UACJ Sustainability

UACJ

Aluminum lightens the world

アルミでかなえる、軽やかな世界

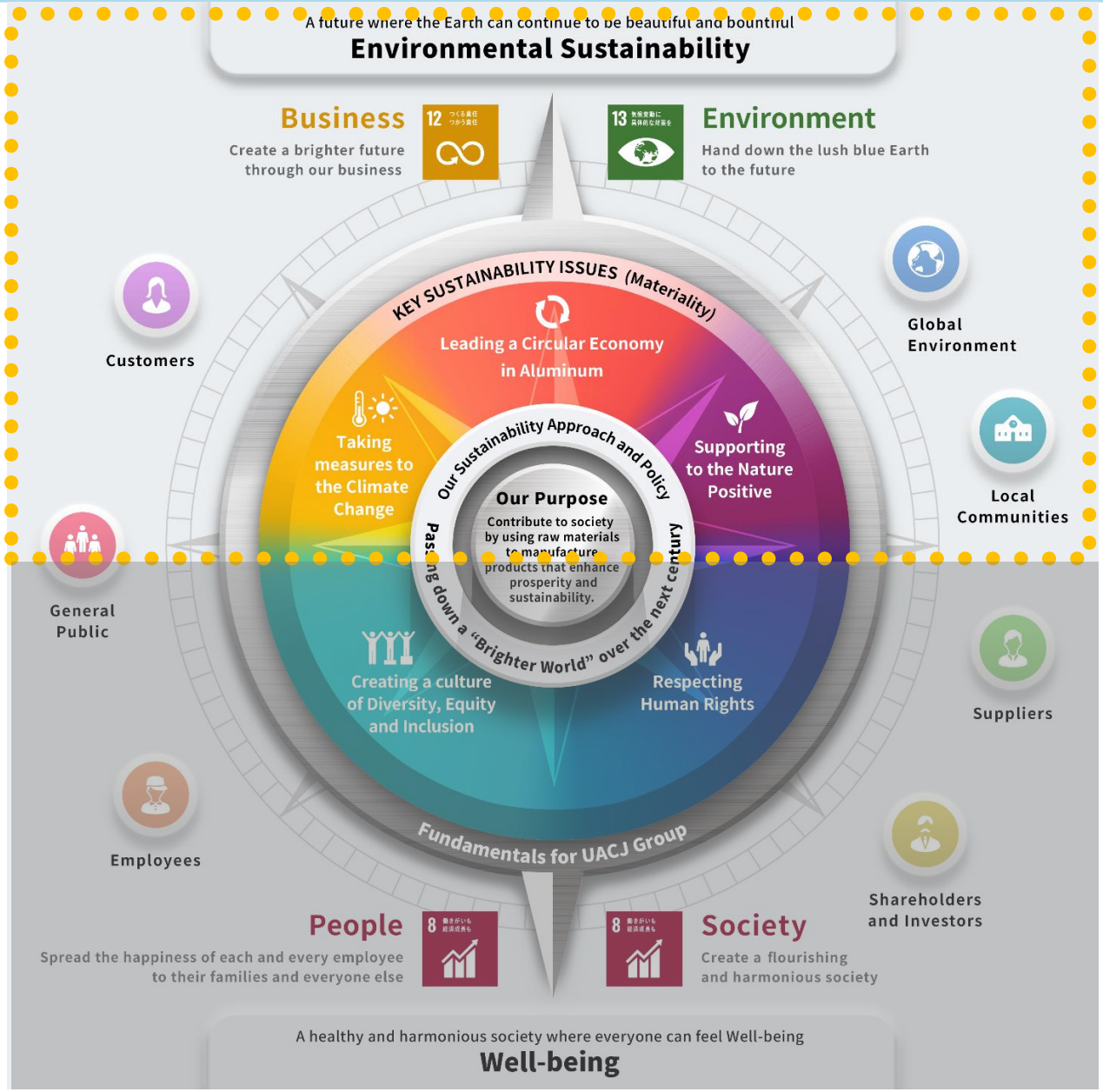
# A future where the Earth can continue to be beautiful and bountiful


## Director, Managing Executive Officer
## Shinji Tanaka


**December 7, 2023**

**UACJ Corporation**

# A Compass Guiding UACJ to Make a Better World




## Passing down a "Brighter World" over the next century

Aluminum is a fundamental material that supports our daily lives.
It is a material that is freely transformable in its shape and has unlimited potential.
It can be eternally recyclable as the same product over and over again.
This is the unique characteristic of aluminum.
So to speak, aluminum is the sustainable material.

The aluminum's potential has been maximized by the UACJ Group who has the cutting-edge technologies and seasoned expertise.

We realize a future in which the Earth can continue to be beautiful and bountiful with the wisdom and the passion for technologies and expertise we have built up over the years.
That make us be rewound that our business is to be environmentally friendly, and to be approached to solve the various challenges our society on the global has faced.

We contribute to create a healthy and harmonious society where everyone can feel Well-being.
Each of the UACJ Group's people respect diversity, act to create synergy from the diversity together with all of stakeholders and local community.

A brighter tomorrow with aluminum.
A beautiful planet and a sustainable society for the next generation of the future.
This is what the UACJ Group believes the "Brighter World" is all about.

# A future where the Earth can continue to be beautiful and bountiful


UACJ Group's Environmental Concept

## We will contribute to the creation of a sustainable society with loving care for our lush blue Earth through exploring further potential of aluminum.

