ESG THROUGH NUMBERS

ESG 2021 at a glance, looking ahead to 2030



TRANSFORM NEXT 2023

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Despite the continuing uncertain conditions due to the pandemic, which still affected our plants and people, 2021 saw a good recovery in the markets and important changes especially from a Sustainability perspective.

With this **preliminary** and concise **ESG Report** albeit based on the **GRI international standard**, Tsubaki Nakashima wants to both illustrate the decisions taken in 2021 that will have a fundamental and decisive impact on the company in the years to come, the organizational structures and resources deployed, the main results achieved in the year **2021** and the targets both in the long term and referring to the year **2022**.

This preliminary Report, as well as the official ESG Report which will be publish in the next few months, embodies our aim to continue growing as an environmentally responsible and ethically sourced business, therefore reaffirming our commitment to transparency, sustainability and good governance, particularly in matters of sustainable and profitable growth, attention to our Stakeholders, and the **Vision Zero's Approach** (Zero accidents, Zero occupational illnesses, Zero wastes, Zero inequalities, Zero lack of knowledge).

The report addresses items of significant importance to Tsubaki-Nakashima's business strategy and the narrative describes our efforts to contribute to the United Nation's Sustainable Development Goals (**SDGs**).



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Our History

Founded in 1934 by Kosaburo Chikamori, Toyo Steel Ball Seisakusho started manufacturing steel balls for bicycles. In 1954 the Company changed name to Tsubakimoto Steel Ball Manufacturing Co., Ltd. and in 1958 began mass production of nylon, stainless, brass, and other special balls such as tungsten carbide balls.
In 1961 the Company was listed on the second section of both the Tokyo and Osaka Stock Exchanges.
In 1973 it started manufacturing and sale of ceramic balls.





More recently, in 1996 the Company has been merged with Nakashima Seisakusho Co., Ltd., and finally Tsubaki Nakashima Co., Ltd. was established, starting a long process of acquisitions (USA, India, China, Poland, Taiwan, UK, Thailand which ended in 2017 with the acquisition of Precision Bearing Components, Group of NN Inc.

Tsubaki Nakashima at a glance

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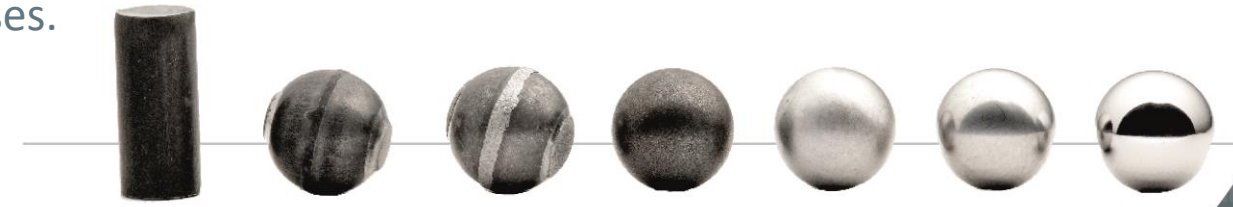
Our Company, our Products

We are a specialized manufacturer of **precision balls and rollers as well ball screws and other mechanical parts**, headquartered in Nara, Japan.
In addition to Japan, we manufacture in the United States, Italy, Poland, Slovakia, The Netherlands, Bosnia, United Kingdom, China, Thailand, India and Taiwan.
The industry's most well-established production network enables us to respond to various customer needs, local procurement, quick delivery, and superior customer support.

We produce a broad range of **high-quality precision balls**, rollers and ball screws with more than 20,000 product types. Utilizing various materials including **ceramics and steels**, in a range of sizes to meet our customers' specific requirements. We have been a pioneer in the mass production of ceramic balls utilizing our manufacturing know-how and process technology in various areas. Our development capabilities and industry-leading product line-up allow us to fulfill a variety of needs from global customers, which enables us to support new demands from a variety of end-market products and uses.



Tsubaki Nakashima at a glance

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20 Plants, 3500 employees, 31 different nationalities

The corporate structure of the company is made up of a high-level company organized by a Board of Directors made up of 7 members and by a Management Committee (made up of 6 members). Tsubaki Nakashima's mid-term plan bears two important words, "Transform Next," signifying the company's commitment to a continuous process of sustainable transformation and rationalization.

- Accelerating the growth, strengthening the earning power of our Regions and Global Ceramic Business under the guidance of a single Leader, the Chief Growth Officer who leads 5 Regions and/or Businesses
- Transforming the Company in a sustainable way, executing our strategic projects, reforming our business with the support of our Monozukuri Team with 5 Operational Functions (sustainable development, engineering, purchasing, quality, plant management and continuous improvement), under the guidance of one visionary Leader, the Chief Transformation Officer
- Developing and streamlining of Planning & Promotion Structure for Management Control M&A, under the guidance of the Chief Financial Officer, who will work with the Chief Human Resources Officer to drive sustainable strategies.

NO MAN IS AN ISLAND

OUR VISION

ACHIEVE
PROFITABLE AND
SUSTAINABLE GROWTH
WITH AN UNWAVERING COMMITMENT
TO **IMPROVEMENT**, **PRODUCT EXCELLENCE**
AND CREATING
SHAREHOLDER VALUE
WITH AN INCREASING DEDICATION TO
SUSTAINABILITY
WITHIN ITS LEADERSHIP, OPERATIONS,
EMPLOYEES
AND INVESTMENTS.



VISION ZERO
Safety.Health.Wellbeing.

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OUR MISSION

BUILDING THE
TRUST OF OUR
STAKEHOLDERS
GROWING AND THRIVING
WITHIN OUR
COMMUNITIES
AND HELPING TO
CREATE
A MORE SUSTAINABLE
WORLD

VISION ZERO
Safety.Health.Wellbeing.

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PROFIT
SOCIAL
ENVIRONMENT
DEVELOPMENT



OUR POLICY

TSUBAKI NAKASHIMA WILL CONTINUE TO IMPROVE ITS OWN INTEGRATED CORPORATE GOVERNANCE SYSTEM, ORGANIZATION, PROCESSES, PRODUCTS, AND SERVICES AIMING TO CONTINUE TO GROW AS AN ENVIRONMENTALLY RESPONSIBLE AND ETHICALLY AWAREBUSINESS. THE COMPANY THEREFORE REAFFIRMS ITS COMMITMENT TO TRANSPARENCY AND GOOD GOVERNANCE, PARTICULARLY IN MATTERS OF SUSTAINABLE AND PROFITABLE GROWTH, ATTENTION TO OUR STAKEHOLDERS, AND THE COMPANY'S VISION ZERO'S APPROACH (ZERO ACCIDENTS, ZERO OCCUPATIONAL ILLNESSES, ZERO WASTES, ZERO INEQUALITIES, ZERO LACK OF KNOWLEDGE). TSUBAKI NAKASHIMA VISION IS TO MAINTAIN AND IMPROVE ITS POSITION AS A LEADING MANUFACTURER OF HIGH-QUALITY, HIGH-PRECISION COMPONENTS THROUGH SUSTAINABLE, CONTROLLED, AND PARTICIPATORYPROCESSES, WITH A HIGH FOCUS TO THE CUSTOMERS AND ALL STAKEHOLDERS NEEDS AND TO GLOBALLY PREVENT ALL NEGATIVE IMPLICATIONS. THE IDENTIFICATION OF THE EXPECTATIONS OF THE STAKEHOLDERS, THE ANALYSIS OF THE REQUIREMENTS AND NEEDS, THE DEFINITION OF ATTAINABLE CHALLENGING AND MEASURABLE OBJECTIVES, THE DEFINITIONOF CLEAR TIMEFRAMES AND RESOURCES MUST GUIDE THE COMPANY TOWARDS CONTINUOUS AND SUSTAINABLE IMPROVEMENT (PEOPLE, PLANET AND PROSPERITY), INTEGRATING THE SYSTEMS IN USE AND ALIGNING THE INTEGRATED CORPORATE GOVERNANCE SYSTEM WITH INTERNATIONALLY RECOGNIZED STANDARDS TO HELP ENSURE THAT TSUBAKI NAKASHIMA SERVES THE ROLE THAT SOCIETY EXPECTS. IN PARTICULAR, THE COMPANY IS COMMITTED TO PROVIDING SAFE AND HEALTHY WORKING CONDITIONS, RESPECTING THE ENVIRONMENT, AND RESPONSIBLY USING THE AVAILABLE NATURAL RESOURCES, IN FULL COMPLIANCE WITH THE STATUTORY, REGULATORY, ORGANIZATIONAL AND CUSTOMER REQUIREMENTS, ASSESSING RISKS TO THE PRODUCTS, SERVICES, ENVIRONMENT AND TO ITS EMPLOYEES, SETTING TARGETS AND MEASURING THE PERFORMANCE, AND ENCOURAGING THE ACTIVE PARTICIPATON OF EMPLOYEES AND THEIR REPRESENTATIVES.

