



*Aluminum lightens the world*

アルミでかなえる、軽やかな世界

# Toward a Sustainable, Better Society

**Shinji Tanaka**

Director, Managing Executive Officer



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

# Pivoting Our Environmental Action

Going beyond defensive environmental action to expand our offensive action

## Future expansion areas

(Initiatives requiring more proactivity than before)

- Conservation of water resources
- Conservation of biodiversity
- Contribution to/collaboration with stakeholders' activities
- Promotion of climate change measures
- Sales and technological development of products that contribute to environmental improvement
- Building a recycling-oriented society

## Areas to maintain and manage

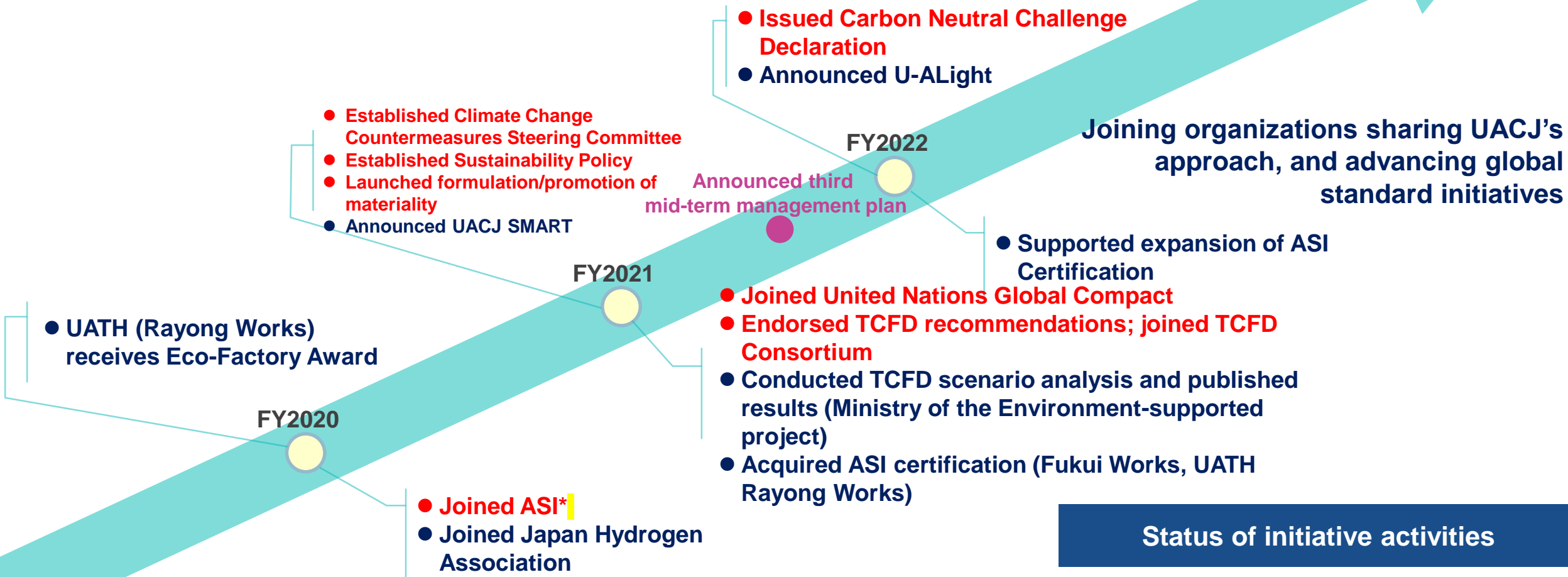
(Environmental actions essential for sustaining UACJ)

- Legal compliance
- Eliminating serious environmental accidents
- Proper management of chemical substances
- Raising environmental awareness

# Timeline of Environmental Actions

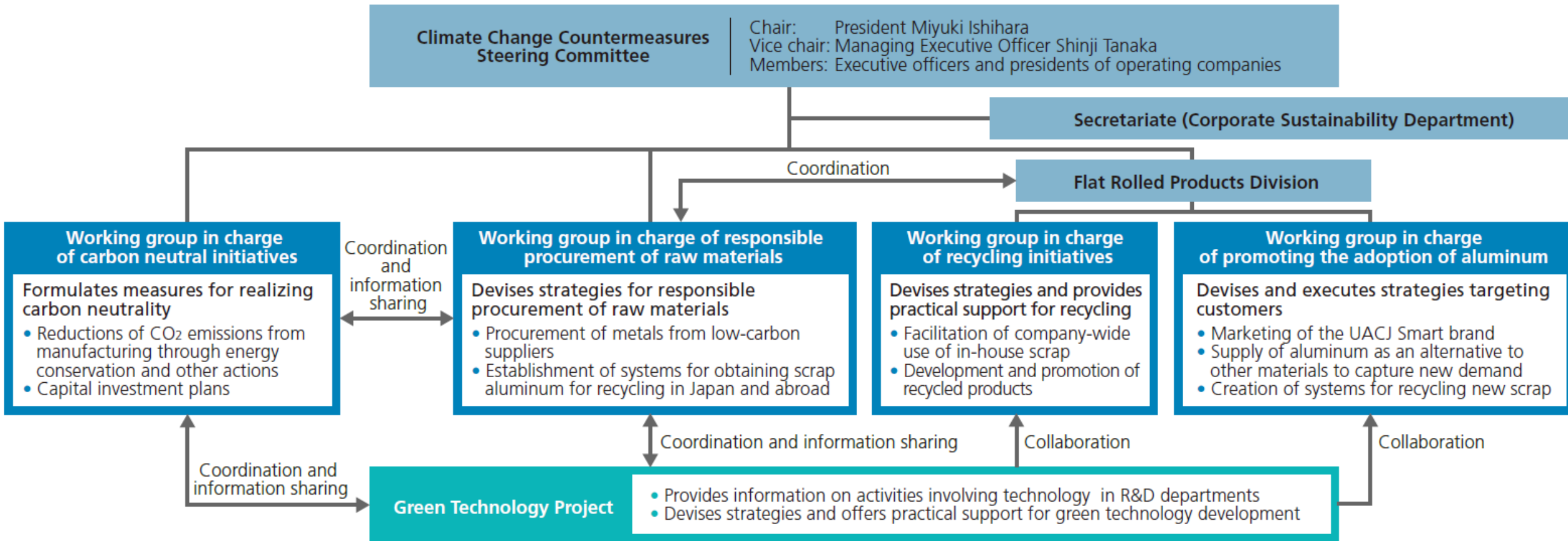
## Status of environmental actions

UACJ steadily implements necessary environmental measures and continues to fulfill its responsibility to the global environment



# Launched the Climate Change Countermeasures Steering Committee

Engaging in Group-wide, vigorous activities to minimize environmental impact, reduce CO<sub>2</sub> emissions, and become carbon neutral



# Review of the UACJ Group Basic Environmental Policies

## Reviewing the Basic Environmental Policies and declaring further promotion of climate change initiatives

### Environmental Management

Listen to this page



- ▼ UACJ Group Basic Environmental Policies
- ▼ UACJ Environmental Management Activity Policy    ▼ Approach to Environmental Management
- ▼ Environment-Related Investment    ▼ Environmental Education

### UACJ Group Basic Environmental Policies

#### | Corporate Philosophy

The UACJ Group is thankful for the earth and the abundance of life it supports, and work to conserve it, with recognition that the fate of all living things hangs on the condition of the earth's environment. We will also voluntarily and actively take action to evaluate the environmental impact of our current and future business activities throughout the supply chain, set specific targets based on the assessment, and minimize environmental load and maximize environmental contribution.

