

## Carbon Neutrality Roadmap

# CN Roadmap 2030

Going up five roads to help  
our customers, business partners,  
and society become carbon-free.

RM 2030

RM 2050



## Mission

# Passing on a better global environment to the children of the future

### Our Corporate Philosophy

We will aim to achieve our mission in accordance with our principle of “Living and prospering together with people, society, and the planet, we aim to be a value-generating corporation that contributes to the creation of prosperous societies.”

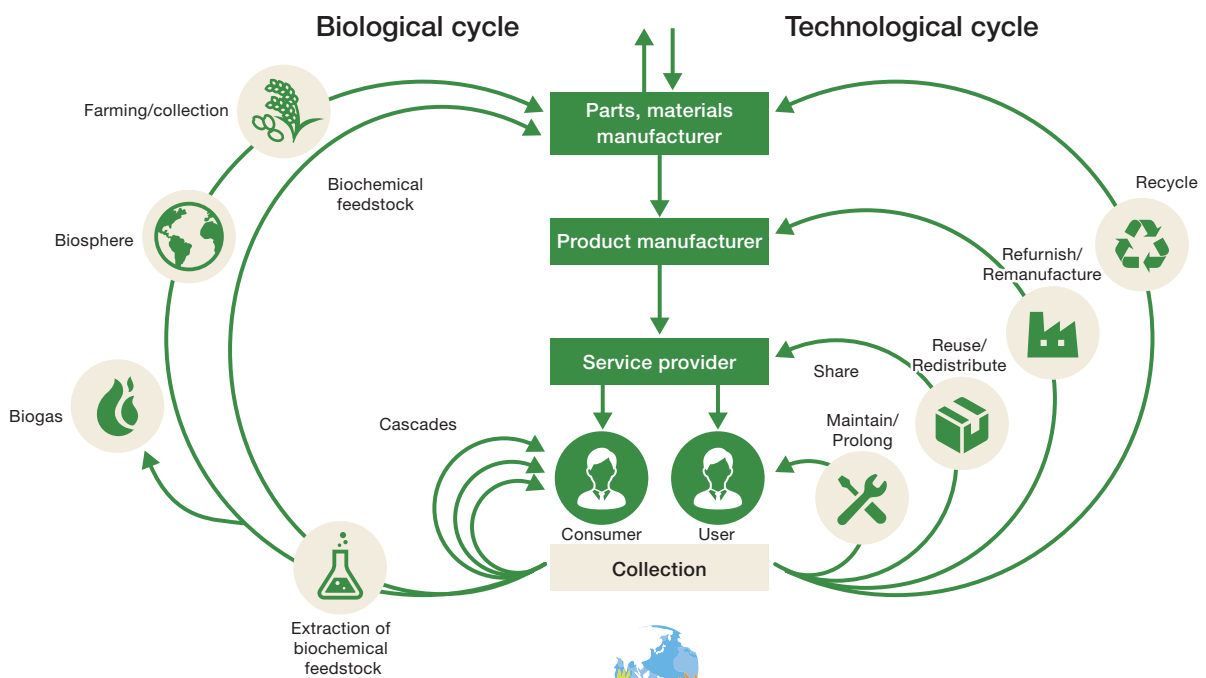


## Vision (Ideal Image)

# Leading circular economy\* provider

\*An economy that maximizes added value through efficient and recycling-oriented use of resources at all stages.

Toward achieving carbon neutrality, we will break through the center as the top runner and expand our frontline to span the entirety of a circular economy.



# Toyota Tsusho Group carbon neutrality declaration

We aim to be **carbon neutral** by 2050.

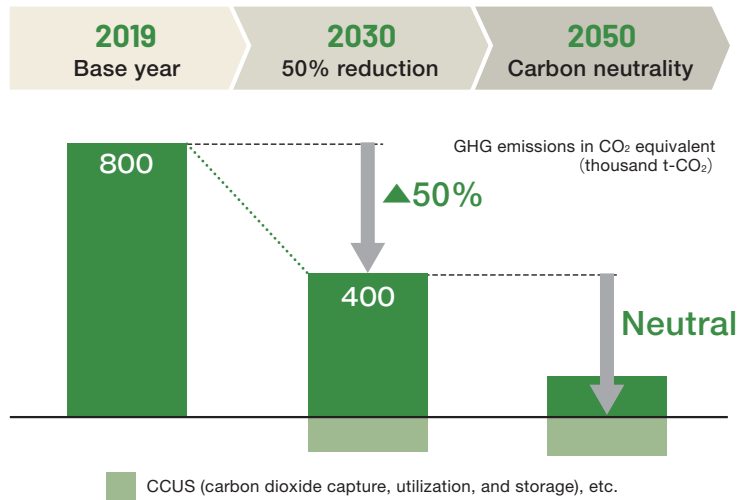
We aim for a **50% reduction** in GHG\* by 2030 compared to 2019.

\*Greenhouse gases

**Included**

- Parent company, domestic and overseas consolidated subsidiaries
- Scope 1, Scope 2

Note: Scope 3 promotes specific initiatives with suppliers and customers to reduce GHG emissions throughout the value chain.



See Page 10 for Scope details.

## Our 2 Tasks

# What we should do as the Toyota Tsusho Group

While focusing on reducing the GHG emissions of our corporate group, customers, and business partners, we aim to achieve further growth by expanding our business domains with ideas and proposals that contribute to the reduction of GHGs.

