

# FY2023 Shimizu Corporation SDGs·ESG Briefing

October 13, 2023

Today's Work, Tomorrow's Heritage



SHIMIZU CORPORATION supports the Sustainable Development Goals

# FY2023 SDGs·ESG Briefing

Agenda	Speaker	
Opening Remarks	President and Representative Director	Kazuyuki Inoue
Presentation 1 Initiatives of our SDGs · ESG	Senior Managing Officer and Representative Director Senior Managing Officer and Executive Officer In charge of Administrative Functions and SDGs & ESG Promotion, Director, Corporate Planning Div.	Yoshiki Higashi
Presentation 2 Progress of Group Environmental Vision “SHIMZ Beyond Zero 2050”	Executive Officer Director, Environmental Strategy Office, Deputy Director, Corporate Planning Div.	Mika Kaneko
Presentation 3 Operation Status of BLUE WIND	Director, Senior Managing Officer Senior Managing Officer and Executive Officer In charge of Engineering Business, Director, LCV Headquarters, In charge of Information Management	Takeshi Sekiguchi
Presentation 4 Status of our ESG Finance	Executive Officer In charge of Finance & Accounting and IR	Michiho Yamaguchi
Presentation 5 DE&I Initiatives	General Manager, DE&I Promotion Dept., Corporate Planning Div.	Maho Nishioka
Presentation 6 SDGs Activities in our Global Business	Managing Officer Director, International Civil Engineering Div., Global Business Headquarters	Kazuya Osako
Q&A		

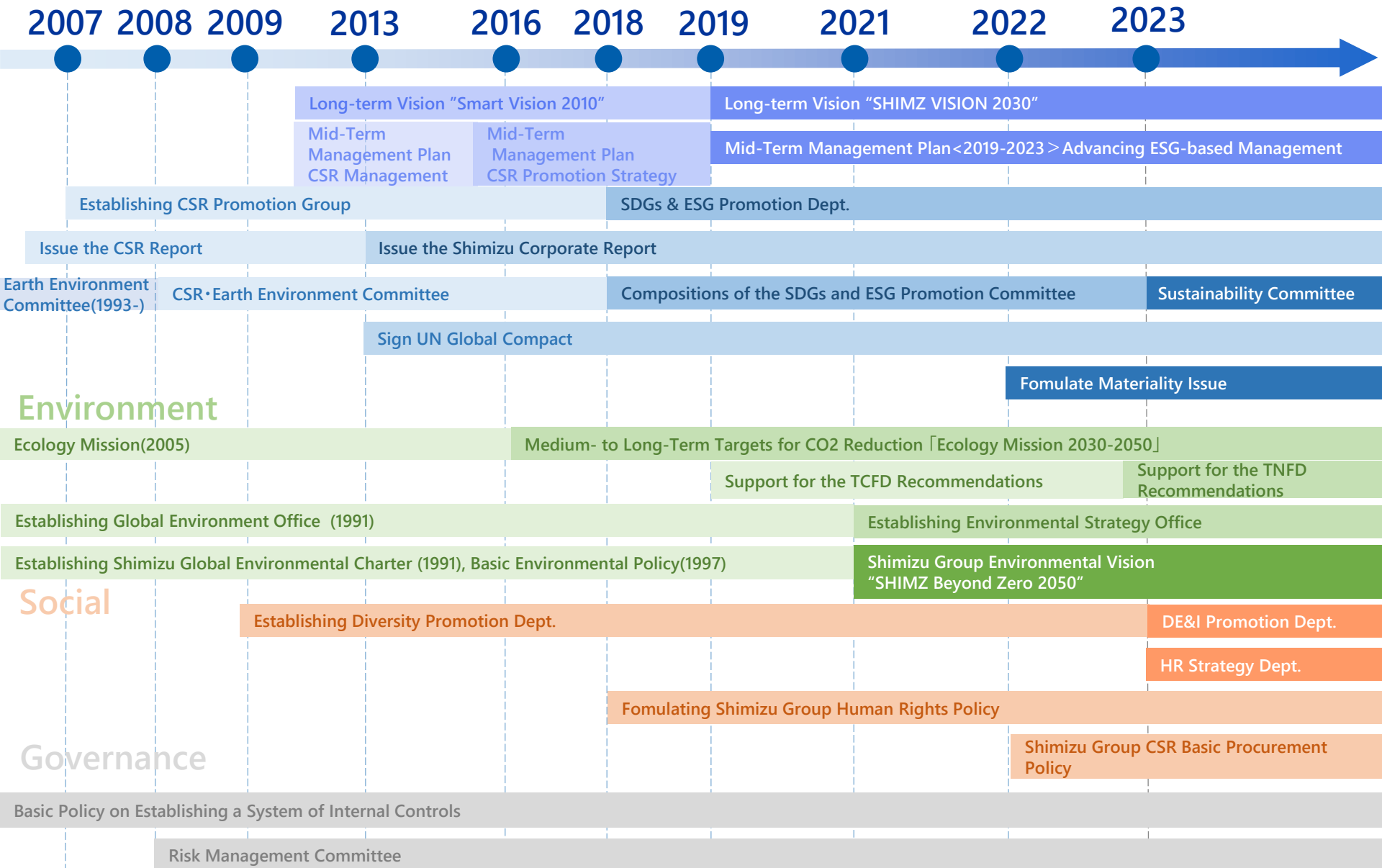
# Presentation 1

## Initiatives of our SDGs · ESG

Yoshiki Higashi,  
Senior Managing Officer and Representative Director  
Senior Managing Officer and Executive Officer  
In charge of Administrative Functions and  
SDGs & ESG Promotion,  
Director, Corporate Planning Div.



# Major Historical Changes in SDGs and ESG



# Sustainability Committee

## Board of Directors

Reports ↑ ↓ Supervises

## Sustainability Committee

Chair: President

Members: Officer in charge of SDGs and ESG Promotion, Officer in charge of Safety Administration & Environment, officers in charge of each business, officers in charge of group companies, Officer in charge of Purchasing & Technology, Officer in charge of Finance & IR

Topics: Deliberation and decisions on the Shimizu Group's ESG policies and key measures  
Deliberation and decisions on ESG-related information disclosure (e.g., information disclosure based on TCFD recommendations)

Proposals and reports ↑ ↓ Instructions

### Environmental Subcommittee (E)

Topics: Carbon neutrality, resource recycling, coexistence with nature, environmental education, etc.

### Social Subcommittee (S)

Topics: Human capital, DE&I, job satisfaction, human rights, supply chain management, social contribution activities, etc.

### Governance Subcommittee (G)

Topics: Corporate governance, sustainability information disclosure, etc.

Reports ↑ ↓ Instructions

Business divisions/branches

Instructions  
← Reports

Headquarters: Divisions and Departments that Supervise by Function

Instructions  
← Reports

Group companies

# Presentation 2

## Progress of Group Environmental Vision “SHIMZ Beyond Zero 2050”

Mika Kaneko,  
Executive Officer  
Director, Environmental Strategy Office,  
Deputy Director, Corporate Planning Div.



# Group Environmental Vision “SHIMZ Beyond Zero 2050”



Thoughts on "Beyond"

In addition to reducing the negative impact of our activities on the environment to zero, provide positive environmental value to customers and society



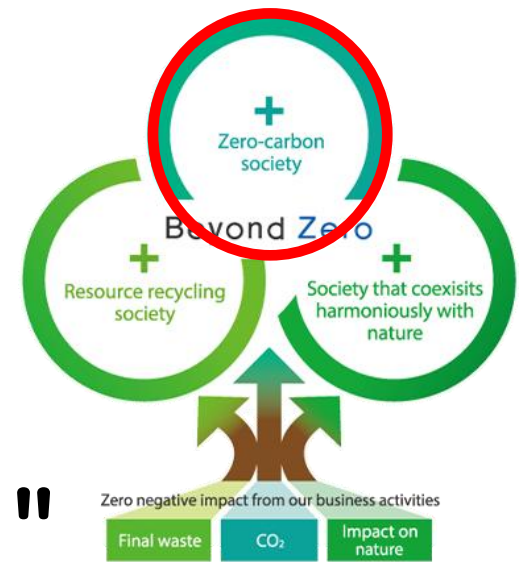
	Zero negative impact from Shimizu's business activities	+	Beyond Zero Providing environmental value to customers and society
Zero-carbon society	<ul style="list-style-type: none"> <li>Zero CO<sub>2</sub> emissions from Shimizu's workplaces and</li> </ul>	+	<ul style="list-style-type: none"> <li>Contribute to a zero-carbon society through the supply chain by zero CO<sub>2</sub> emissions from the operation of buildings designed and built by Shimizu</li> <li>Drive progress toward a zero-carbon society through technological innovation and generating power from</li> </ul>
Resource recycling society	<ul style="list-style-type: none"> <li>Zero final waste from Shimizu's business</li> </ul>	+	<ul style="list-style-type: none"> <li>Contribute to resource recycling over the entire lifecycle of a building from procurement of materials through dismantling</li> </ul>
Society that coexists harmoniously with nature	<ul style="list-style-type: none"> <li>Zero negative impact from Shimizu's business on nature</li> </ul>	+	<ul style="list-style-type: none"> <li>Add to biodiversity and contribute to sustainable coexistence with nature through the introduction of green</li> </ul>

# Major Initiatives

	In-house activities	Providing Value to Customers and Society
Decarbonization society	<ul style="list-style-type: none"> <li>• CO<sub>2</sub> Reduction efforts at Shimizu's Office Decarbonization of electricity and energy ZEB Conversion of our branch office buildings</li> <li>• <b>CO<sub>2</sub> Reduction efforts during construction</b></li> <li>• Development of CO<sub>2</sub> monitoring system during construction and deployment to all work sites</li> </ul> 	<ul style="list-style-type: none"> <li>【Construction Business】</li> <li>• ZEB Conversion of designed-construction buildings</li> <li>• Development and implementation of Hydro Q-BiC®</li> <li>• Technological development of low (de)carbon materials</li> <li>• Development of SCAT, a tool for predicting CO<sub>2</sub> emissions during construction</li> <li>• Construction of renewable energy power generation facilities</li> <li>【Non Construction Businesses】</li> <li>• Promotion of renewable energy service business</li> <li>• Introduction of renewable power to investment development properties</li> </ul>
Resource Recycling society	<ul style="list-style-type: none"> <li>• Promotion of 4R activities</li> </ul>	<ul style="list-style-type: none"> <li>• Forest Recycling Initiatives Wooden architecture</li> <li>• <b>~Tree-planting activities "Shimizu Meguri no Mori"</b></li> </ul>
Coexist Harmony with nature society	<ul style="list-style-type: none"> <li>• Registration on the Symbiosis Site of "Rebirth Forest" that the saisei-no-Mori Biotope of our institute of technology</li> <li>• ABINC Certification of NOVARE</li> <li>• Participation in the TNFD Forum</li> </ul>	<ul style="list-style-type: none"> <li>• Industry-government-academia-private collaboration activities at Shimizu Yatsu in Yatsubori</li> </ul>  <ul style="list-style-type: none"> <li>• <b>Proposal and Implementation of Green Infrastructure+</b></li> </ul>