Aluminum is a material that supports essential utilities in our daily lives. At the same time, it plays an active role in a wide range of fields, including transportation, aerospace, healthcare, and information technology.

Aluminum is a material that offers many opportunities, such as conserving resources and energy and reducing environmental impacts.

Because we at the UACJ Group employ so many of Earth's resources in the production of aluminum, we have always taken environmental initiatives very seriously.

Not only do we comply with environmental laws, regulations, and standards as a matter of course, but we also take environmental measures from all perspectives—water, soil, air, resource and energy— including reducing intake and utilization of water as the "UACJ Group fundamentals".

And now we are expanding our vision to everything around us, including society and our planet.

For example, playing a role at the “heart” of the resource cycle circulation.

Minimizing greenhouse gas emissions throughout the value chain and achieving carbon neutrality.

Furthermore, developing proactive activities that go beyond the protection of nature, including water resources, leading to their creation or restoration.

We, the UACJ Group, will continue our commitment to the environment by further exploring the potential of aluminum.

To hand down a brighter and more prosperous society to next generations.

※Notes: We have been studying environmental concepts based on the UACJ Group Environmental Basic Policy

# Three Materiality issues - Environment

## Materiality issues to create a “A future where the Earth can continue to be beautiful and bountiful”

### Leading a Circular Economy in Aluminum

The promotion of a circular economy based on the circulation of aluminum is essential for resolving the issues of climate change and nature conservation. By further pursuing the potential of aluminum throughout the entire UACJ Group, we can contribute significantly to society and the environment.

### Taking measures to the Climate Change

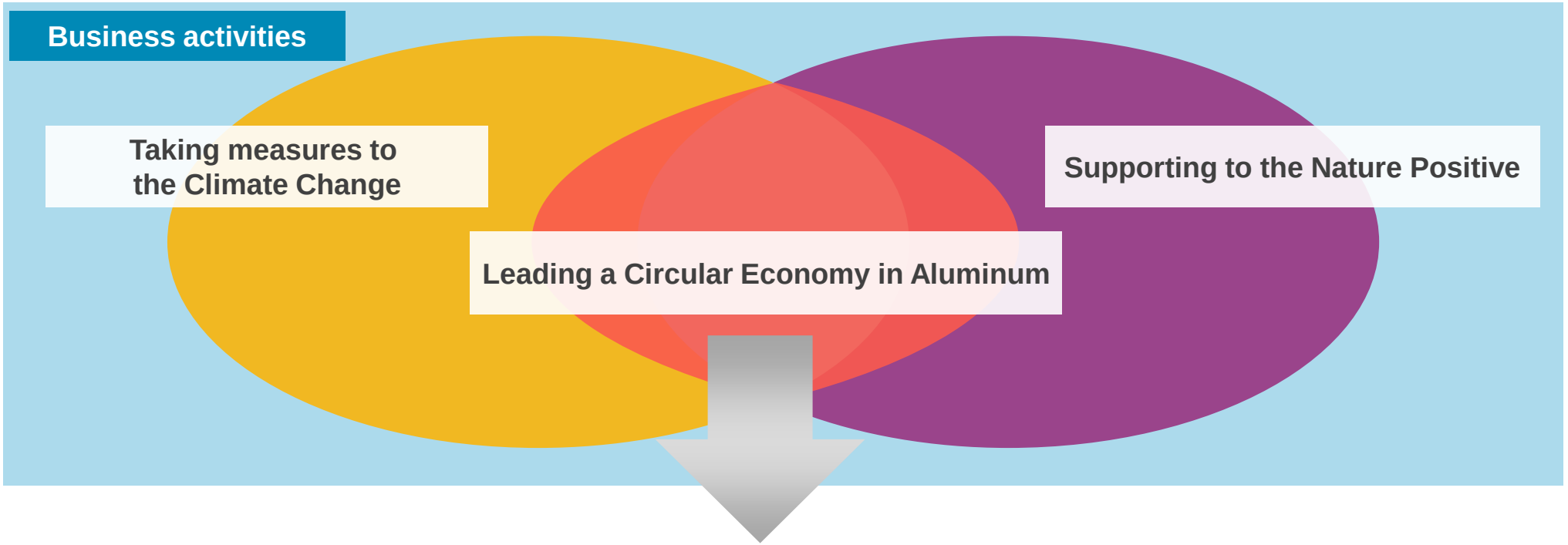
Rapid climate change is an urgent issue that must be addressed by all of society. Our in-house initiatives and efforts to expand opportunities for the utilization of aluminum can help to reduce $CO_2$ emissions throughout all of society and contribute significantly to the formation of a sustainable society.

### Supporting to the Nature Positive

We can pass on a bright and prosperous world to the children of our future by continuing the environmental management activities that we have carried out as daily practice, and by making efforts across the entire supply chain, such as addressing water security.

# Environment — Relationship Between the Three Materiality issues

**Rather than being independent issues, our three materiality issues are related, mutually supportive, and united. As such, they are linked to the UACJ Group's goal of forming a sustainable society supported by a beautiful and abundant planet.**




**grateful for the lush blue earth, and we will pursue aluminum to contribute to the formation of a sustainable society**

**=**

**Enhance the UACJ Group's corporate value**

## Supporting to the Nature Positive

## Taking measures to the Climate Change

## Leading a Circular Economy in Aluminum

# UACJ Group and Nature Positive

**Although our business activities are benefited by nature in various ways, they impact nature at the same time. While avoiding and reducing risks from nature, we are working to restore nature through efforts unique to the UACJ Group.**


Dependent

- ✓ Supply of water for operations
- ✓ Supply of wood for packaging
- ✓ Purified wastewater
- ✓ Easing of floods and tsunamis
- ✓ Easing of climate change, etc.