TSUBAKI NAKASHIMA

廣田浩治

[Koji Hirota • President and CEO]

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We will Transform our Company on a continuous basis to make the best products in the world, in a Sustainable way

With our creativity we will provide our Customers with the highest QCDS (quality, cost, delivery, and service), drawing ideas from our Stakeholders

We will create a teamwork-oriented culture - One Team Spirit - convinced that the Value of our people is the is the sum of their Competences, Humility and Ability to achieve results, with positive Attitude

We aim to become a truly global Company with an international mindset, deeply transforming our organization to stay one step ahead of the curve

We aim to be a Company that continues to achieve sustainable and profitable Growth

WE



Management Principles

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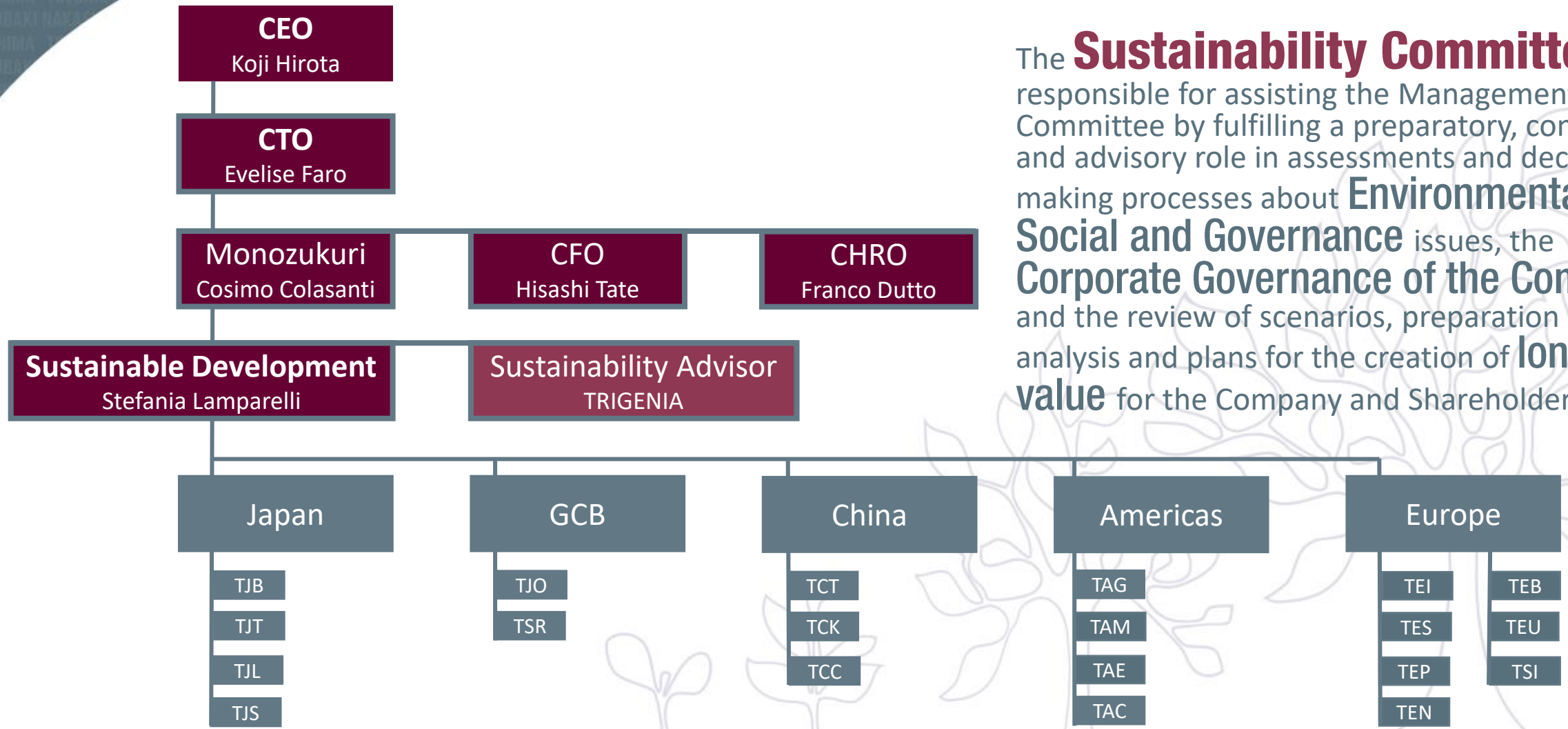
As Tsubaki Nakashima, we recognize our responsibility to address the environmental and social impacts of our business.

Our **Global Sustainability System** – a multisite integrated system based on ISO 14001, ISO 45001, and ISO 50001 - has been implemented in all our factories in the world. A responsible use of resources and energies, as well as tracking and reducing Green House Gas (GHG) emissions, will allow us to lessen our climate change impact and provide important opportunities to help drive momentum for global climate action.

The recently created **Sustainability Committee** is responsible for assisting the Management Committee by fulfilling a preparatory, consultative and advisory role in assessments and decision-making processes with regard to Environmental, Social and Governance issues, related to Tsubaki Nakashima business and its engagement with all stakeholders, the Corporate Governance of the Company, and the review of scenarios envisaged in the preparation of the Medium Term and Business Plans, based also on the analysis of significant issues for the creation of long-term value.

Sustainability Committee



The **Sustainability Committee** is responsible for assisting the Management Committee by fulfilling a preparatory, consultative and advisory role in assessments and decision-making processes about **Environmental, Social and Governance** issues, the **Corporate Governance of the Company**, and the review of scenarios, preparation of analysis and plans for the creation of **long-term value** for the Company and Shareholders

Sustainability Committee

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The **Paris Agreement and the AGENDA 2030** of the United Nations aim to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels. As a result, several global goals have been set to fight climate change:

- **Global CO_2 emissions** need to be reduced by **45% by 2030** from 2010 levels (last official data available)
- **CARBON NEUTRALITY by 2050**: carbon neutrality is a state of net-zero CO_2 emissions. This can be achieved by balancing emissions of CO_2 with its removal.

TSUBAKI NAKASHIMA environmental sustainability goals are in line with global sustainability targets (Paris Agreement)

SUSTAINABLE DEVELOPMENT

TRANSFORM NEXT 2023

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Vision Zero

Zero Accidents, Zero Occupational Illnesses, Zero Wastes, Zero Inequalities, Zero Lack of Knowledge