# "Decarbonization"

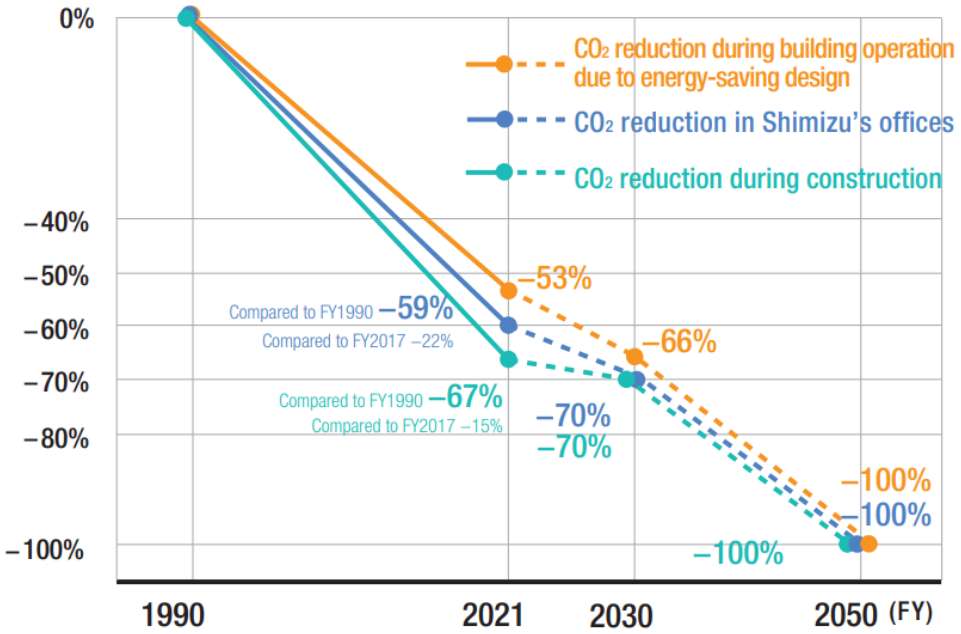


## CO<sub>2</sub> Reducation Efforts During Construction

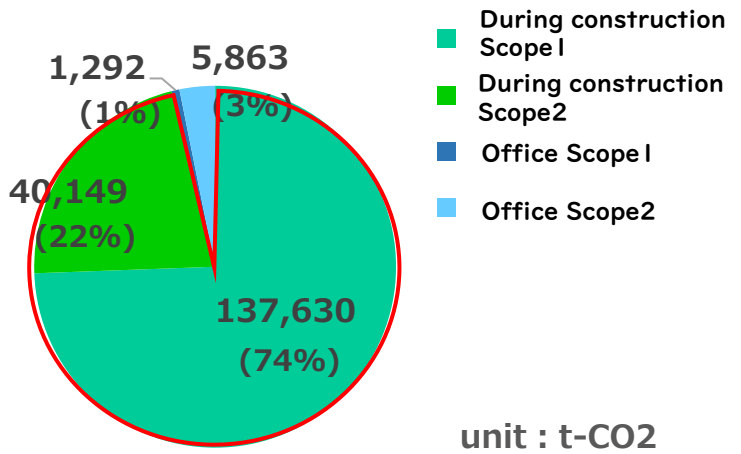
# Target values and main measure



Acquired SBT certification in 2019 (Well Below 2°C)  
 Renewal deadline in 2024.  
 Aiming to obtain 1.5°C certification



## Medium to Long Term Goals: Ecological Mission 2030-2050



CO2 emissions FY2022

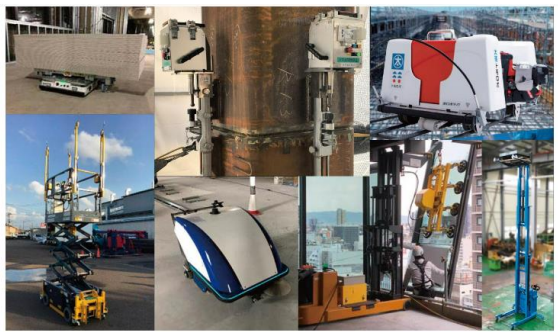
- Major measures to reduce CO2 emissions during construction
- Increased energy productivity
  - Electrification of heavy machinery
  - Decarbonization of fuels
  - Use of renewable energy power

# Improvement energy productivity

(Reduction of energy consumption per unit of digestion)



## Inter operable Robots and machine



Japan Society of Civil Engineers Award, Ministry of Technology I (FY2022)  
Tunnel construction that realized productivity improvement by utilizing full ICT-  
(Shin-Tomei Expressway Kawanishi Construction Yagayama Tunnel)

## Remote control of tower crane



## Linked Robots, IoT and BIM



Winner of the i-Construction Grand Prize (FY2021)  
Making full use of digital tools  
Visualization and sophistication of on-site management  
(ST Line Shin-Yokohama Construction)



Using 3D models to build temporary construction piers across expressways / Study of VR construction in virtual space (Shin-Meishin Expressway Kajiwara Tunnel construction)

# Decarbonization of fuels



## Shibaura 1-chome Planning & Construction Plant

Installed Euglena Susteo 20 for two crawler cranes (Reduction of CO2 emissions from diesel oil by 20%)



## JV Central Linear Kawasaki Todoroki Emergency Exit

Installed Euglena Susteo 20 for two crawler cranes (Reduction of CO2 emissions from diesel oil by 20%)



## JV 2025 Japan World Expo PW Southeast Construction Area Construction Plant

FY 2023 Osaka Prefecture Carbon Neutral Technology Development and Demonstration Project adopted ITOCHU ENEX RD was installed in four generators. (Reduction of CO2 emissions from diesel oil by 20%)



## Crawler cranes owned by SC Machinery nationwide

ITOCHU ENEX GTL was installed (Reduction of CO2 emissions from diesel oil by 8.5%)

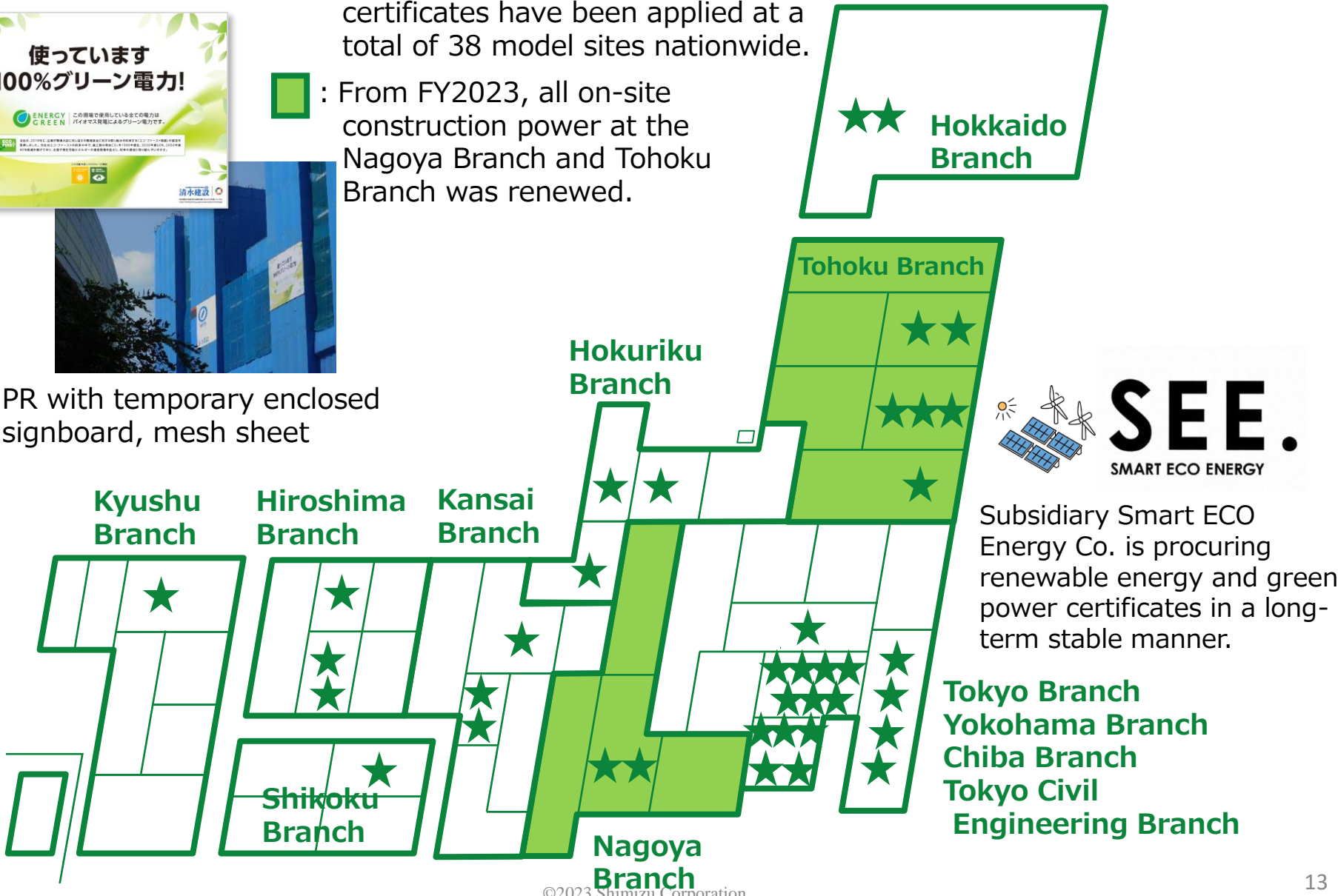
# Use of renewable energy power

★ : From FY2020, green power certificates have been applied at a total of 38 model sites nationwide.