Impact

- ✓ Consumption of water resources
- ✓ Emission of GHGs ($CO_2$, etc.)
- ✓ Waste, etc.

Involved through the supply chain

- ✓ Alteration of land due to bauxite mining
- ✓ Minimize climate change by increasing recycling rate, etc.

# UACJ Group and Nature Positive

**We will expand efforts while identifying how activities for the conservation, regeneration, and creation of nature impact and effect our existing initiatives (leading a circular economy for aluminum, responding to climate change, and environmental management activities).**

| Example measures | Example effects |
|---|---|
| **Proactive use of recycled materials** | ● Reduction of virgin aluminum usage<br>● Reduction of product waste<br>● Reduction of GHG emissions in production processes<br>● Avoidance/reduction of land alteration due to bauxite mining |
| **Recycling of water** | ● Reduction of water intake<br>● Strengthened response to water risk by promoting recycling of water<br>● Avoidance/reduction of impacts of water use on ecosystems |
| **Proactive conservation of forests** | ● Contribution to the supply of wood and wood pellets as a recyclable resource<br>● Increase in carbon absorption and fixation<br>● Forest regeneration and restoration<br>● Water source cultivation |

Supporting to the Nature Positive

**Taking measures to the Climate Change**

Leading a Circular Economy in Aluminum

# Climate Change Response — Update to Carbon Neutral Declaration

**Before**

**Course of action**

- Scope 1 and 2: Carbon neutral by 2050
- Scope 1 and 2: 30% reduction by FY2030
- Scope 3: Collaborate with various supply chain partners to maximize recycling and minimize $CO_2$ emissions throughout the entire supply chain

**After**

**Course of action**

- Scope 1 and 2
  30%*1 reduction by FY2030 and carbon neutral by 2050
- Scope 3
  - ✓ By FY2030: 30%*2 reduction by increasing recycling
    By 2050: Minimize GHG emissions by collaborating with various supply chain partners on initiatives to maximize recycling and reduce $CO_2$ and other GHG emissions throughout the entire supply chain.

*1 Emission intensity compared to FY2019
*2 Emission intensity compared to FY2019 for Category 1. (Refers to Purchased Goods and Services: procurement of raw materials, outsourcing of packaging, procurement of consumables).

# Response to Climate Change —Road Map for Promoting Measures

| Item | Description | By FY2023 | By FY2050 |
|---|---|---|---|
| Scope 1 and 2 | Promotion of further energy saving | Improve energy consumption efficiency and reduce loss | Become carbon neutral |
| | Transition to low-carbon/green fuel | Switch from heavy oil and LPG to LNG and city gas | Hydrogen, ammonia, methanation, etc. |
| | Transition to low-carbon/green electricity | Introduce and expand use of renewable energy-derived electricity | Switch to renewable energy for all electricity consumption |
| | Introduction of carbon recovery technologies | Investigate and review technology | CO2 capture, usage, and storage technology, etc. |
| | Carbon offsetting | Timberland investment, emissions trading, etc. | Tree planting, emissions trading, CCU, etc. |
| Scope3 | Promotion/maximization of recycling | Maximize use of all scrap (in-house scrap, customers' scrap, general consumers' scrap) | Minimize GHG emissions |
| | Development and practical application of recycled alloys and associated technologies | Development and practical application (NEDO*-subsidized project) | Practical application, promotion of widespread adoption |
| | Transition to low-carbon/green virgin aluminum | Increase use of virgin aluminum produced with hydroelectricity | Transition to green virgin aluminum (carbon free) |
| | Development/supply of products using UACJ's unique, certified CO2 emissions reduction method, "Mass Balance," and including them in regular lineup | Complete formation of framework, commence supply → Promote usage, make part of regular lineup | |
| | Promotion of aluminum alternatives | Expand sales and establish UACJ-SMART, ALMitas+ Develop new domains and expand sales in them | |
| | | Utilize aluminum's environmentally friendly properties, set rules for reducing environmental impacts | |
| Participation and collaboration with external organizations | | Participate in initiatives and collaborate with industry groups | |