Integrated Corporate Governance

Sustainable Development

- Institutional
- External
- Internal
- TN Academy

G Governance

M Monozukuri

C Communication

Sustainable Development

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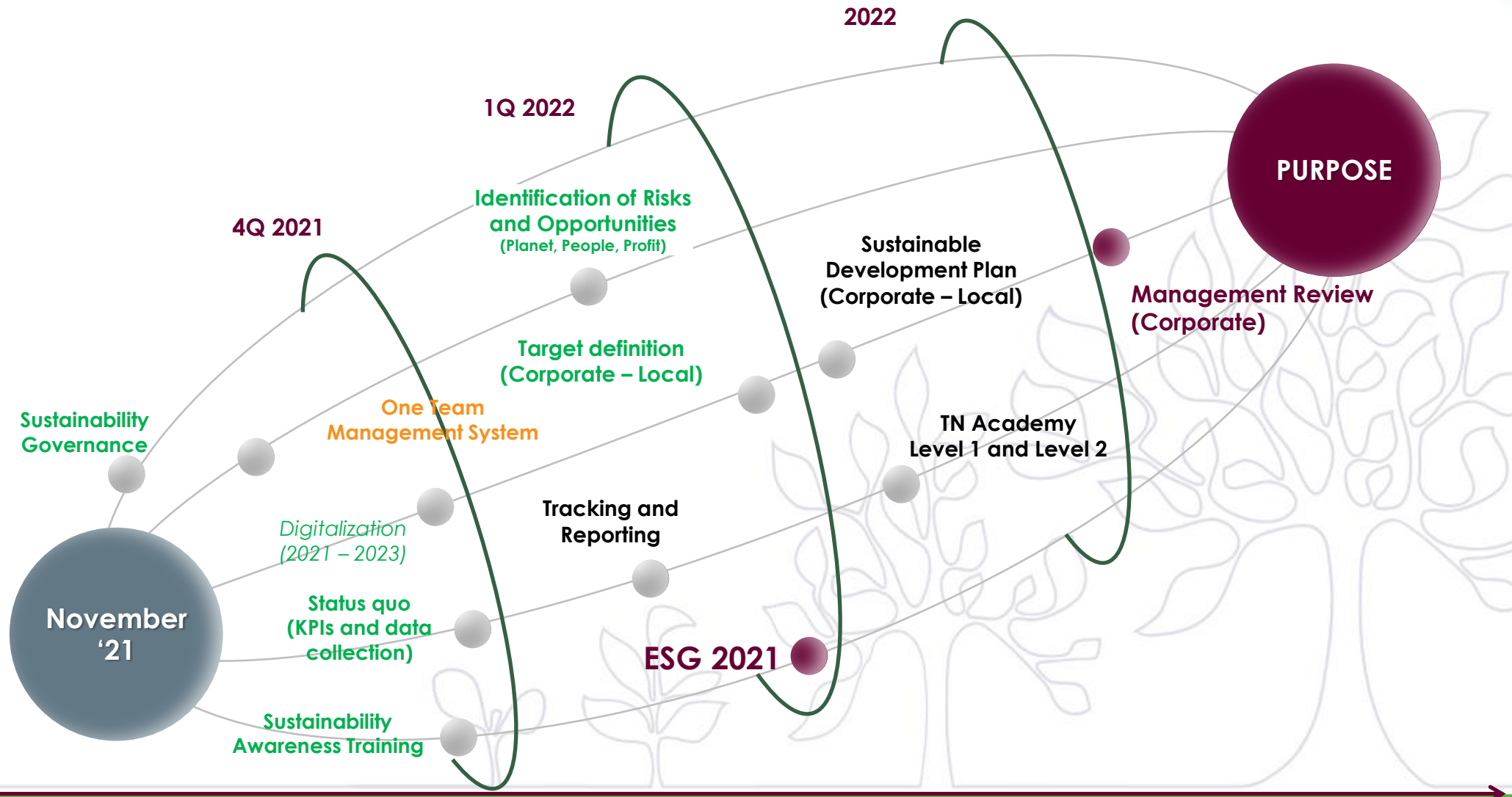

Sustainable Development Model

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Environmental state of art

- Carbon footprint
- Water footprint
- Other relevant environmental impacts
- Setting Environmental KPIs
- Benchmarking between plants

Environmental targets achieved

- Analysis of energy and environmental efficiency measures already carried out
- Calculation of savings/benefits obtained in terms of environmental impact
- Re-calculation of KPIs

Environmental targets to be achieved

- Calculation of multi-year environmental sustainability targets
- Calculation of GHG reduction goals with science-based targets
- Drawing up the environmental sustainability plan

Measures for environmental sustainability

- Analysis of the needed interventions aimed at reducing the carbon footprint
- Analysis of the interventions aimed at reducing the water footprint

ENVIRONMENTAL STATE OF ART → ENVIRONMENTAL TARGETS ACHIEVED → ENVIRONMENTAL TARGETS → MEASURES FOR ENVIRONMENTAL SUSTAINABILITY

SUSTAINABLE DEVELOPMENT - Monozukuri

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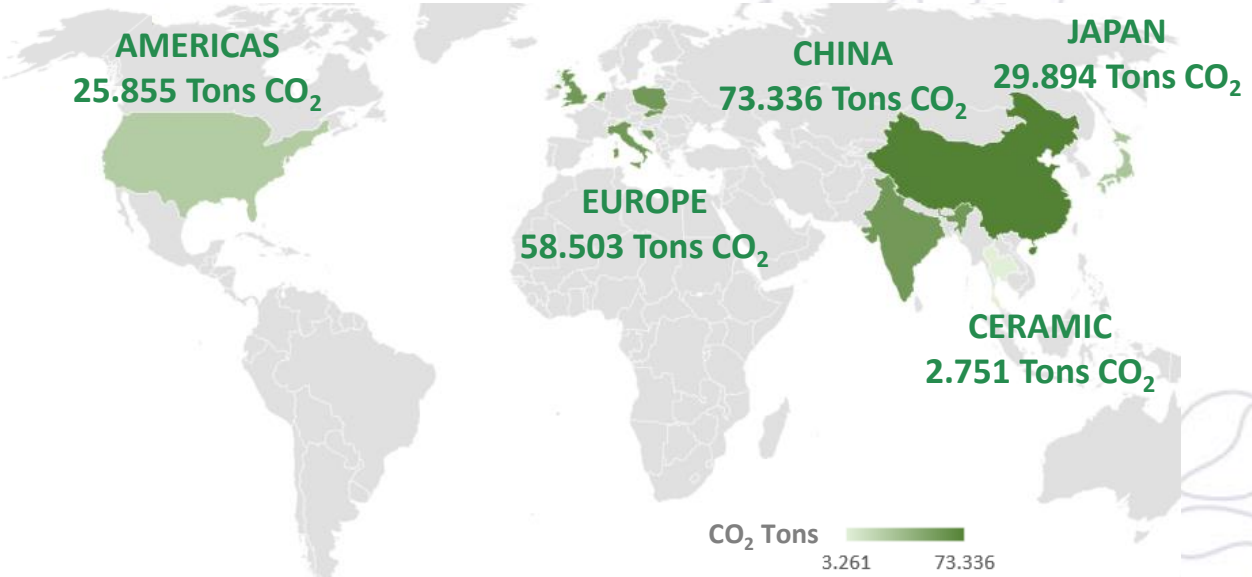
Quantity of CO_2 Tons (Scope 1 and Scope 2) produced per Ton of Product

Carbon Footprint Tons CO_2 / Ton Product	2019	2020	2021
JAPAN	2,2	2,5	2,3
EUROPE	1,4	1,6	1,4
CERAMIC	18,1	18,6	23,3
CHINA	2,3	2,3	2,3
AMERICAS	1,8	1,9	1,9
TSUBAKI NAKASHIMA	1,9	2,0	1,9

Total Quantity of CO_2 (Scope 1 and Scope 2) produced in 2021



TSUBAKI NAKASHIMA **190.849 Tons CO_2**

CO_2 EMISSIONS

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CO_2 (Scope 1 & Scope 2) emission reduction target to 2030 was identified using modeling proposed by **Science Based Target**

TN defines its goals in accordance with the targets provided by the **Paris Agreement and the UN AGENDA 2030**.

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
182.923 Tons CO_2	166.276 Tons CO_2	190.849 Tons CO_2	169.204 Tons CO_2	164.631 Tons CO_2	160.058 Tons CO_2	155.485 Tons CO_2	150.911 Tons CO_2	146.338 Tons CO_2	141.765 Tons CO_2	137.192 Tons CO_2	132.619 Tons CO_2

