



Aluminum lightens the world

アルミでかなえる、軽やかな世界

Briefing on Auto Body Paneling Business: Current and Future Market Conditions

December 18, 2023

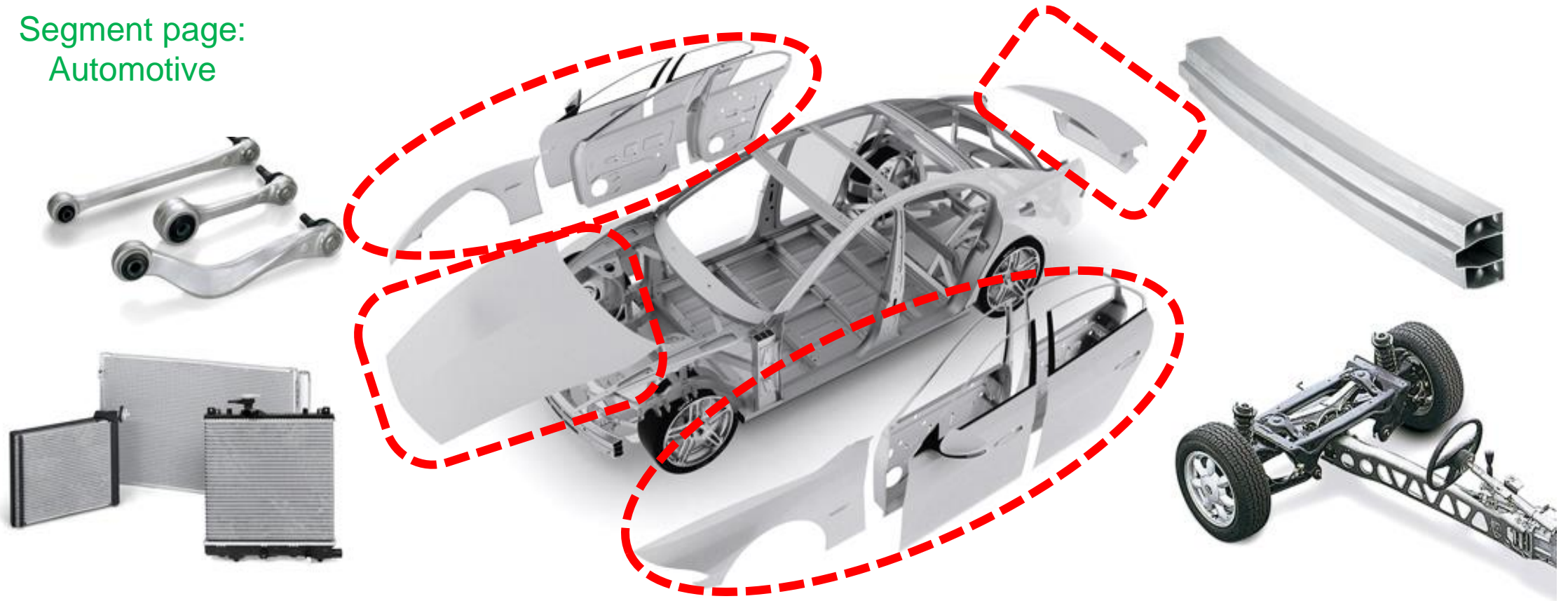
Flat Rolled Products Division,
Automotive Materials Marketing & Sales Department
UACJ Corporation



Scope

Aluminum is an integral material in many parts of automobiles. Today's briefing focuses on the panels outlined in red.