30% $CO_2$ Reduction

30% $CO_2$ Reduction



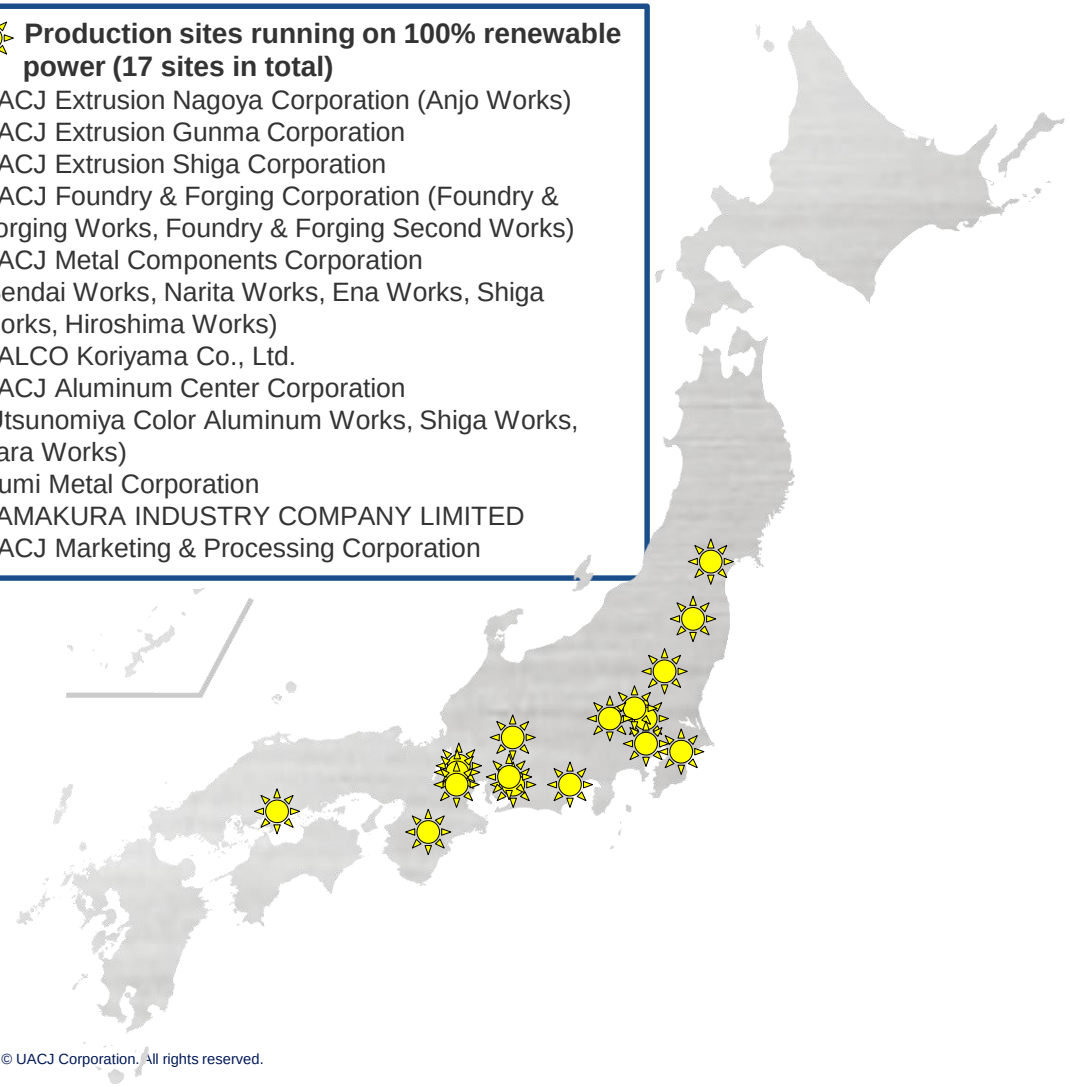
*NEDO: New Energy and Industrial Technology Development Organization

# Decarbonization in the production process

## Converting the production sites of processed products to 100% renewable energy, providing customers with an option for reducing $CO_2$

**Production sites running on 100% renewable power (17 sites in total)**

- UACJ Extrusion Nagoya Corporation (Anjo Works)
- UACJ Extrusion Gunma Corporation
- UACJ Extrusion Shiga Corporation
- UACJ Foundry & Forging Corporation (Foundry & Forging Works, Foundry & Forging Second Works)
- UACJ Metal Components Corporation (Sendai Works, Narita Works, Ena Works, Shiga Works, Hiroshima Works)
- NALCO Koriyama Co., Ltd.
- UACJ Aluminum Center Corporation (Utsunomiya Color Aluminum Works, Shiga Works, Nara Works)
- Izumi Metal Corporation
- KAMAKURA INDUSTRY COMPANY LIMITED
- UACJ Marketing & Processing Corporation



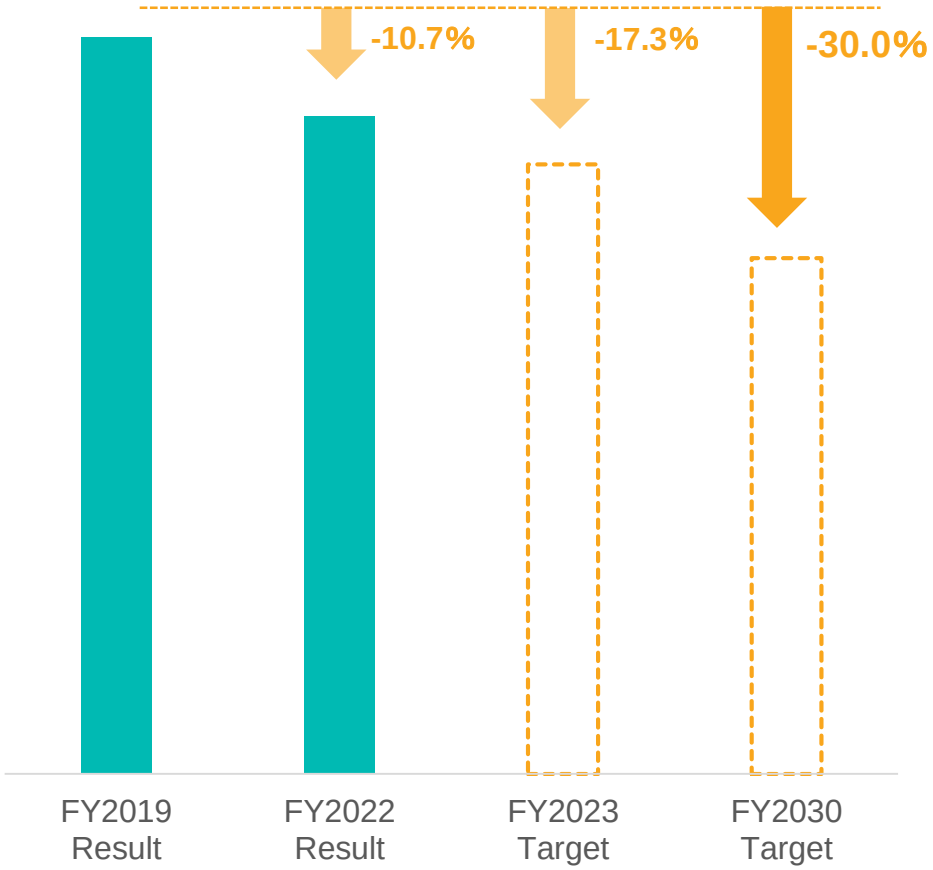
- Approx. 220 GWh of electricity will be purchased annually from 100% renewable energy sources (starting from April 2023)
- The UACJ Group's 17 major production sites in Japan will be run on 100% renewable power, with zero scope 2 $CO_2$ emissions
- $CO_2$ emissions will be reduced by an estimated 100,000 tons*
  ⇒ Equivalent to approx. 20% of the UACJ Group's scope 2 $CO_2$ emissions