OUR TARGETS

-27.5% Tons CO_2 BY 2030 COMPARED TO 2019

CO_2 EMISSIONS TARGETS

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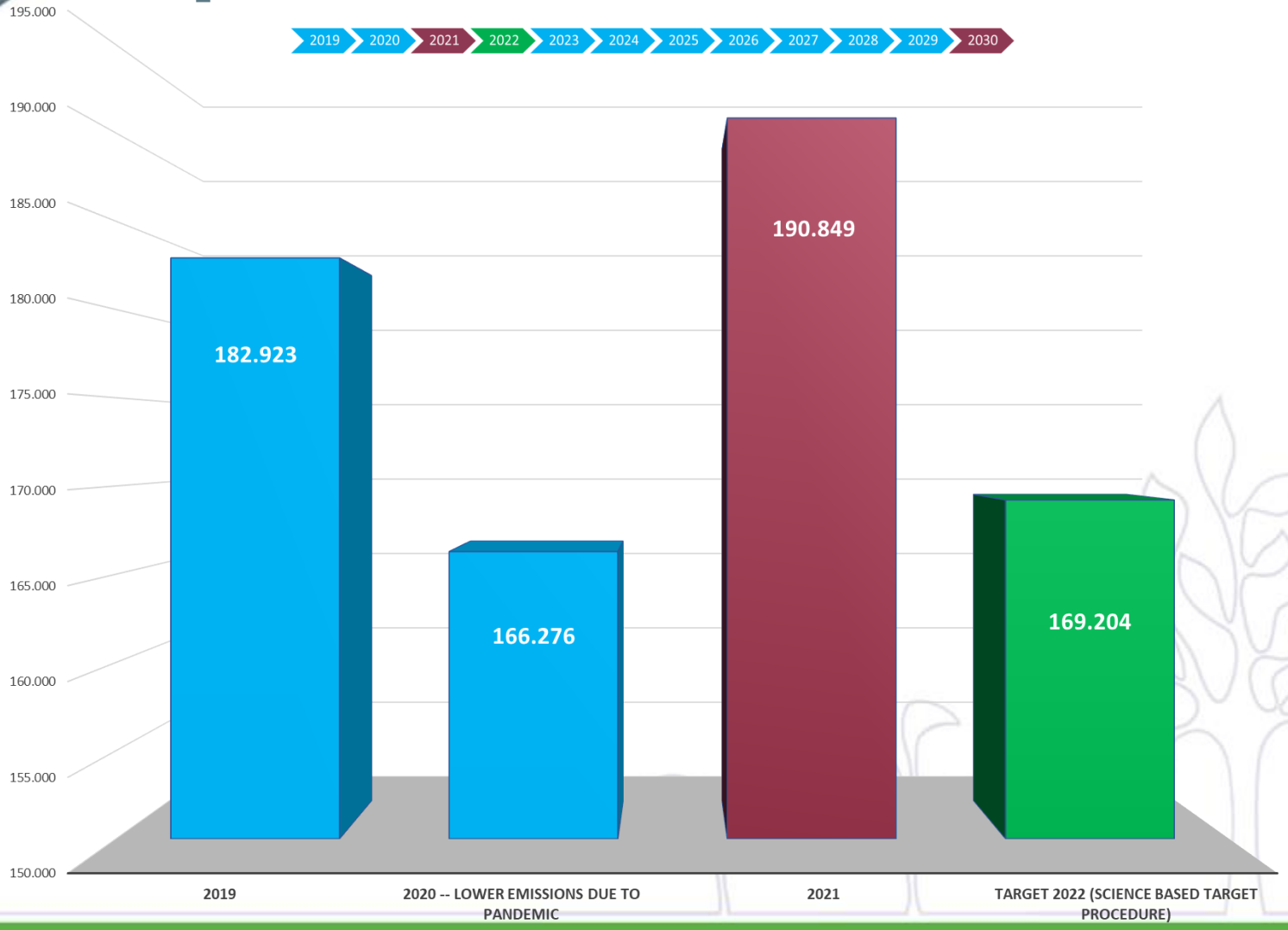
CO_2 Total Emissions – Scope 1 and Scope 2 – in Tons



CO2 emissions of Scope 1 and Scope 2 comes from the energy consumption:
Scope 1 emissions are about Fossil fuels combustion and Scope 2 emissions about electricity consumption.
In 2020 a drop in CO2 emissions is observed which is due to the pandemic from Covid and therefore less production.

TN is committed to reducing its emissions in 2022 from 190.849 tons CO2 to 169.204 tons CO2.

Effective action plans and project, continuous control and monitoring of CO2 emissions data will also avoid the "green washing" effect.

CO_2 EMISSIONS TARGETS

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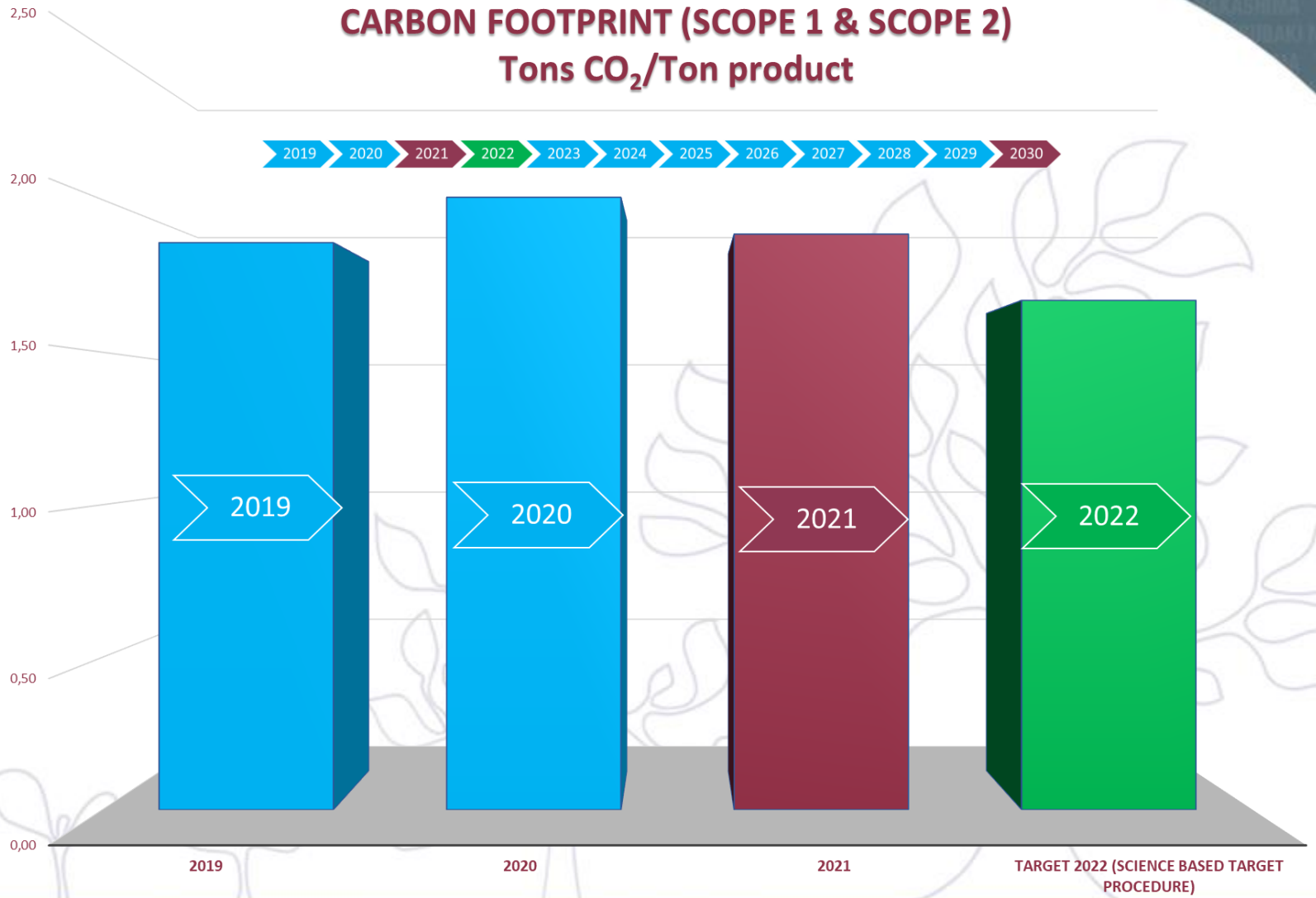
In addition to the target on total CO2 emissions, a **carbon footprint target** has also been set, which must therefore reflect the reduction in CO2. This parameter is an indicator of the "environmental" efficiency of the company (amount of CO2 emitted to produce one ton of product), and it's able to represent the **sustainable growth** of a company.