■ : From FY2023, all on-site construction power at the Nagoya Branch and Tohoku Branch was renewed.



PR with temporary enclosed signboard, mesh sheet



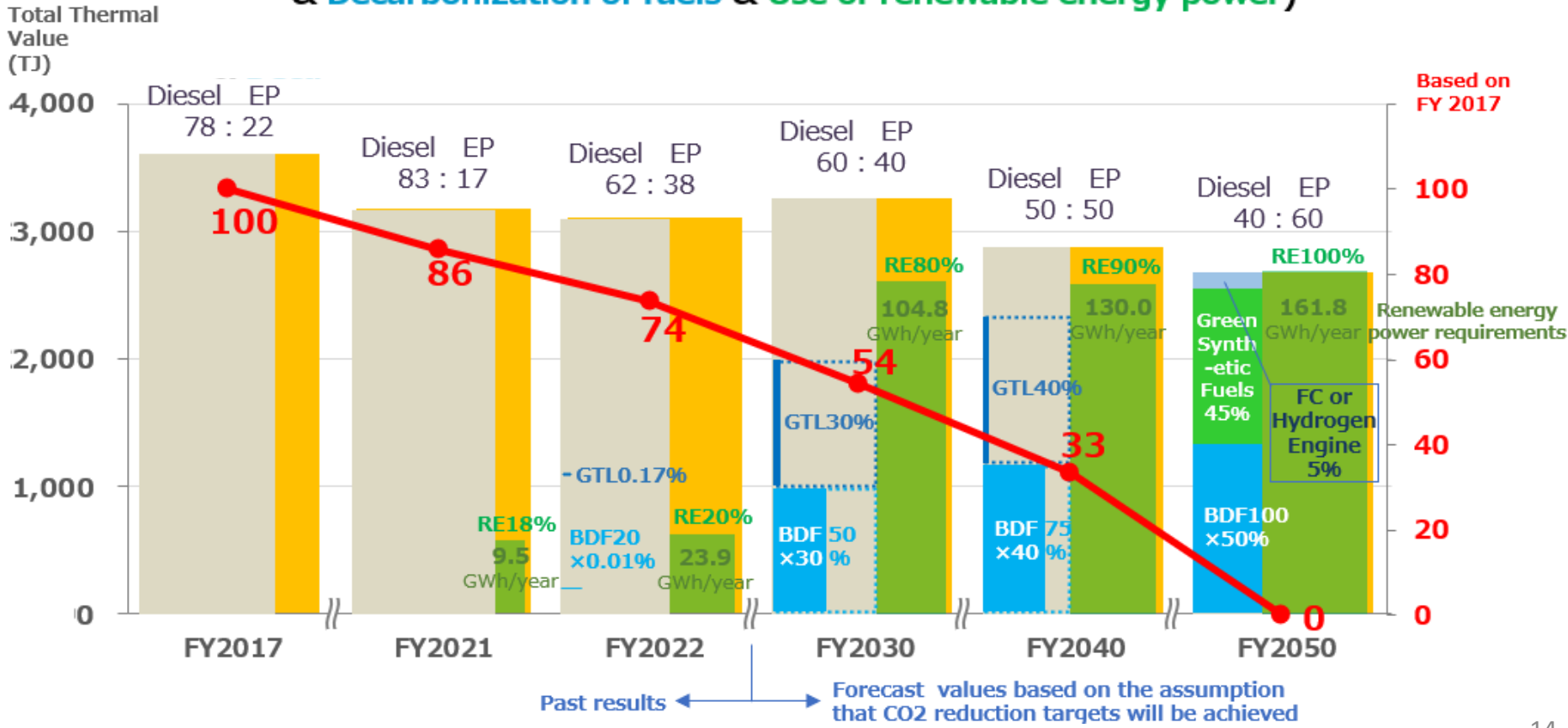
Subsidiary Smart ECO Energy Co. is procuring renewable energy and green power certificates in a long-term stable manner.

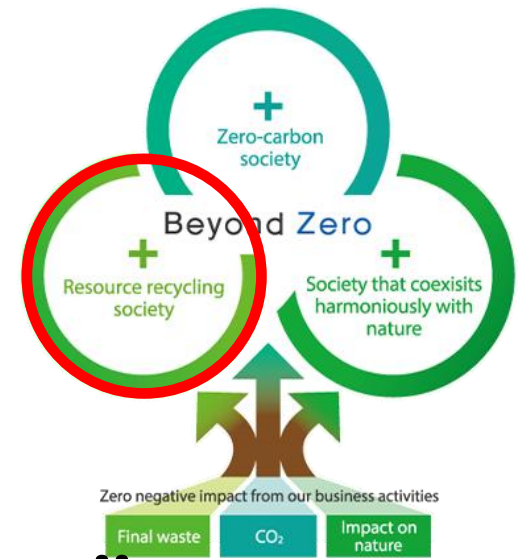
- Tokyo Branch
- Yokohama Branch
- Chiba Branch
- Tokyo Civil Engineering Branch

# Initiative Targets for Each Measure

- Diesel
- EP
- BDF·RD
- Renewable energy power
- GTL
- Green Synthetic Fuels
- FC or Hydrogen Engine

**Total Energy Usage (Improving Energy Productivity & Electrification of heavy machinery & Decarbonization of fuels & Use of renewable energy power)**





# "Resource Recycling"

## Tree-planting Activities Aimed at Forest Circulation

# Shimizu Meguri no Mori



## Forest circulation

Source: White Paper on Forests and Forestry (FY 2021)

"Shimizu Meguri no Mori" activity (Kawaba Village, Gunma Prefecture, 2022~)

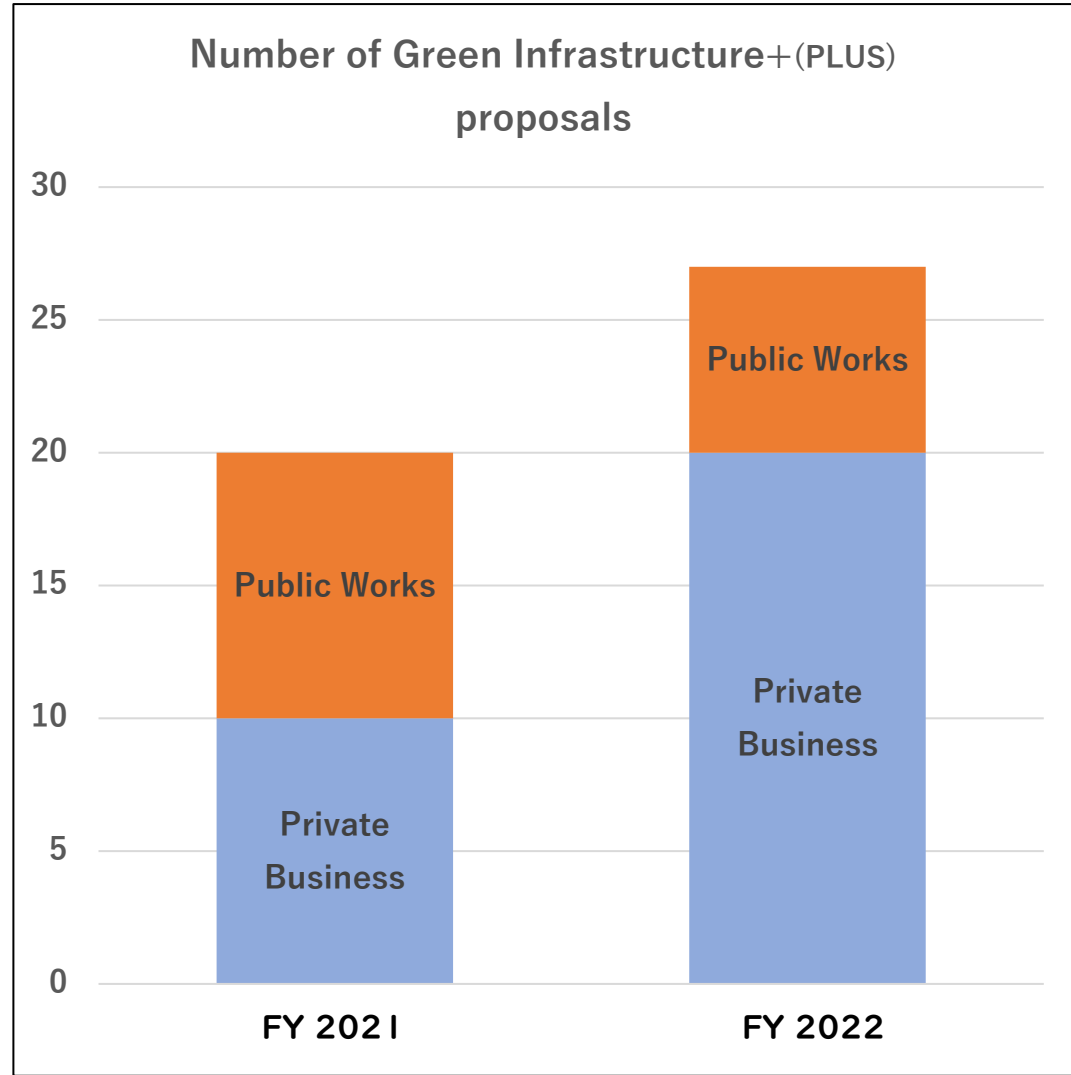




# “Coexist Harmony with Nature”

## Proposal and Implementation of Green Infrastructure+(PLUS)

# Proposal of Green Infrastructure+(PLUS)<sup>※</sup> to Customers



※: The concept of developing infrastructure while wisely utilizing the functions of nature and combining the expertise and technologies Shimizu possesses to restore the blessings of nature to the entire local community.

# Implementation of Green Infrastructure+(PLUS) with an eye toward deployment to customer

## Rooftop vegetable garden at Mebukus Toyosu



- Toyosu 6-chome 4-2 and 3 blocks were named "Michino Terrace Toyosu" and started efforts to create a new town with high quality of life (QOL) that is full of comfort and vitality.
- At Mebukusu Toyosu, as an office facility, "diversity and in pursuit of "functionality and comfort", we provide an office environment that can create a workplace.