*Considered in terms of general household use, this is equivalent to about 54,000 households

By implementing renewable power at the production sites of the products closest to finished products, we can also contribute to reducing customers' scope 3 $CO_2$ emissions

# Scope 1 and 2 $CO_2$ Emissions Reduction Results and Targets

**CO2 Emissions Reduction Targets**
**(Scope 1 and 2 emission intensity* compared to FY2019)**




**Steadily implementing more aggressive measures to achieve a 30% reduction in Scope 1 and 2 in FY2030.**

- Increasingly accelerated energy conservation
- Conversion to fuels with lower GHG emissions
- Encouraging the introduction of renewable energy
- Promoting development of technologies that contribute to GHG reduction
- Participation in GHG reduction initiatives
- Proactive information disclosure (and others)

Domestic sites covered: UACJ (Nagoya, Fukui, Fukaya), UACJ Extrusion Nagoya (Nagoya, Anjo), UACJ Extrusion Oyama, UACJ Extrusion Shiga, UACJ Extrusion Gunma, UACJ Foil (Shiga, Nogi, Isezaki), UACJ Foundry & Forging, UACJ Aluminum Center (Utsunomiya Color Aluminum Works).
Overseas sites covered: UACJ (Thailand) Co., Ltd., UACJ Extrusion Czech s.r.o, UACJ Extrusion (Thailand) Co., Ltd., UACJ Foundry & Forging (Vietnam) Co., Ltd., UACJ Foil Malaysia Sdn. Bhd., UACJ Automotive Whitehall Industries, Inc. (Michigan District Head Office, Paducah, San Miguel, Flagstaff).
Emission intensity compared to FY2019. Calculated using the Sixth Strategic Energy Plan (Ministry of Economy, Trade and Industry 2021).

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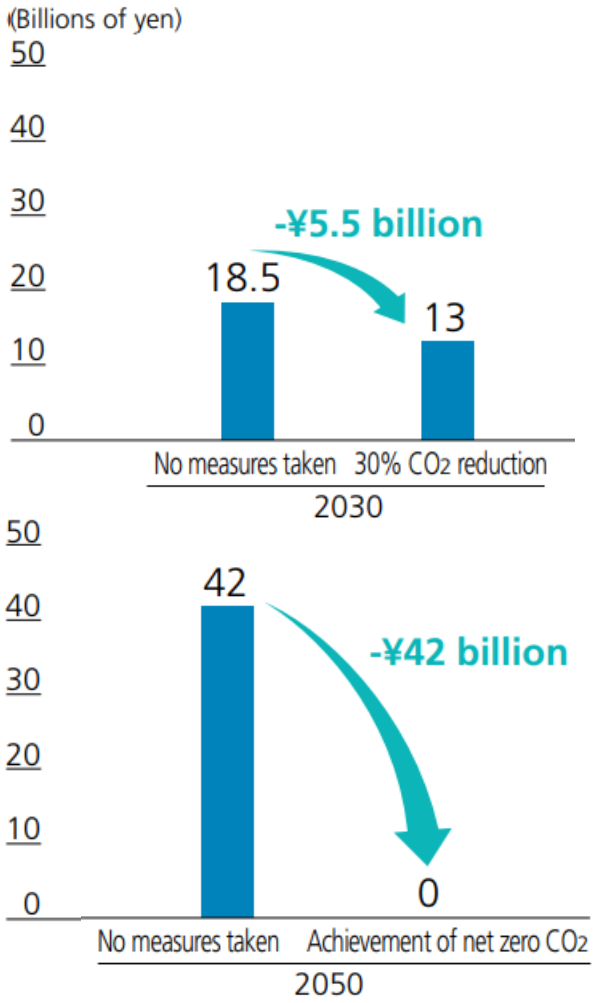
30% $CO_2$ Reduction