CO_2 EMISSIONS TARGETS

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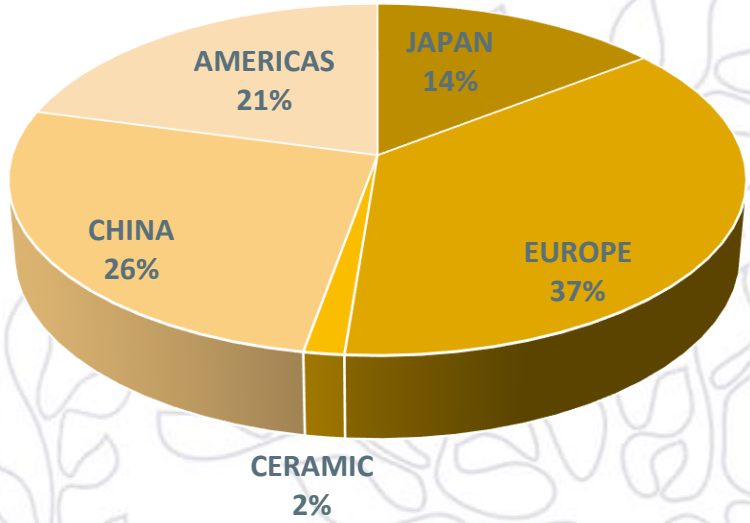
2021

Quantity of Energy consumed per Ton of Product

Energy Intensity MWh/ Ton Product	2019	2020	2021
JAPAN	3,1	3,5	3,1
EUROPE	2,5	2,7	2,5
CERAMIC	25,0	25,5	32,2
CHINA	2,3	2,2	2,2
AMERICAS	4,1	4,3	4,0
TSUBAKI NAKASHIMA	2,8	2,9	2,7

Energy consumption breakdown



TSUBAKI NAKASHIMA 276.309 MWh

% OF GREEN ENERGY = 26%

ENERGY

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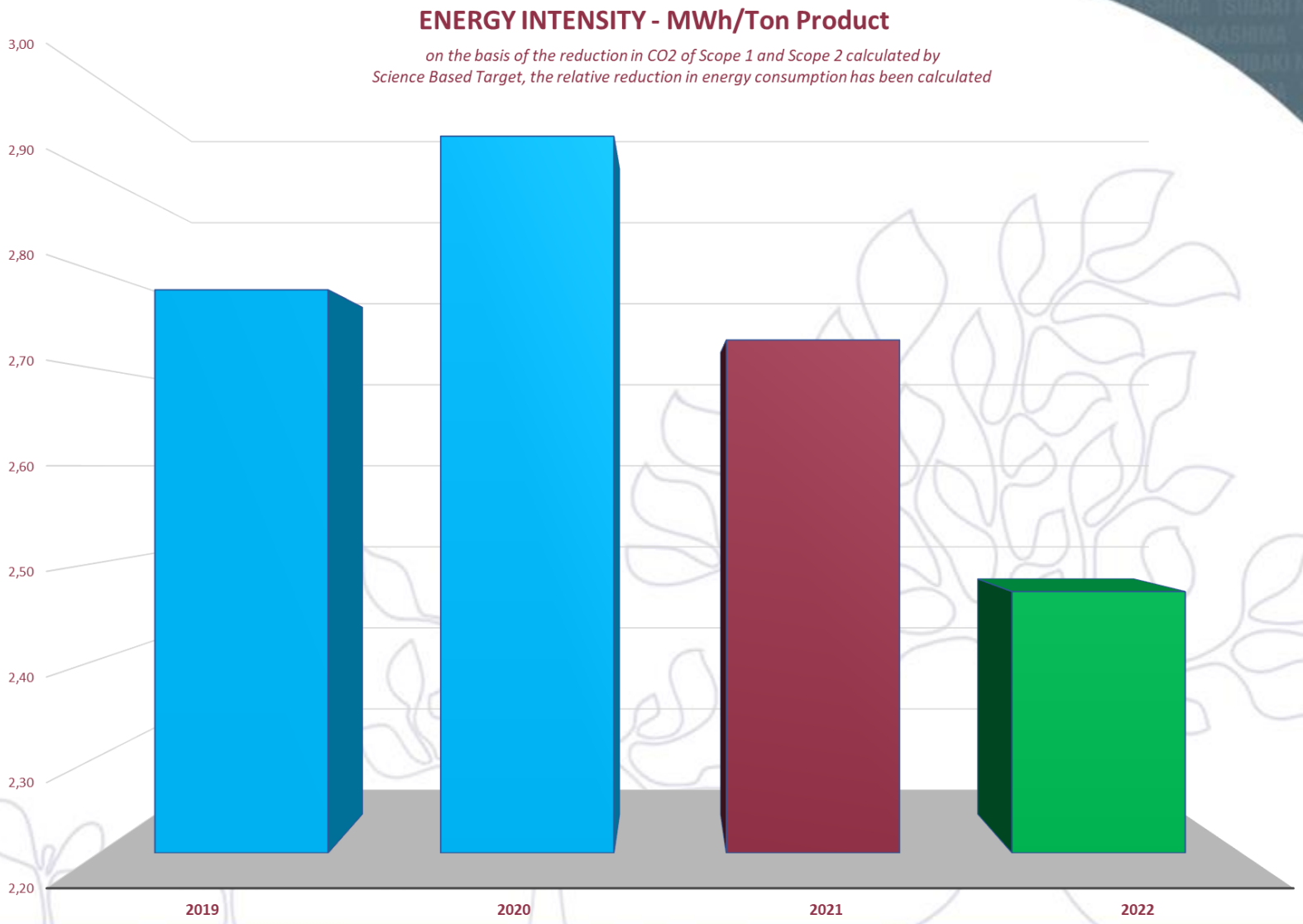
In order to achieve the CO2 reduction target, TN has also set itself **energy efficiency targets**.

TN has always focused on energy efficiency and reducing energy consumption, and this is evident from the trend in the graph.

Thanks to the actions carried out over the years, 2021 is the year with the lowest indicator or the most energy efficient year.

TN has set itself a challenging target in terms of reducing energy consumption by 2022 and, with a focus on sustainable growth, intends to achieve it through a set of key energy and technological innovation projects.



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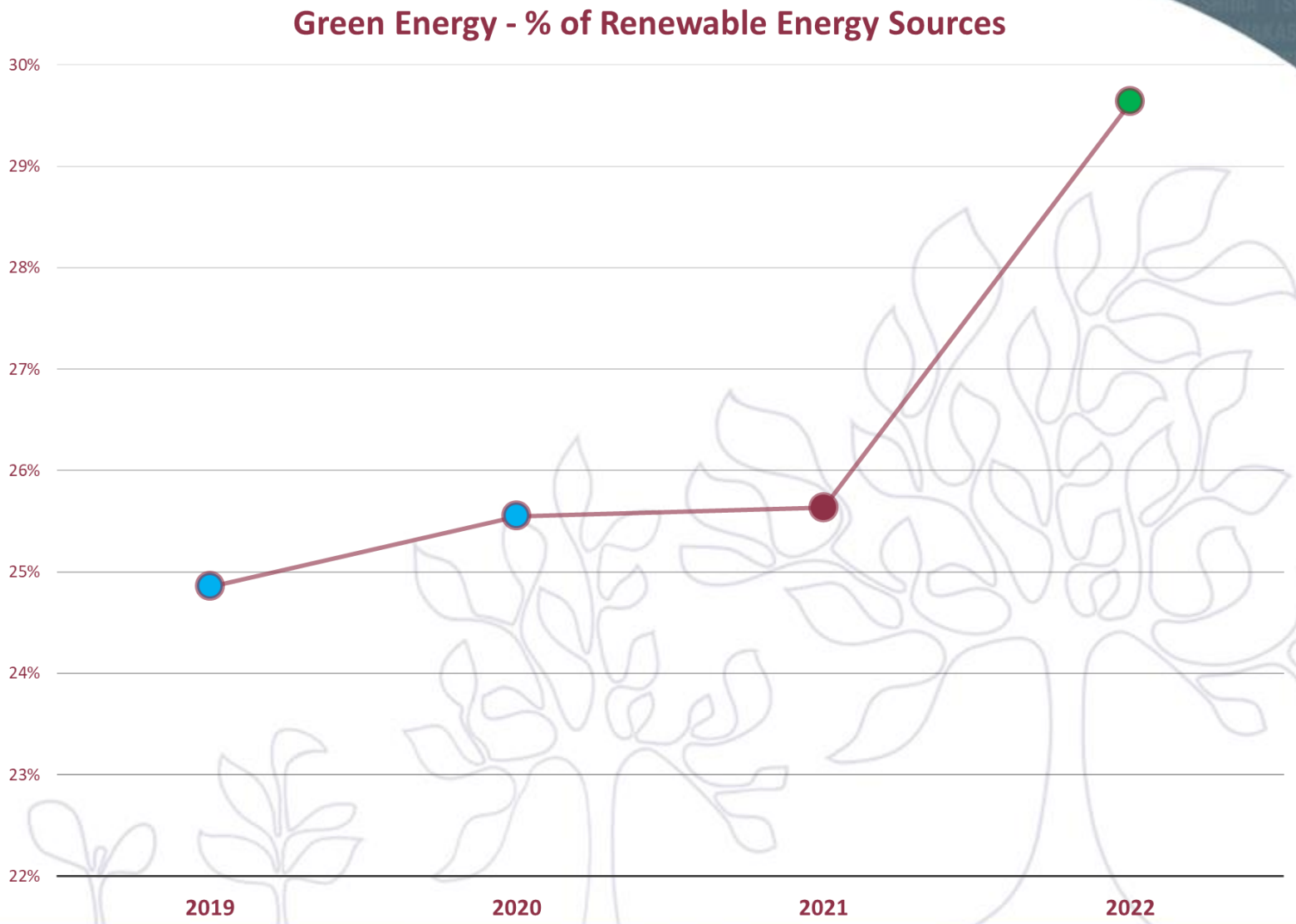
In addition to energy efficiency efforts TN will also engage in the **transition to renewable energy**

