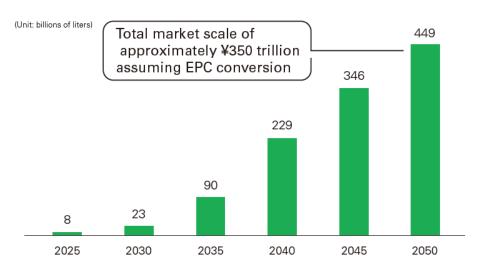


# Outlook for the future business environment - New business fields (2)

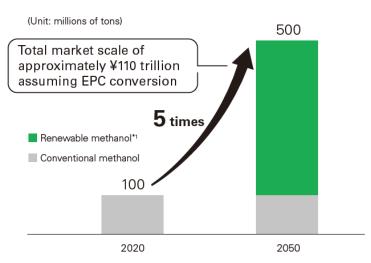
### Synthetic Fuel (e-fuel/SAF), g-Methanol®

- Increase in inquiries due to acceleration of consideration for commercialization in Japan and overseas.
- Expected to shift to FEED from FY2024 onward and increase demand for EPC.

# Predicted demand for SAF up through 2050 to achieve net-zero emissions



#### Predicted methanol production output in 2050



<sup>\*1</sup> Biomass methanol and e-methanol

Source: Compiled by TOYO based on Fig. 47 of IRENA's Renewable Methanol Report.

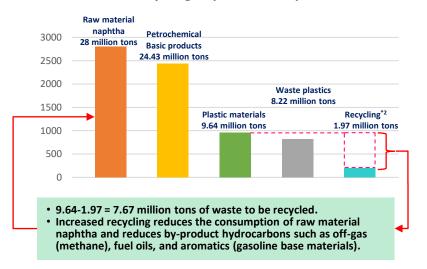


# Outlook for the future business environment - New business fields (3)

### Waste plastics recycle, bio-polymers

- In Japan, chemical/petroleum companies are considering construction of commercial plants.
- Commercial plants are in operation in Europe and the U.S., and plans for further commercial plants and an off-take contract\*1 for waste plastic cracker oil are also being activated.

#### **Recycling of plastics in Japan**



#### Toyo's initiative: Joint collaboration for process improvement



Demonstration plant for the advanced recycling process

- Rayong, Thailand
- Processed: 4,000 tons/year
- Completed in January 2021 and commenced operation

#### **Toyo's Strengths and Roles**

- Technical expertise and experience gained through engineering and construction of petrochemical plants.
- Upstream/downstream system construction and total optimization.

# Joint development goals

- Improving the performance of existing demonstration plants.
- Scale-up to commercial size.
- Expansion of production capacity for plastics derived from waste plastics by optimization with ethylene plant/polymer plant.

# Future development

Expansion to other SCG Chemicals plants and external sales.

<sup>\*1</sup> Contract stipulating the long-term sales and purchase of products between suppliers and purchasers \*2 Material recycling and chemical recycling

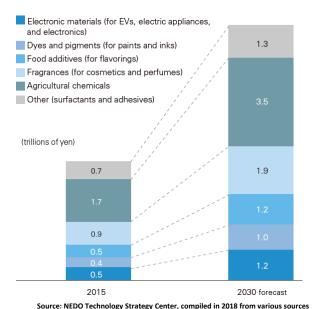


# Outlook for the future business environment - New business fields (4)

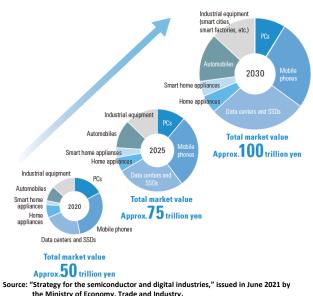
### **High-performance chemicals**

- Customers are reforming their portfolio from conventional general-purpose petrochemicals.
- Despite the sluggish investment motivation in this fiscal year due to the impact of the economic stagnation in China, capital investment is expected to become active from fiscal 2024 onward.

#### Global market for functional chemicals (synthetic organic chemicals)



#### Market for semiconductors for IoT use



the Ministry of Economy, Trade and Industry.



# Outlook for the future business environment - New business fields (5)

### Marine mineral resources (Methane Hydrate, Rare Earth, etc.)

- Basic plan on ocean policy approved by Cabinet in Japan.
- TOYO is proactive in promoting technological development projects for the development of marine resources in Japan.