Segment page:
Automotive



Source : <https://www.aluminum.or.jp/jidosya/japanese/index.html>

Aluminum paneling for Japanese automobiles

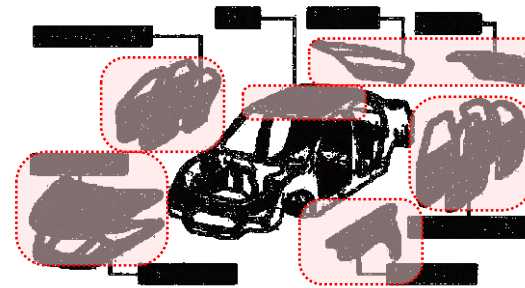
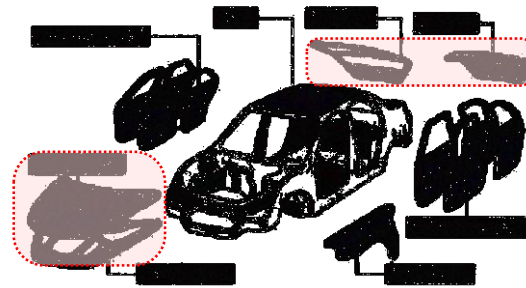
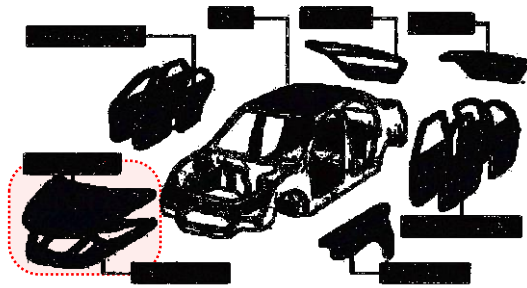
The amount of aluminum paneling per vehicle has increased because the material is used for more vehicle types and parts.

Image of increase in aluminum paneling per passenger car

Vehicle type: Mainly sportscars
⇒ Low-volume vehicle type
Parts: Mainly hoods
(All aluminum on some vehicles)

Vehicle types: Large sedans, HVs
⇒ Transition to higher-volume vehicle types
Parts: Hoods, trunk lids/back doors, etc.
⇒ More parts

Vehicle types: Large sedans, SUVs, HVs, EVs
Parts: Hoods, trunk lids/back doors, fenders, doors, roofs, etc.
⇒ More vehicles types and parts



1995

2000

2005

2010

2015

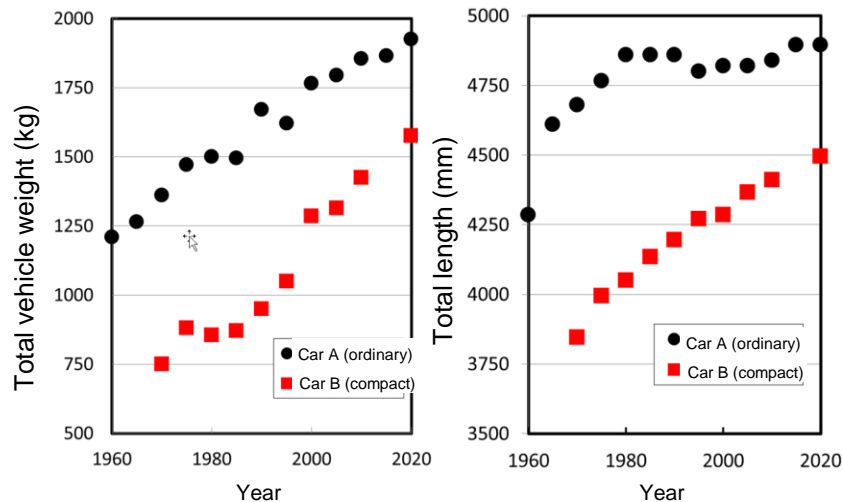
2020

Source: UACJ research

Background on increase in aluminum usage

Aluminum is used to reduce auto body weight.

Change in auto body weight



Source : <https://www.aluminum.or.jp/jidosya/japanese/01/5-2.html>

Auto body weight

300–400 kg increase over the past few decades

Auto body length

Overall length 200 mm or more longer than initial models

Auto bodies continue to become larger

Background of vehicle enlargement (weight increase)

Stricter vehicle safety standards

Increase in part thickness and other revisions to frame structure, etc.

More preventive safety devices, automated driving

More sensors for radar, cameras, etc.