#### | Guidelines

1. We comply with environment-related laws, regulations, and agreements, and establish voluntary standards to properly manage wastewater, exhaust gas, and chemical substances.
2. We promote sales of products and development of technology that contribute to environmental improvement.
3. In order to contribute to the achievement of the goals of the Paris Agreement, we will strive to reduce greenhouse gas emissions and conserve energy, and promote measures against climate change. (The details shall be based on the "Concept of Climate Change Countermeasures")
4. We promote the use of recycled materials, and promote the creation of a sustainable recycling economy.
5. We endeavor to conserve water resources essential to our business activities.
6. We endeavor to conserve biodiversity by giving consideration to the benefits of ecosystems.
7. We raise environmental awareness through educational and public relations activities.
8. We strive to contribute to and coordinate the environmental conservation activities of our stakeholders.

Added in March 2022 ;

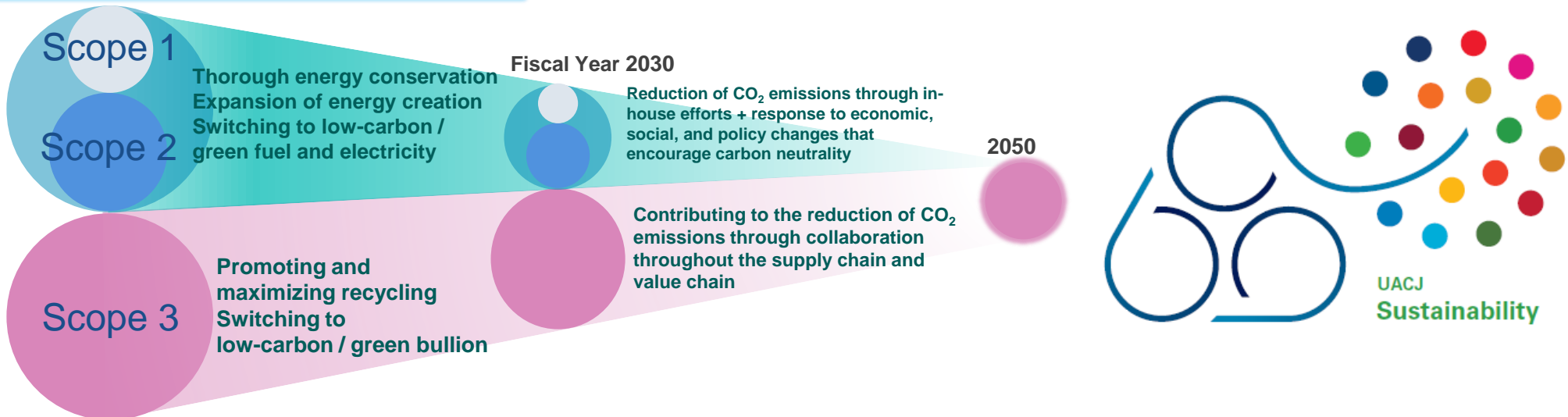
**In order to contribute to the achievement of the goals of the Paris Agreement, we will strive to reduce greenhouse gas emissions and conserve energy, and promote measures against climate change.**

## Preparing for Carbon Neutrality by 2050

### Guidelines for action

- For Scope 1 and Scope 2, take on the challenge of carbon neutrality by 2050
- For Scope 1 and Scope 2, aim to cut emissions by 30%\*1 by FY2030
- For Scope 3, work on collaborations with a variety of partners in the supply chain to maximize recycling and minimize CO<sub>2</sub> for the supply chain as a whole

### CO<sub>2</sub> emissions by Scope and Illustration of Future Reductions



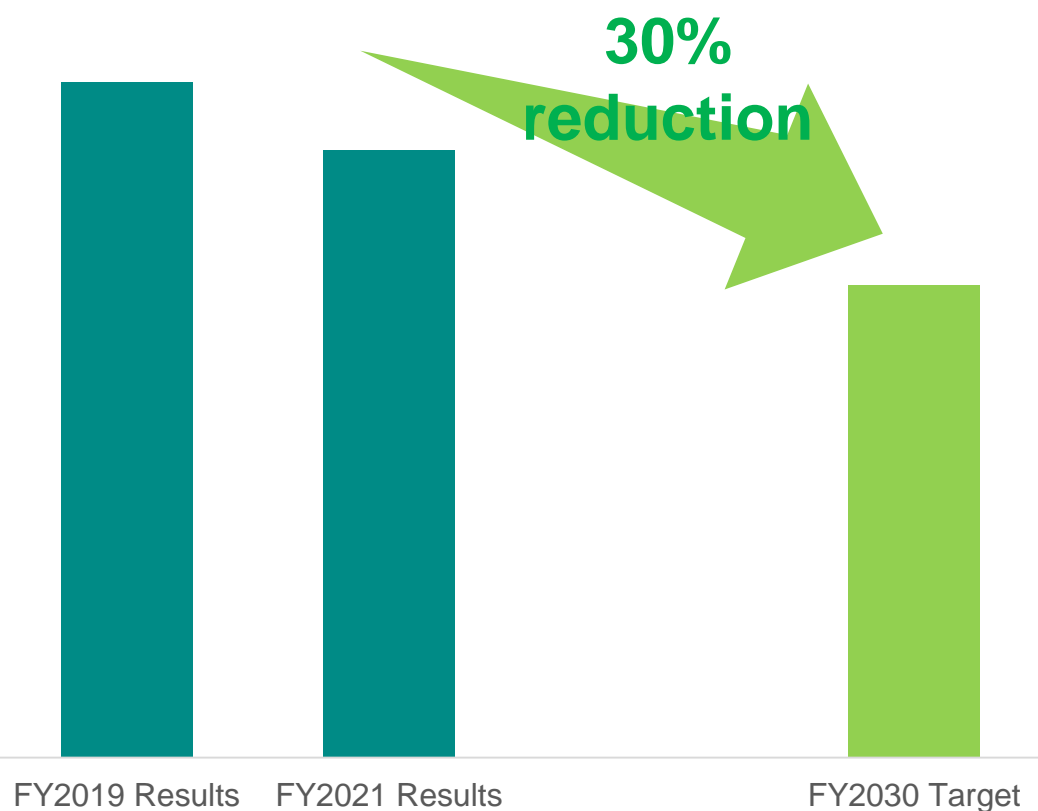
# Roadmap for Promoting Climate Change Action