- ① Climate Change Countermeasures
  - Rainwater harvesting and utilization
- ② Resource Supply
  - Utilization of pavement materials recycled from thinned wood
- ③ Environmental Protection
  - Utilization of native species
  - Management of green spaces with minimal pesticides, etc.
- ④ Regional Revitalization
  - Promotion of physical and mental health of users through vegetable gardens and outdoor activities
  - Promoting interaction between users through vegetable gardening activities



# Coexist Harmony with Nature : Rooftop Vegetable Garden in Mebukusu Toyosu

## Regional Revitalization

### Collaboration with Plantio Corporation

- Revitalizing the participant community through the use of IT



## Environmental Protection: Biodiversity

- Selected "Edo vegetables", which are native species.
- Minimal use of pesticides.

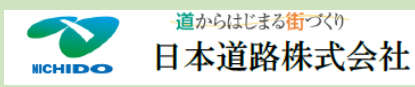
Planter 1	Planter 2	Planter 3
Goseki Japanese bustard spinach	Norabou rape blossoms	Takinogawa carrot
Perennial grass	Kanamachi turnip	Takinogawa burdock
Mustard greens	Kameido radish	Takinogawa turnip
Radish	Nerima radish	Komagome Sansun carrot



## Resource supply

### Collaboration within the Group Company

- Recycled wood molded paving block "Mokure"



## Future Initiatives

Utilization as a place for environmental education and research and development, etc.:

- Learning about greening Edo vegetables (native species)
- Visualization of contributions to wellbeing
- Soil improvement technology to enhance plant growth effects



The Shimizu Group will continue to develop technologies, accumulate knowledge, and disseminate information toward the realization of a society with built-in green infrastructure.

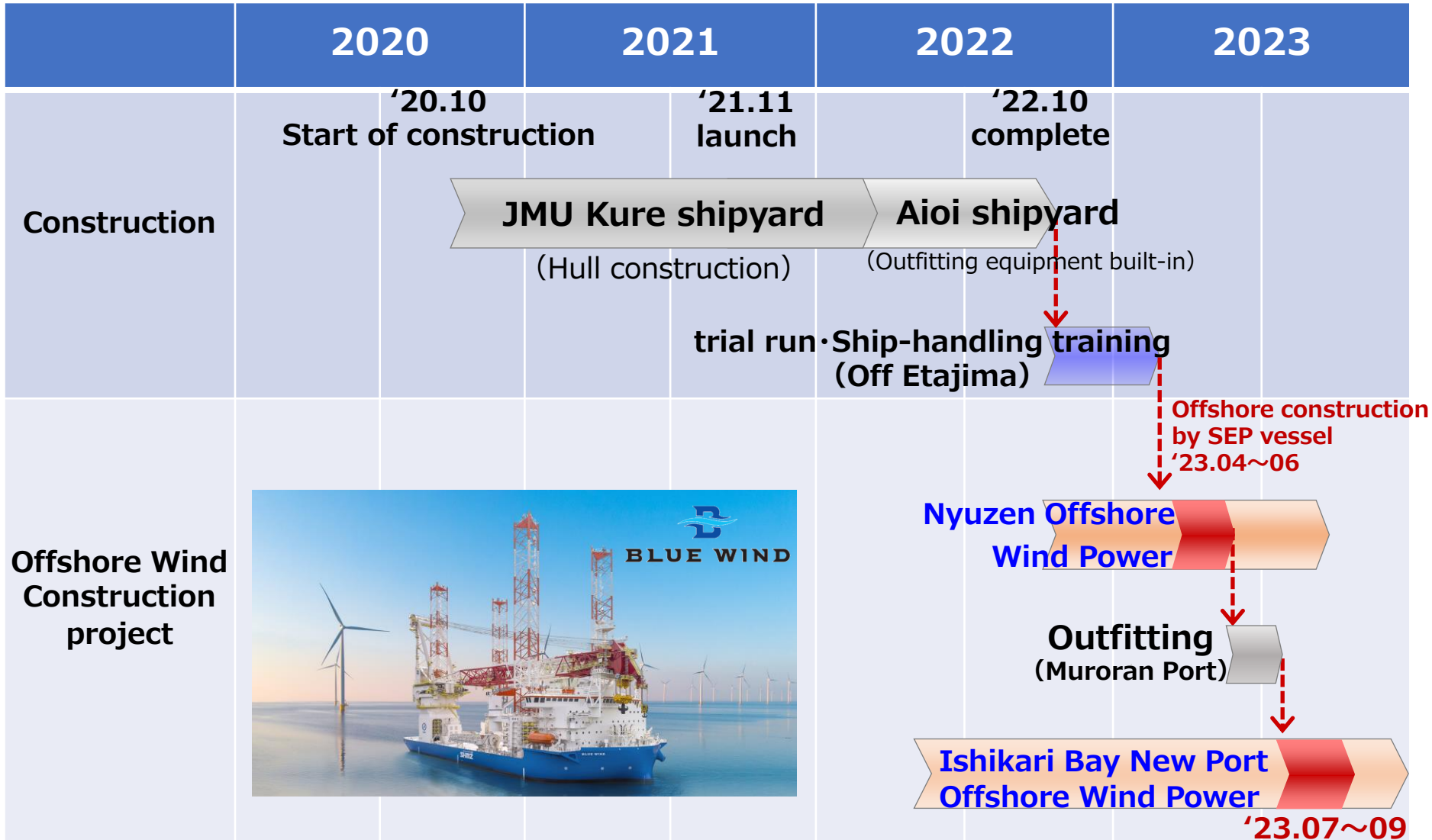
# Presentation 3

## Operation Status of BLUE WIND

Takeshi Sekiguchi,  
Director, Senior Managing Officer  
Senior Managing Officer and Executive Officer  
In charge of Engineering Business,  
Director, LCV Headquarters,  
In charge of Information Management



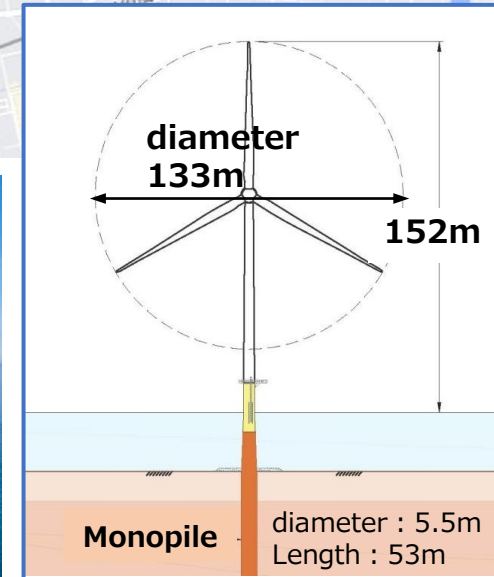
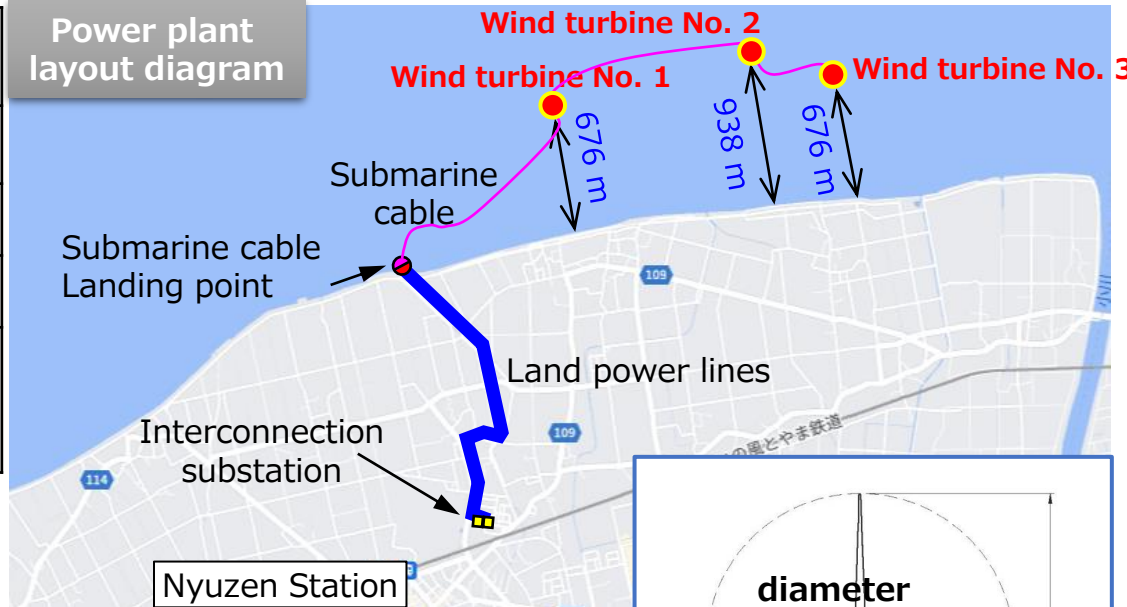
# Operational status of the self-propelled SEP vessel "BLUE WIND"



# Nyuzen Offshore Wind Farm

~ Japan's first privately funded offshore wind power business in general sea area ~

<b>Business operator</b>	Nyuzen Marine Wind LLC
<b>Planned site</b>	Nyuzen, Shimoshinkawa-gun, Toyama
<b>Standards</b>	3MWloom × 3 = 9MW
<b>Basis</b>	Monopile
<b>Construction period</b>	2022.10 ~ 2023.08 SEP vessel Offshore construction : 2023.04~06