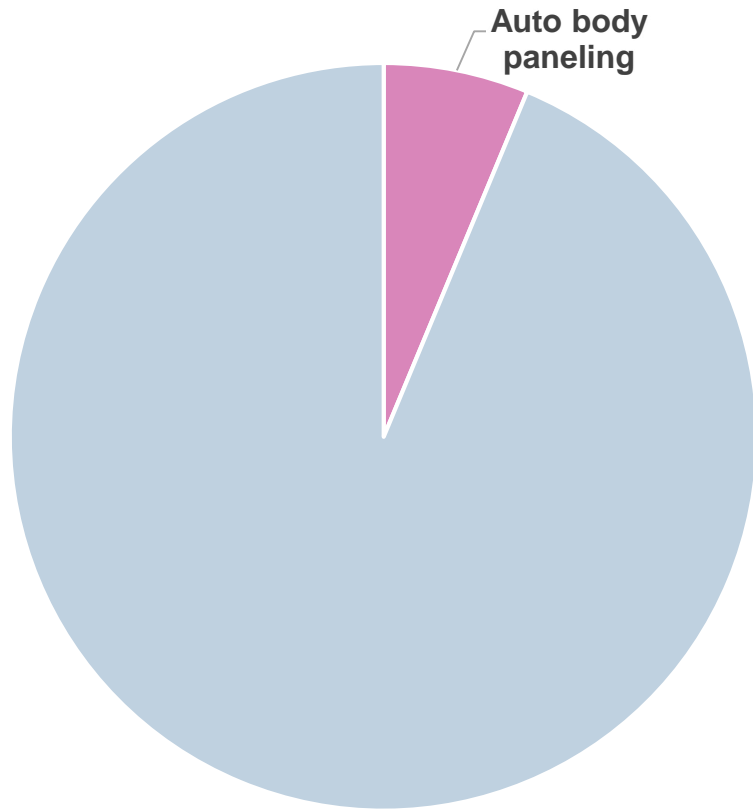
Fuel consumption/CO₂ emission regulations

Auto body electrification
⇒ Increased weight due to batteries

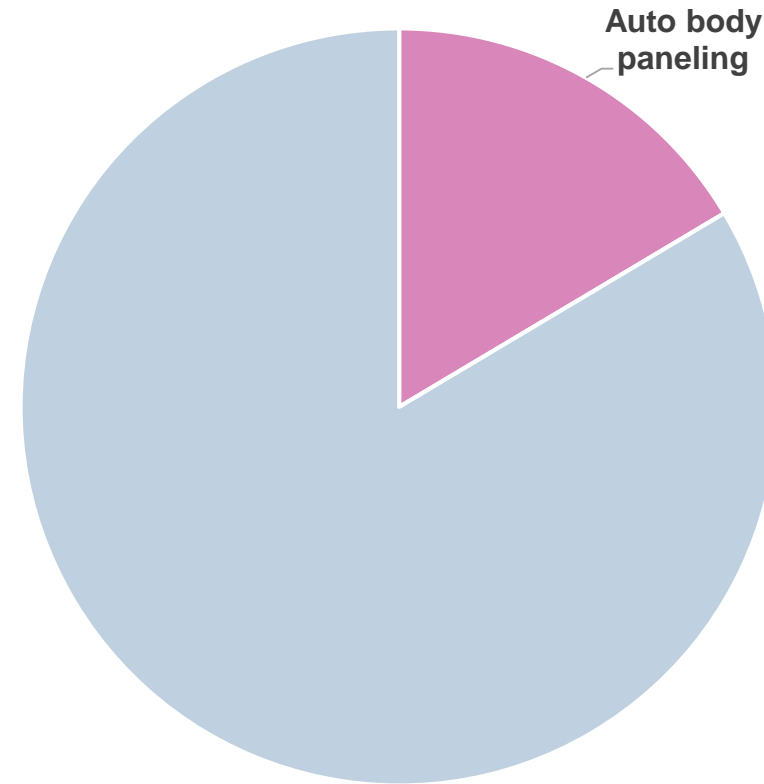
Positioning of auto body paneling in UACJ's domestic panel business

Sales ratio have increased in line with greater demand for auto body paneling.