Category	Details	FY2030	FY2050	
Scope 1 and 2	Rigorous energy conservation	Streamlining energy use / reducing loss	Achieved carbon neutrality	
	Switching to low-carbon/green fuels	Switching heavy oil/LPG to LNG/city gas		
	Switching to low-carbon/green electricity	Launching/expanding introduction of		
	Introducing carbon capture technology	Technology research/study		
	Using carbon offsets	Surveying market trends on emissions		
Scope 3	Promoting/maximizing recycling	Maximizing use of all scrap (from internal processes, customers, and general consumers)	Minimized CO <sub>2</sub> emissions	
	Developing/applying recycled alloys/technologies	Development/application (NEDO*-subsidized project, etc.)		
	Switching to low-carbon/green bullion	Expanding use of hydropower generation		
	Introduction of "UACJ mass balance approach" to certify reduction of CO <sub>2</sub> emission.	Building → Harnessing/popularizing		
	Promoting the switch to aluminum	Developing/expanding sales/entrenching UACJ-SMART, developing/expanding sales in new domains		Application/expanding popular use
		Reducing environmental burden from harnessing aluminum, establishing reduction contribution		Switching to green (carbon-free) bullion
Participation/cooperation with external institutions	Participating in initiatives, collaborating with aluminum industry groups			



# Initiatives to Reduce Scope 1 and 2 Emissions

## CO<sub>2</sub> emission reduction target (Scope 1 and 2 per unit, vs. FY2019)



## New Energy-Saving Subcommittee\*

- After issuing the Carbon Neutral Challenge Declaration, we have been working to achieve the targets in Scope 1 and 2, and we therefore **established the New Energy-Saving Subcommittee in** July 2022, launching UACJ Group-wide efforts toward further reduction.

## Results and plans for renewable energy (electricity)

- Results: Installation of solar power generation systems worth **CO<sub>2</sub> emissions reductions of approximately 14,000** tons/year (at the UATH Rayong Works, etc.).
- Plan: Introduce renewable energy (electricity) from FY2023 worth **CO<sub>2</sub> emissions reductions of approximately 100,000** tons/year

# Initiatives to Reduce Scope 1 and 2 Emissions

## Examining measures to reduce CO<sub>2</sub> emissions and developing a path to implementation

### Progress of the New Energy-Saving Subcommittee

- Discussions to be held by November 2022 to consider measures
- Building up reduction measures that exceed reduction targets of Scope 1 and 2 for FY2030
- Priority action to be taken while confirming effectiveness

### Examples of reduction measures under consideration

#### Initiatives implemented

- Reducing steam/compressed air leaks (Repairs/reinforcing)
- Furnace insulation reinforcement and prevention of heat dissipation

#### Actions partially implemented / Actions that are expanding the scope

- Expanding introduction of solar power generation on in-house premises
- Expanding into low-carbon fuels for casting/heating/annealing furnaces
- Expanding LED switching at plants

#### Actions under consideration

- Electrification of heat utilization equipment (And use of renewable energy in electrification)
- Renewal of HVAC equipment/boilers (Increasing efficiency)
- Introduction of waste heat utilization equipment in casting/heating furnaces (Regenerative burners, etc.)

# UATH\* (Rayong Works) Solar Power Generation System Started Operation in September



- **Installed photovoltaic panels** on the roof of Rayong Works property (18,000 kW output from approx. 40,000 panels, equivalent to output of approximately 7,900 ordinary Japanese homes) with cooperation from Kansai Energy Solutions (Thailand) Co., Ltd.
- UATH will consume all the electricity generated for 20 years
- **Achieves CO<sub>2</sub> reduction of approximately 14,000 tons/year**

\*UACJ (Thailand) Co., Ltd.

# CO2 reduction can were put on sale ( in September )



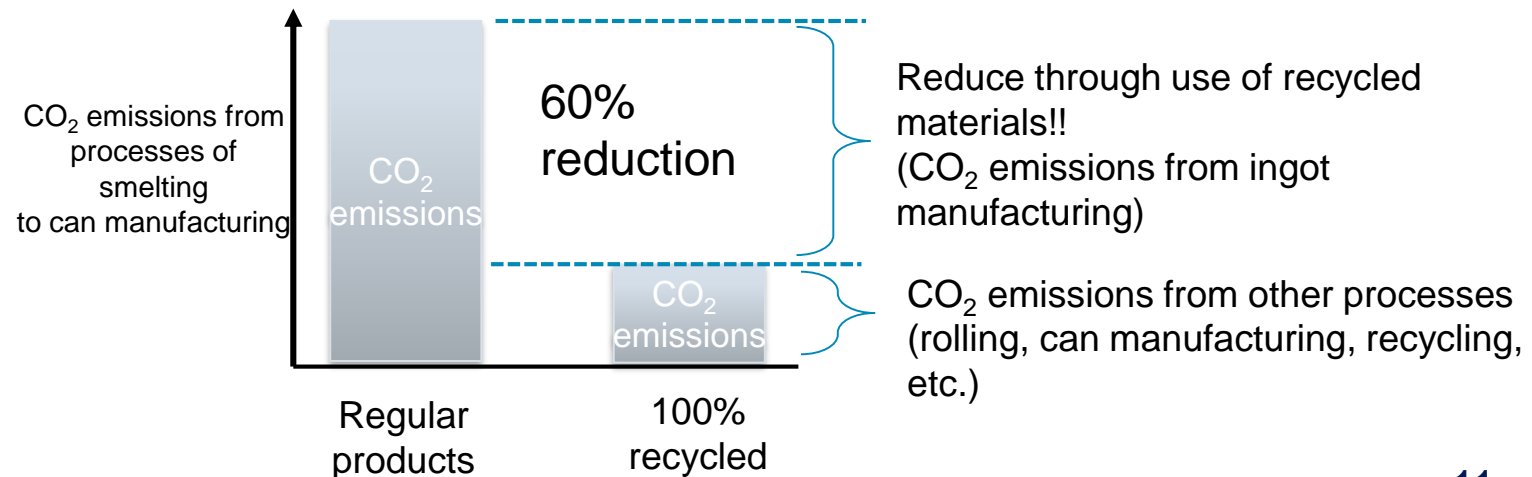
The Premium Malt's CO<sub>2</sub> reduction can