30% $CO_2$ Reduction



*NEDO: New Energy and Industrial Technology Development Organization

# TCFD Risk significance assessment: risks and opportunities




**Estimated monetary impact of carbon tax**

## Risk significance assessment: risks and opportunities

| | | Carbon price (carbon tax / carbon border adjustment mechanism) | Carbon emissions targets / policies in each country (Emissions trading / Mandatory Carbon Footprint Reporting etc.) |
|---|---|---|---|
| Index | | Revenue Expenditures | Revenue Expenditures |
| Business impact | Risks | • Procurement costs for imported raw materials / materials increase<br>• Electricity costs increase | • Raw material procurement costs / manufacturing costs increase due to expenses for purchasing carbon credits<br>• Expenses increase for updates / introduction of equipment such as aluminum scrap melting furnaces and energy-saving equipment, and enabling changeover to other fuels<br>• Production management costs increase due to mandatory carbon footprint recording and reporting |
| | Opportunities | **• Sales and revenue increase due to reduced competitiveness of imported competitor products from countries/regions with insufficient GHG emissions controls** | **• Carbon tax and other costs can be reduced by reducing procurement of energy-intensive raw materials (virgin aluminum)<br>• Demand associated with switching from other materials increases due to tighter regulations<br>• There are opportunities to increase revenue by taking advantage of aluminum's light weight, high thermal efficiency, and high recyclability** |
| Evaluation | | High | High |
| Future countermeasures to individual risks | Category | Adapted | |
| | Risk countermeasures example | • Setting of long-term GHG emissions reduction targets<br>• Setting of long-term energy use reduction targets<br>• Introduction of internal carbon pricing | |
| | Initiatives for seizing opportunities example | • Implementation of long-term GHG emissions reduction targets<br>• Leveraging of CO2 absorption through forests, etc., and credit programs<br>• Establishment of an evaluation method to measure contribution to making reductions<br>• Shifting to energy-saving technologies with an aim toward decarbonization through public-private partnerships and international cooperation | |

For the materiality assessment of risks/opportunities and response measures for other TCFDs, please refer to UACJ Report 2023 "Advances in Sustainability - Environmental Actions" (p63-64).https://www.uacj.co.jp/ir/library/pdf/2023/03_2023uacjr.pdf

TCFD scenario analysis was supported by the Ministry of the Environment's 2021 support project for climate risk and opportunity scenario analysis in line with the TCFD

# $CO_2$ Emission Reduction Results and Targets (Scope 3)

**CO2 emissions reduction target**
**(Scope 3, vs. FY2019. per-unit basis*)**


**Aiming to achieve a 30% reduction in FY2030 through investment in recycling facilities, technology development, and the creation of mechanisms**

- Promotion and maximization of recycling (capital investment to expand UBC use)
- Development and commercialization of recycled alloys and technologies
- Conversion to low-carbon and green ingots
- Development, supply and standardization of guaranteed products such as ALmitas+ and SMART products

* Category 1. (Refers to Purchased Goods and Services: procurement of raw materials, outsourcing of packaging, procurement of consumables).

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Overseas sites covered: UACJ (Thailand) Co., Ltd., UACJ Australia Pty. Ltd.