For this reason, one of the key targets in the coming years is to **increase the percentage of renewable energy consumed**



ENERGY

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Solar energy

Relamping with LED lamps

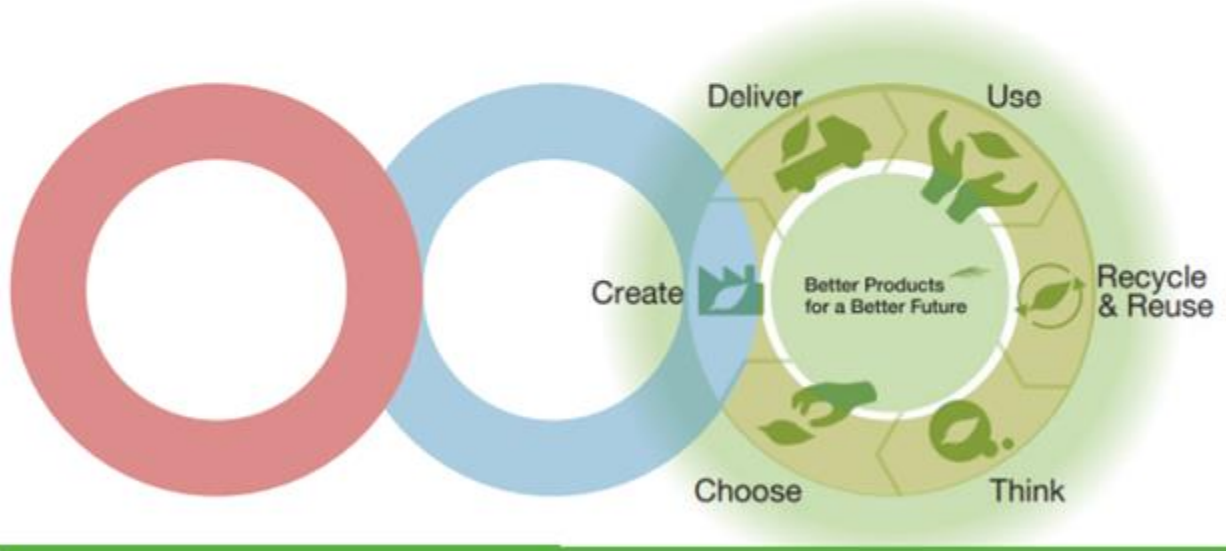
Heat treatment maintenance and optimization

Engine power reduction

Compressor maintenance and optimizazion

IoT (Internet of Things) device Sensors and automatic controls

Predictive maintenance



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MONOZUKURI PROJECTS
included in BP2022 (10,2% of the projects are related to sustainability) will generate
9.250 TON CO_2 REDUCTION

HOW TO REACH 2022 CO_2 REDUCTION GOAL

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HEAT TREATMENT Insulation

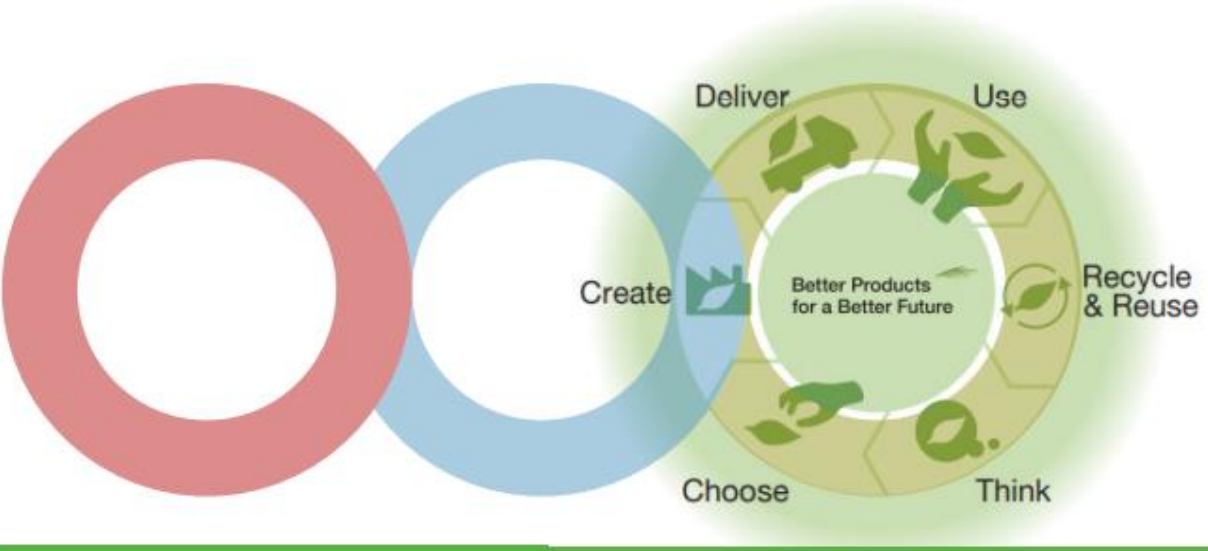
FLASHING Electric motors optimization

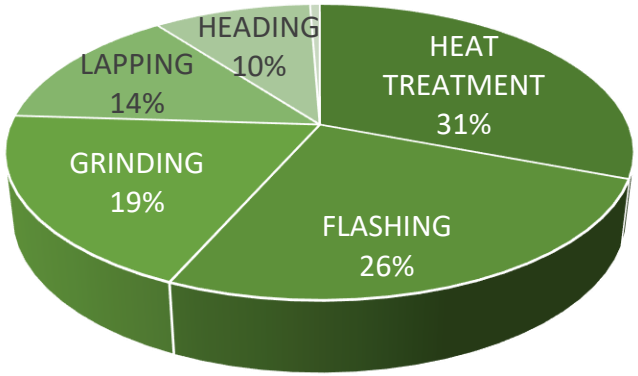
GRINDING Pressure and electric motors optimization

LAPPING Time cycle optimization

HEADING Production optimization

2030 TARGET





ENERGY BALANCE

HOW TO REACH 2022 CO_2 REDUCTION GOAL

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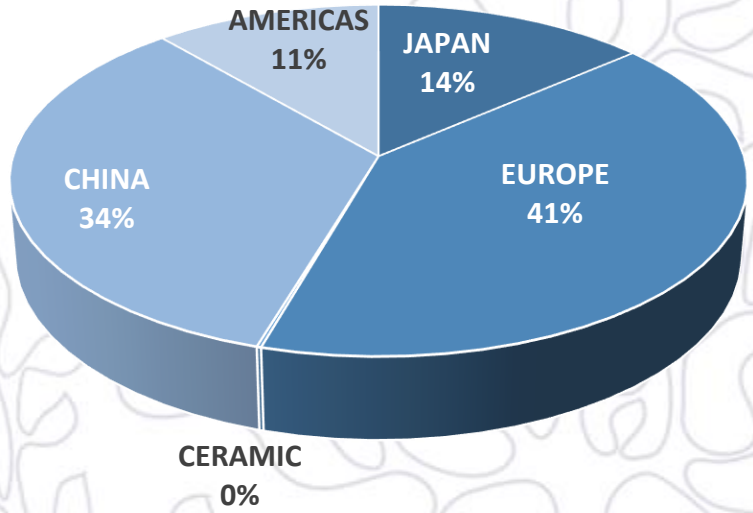
2021