FY2017 figures



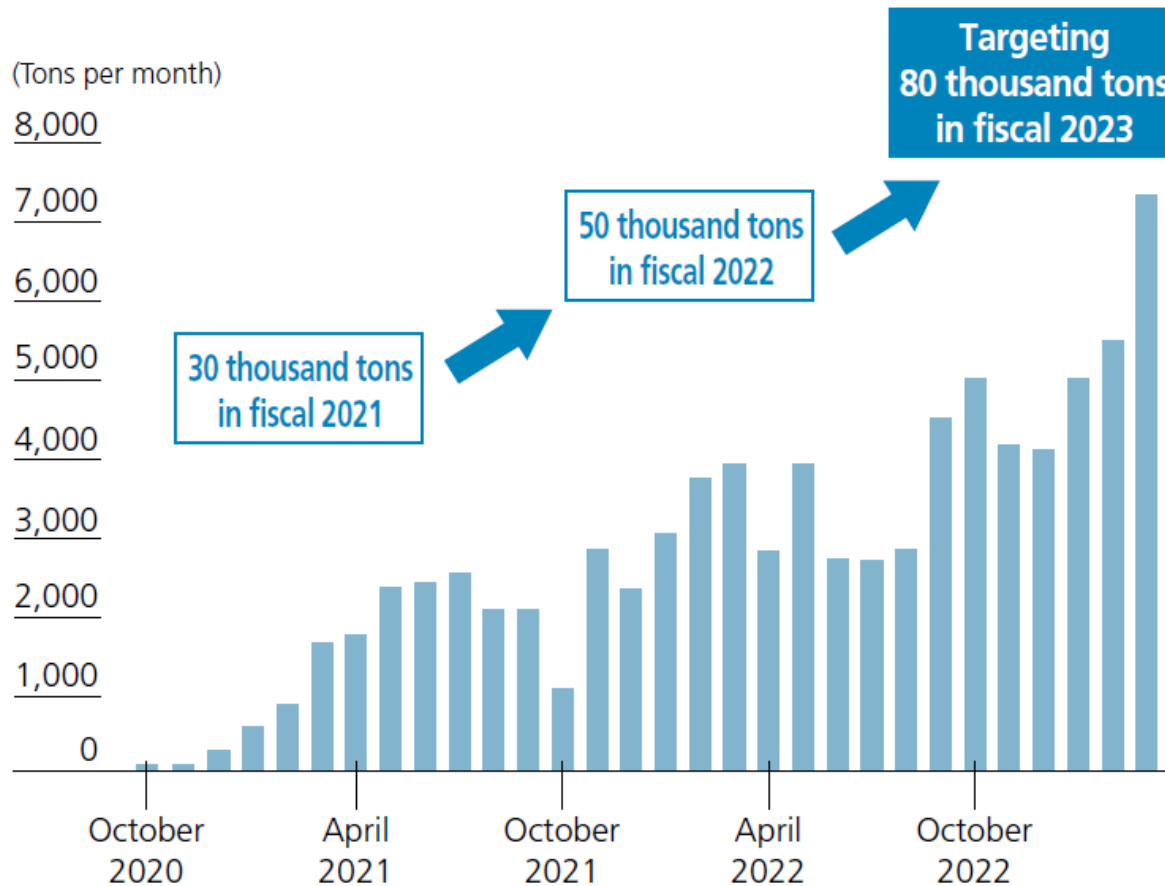
FY2023 projections



Rising demand for auto body paneling in Japan

Production volume in Fukui Work is increasing in line with rising demand for auto body paneling.