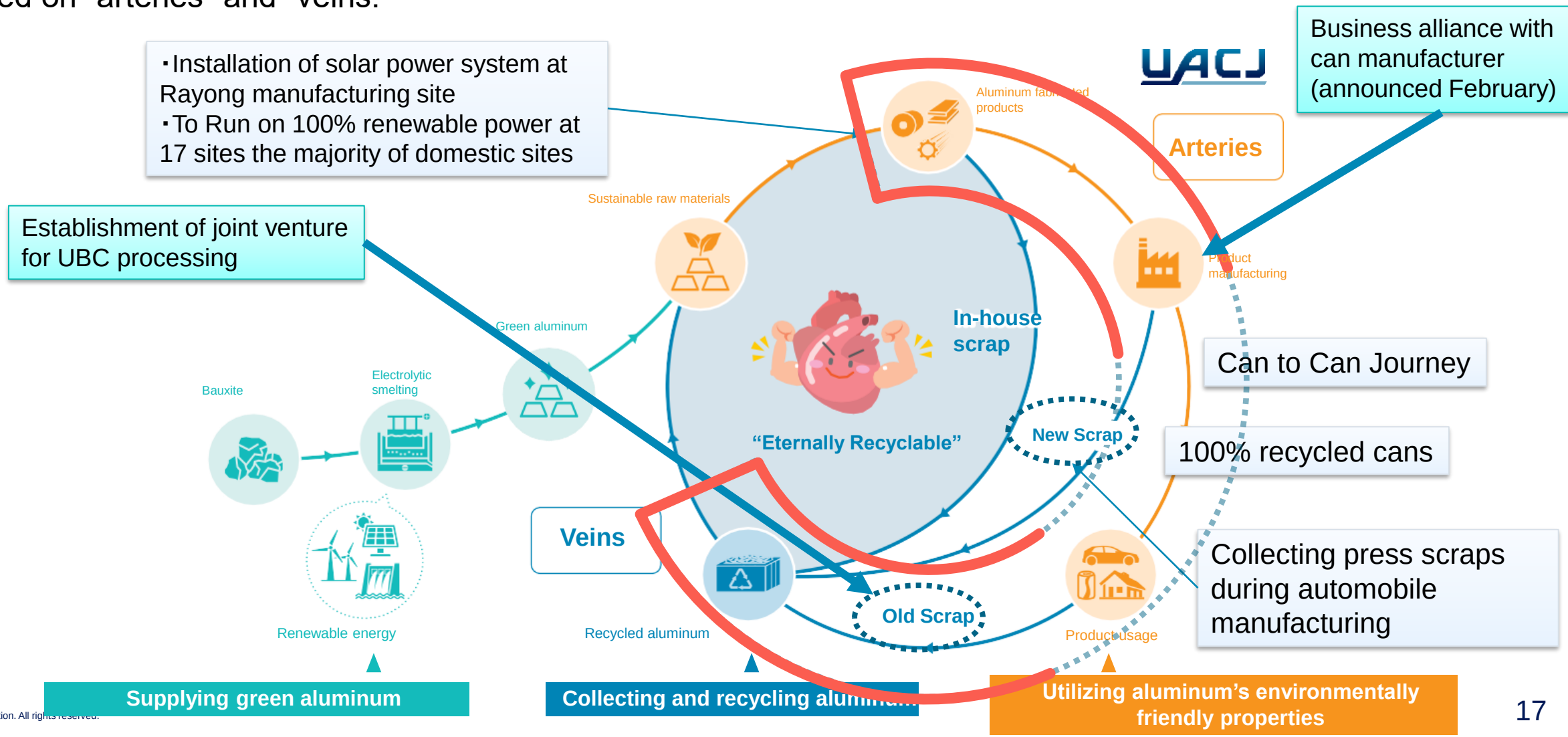
Supporting to the Nature Positive

Taking measures to the Climate Change

**Leading a Circular Economy in Aluminum**

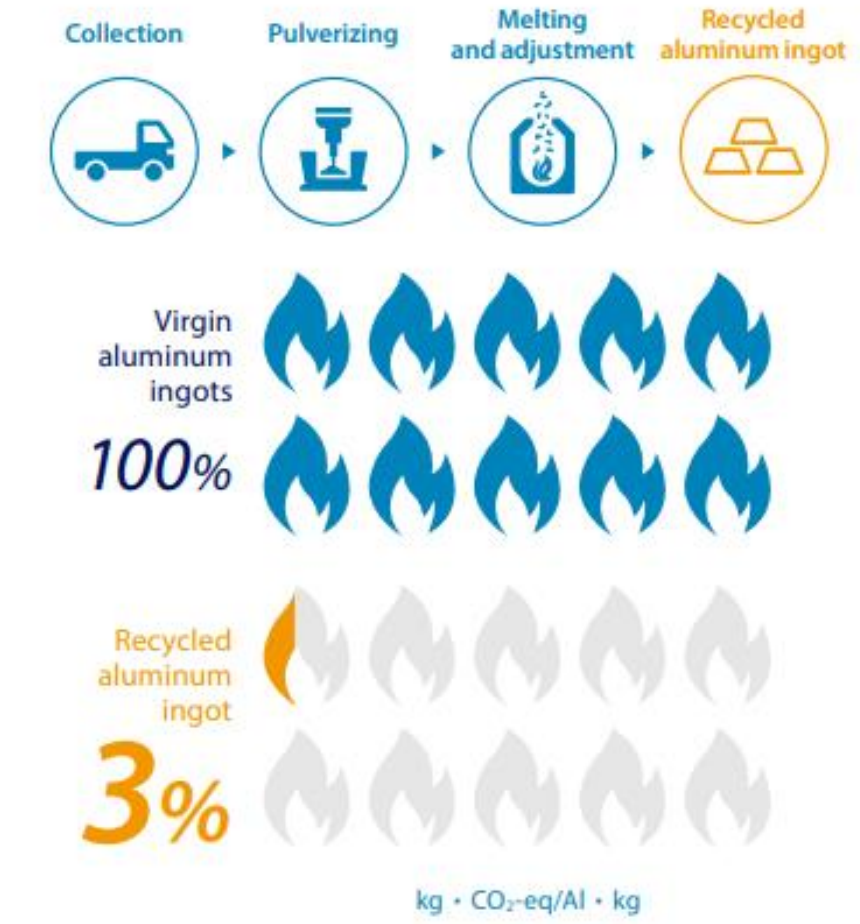
# A Leader in the Creation of a Circular Economy for Aluminum

Aiming to create a better world, we will lead the way in the creation of a circular economy based on “arteries” and “veins.”