Quantity of Water consumed per Ton of Product

Water footprint m^3/ Ton Product	2019	2020	2021
JAPAN	3,0	4,0	3,3
EUROPE	2,5	2,9	3,1
CERAMIC	3,3	3,0	3,8
CHINA	3,4	3,2	3,3
AMERICAS	2,9	2,7	2,6
TSUBAKI NAKASHIMA	2,9	3,1	3,1

Water consumption breakdown



TSUBAKI NAKASHIMA 317.226 m^3

% DISCHARGED WATER = 46%

WATER

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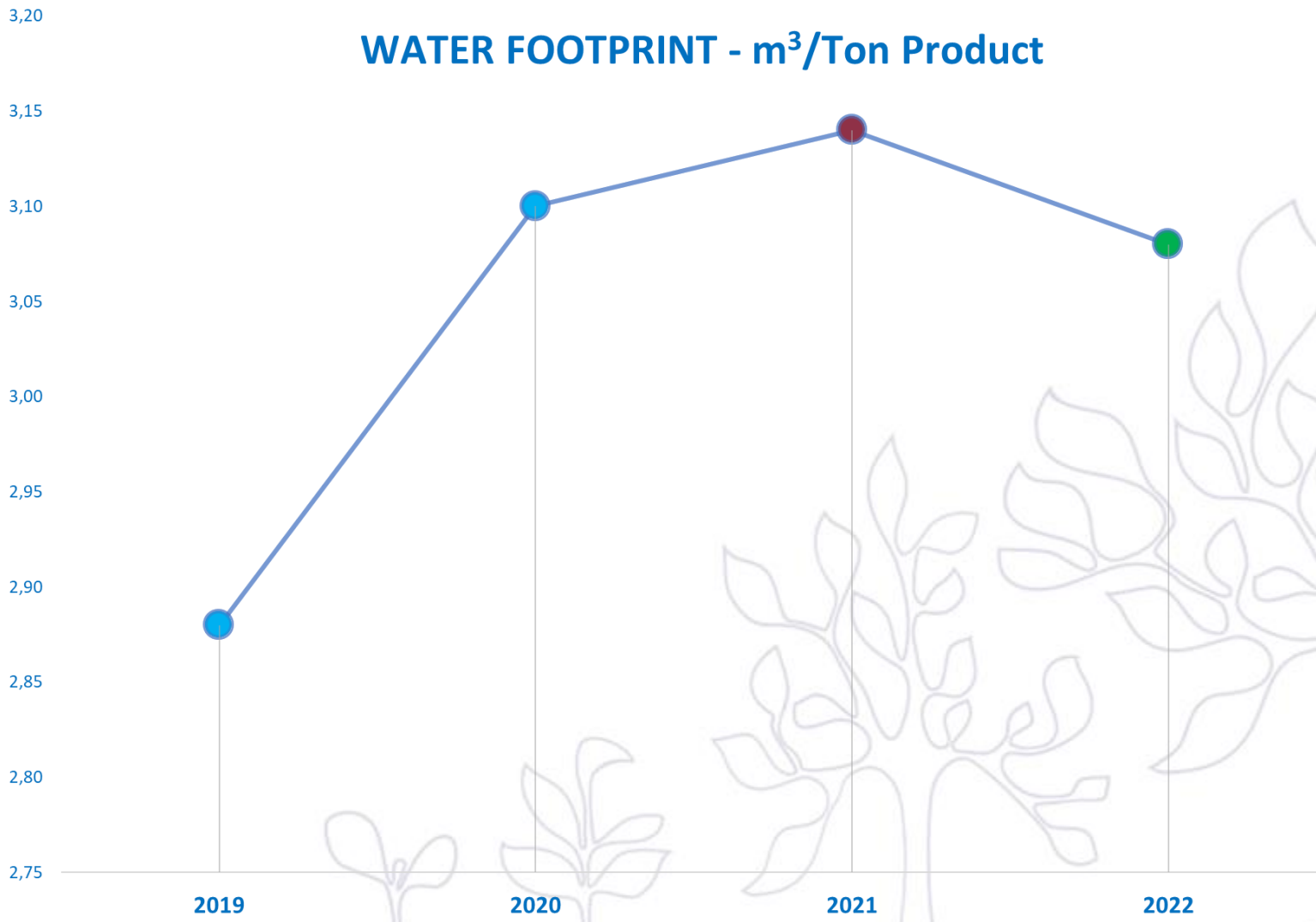

WATER

TRANSFORM NEXT 2023

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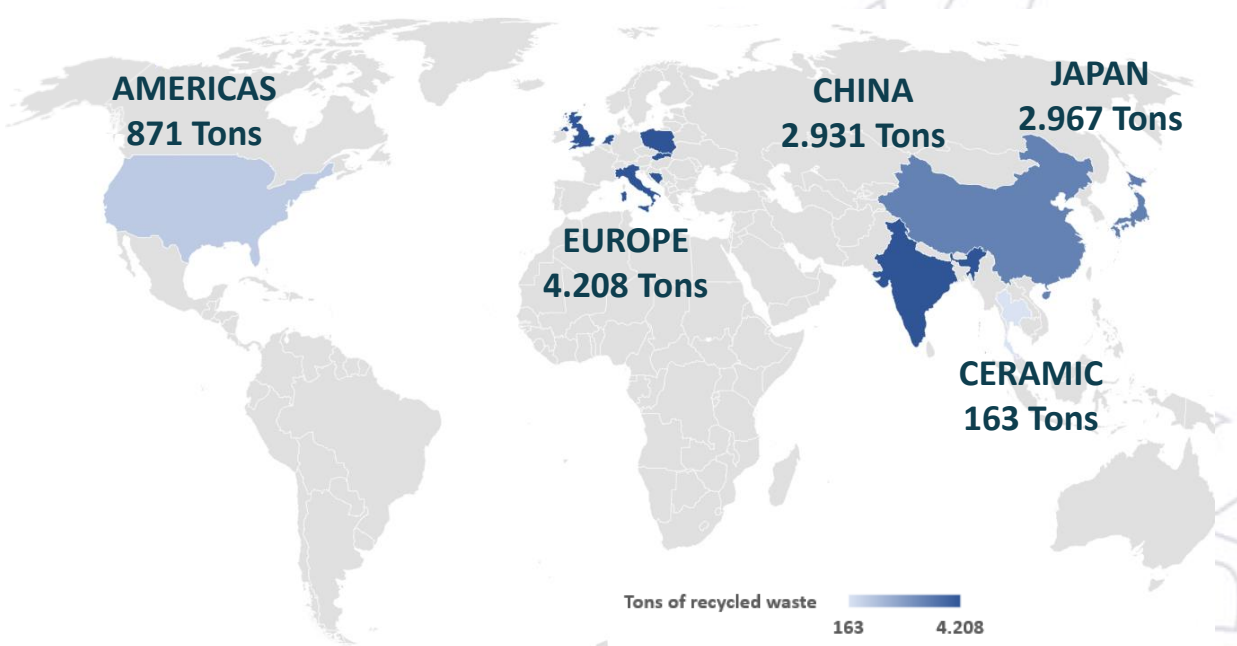
2021

Quantity of recycled waste

Recycled rate %	2019	2020	2021
JAPAN	47%	61%	51%
EUROPE	38%	33%	33%
CERAMIC	32%	37%	28%
CHINA	25%	34%	36%
AMERICAS	6%	12%	10%
TSUBAKI NAKASHIMA	24%	30%	31%