Fukui Work's production capacity of automotive body panel finishing lines



Early launch of new automotive body panel finishing lines at Fukui Works

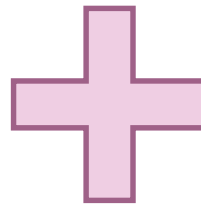
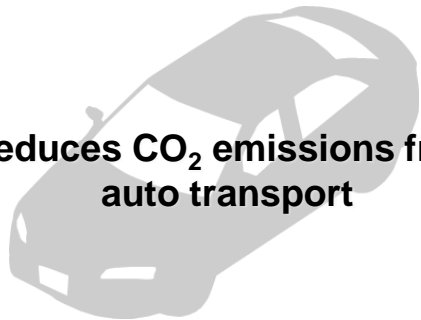
Meet rising demand

Future developments (carbon neutrality)

Carbon neutrality efforts accelerate in the automotive industry.

Automakers: All companies implement efforts to achieve carbon neutrality

Reduces CO₂ emissions from auto transport



Reduces CO₂ emissions from auto manufacturing



Circular economy

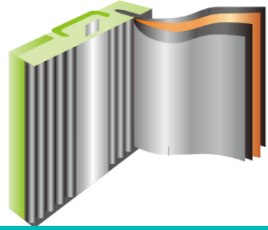
Opportunity to growing demand by leveraging the benefits of aluminum

✓ Lightweight

✓ Recyclability

} Contributing to reducing environmental impact

EV battery components and related business segments



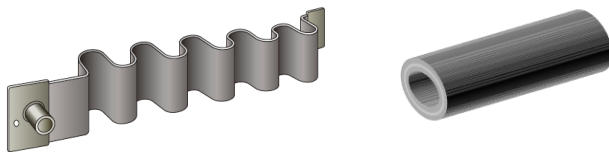
Cells



Modules



Packs (cases)