TOYO's marine resource development-related services

Methane Hydrate terrestrial production test at Alaska (Establishment of production technologies to achieve stable long-term production)

Methane Hydrate production test at Japan EEZ\*1 (Development of production systems for commercialization)

**Establishing Rare-Earth production and refining technologies** 

**Establishment of Cobalt-Rich Ferromanganese Crust production technology** 



Source: The Agency for Natural Resources and Energy website (https://www.enecho.meti.go.jp/about/special/johoteikyo/kaiyokaihatukeikaku.html)



# Outlook for the future business environment - New business fields (6)

### **Cutting-edge pharmaceutical**

- Large-scale capital investment in Japan continues because of the government's subsidy policy (dual use\*1 subsidy program to strengthen the vaccine production system, etc.)
- Capital investment continues to expand in Japan for antibody and other biopharmaceuticals and middle molecular pharmaceuticals.

### Global market size by modality

Mod	lality	Market size <sup>*1</sup> (2020)	Growth rate (2020-30)	Market size <sup>*1</sup> (2030)
Middle molecular	Nucleic acid drugs	450 billion yen	High (17%)	2.1 trillion yen
pharmaceuticals	Peptide drugs	3.2 trillion yen	Medium (8%*²)	4.7 trillion yen (2025)
conjugates	Antibody drugs	16 trillion yen	Medium (8%*²)	23 trillion yen (2025)
(Biopharmaceutic als)	Protein drugs	6.4 trillion yen	Low (4%)	10 trillion yen
Low-molecular pharmaceuticals	Low-molecular pharmaceuticals	48 trillion yen 2016	Low (slight increase)	Appox. 55 trillion yen

<sup>\*1</sup> Predicted market values \*2 Growth rates for 2020-25.

<sup>\*1</sup> Dual-use facilities refers to facilities that usually produce biopharmaceuticals, but that are capable of switching to the production of vaccines to combat infectious disease pandemics.



# Outlook for the future business environment - Existing business fields

(1) FPSO

• Investment plans are expected to continue in South America and Africa.

Oil/Gas

(3)

**(5)** 

• Investment will continue as transition energy to meet growing energy demand.

**Petrochemicals/Chemicals** 

- Decisions on investment postponed due to raw material prices increase and slow economic recovery in China.
- Prospects for recovery from FY2024 onwards, mainly in high value-added, high-performance petrochemicals.

Fertilizer (Urea)
• Steady growth in o

• Steady growth in demand is expected as part of global food security to compensate for population growth and stagnation of fertilizer plant construction during COVID-19.

Power generation (Geothermal/Gas-fired)

• The geothermal power generation in Indonesia is expected to be 5.5 GW in 2030 from current 2.4 GW. Interest in the application of the closed loop system is increased.

• Demand for new gas-fired power generation is high in Southeast Asia and Brazil.



# Revised new order target: ¥410 billion\*1 (1st half year result: ¥361.1billion\*2)

The target was revised upward based on the results for the 1st half. Scope of services : O : Orders received by 2Q : Expected projects in the future Centering on petrochemicals and fertilizer projects In the 2<sup>nd</sup> half of the fiscal year. **Major projects** Region FS **FEED** EPC Hydrogen/Fuel ammonia Americas, India, Middle East, Japan OV Synthetic Fuel (e-fuel/SAF), g-Methanol® Japan, India, Americas, Australia **New Business** Waste plastics recycle, bio-polymers 01 Japan, Southeast Asia **High-performance chemicals** Japan, South Korea, China 01 Marine mineral resources Japan, Americas 0 OV OV (Methane Hydrate, Rare Earth, etc) **Cutting-edge pharmaceutical** Japan OV **Energy-saving and GHG reduction services** Japan, Southeast Asia **FPSO Americas** 0 **Existing Business** Oil/gas Americas, India OV Petrochemicals/Chemicals India, South Korea, Southeast Asia, Americas Fertilizer (Urea) Southeast Asia OV Power generation (Geothermal/Gas-fired) Southeast Asia

L: License, FS: Feasibility Study, FEED: Front End Engineering Design, E: Engineering, EPC: Engineering, procurement, construction

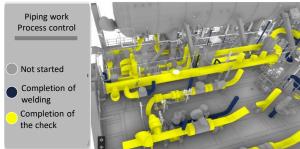
<sup>\*1</sup> Including ¥290.0 billion by the equity method affiliates \*2 Including ¥290.7 billion by the equity method affiliates

## Resilience of project execution - demonstration of the effects of DX in the project



# **Q4** Construction digital twin

Real-time monitoring of construction arrangements and on-site conditions



**01** Zero trust\*1 implementation

On a full cloud

Implementation of data centric projects



Al support

High risk

Small risk

Achieved 90% of expected benefits

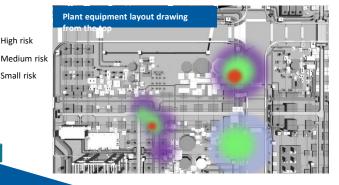
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02