The Premium Malt's "Kaoru" Ale CO<sub>2</sub> reduction can

- ✓ We partnered with Suntory Spirits Ltd. and Toyo Seikan Group Holdings, Ltd. to realize the world's first can stock using 100%-recycled materials
- ✓ We did not use any new ingots, and instead used UBCs (used beverage cans) and offcuts from aluminum can stock production processes for all can bodies, lids, and tabs
- ✓ We will aim to achieve reductions in environmental impact in the future through specialized management of sorting, separating, flat-rolled aluminum manufacturing processes to produce 100%-recycled aluminum can sheet material

[Image of CO<sub>2</sub> emissions reduction from smelting to can manufacturing]



# Promoting Closed-loop Recycling of Aluminum Cans in ASEAN

## Can-to-Can Journey

Government and industry officials were invited to UATH to understand the recyclability of aluminum cans and the closed loop of the Can-to-Can process (recycling of aluminum in aluminum can processes)

### Participating companies and organizations



## Conclusion of a Memorandum of Understanding (MOU) on the promotion of closed-loop recycling

- December 2021 Thailand
- February 2022 Vietnam

In ASEAN, where the use of aluminum cans is increasing, we will continue to focus on establishing recycling schemes with local governments and companies.



MOU signing ceremony in Thailand  
(Second from right: Keizo Hashimoto, Delegated Vice Chief Executive, Flat Rolled Products Division of UACJ)

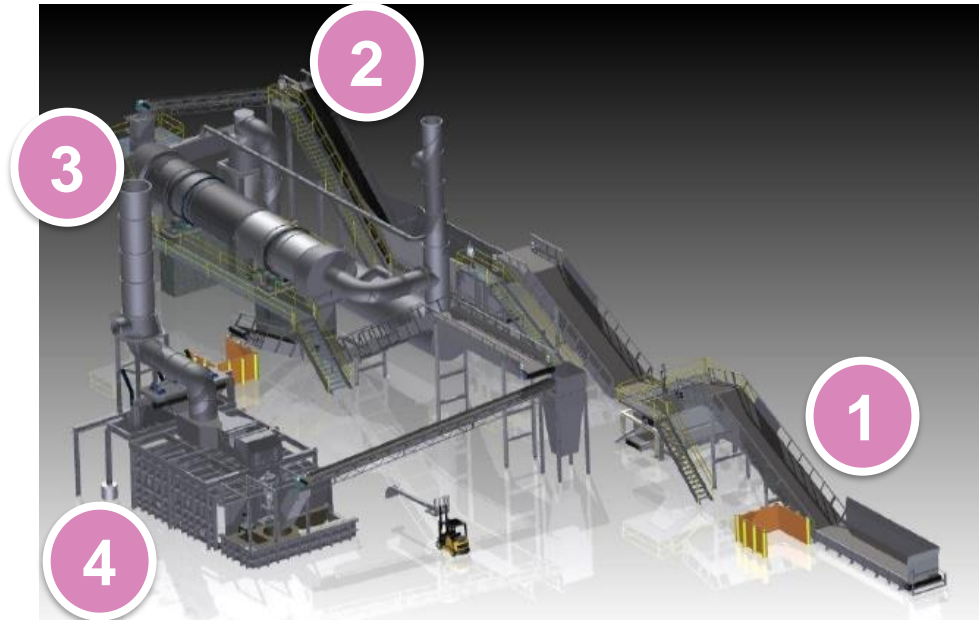


MOU signing ceremony in Vietnam  
(Second from right: Kimitoshi Inagaki, President of UATH)

# Expanding Aluminum Can Recycling to Minimize CO<sub>2</sub> Emissions

Promoting the introduction of aluminum can recycling facilities to become the heart of the circular economy

➤ In operation at TAA\* (Logan Mill)



Illustration/photographs of facilities in operation at TAA (Logan)