# Energy difference between making new aluminum ingots and using recycled aluminum ingots

## Aluminum extracted from the ore can be melted again with little energy.

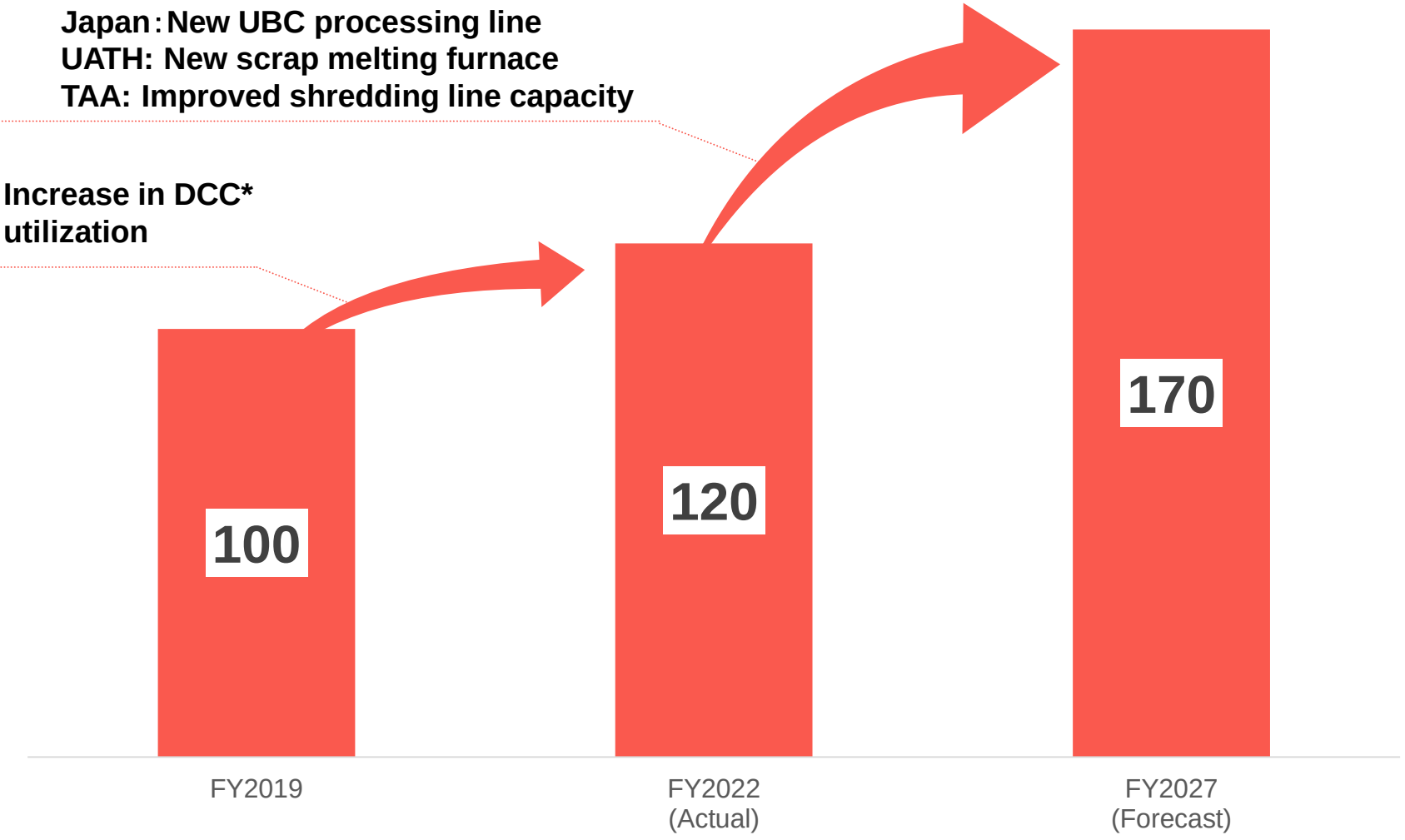



Source: Japan Aluminium Association

# Amount of Used Beverage Can (UBC) Utilized as Raw Materials

**Japan：New UBC processing line**
**UATH: New scrap melting furnace**
**TAA: Improved shredding line capacity**

**Increase in DCC* utilization**




**UATH: New scrap melting furnace**

**TAA: Shredding line**

**Actual UBC utilization in Japan, UATH, and TAA in FY2019 for each year as 100**



*DCC　UBCs are crushed, sorted, roasted, etc., and the paint is skipped. Delacquered Can Chip

# UACJ Recycling Rate Definition and Target

**We have defined the UACJ Recycling Rate[*1] as an indicator for the Group's aluminum resource circulation. We have set a clear target and are working group-wide to realize a circular economy.**

***1 The rate indicates a target for in-house resource circulation activities and is not an indicator for each individual product.**

## Calculation of the UACJ Recycling Rate

$$\frac{\text{Circulated aluminum amount}}{\text{Amount charged into the melting furnace}} \times 100$$

The circulated aluminum amount is the combined total of:
- Scrap generated from all in-house processes
- PIR Scrap[*2]
- PCR Scrap[*3]

The amount charged into the melting furnace is the combined total of:
- Virgin aluminum, metal additives
- Scrap generated from all in-house processes
- PIR scrap
- PCR scrap

## UACJ Recycling Rate Target[*1*4]

| FY2019 result | FY2030 target |
|---|---|
| 65% | 80% |

*1 Excludes pure aluminum materials (1000 and 8000 series)
*2 Post-industrial recycled scrap: scrap generated during the material processing stage of production.
*3 Post-consumer recycled scrap: scarp originating from end-of-life products.

# Importance of UACJ Group's Recycling

**"Recycling promotion" at the UACJ Group refers to reducing the amount of virgin aluminum ingots used in the melting stage.**

## A better world created through the recycling of aluminum

| | |
|---|---|
| **Climate change countermeasures** | **Reduce GHG emissions by promoting recycling**<br>(Production with recycled raw materials requires only up to 3% of the energy used in production with virgin aluminum ingots.) |
| **Resource circulation** | **Fully utilizing scrap from both in-house and external sources minimizes the use of virgin aluminum ingots and promotes the circulation of aluminum to produce products of the same kind (closed-loop recycling).** |
| **Conservation of natural capital** | **Minimizing virgin aluminum ingot use helps to minimize new bauxite mining and reduce environmental impacts.** |

**As a provider of materials for aluminum products, our efforts to promote recycling are of deep importance.**

# A future where the Earth can continue to be beautiful and bountiful

*Aluminum lightens the world*

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