01

Predicting and eliminating project implementation risks

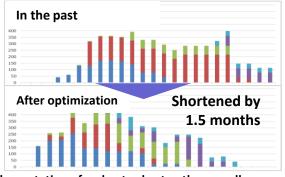
Pre-detection of risks such as delays in construction Prevent budgetary overruns and delays in construction



**Achieving process** optimization

03

Click here for reference video



Implementation of a plan to shorten the overall construction period using the AWP method

<sup>\*1</sup> Security measures implemented on the assumption that all users, devices, and the location of the connection source are unreliable



# **Human Capital Management**

**Basic Approach to Human Capital** 

Human capital investment and environmental development (input)

Human capital investment

- Hiring and retention measuresTraining
- Remuneration, grading, and assessment systems
- Creating growth opportunities

Environmental

- · Health management
- development Work-style reforms



# Human capital measures (output)

- Enhancing organizational strength
- Improving employee engagement
- Promoting independent growth





Value creation

Achieving the mission of medium-term management plan

#### **Establishment of the Human Resources Development Committee**

Establish the committee under the HR Department to consider and implement various HR measures from a company-wide and medium- to long-term perspective, thereby realizing an improvement in the value of human capital.

#### **Purpose**

- 1 Measures to increase the value of employees including skills and abilities.
- **2** Engagement Improvement Measures.
- ③ Measures to strengthen and revitalize the organization and related HR strategies.

#### member

**Chairman: General Manager of Corporate Administration Division** 

Advisor: Executive Officer in charge of Corporate Administration Division

Representatives of each division: 9 Divisions

Secretariat: HR Department

#### FY2023 themes

- 1 Development of a human resource portfolio
- (2) Revision of remuneration system
- **3** Development of training systems/programs
- 4) Work styles and work-life balance
- (5) Career development
- **6** Engagement survey
- 7) Talent review and next year's rotation plan
- **8** Review of evaluation system





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- KGI and KPI
- Other Topics for the 1st Half



# **KGI** and **KPI**

KGI (Key Goal Indicator)		KPI (Key Performance Indicator)		
Target	FY2023 1 <sup>st</sup> half		Target	FY2023 1 <sup>st</sup> half
Onsolidated net income  ■ Average of 5 billion yen or more from FS2023 to 25	¥2.3 billion (Yearly forecast of	Non-EPC*1 Gross Profit Composition	<ul> <li>FY2025: <u>25% or more</u></li> <li>FY2030: <u>50%</u></li> </ul>	42%
<ul> <li>FY 2030 ⇒ 10 billion yen</li> <li>Consolidated net sales</li> <li>Focus on profit rather than net</li> </ul>	¥3.0 billion)	New business areas Gross Profit Composition	<ul> <li>FY2025: <u>25% or more</u></li> <li>FY2030: <u>50%</u></li> </ul>	7%
sales  ■ Sales target : 300 billion yen	(Yearly forecast of ¥250.0 billion)	Gross Profit Composition (Group companies)	● FY2025: <u>45% or more*2</u> ● FY2030: <u>50%</u>	53%
ROE  • FY2025 ⇒ <u>10% or more</u> • FY2026 - : <u>Stably</u> 10% or more	—— (Yearly forecast of 5.7%)	Employee satisfaction	Improved from the previous year	3.63 (highest in 5) in FY 2021 Next time is in the 2 <sup>nd</sup> half of FY2023
Dividends		Number of	<ul> <li>Toyo-J: To double resources from 110 for new technology and business</li> </ul>	About 130 employees
<ul> <li>Aim to <u>distribute dividends</u> within the medium-term management plan</li> </ul>	_	employees	<ul> <li>Group companies: increase/ decrease according to the needs</li> </ul>	About 7,300 employees

<sup>\*1</sup> Non-EPC = EPC/EP Lump-Sum Projects \*2 TSPI (Brazil) and OFS (Singapore) are not included because they are equity-method affiliates.

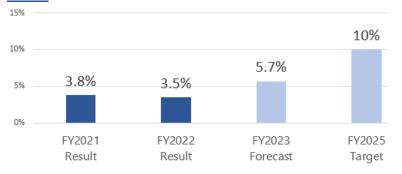
### KGI



### **Consolidated net income**



### **ROE**



### **Consolidated net sales**



#### Consolidated net income

Achieved 77% of progress due to high profitable projects in the 1<sup>st</sup> half of the year.