Tons of recycled waste



TSUBAKI NAKASHIMA **11.140 Tons**
recycled waste

WASTES

TRANSFORM NEXT 2023

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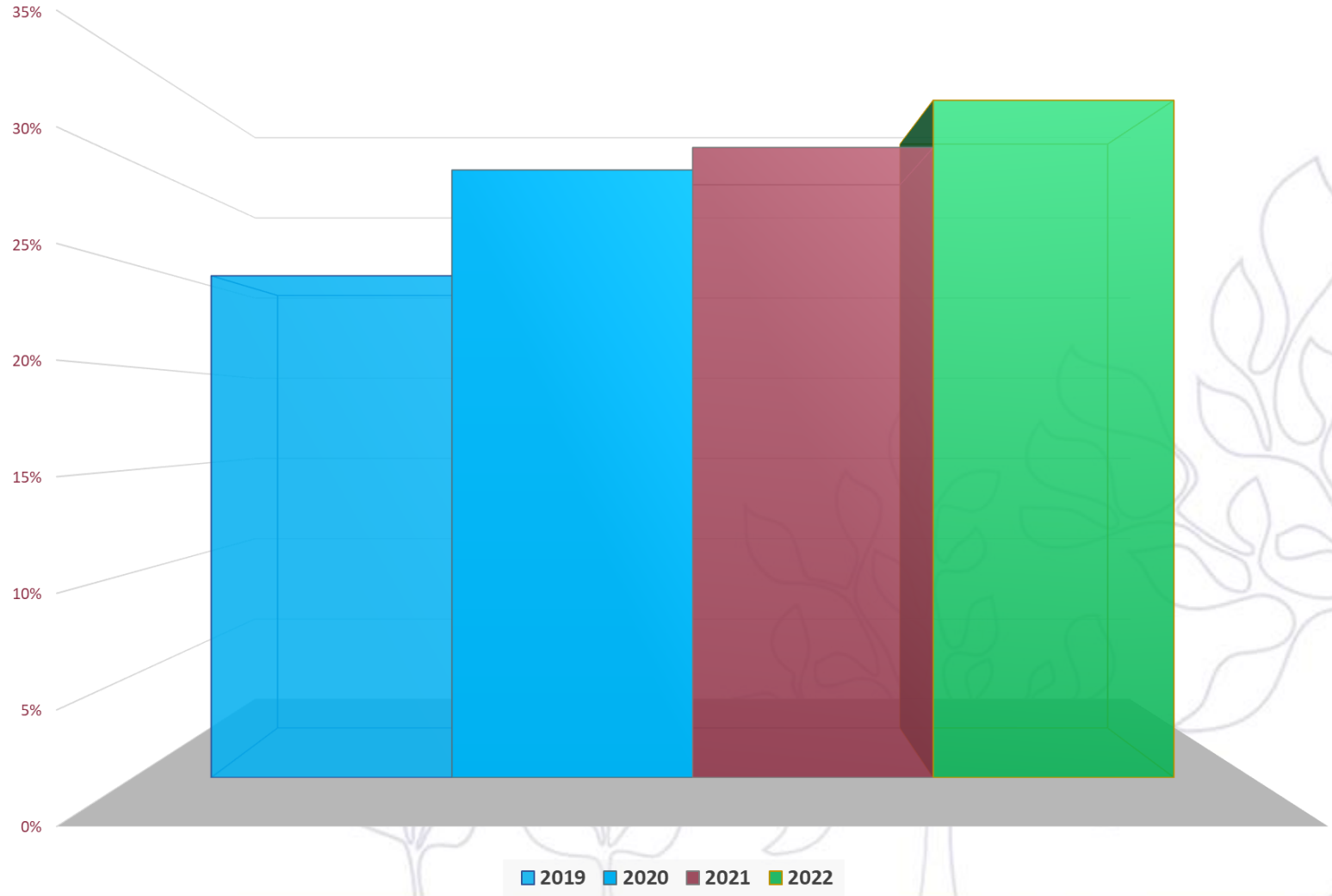
% Recycled waste



WASTES

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Scrap reduction

Waste reduction

Reusable packaging

Waste water reduction

Reduce water consumption

Improve utilization rate of raw materials

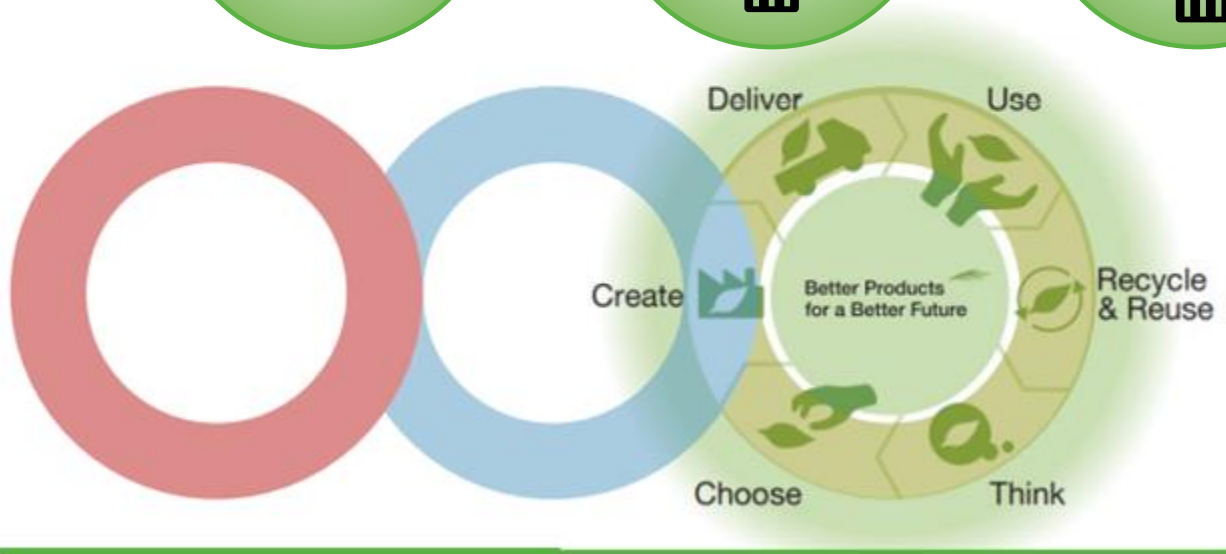
Oil recycle

Reduce usage of auto sorting coolant

Heading Oil reduction

Reduce usage of packing prevent oil

Sludge recovery



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MONOZUKURI PROJECTS

included in BP2022 (13,2% of the projects) are in line with UN AGENDA 2030 waste and water targets

SUSTAINABILITY PROJECTS 2022

TRANSFORM NEXT 2023

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Respect for diversity is a cornerstone of Tsubaki Nakashima Management Philosophy, and our personnel policies reflect it. Diversity is the inclusion of individuals of different genders, national origins, religions, regions, educations, social statuses, and LGBT, regardless of whether these traits are innate or acquired, visible, or invisible.
The Group has manufacturing bases not only in Japan, but also in the United States, Italy, Poland, Slovakia, the Netherlands, Bosnia, China, Thailand, India, and Taiwan, and in each of these countries, local employees take the lead in conducting activities.
We aim to utilize diverse values in our business and promote diversity by appointing suitable personnel to Leadership Positions regardless of nationality, promoting the activities of women, and employing people with disabilities.

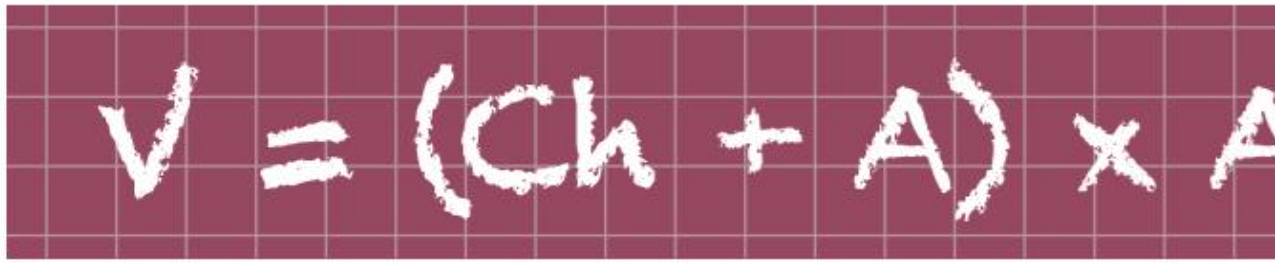
In our Group we have 31 different nationalities.

Diversity is key, always.



INCLUSION and DIVERSITY





ACADEMY

TN Academy is a the Tsubaki Nakashima Platform
to ensure a common **technical and managerial development**