Peripherals

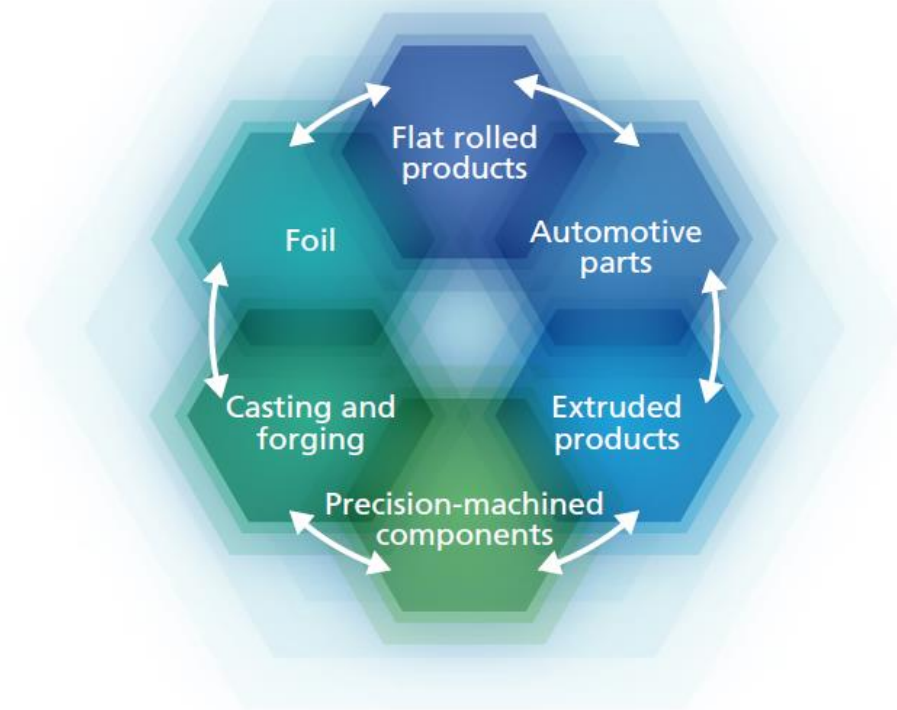
Battery components



All business segments
are involved

Exhibiting the strengths
of UACJ

- Collaboration between 6 business segments
- Versatile machining capacity

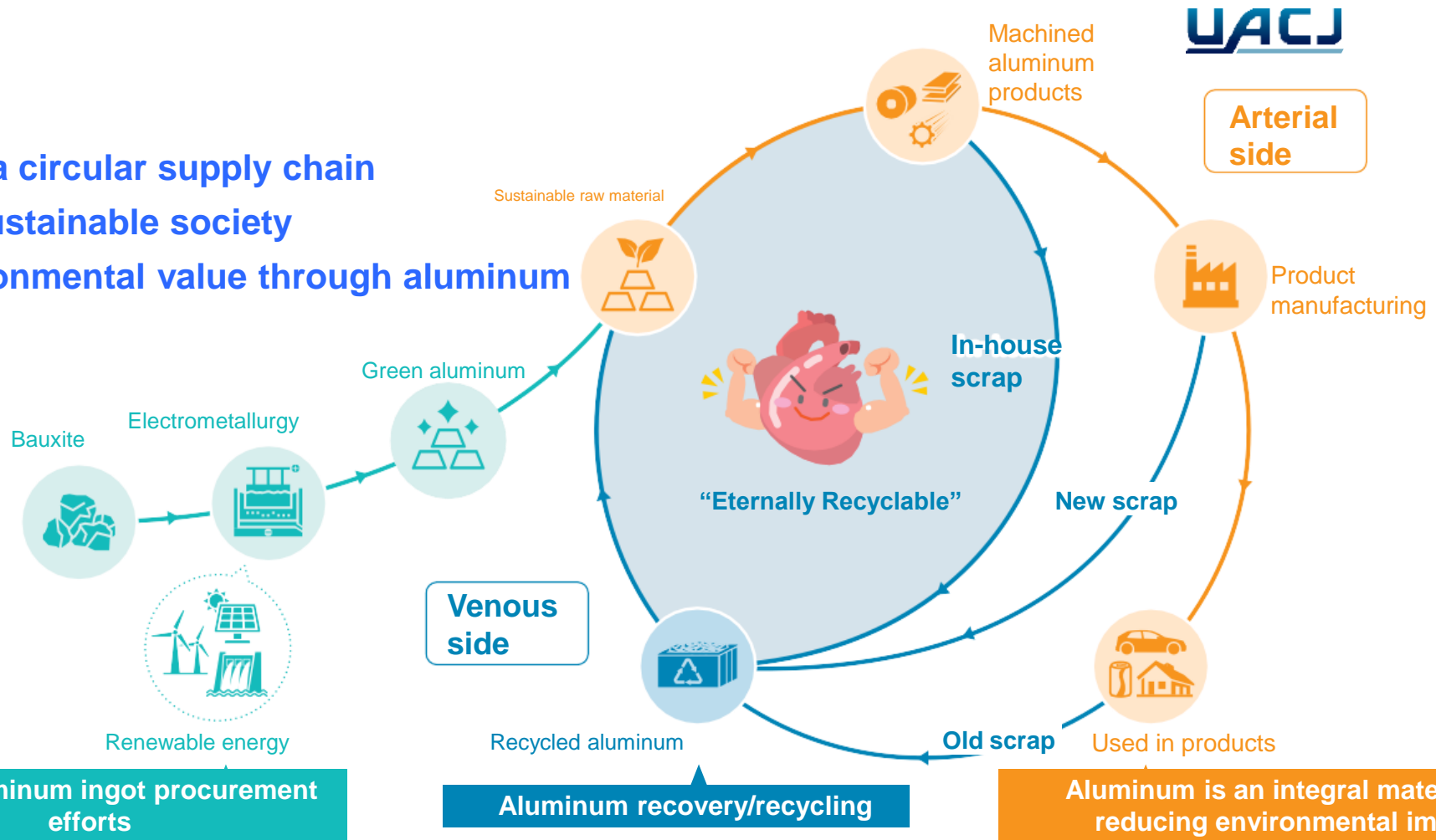


Striving to achieve a circular economy (UACJ's efforts)