**Construction site**

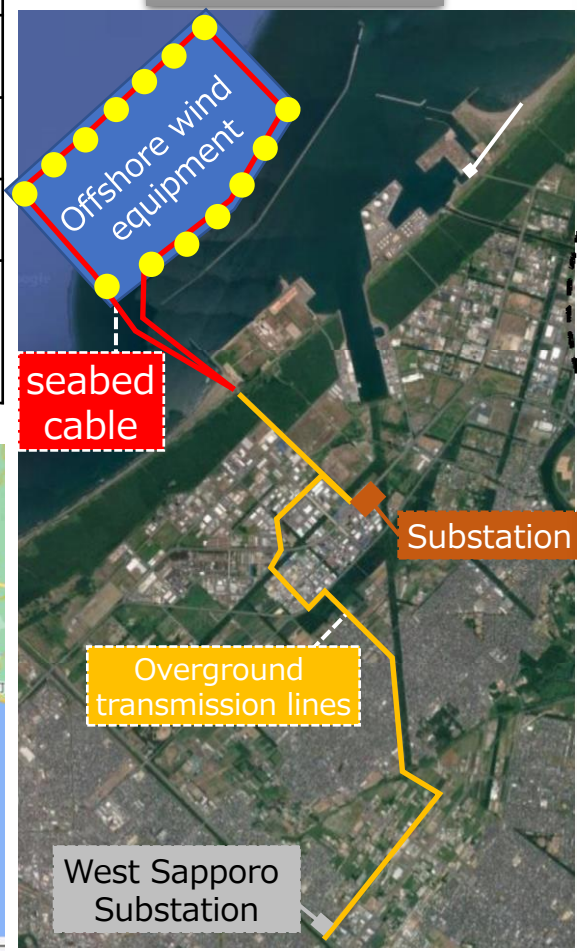


# Offshore Wind Farm at Ishikari Bay New Port

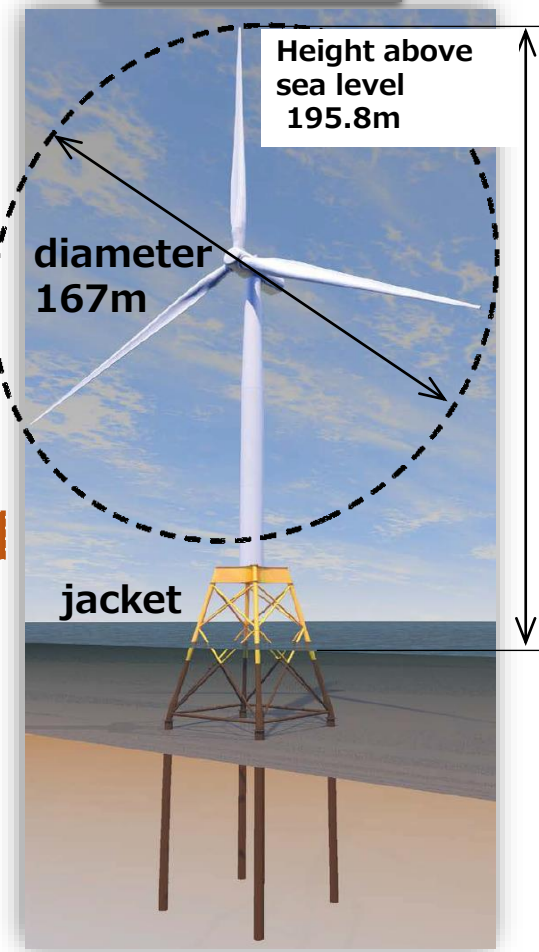
~ Offshore wind power business using Japan's largest 8MW wind turbine ~

<b>Business operator</b>	Green Power Ishikari LLC
<b>Planned site</b>	Within Ishikari Port Area, Ishikari City, Hokkaido
<b>Standards</b>	8.0MW/loom × 14 = 112.0MW
<b>Basis</b>	jacket
<b>Construction period</b>	2022.04 ~ 2023.12 SEP vessel Offshore construction : 2023.07~09

Power plant layout diagram



Shape and size of wind turbine



Construction site





# Presentation 4

## Status of our ESG Finance

Michiho Yamaguchi,


Executive Officer

In charge of Finance & Accounting and IR




# Background to the spread of ESG finance

## Changes in investors


- Establishment of PRI (Principles for Responsible Investment)
  - Establishment of the Stewardship Code
- 
- Consider ESG in investment decisions
  - Acceleration of divestment

## Changes in the external environment

- Growing momentum for decarbonization
  - Decline in the functioning of the emissions market
- 
- It is necessary to utilize not only funds from the public framework but also private funds.



## Origin

- ESG bond have issued by local governments and business companies has increased since around 2012.
- 
- The corporate procurement environment has changed significantly, and ESG bond issuance has been promoted.
- Combination of financing and ESG factors
  - Establish initiatives to improve and stabilize market reliability

# Our ESG Finance (1)

## 【Details of bond issuance】

## 【Fund Appropriation Project】

Types of corporate bonds	Green Bonds	Property Name	Yokohama Grangate
Total amount issued	10 billion yen	location	Minato Mirai , Nishi-ku , Yokohama
Rates	0.110%	Total floor area	100,926㎡
Term	5 years	Number of floors	18 floors above ground, 2 rooftop shack
Payment due date	December 12, 2019	Purpose	Office, Shop, Parking Lot
		completion	February 2020

## 【Environmental Performance of Target Projects】

Comprehensive assessment of environmental performance of buildings  
**CASBEE**®  
 Comprehensive Assessment System  
 for Building Environmental Efficiency



**S rank acquired**

International standard for building environmental performance  
**LEED**®  
 Leadership In Energy & Environmental Design



**Gold certified**

〈reference〉

People-focused building certification program  
**WELL**®  
 WELL Building Standard



**In tenant office buildings  
 Japan's first WELL  
 certification  
 (Gold Rank)**



# Our ESG Finance (2)

## 【Details of bond issuance】

Types of corporate bonds	Sustainability Bonds
Total amount issued	10 billion yen
Rates	0.100%
Term	5 years
Payment due date	December 16, 2021

## 【Fund Appropriation Project】

Property Name	Mebukus Toyosu, etc.
location	Toyosu, Koto-ku, Tokyo
Total floor area	Approx. 88,000m <sup>2</sup>
Number of floors	12 steps above ground
Purpose	Offices, stores, etc.
Completion	August 2021

## 【Environmental Performance of Target Projects】

Comprehensive assessment of environmental performance of buildings  
**CASBEE**® Comprehensive Assessment System for Building Environmental Efficiency

➔ **S rank acquired**



➔ **5 stars awarded (Highest Rank)**



➔ **Acquired**



# Our ESG Finance (3)

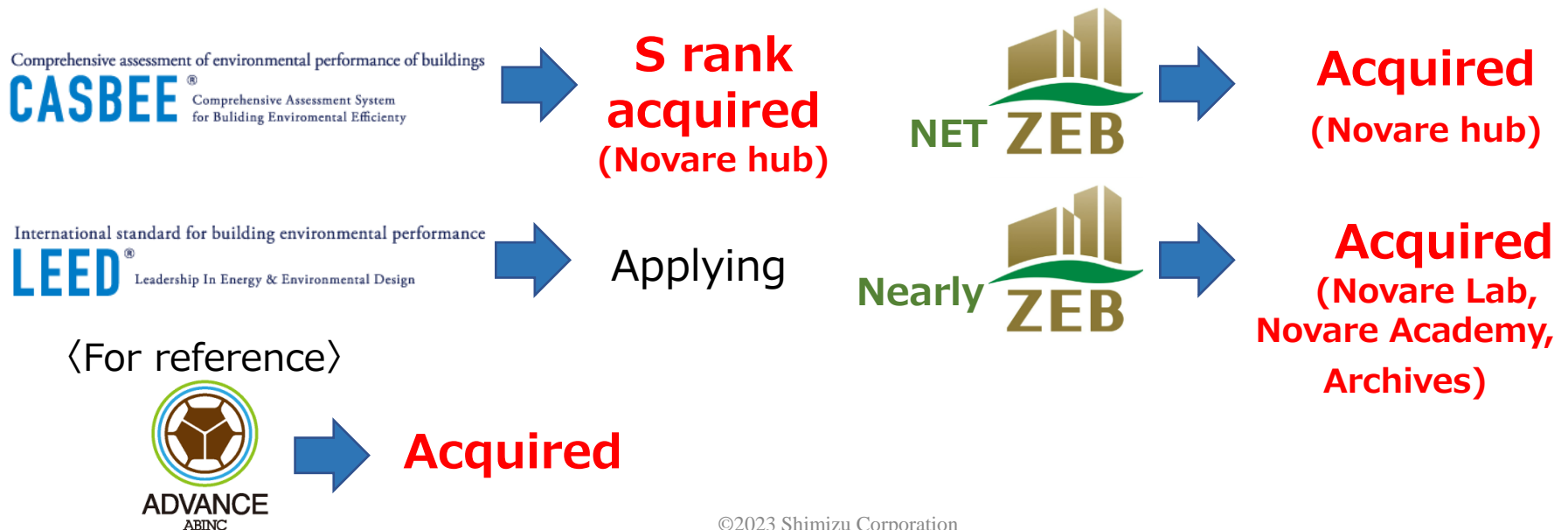
## 【Details of bond issuance】

Types of corporate bonds	Sustainability Bonds
Total amount issued	20 billion Yen
Rates	0.550%
Term	5 years
Payment due date	February 24, 2023

## 【Fund Appropriation Project】

Property Name	Smart Innovation Ecosystem Novare
location	Shiomi, Koto-ku, Tokyo
Area developed	Approx. 36,880m <sup>2</sup>
	Total floor area : Approx. 25,000m <sup>2</sup>

## 【Environmental Performance of Target Projects】



# ESG Finance of the Company's Subsidiaries, etc.

## SHIMIZU PRIVATE REIT, Inc.

**Green Loans**  
(Acquired the highest rating from JCR in January 2023)

※Allotted to the acquisition cost of assets that meet the eligibility criteria (1) and (2) below



### (1) Green Building

- ① DBJ Green Building Certification : 5 stars, 4 stars or 3 stars
- ② CASBEE Certification : S rank, A rank or B+ rank
- ③ BELS Rating : 5 stars, 4 stars or 3 stars
- ④ LEED Certification : Platinum, Gold, Silver

### (2) Renovation work, etc.

- ① Obtained certification for eligibility criteria (Green Buildings ① to ④) , Renovation work intended to reacquire or improve the number of stars or rank by one level or more
- ② Renovation work that can reduce electricity usage, CO<sub>2</sub> emissions, or water usage by 30% or more
- ③ Installation or acquisition of equipment related to renewable energy