#### Consolidated net sales

Progress of projects mainly in India and China is expected to improve in the  $2^{nd}$  half of the year.

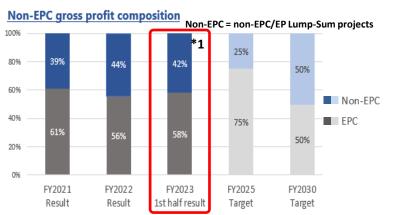
#### ROE

Improve profit levels toward ROE target in FY2025.

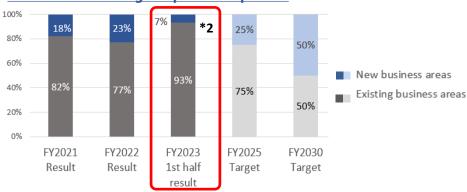


### **KPI**

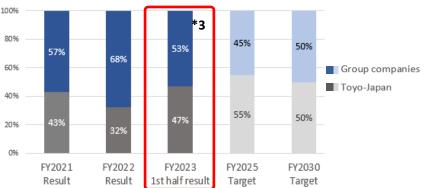
### The composition of gross profit of non-EPC and major group companies already exceeded the FY2025 target







**Group companies gross profit composition** 



\*1: Major Non-EPC Projects:

Petrochemical EPsCm, PMS (China) Petroleum-related PMC (India)

\*2: Major New Business Projects:

High-performance chemicals (Japan, China) Marine Resource Development (Alaska) Energy-saving and GHG reduction services

\*3: Major Projects of Group Companies:

Toyo-India (Petroleum-related, Fertilizer)

Toyo-China (Chemical, Petrochemical)

Toyo-Korea (Petrochemical)

TPS (Pharmaceutical, Chemical)

TSPI (Brazil) and OFS (Singapore) are not included because they are equity-method affiliates



# Contributing to reducing environmental impact through energy services

# On-site photovoltaic power generation

- **◆** PPA for large-scale plantations
  - 10% to 15% reduction in electricity cost by switching to on-site PPA.
  - With fewer suitable mega-solar sites, the agricultural sector has high potential.
  - Combination of photovoltaic power generation and smart agriculture business model is considered in the future.



# **♦** Solar car port

- Delivery to an experimental store of SEVEN-ELEVEN JAPAN Co., Ltd. to reduce environmental impact.
- Half of construction period and low cost by developing an oblique pile foundation method.
- Business development plan in the form of monthly flat-rate energy service for stores with roadside parking lots.



Photo courtesy of SEVEN-ELEVEN JAPAN Co., LTD.

# New order for lubricant manufacturing in India

### **Overview**

- ExxonMobil Lubricants Private Limited (EMLPL)'s first greenfield investment in India.
- A lubricant manufacturing plant with an annual production capacity of 159,000 KL.

### **Characteristics**

- Manufacture high-performance mobile brand lubricants in response to the increase of demand in automotive and industrial lubricants.
- Full application of AWP\*1. Efforts are under way to improve productivity by realizing total project optimization through the integration of EPC data.



Signing ceremony



# 2 FPSO EPCI\*1 orders by a joint venture (OFS\*2) with MODEC, Inc.

CO<sub>2</sub> emissions are reduced by using combined cycle generator instead of gas turbine generator

# **♦** Uaru for Guyana

•	
Place	About 200 km offshore of Guyana
Crude oil production	250,000 barrels per day
Gas production	540 million cubic feet per day
Oil storage capacity	2 million bpd



## **♦** Raia for Brazil

Place	About 200 km offshore of Brazil
Crude oil production	125,000 barrels per day
Gas production	565 million cubic feet per day
Oil storage capacity	2 million bpd



<sup>\*1</sup> Engineering, Procurement, Construction and Installation \*2 Offshore Frontier Solutions Pte. Ltd.



# New order for thermal power plant facilities using exhaust gas in Indonesia

### **Overview**

- Combined cycle power plant using exhaust gas from existing simple-cycle gas-fired power plant.
- Increased capacity of 39 MW to achieve total generation of 109 MW.

### **Characteristics**

- Reducing gas fuel and production costs by using exhaust gas.
- Contributing to reducing CO<sub>2</sub> emissions in the Bintan area of Batam island.
- In line with the Government's program to reduce CO<sub>2</sub> emissions in Indonesia and achieve the net zero emission by 2060.



Signing ceremony



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The forecasts given above are based on information available at the time of compilation and are inherently subject to a variety of risks and uncertainties. Actual-results may vary significantly from forecasts due to factors including, but not limited to, changes in the economic or business environment and exchange rate fluctuations.