- Aluminum is an eternally recyclable material that can be recycled for anything

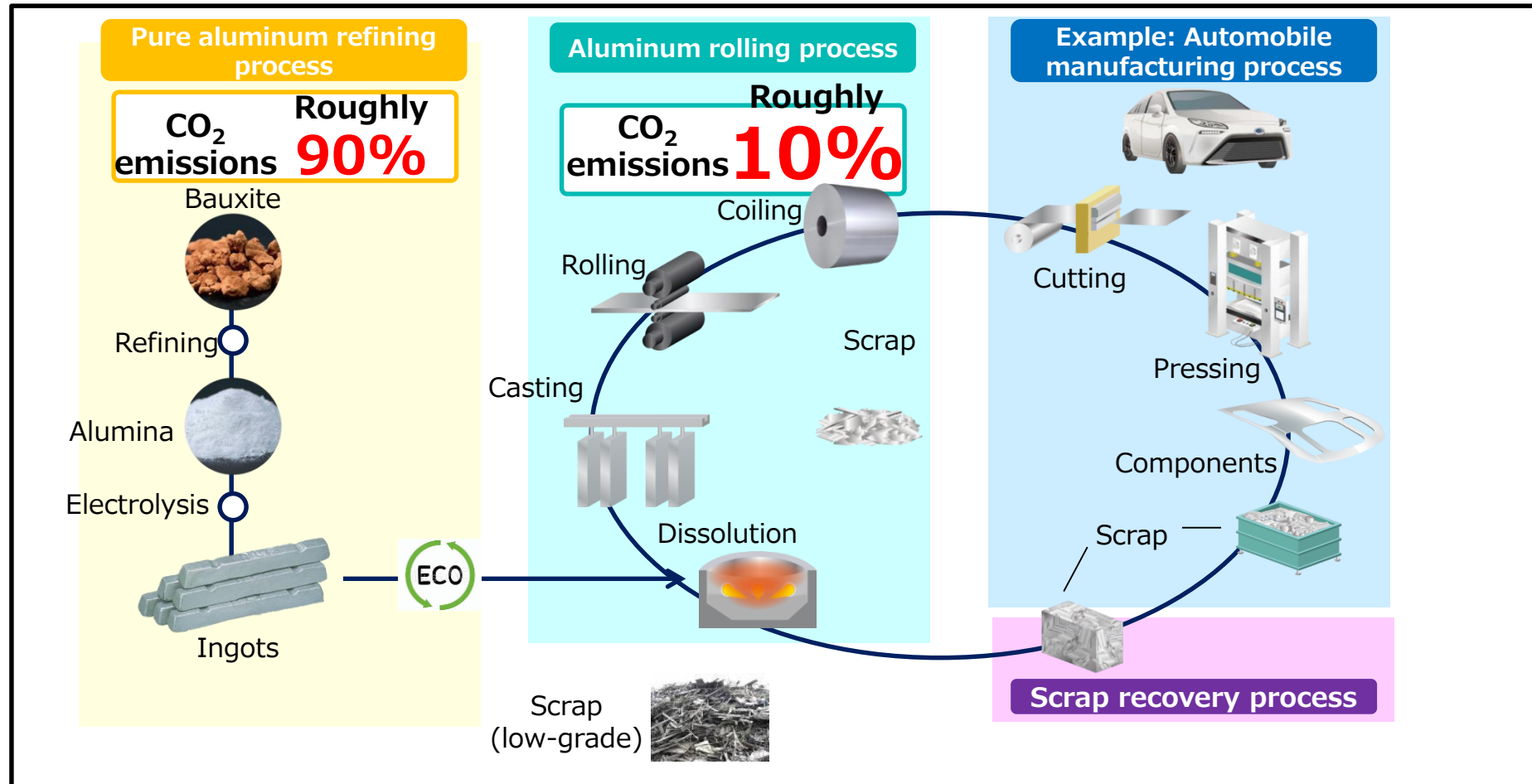
- UACJ

- is the heart of a circular supply chain
- will realize a sustainable society
- provides environmental value through aluminum



Striving to achieve a circular economy (efforts in auto body paneling)

Schematic diagram of the flow of aluminum from material manufacturing to finished product, and environmental measures efforts



Expectations for the potential of aluminum in automotive applications