# Presentation 5

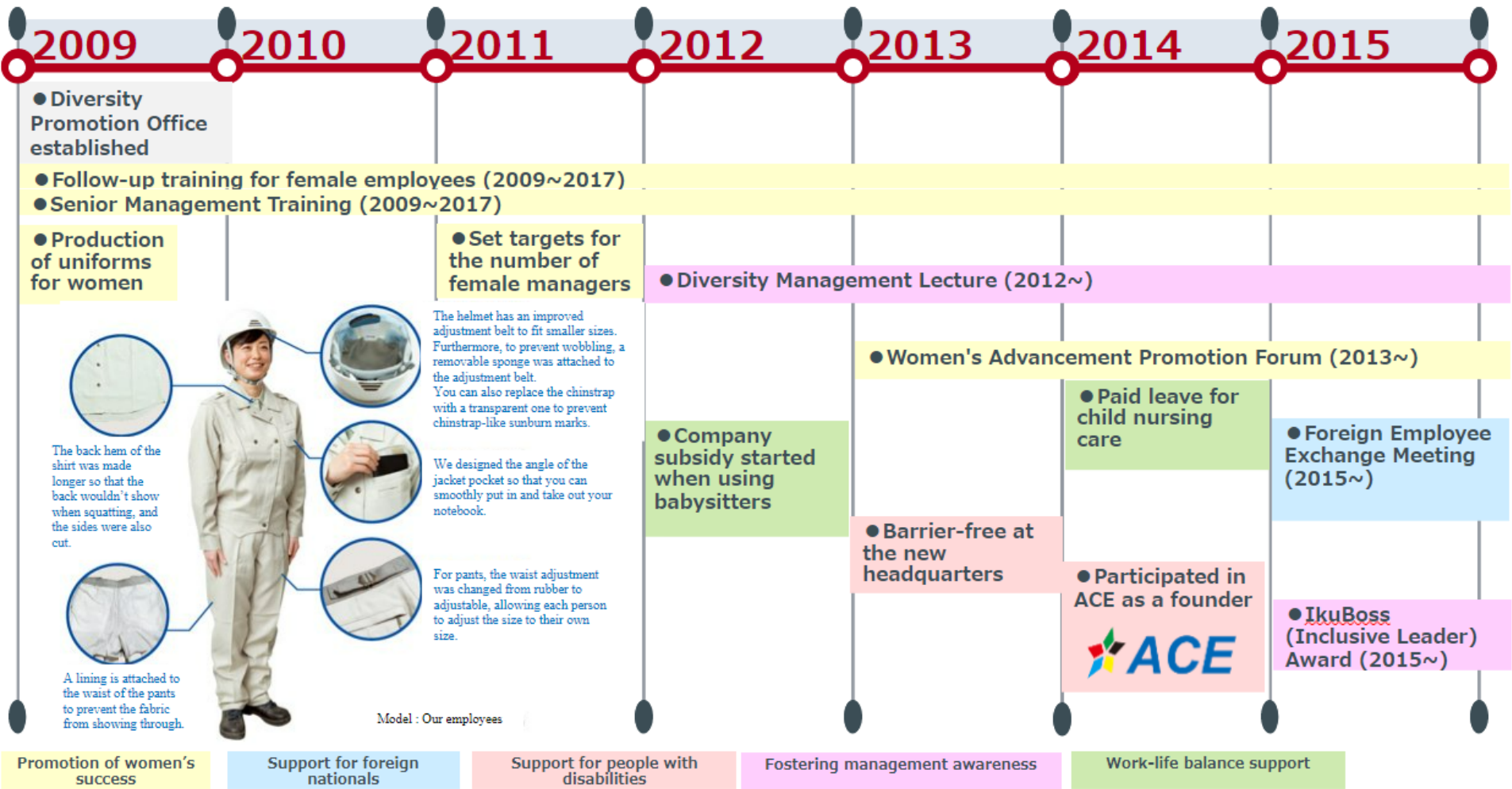
## DE&I Initiatives (Diversity, Equity & Inclusion)

Maho Nishioka,  
General Manager, DE&I Promotion Dept.,  
Corporate Planning Div.



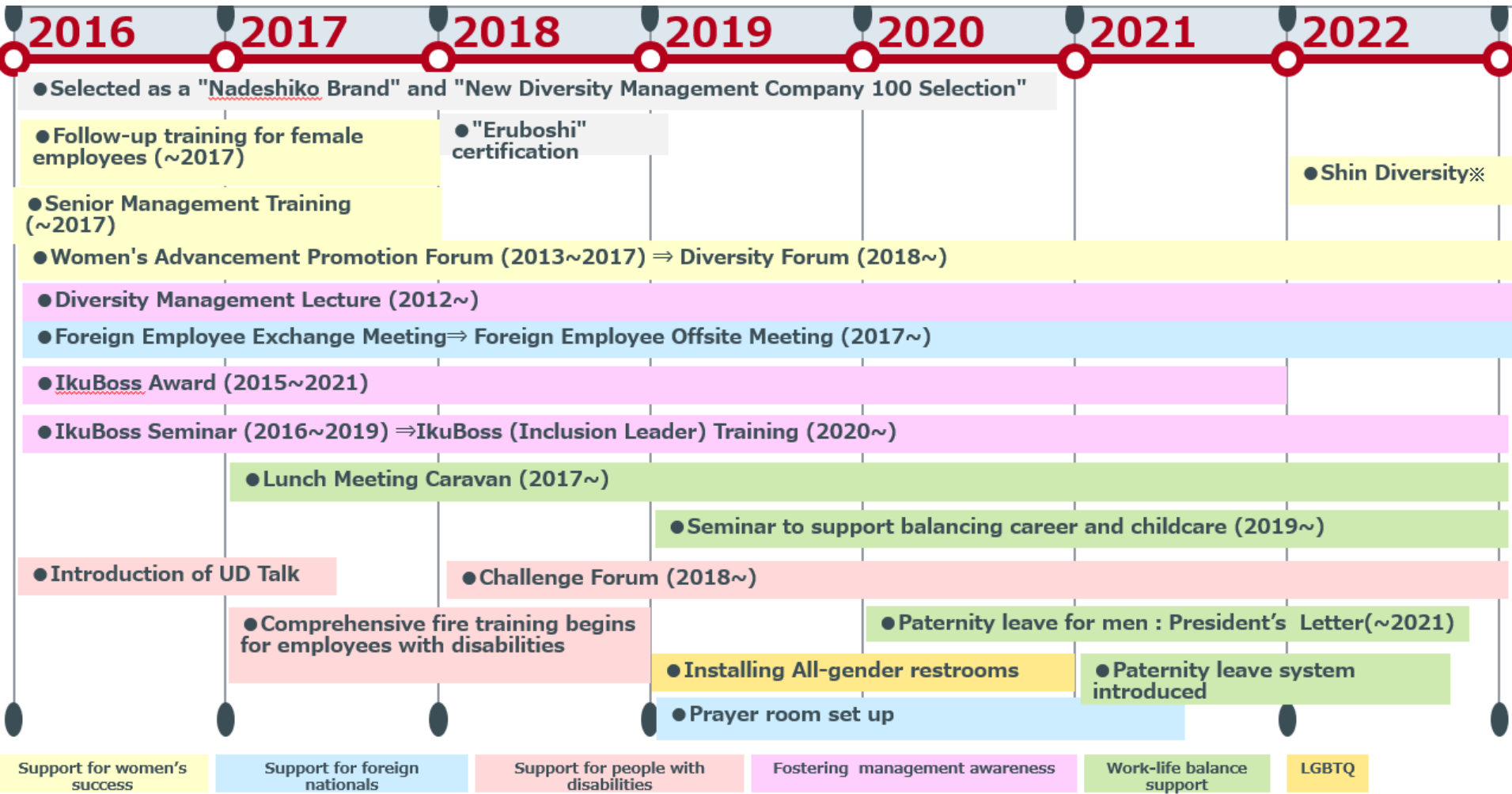
# Historical Changes in DE&I Promotion Department

- In April 2009, from the perspective of securing excellent human resources and CSR management, we established Diversity Promotion Office within the Human Resources Department.





# Historical Changes in DE&I Promotion Department



※ : We have named the actions taken to address the longstanding yet contemporary challenge of promoting women's advancement.

# Establishment of DE&I Promotion Department

- April 2009: From the perspective of securing excellent human resources and CSR management  
Established Diversity Promotion Office within Human Resources Department
- During that time, the concept evolved from Diversity to D&I (diversity and inclusion).
- In April 2023, as DE&I (diversity, equity and inclusion), which adds an equity perspective to D&I, was positioned as a new management strategy, it was transferred to the Corporate Planning Office. The mission is to further promote and develop Shimizu Group's DE&I strategies and measures.

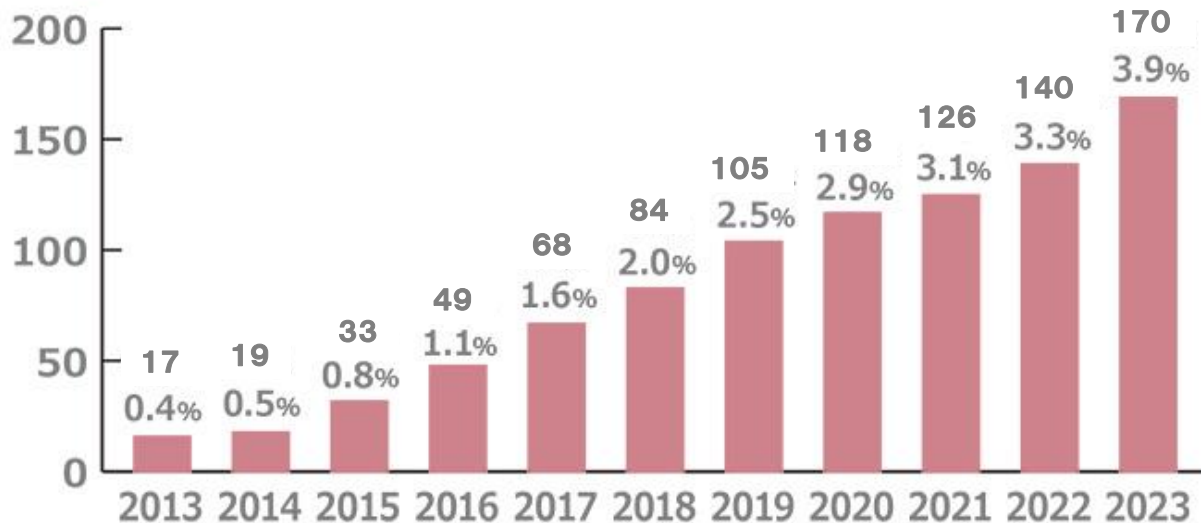
# Formulation of KPI for Promoting Women to Managers

As of April 1 , 2023

Number of employees	11,212	(non-consolidated)
Number of female employees	1,981	(17.7 %)
Number of female managers	170	( 3.9 %)



## Trend in female managerial positions



# Formulation of KPI for Promoting Women to Managers

- Since 2011, we have set targets for the number of female managers as KPI and promoted women to managerial positions
- The "50% increase from 2018 (84 employees) by 2023" formulated in 2019 was achieved in FY2021
- The goals we set for 2022 are based on the backcasting mindset, not the number of people, but the ratio.