(1) Crushing compressed UBCs



(2) Cutting crushed UBCs



(3) Paint removal



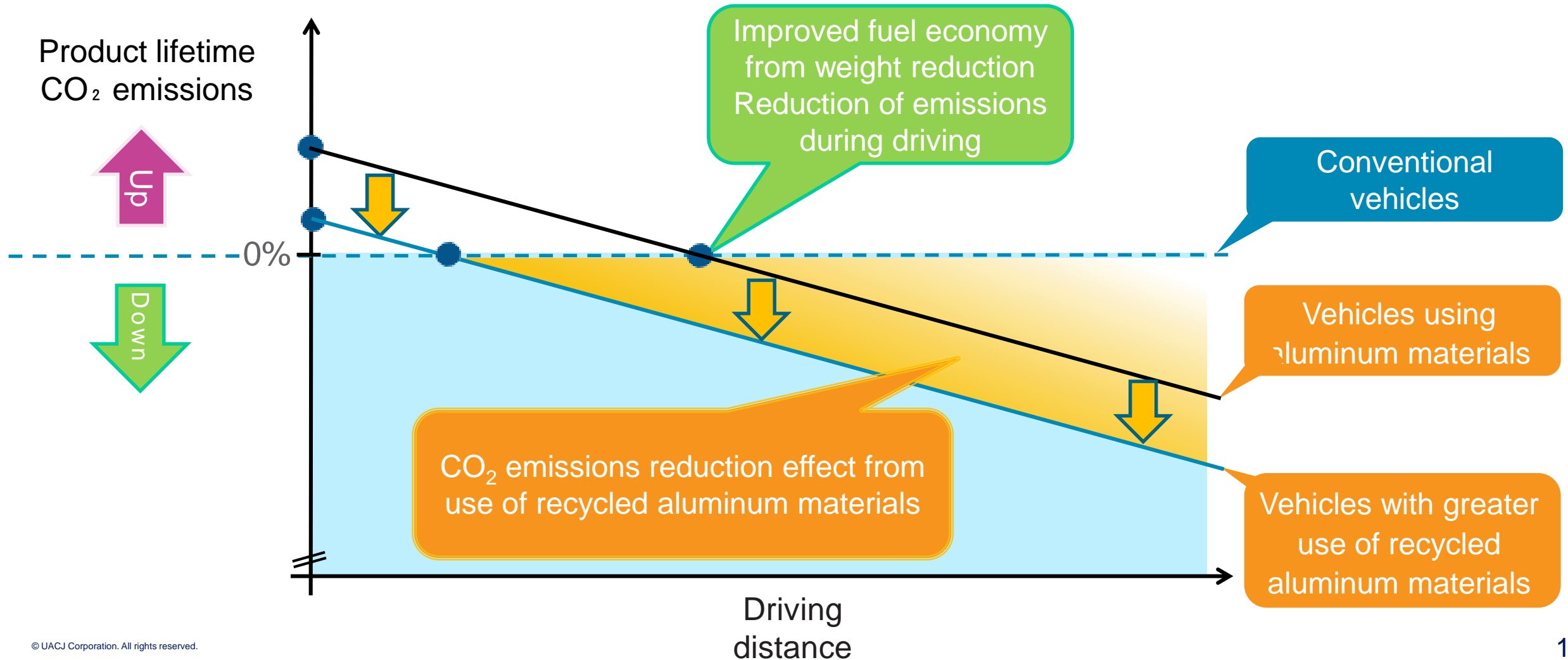
(4) Dissolving



- UATH (Rayong Works): Scheduled to start operation in FY2024
- UACJ (Fukui Works): Promoting collaboration with Yamaichi Metal Corporation

# Contributing to CO<sub>2</sub> Reduction by Switching to Aluminum Use in Automotive Vehicles

Improved fuel economy due to weight reduction contributes to reduction of CO<sub>2</sub> over the entire life cycle



# Development Example: Recycled Material in Automobiles

## Low-CO<sub>2</sub> aluminum material won the 57th Oyamada Memorial Award

- Recycled aluminum material jointly developed with an automotive manufacturing company won the 57th Oyamada Memorial Award from the Japan Institute of Light Metals
- By using approximately 50% aluminum alloy scrap material, we reduced the amount of new bullion, achieving approximately 50% reduction in CO<sub>2</sub> emissions during material production versus conventional aluminum materials
- We were recognized for the technology's significant effect in reducing CO<sub>2</sub> emissions over the life cycle of automobiles and the expectation that it will contribute to carbon neutrality in the future

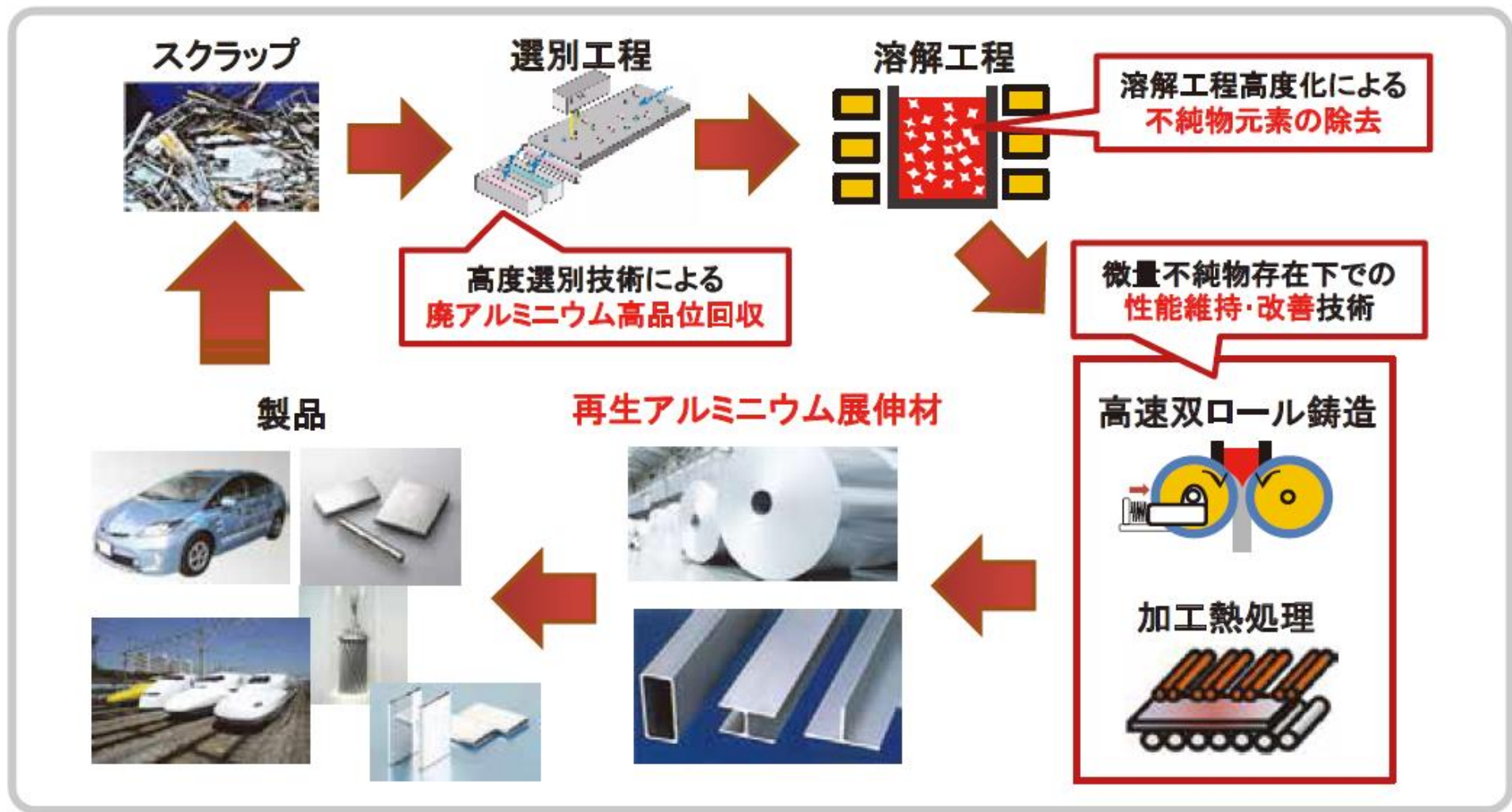


Recycled aluminum material is used for hood inners



# Promoting the Development of New Recycling Technologies

Developing new, innovative recycling technology in a NEDO\* subsidized project to significantly improve the recycling rate



\*New Energy and Industrial Technology Development Organization (NEDO)

Source: NEDO Feasibility Study Program (2019-2020), p. 43: Development of advanced recycling system for aluminum materials

# Conducted TCFD Scenario Analysis

◆ **Conducted scenario analysis** in a project supported by the Ministry of the Environment (October 2021 - January 2022)

- ◆ Analysis targets: Three domestic plants (Nagoya, Fukui, Fukaya) and UATH engaged in the flat rolled products business within the rolled aluminum products business
- ◆ Analysis content: Risks and opportunities in the supply chain from raw material procurement to disposal and recycling
- ◆ Analysis used two warming scenarios by the IPCC, 1.5°C and 4°C (2.6-4°C), and referred to future projections by the IEA, IPCC and others.