**The target for the number of female managers is above 5% by 2025 and above 10% by 2030.**

# Shin Diversity Activities

- Develop "Shin Diversity Activities" on the theme of closing the gender gap from 2022 (13 branches and divisions nationwide in FY2022)
- Through messages from top management, lectures from female outside officers, and group discussions, the aim is to raise the awareness of participants and build a pipeline of female managers
- The target was "female employees before managerial positions" and "male managers who decide evaluations"
- Aiming to produce female leaders in all departments



# Shin Diversity Activities

Female Employee ;

I was very pleased to have the opportunity to talk with Chairman Miyamoto at close range. It was very stimulating with the perspectives and advice unique to top management.

Manager ;

It was a good opportunity to listen to the opinions of various female managers and understand the differences in values.

Female Employee ;

I was able to have a positive mindset. I was more motivated to meet expectations.

Manager ;

Understood that it is necessary to think not only about women, but also about men's work styles.

Female Employee ;

I was reminded that I still have an unconscious bias in myself.

# Family Day

This program has been ongoing since 2009 with the aim of giving employees' families a chance to "deepen their understanding of our company's business and work content," as well as giving employees an opportunity to "reacquaint themselves with family ties."

Situation of Family Day

<https://www.youtube.com/watch?v=vgiZu0ZTzeU>

# Presentation 6

## **SDGs Activities in our Grobal Business** **Asahan 3rd Hydroelectric Power Plant** **Construction(Lot1) in Republic of Indonesia**

Kazuya Osako,  
Managing Officer

Director, International Civil Engineering Div.,  
Global Business Headquarters

Kouji Fujie,  
Deputy Branch Director of International Civil  
Engineering Div., Global Business Headquarters





# Project Overview

- Construction Name Asahan No. 3 Hydroelectric Power Plant Construction (Lot I), Republic of Indonesia
- Employer Indonesian State-owned Electricity Company (PLN)
- Designer Nippon Koei
- Order form Shimizu Corporation and Adikarya JV (ratio 70:30)
- Site North Sumatra, Republic of Indonesia
- Source Of Funding General Yen Loan by Japan International Cooperation Agency (JICA)
- Construction Period 48 months + 9 months extension (completion in December ,2023)

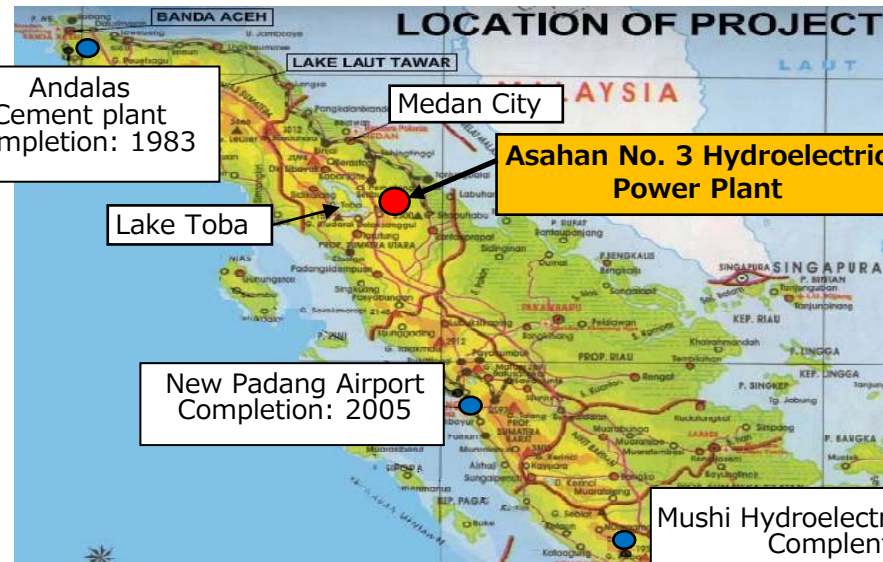
# Project Overview

- Outline Of Construction    Underground hydroelectric power plant (power generation capacity : 174MW) civil engineering and building work  
Underground power plant: height 39m, length 107m, width 22m  
Intake weir: 6.6m high, 55m wide (concrete gravity type)  
Conduit tunnel: Finished diameter 6.6m, extension 7,793m (concrete lining)  
Access road: 5,788m new etc.
- Feature    Civil engineering and building work of underground hydroelectric power plants (from intake weir to water outlet)  
Clearing roads in the jungle and building underground power plants  
Total length of tunnel 11km, concrete pouring capacity 350,000 m<sup>3</sup>

# Location Map (1)

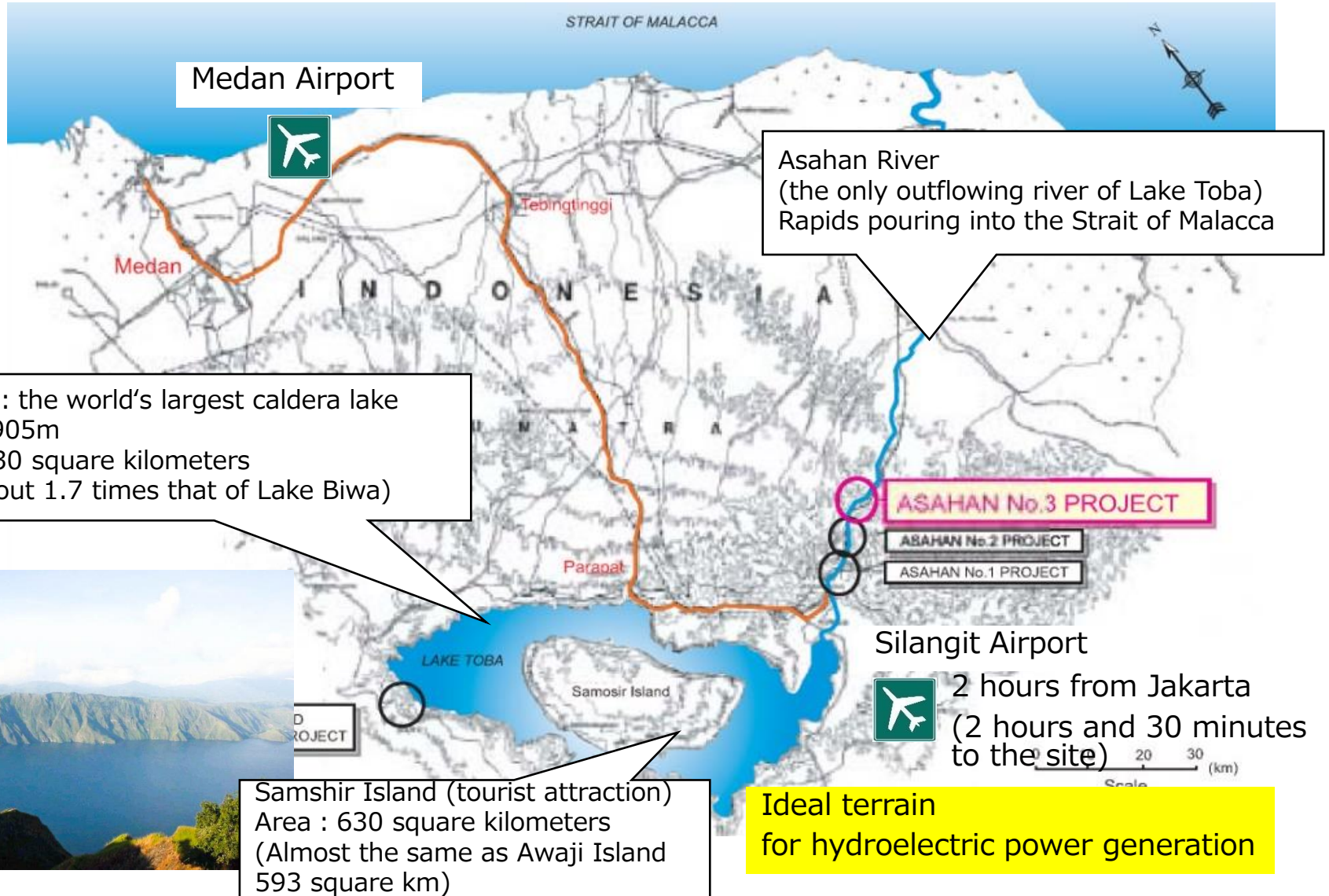


Northern Sumatra  
(North Sumatra)