## Businesses subject to the scenario analysis

Wrought Copper Products Business

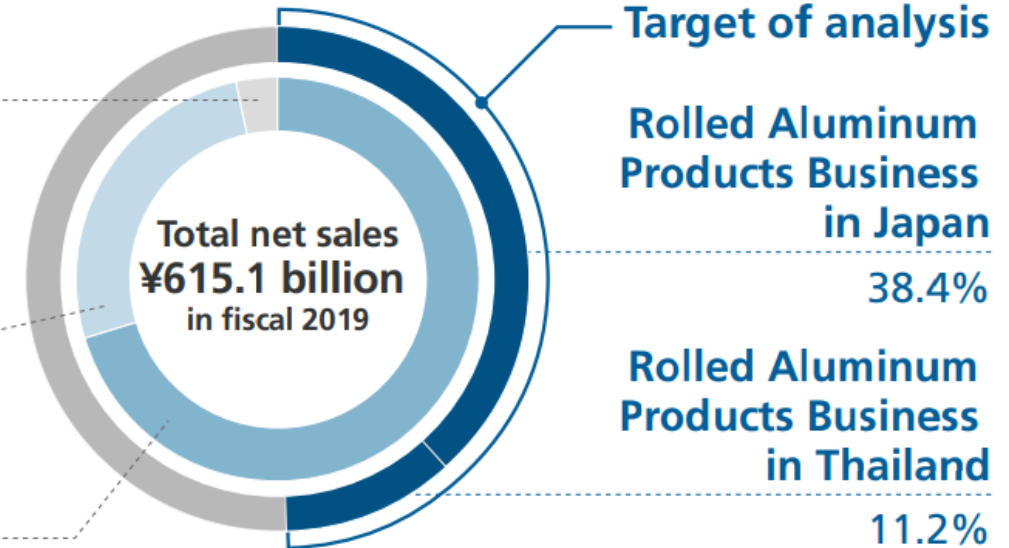
3.2%

Precision-Machined Components and Related Businesses

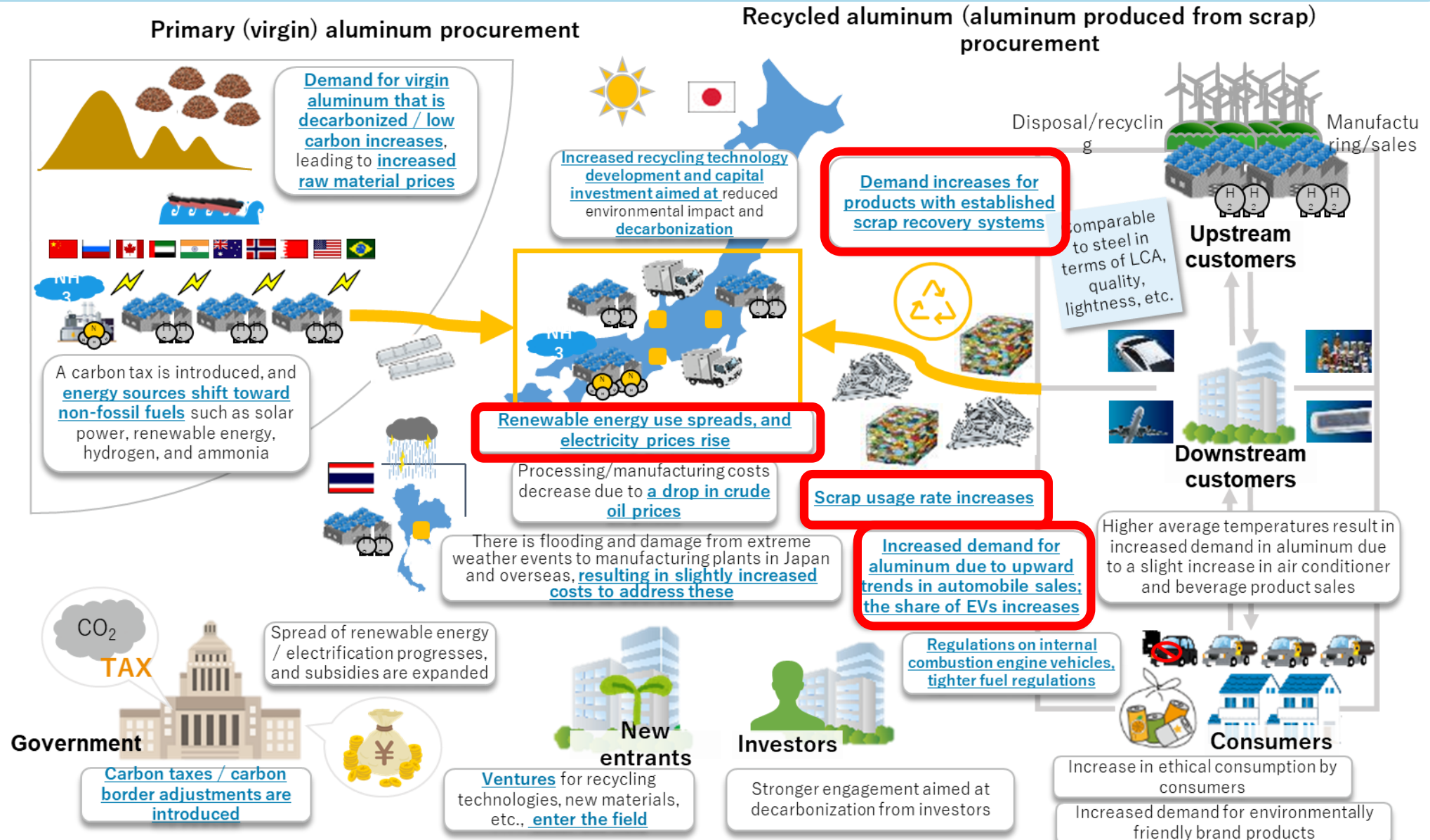
26.4%

Rolled Aluminum Products Business

70.4%



# TCFD Scenario Analysis: Illustration of Society's Future in the 1.5°C Scenario\*



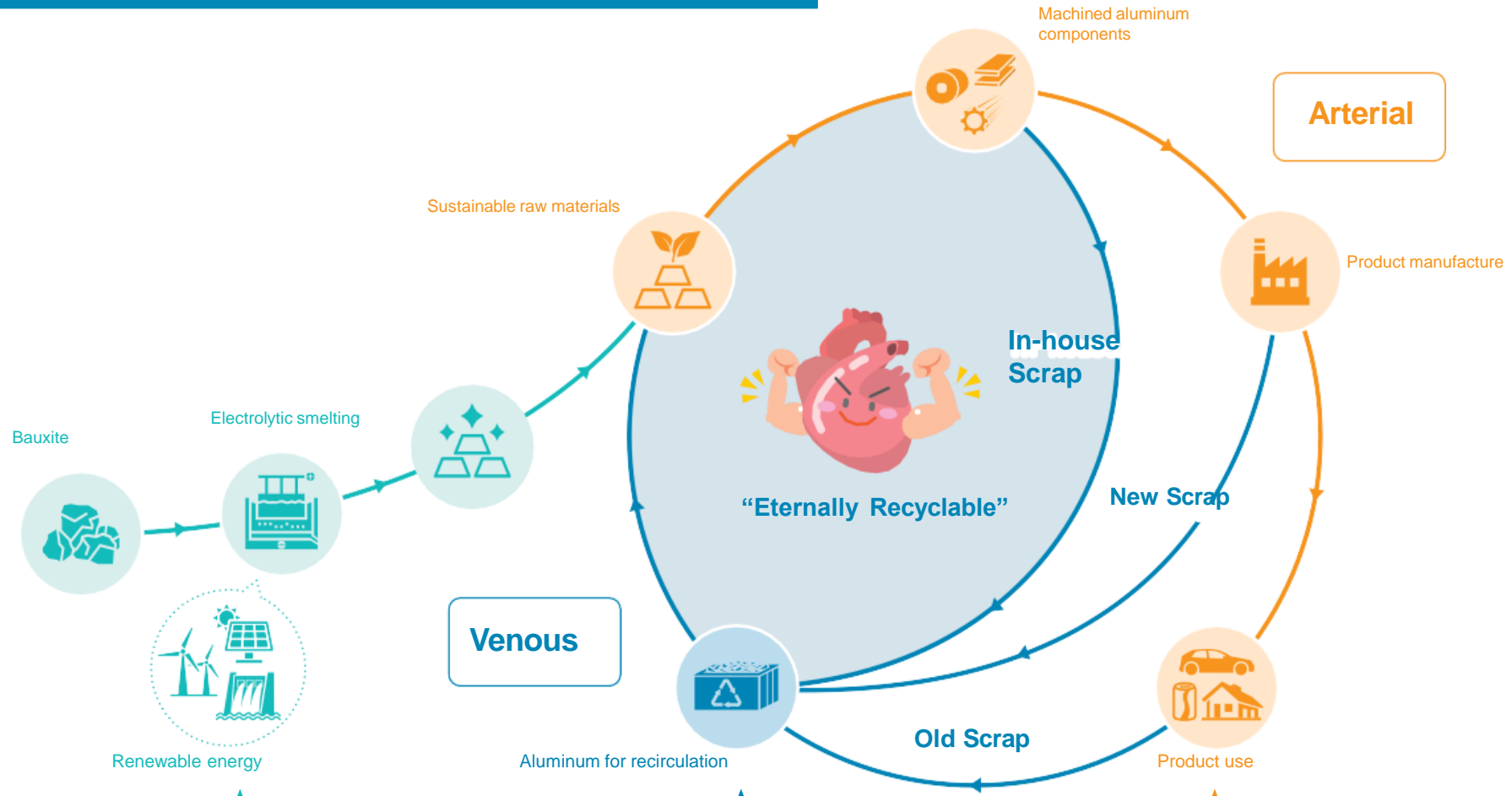
\*Source: Ministry of the Environment, "Recommendations for Management Strategy Planning Using the TCFD" (2021 version):

# Implementing Measures in Line with TCFD Scenario Analysis

Item	Risk Response	Capturing Opportunities
Carbon pricing, national carbon emissions targets/policies	<ul style="list-style-type: none"> <li>✓ Setting long-term CO<sub>2</sub> emissions/energy reduction targets</li> <li>⇒ Issued 2050 Carbon Neutral Declaration, re-established (revised upward) CO<sub>2</sub> emission reduction targets for FY2030</li> <li>✓ <b>Considering internal carbon pricing</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Working toward long-term CO<sub>2</sub> emission reduction targets</li> <li>✓ Capturing CO<sub>2</sub> with forests, etc. and utilizing credit systems</li> <li>✓ Establishing evaluation methods for reduction contribution</li> <li>✓ Transferring energy-saving technologies through public-private partnerships and international cooperation toward decarbonization</li> </ul>
Changes in the energy mix, supporting energy-saving	<ul style="list-style-type: none"> <li>✓ Energy-saving improvements such as switching fuels/power companies</li> <li>✓ Promoting the introduction of renewable energies ⇒ Currently promoting the introduction of renewable energies from FY2023 with CO<sub>2</sub> reduction of 100,000 t/year</li> </ul>	<ul style="list-style-type: none"> <li>✓ Promoting the use of solar power and other forms of private power generation, selling electricity</li> <li>⇒ Installed solar power generation system at UATH (launched operation in September 2022)</li> <li>✓ Utilizing CCS, CCUS and other decarbonization technologies</li> </ul>