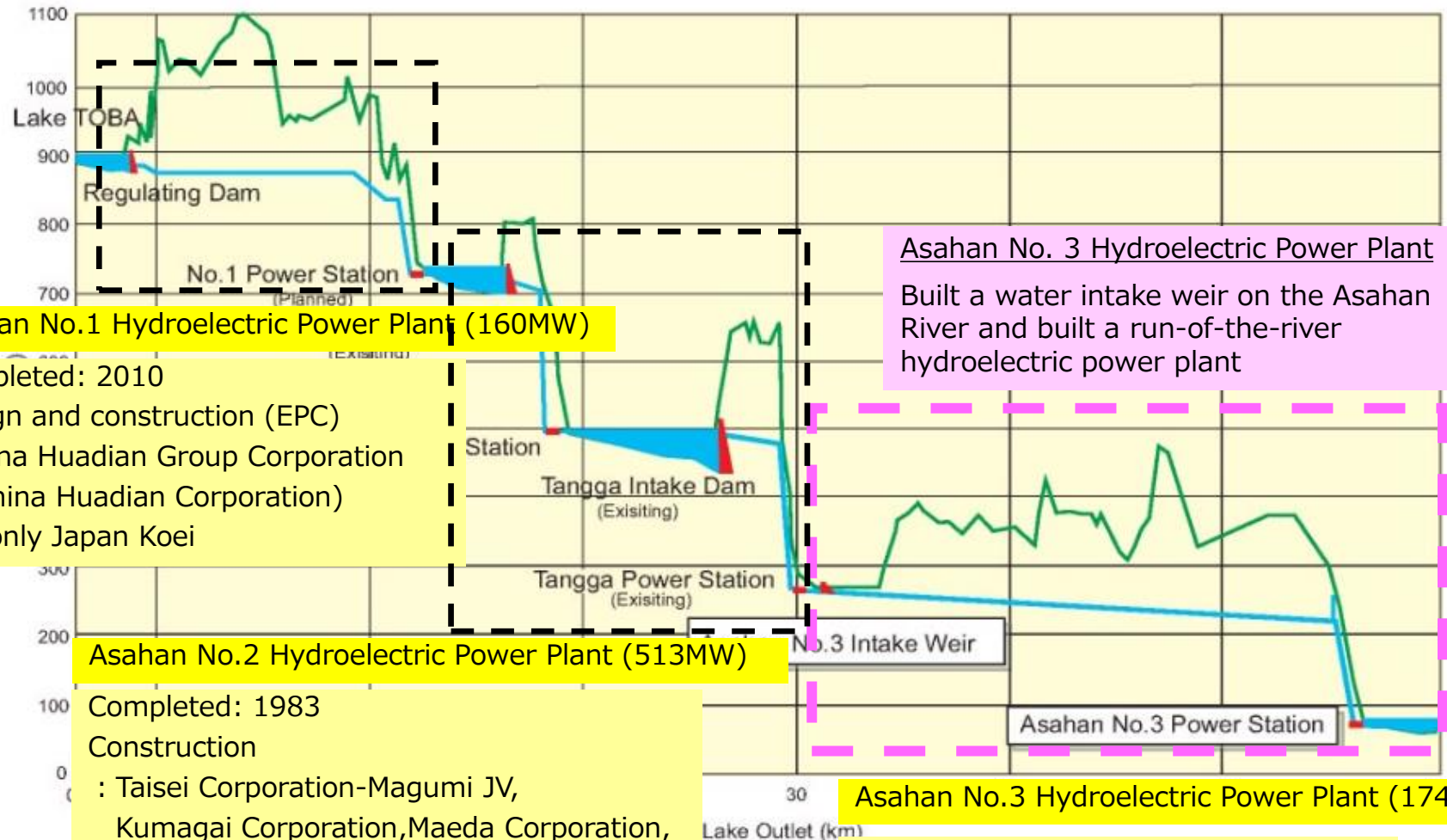


# Location Map (2)

2 hours 15 minutes from Jakarta (5 hours to the site)



# Location Map (3)



**Asahan No.1 Hydroelectric Power Plant (160MW)**

Completed: 2010  
 Design and construction (EPC)  
 : China Huadian Group Corporation  
 (China Huadian Corporation)  
 F/S only Japan Koei

**Asahan No.2 Hydroelectric Power Plant (513MW)**

Completed: 1983  
 Construction  
 : Taisei Corporation-Magumi JV,  
 Kumagai Corporation, Maeda Corporation,  
 Kajima Corporation,  
 Tobishima Construction  
 Design : Japan Koei, TEPCO Design

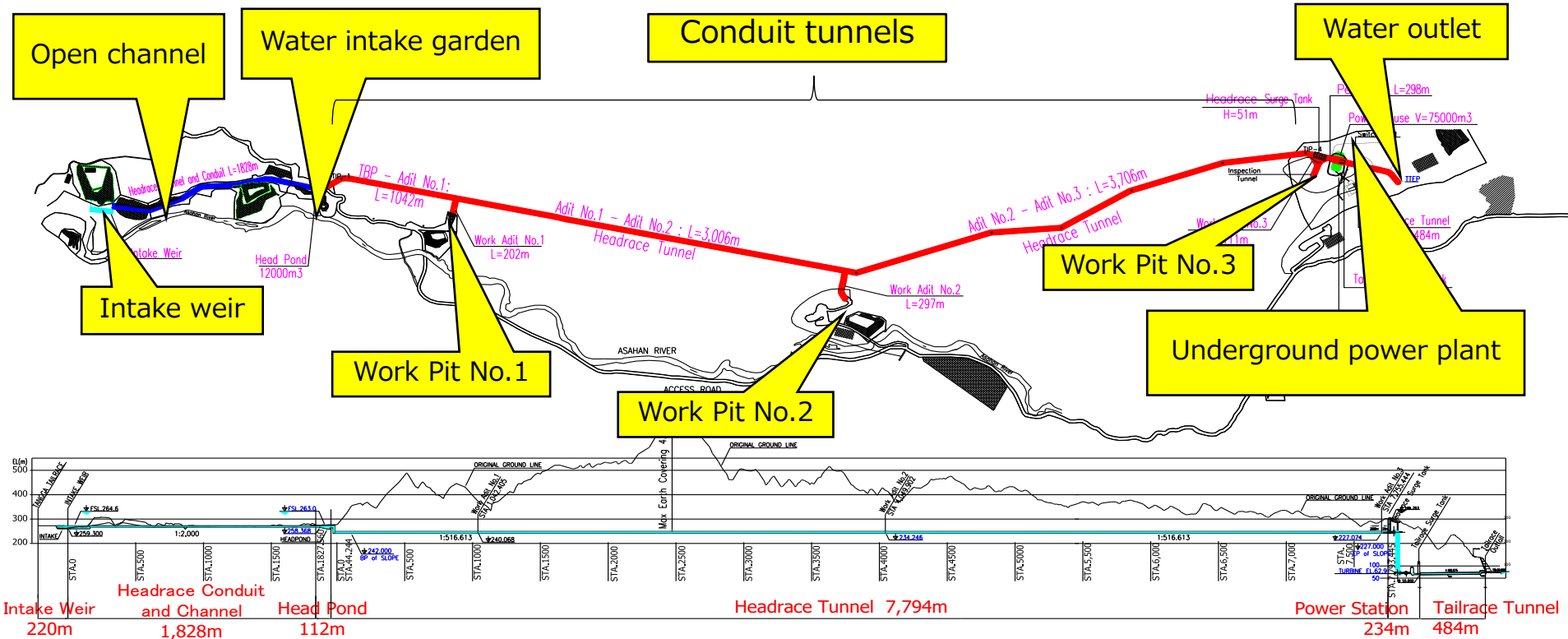
**Asahan No. 3 Hydroelectric Power Plant**  
 Built a water intake weir on the Asahan River and built a run-of-the-river hydroelectric power plant

**Asahan No.3 Hydroelectric Power Plant (174MW)**

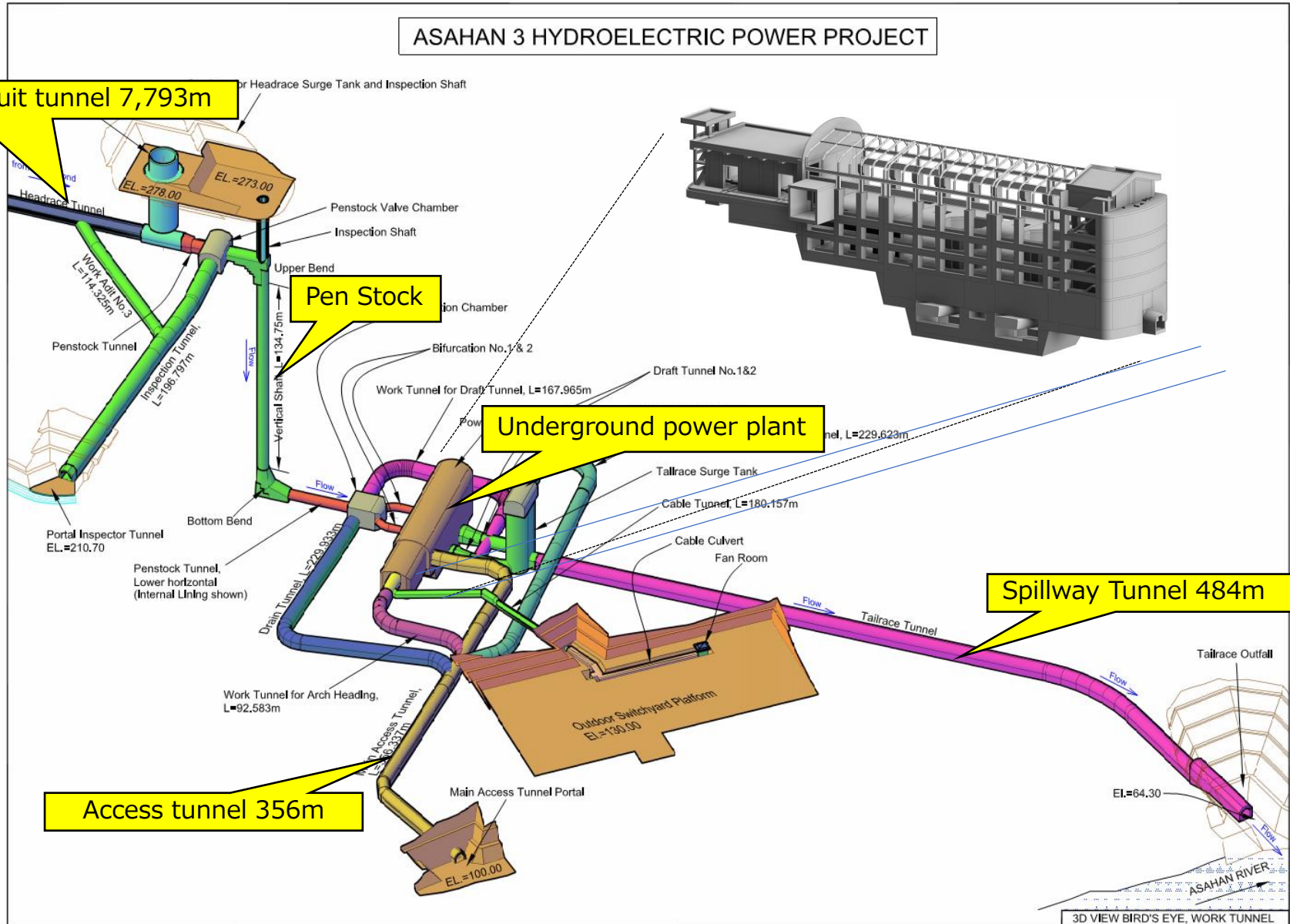
Completion: 2023  
 Construction : Shimizu Corporation,  
 Adhi Karya JO  
 Design : Japan Koei

# Plan View

**Total tunnel length: 10,911m**



# Aerial view (around the underground power plant)



# Overseas Civil Engineering of Shimizu.

Vietnam  
Ho Chi Minh Subway



Vietnam  
Binh Chanh Bridge



Côte d'Ivoire  
Abidjan 3 intersection



Ghana  
National Highway 8 line Refurbishment



Uganda  
Kampala Intersection Improvement



Philippines  
Pasig-Marikina River Refurbishment Phase4



Philippines  
LRT 1 line vehicle depot



Philippines  
Manila Subway CP101



At 2023.6

Philippines  
Davao Bypass



Singapore  
Exon Refinery Crisp Phase2

Singapore  
Mitsui Chemicals 6TF Plant

Indonesia  
Asahan 3rd Hydroelectric Power Plant



Indonesia  
Jakarta Subway CP202



Indonesia  
Jakarta Subway CP201