National recycling regulations / policies	<ul style="list-style-type: none"> <li>✓ Promoting the improvement of product recycling rates</li> <li>⇒ Manufactured the world's first 100% recycled cans</li> <li>✓ <b>Establishing scrap collection scheme (upstream/downstream)</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Collaborating with and establishing scrap collection schemes with retailers and municipalities</b></li> <li>⇒ <b>Developing the Can-to-Can Journey in ASEAN</b></li> </ul>
Changes in important commodity/product prices and demand	<ul style="list-style-type: none"> <li>✓ (Setting product prices in line with rising raw material prices)</li> </ul>	<ul style="list-style-type: none"> <li>✓ (Curbing product price increases and strengthening product competitiveness through measures such as improving recycling collection efficiency)</li> </ul>
Changes in customer behavior	<ul style="list-style-type: none"> <li>✓ <b>Development of certified decarbonized aluminum products and services</b></li> <li>⇒ <b>Introduction of "UACJ mass balance approach" to certify reduction of CO<sub>2</sub> emission.</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Promoting the use of aluminum in products</li> <li>✓ Promoting acquisition of environmentally friendly certifications and establishing original brands</li> <li>⇒ Acquired ASI certification and expanded sales of UACJ SMART</li> <li>✓ Collaborating with competing materials companies</li> </ul>
Rise in average temperature		
Extreme weather events (cyclones, floods)	<ul style="list-style-type: none"> <li>✓ Introducing disaster prevention equipment</li> <li>✓ Evolving risk modeling by utilizing data</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Promoting aluminum utilization in products: Expanding disaster prevention technologies and products</b></li> <li>⇒ <b>Launched sales of watertight plates for disaster prevention and stockpiled water in aluminum bottles and cans</b></li> <li>✓ Forming public-private consortiums for disaster prevention</li> </ul>

# Aiming to Build a Recycling-Oriented Society

The UACJ will continue to work with all partners in our supply chain and value chain to reduce CO<sub>2</sub> emissions



Make efforts to procure green aluminum ingots

Recovery/recycling of aluminum

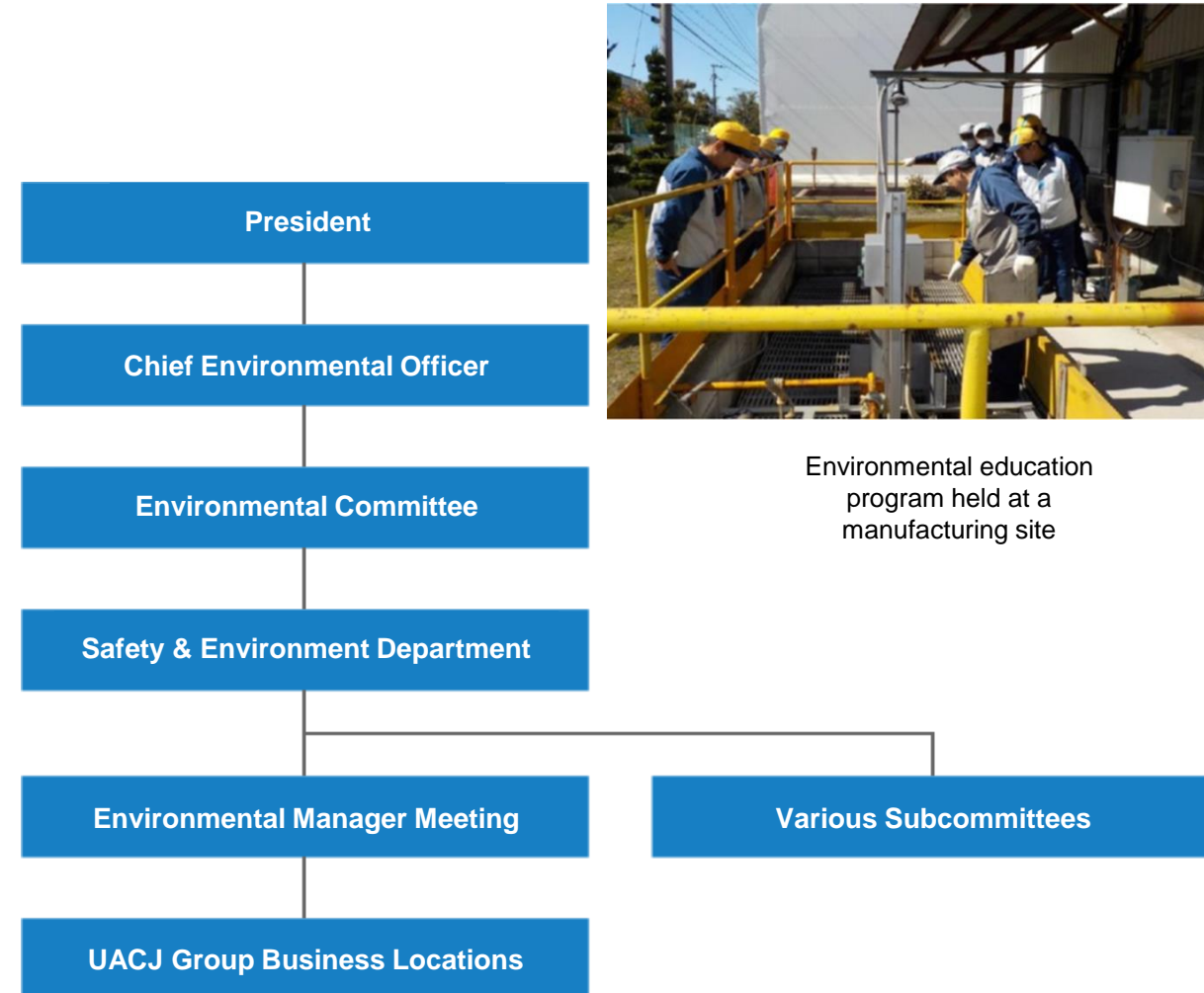
Use of aluminum reduces environmental impacts

# Appendix (1) Ongoing Environmental Activities

## UACJ Group environmental management activity items for FY2022

Item	Target	Priority Action Items
Elimination of serious environmental accidents	No more than one major environmental accident (less than half the number of accidents in FY2021)	<ul style="list-style-type: none"> <li>•Promote horizontal deployment of measures to prevent recurrence of environmental problems</li> <li>•Eliminate environmental management equipment malfunctions</li> </ul>
Promotion of energy-saving measures	Reduce energy consumption per unit by 1% throughout the Group compared to FY2021 (effort target in the Act on Rationalizing Energy Use)	<ul style="list-style-type: none"> <li>•Promote inspection and maintenance of energy-intensive facilities</li> <li>•Promote preparations for compliance with the Revised Act on Rationalizing Energy Use (to take effect in FY2023)</li> </ul>
Reduction of industrial waste	Reduce industrial waste per unit compared to FY2021	<ul style="list-style-type: none"> <li>•Thorough and advanced management of industrial waste</li> <li>•Develop a plan to reduce waste plastics</li> </ul>
Proper management of chemical substances	Reduce controlled chemical substances compared to FY2021	<ul style="list-style-type: none"> <li>•Promote PCB and asbestos handling plans</li> <li>•Respond appropriately to legal amendments</li> </ul>
Promotion of water management	Promote management of water use	<ul style="list-style-type: none"> <li>•Study water management requirements</li> <li>•Review management items related to water use</li> </ul>

## Environmental management structure



# Appendix (2): Membership and Participation in External Organizations



July 2020  
Joined ASI



March 2022  
Received ASI Certification  
(Fukui Works/Rayong Works)



March 2021  
Joined JH2A  
(Japan Hydrogen Association)



April 2021  
Signed the  
United Nations Global Compact



September 2021  
Endorsed the TCFD recommendations,  
joined the TCFD Consortium



February 2022  
Published TCFD scenario analysis  
(Ministry of the Environment-supported project)

## Cautionary note concerning forward-looking statements

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This presentation contains various forward-looking statements that are based on current expectations and assumptions of future events. All figures and statements with respect to the future performance, projections and business plans of UACJ and its Group companies constitute forward-looking statements. Although UACJ's management believes that its expectations and assumptions are reasonable, actual results and trends in UACJ's performance could differ from those expressed or implied by figures or statements herein due to exchange rate movements fluctuations, uncertainties in future business circumstances, and other factors.

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