### ① MUST DO

**Reduce the Toyota Tsusho Group's GHG emissions**

**Take ownership in reducing our own GHG emissions**

- Carbon neutrality for our group Scope 1+2
- Becoming carbon neutral by 2050
- 50% reduction in GHG emissions by 2030 (compared to 2019)

### ② CHANCE Competitive Domains/Growth Strategy

**Engage in five strategic domains**

**Propose technologies and ideas for reducing GHG emissions**

- Renewable energy and energy management
- Batteries
- Hydrogen and carbon neutral fuels
- Resource circulation and the 3Rs (rebuild, reuse, recycle)
- Economy of life

### MUST/CHANCE

Reduce our GHG emissions and contribute to the reduction of GHGs emitted by our customers and society

New leap for Toyota Tsusho  
(Becoming a leading circular economy provider)

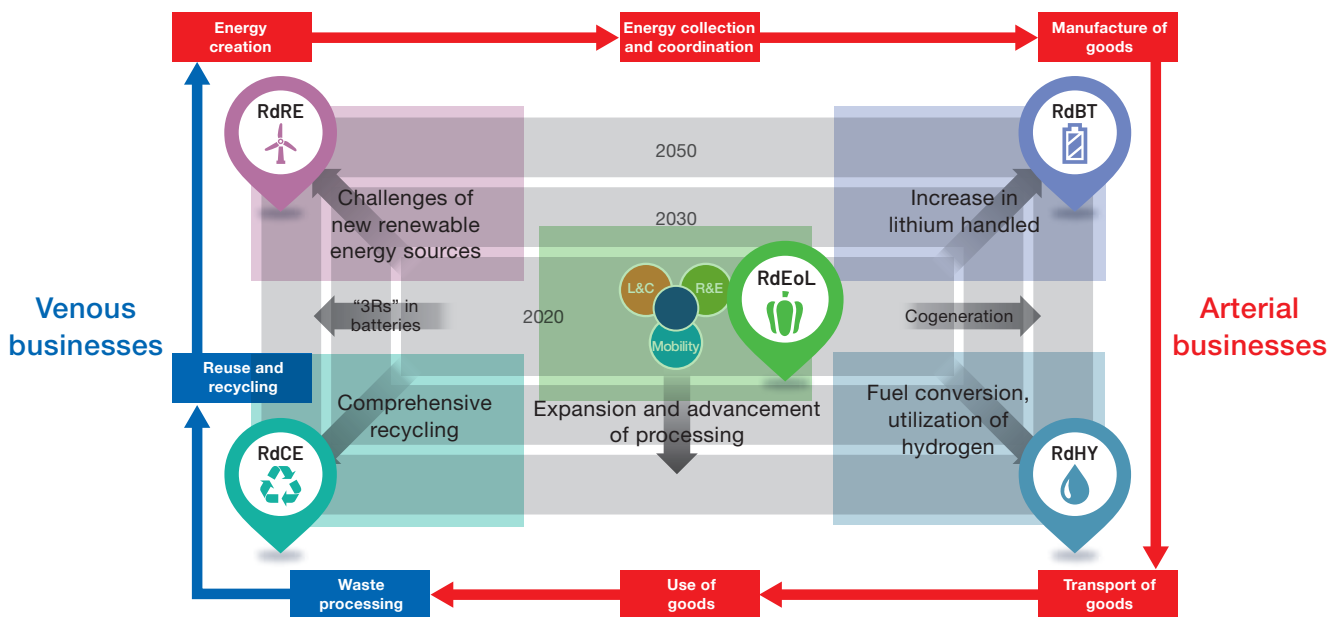
# Domains of strength and 5 WG\*s \*Working group

As part of our efforts to contribute to the transition to a carbon-free society, our corporate group is engaged in businesses that support a circular economy at each stage of the industrial life cycle, which consists of producing energy, gathering and preparing energy, producing goods, transporting goods, using goods, processing waste, and reusing goods.

RdRE (Road Renewable Energy) <b>Renewable Energy &amp; Energy Management WG</b>	Investment: 700 billion yen
<ul style="list-style-type: none"> <li>● Having renewable energy account for 50% of our power consumption</li> <li>● Contributing to meeting the renewable energy needs of major customers</li> <li>● Expanding the introduction of renewable power generation</li> </ul>	

RdBT (Road Battery) <b>Battery WG</b>	Investment: 400 billion yen
<ul style="list-style-type: none"> <li>● Constructing supply chains for local production and local consumption</li> <li>● Entering the battery manufacturing business</li> <li>● Expanding the supply capacity for lithium and other resources</li> <li>● Entering the raw materials and parts manufacturing businesses</li> </ul>	

## Carbon Neutrality Roadmap



RdCE (Road Circular Economy) <b>Resource Circulation &amp; 3R* WG</b>	Investment: 200 billion yen
<ul style="list-style-type: none"> <li>● Centered on the (tentatively named) Circular Economy Innovation Center, creating businesses that multiply the effects of circular economy and carbon neutrality initiatives</li> <li>● Achieving battery-to-battery recycling, metal and plastic recycling, and CO<sub>2</sub> recycling</li> </ul>	
<small>*Rebuild, Reuse, Recycle</small>	

RdHY (Road Hydrogen) <b>Hydrogen &amp; Carbon Neutral Fuel WG</b>	Investment: 200 billion yen
<ul style="list-style-type: none"> <li>● Realizing three large-scale models of hydrogen and fuel cell utilization (at ports, in public transportation, and in logistics) at more than 10 locations</li> <li>● Realizing the supply of carbon neutral fuels in Japan's Chubu region</li> </ul>	

RdEoL (Road Economy of Life) <b>Economy of Life WG</b>	Investment: 100 billion yen
<ul style="list-style-type: none"> <li>● Obtaining carbon credits through agribusiness</li> <li>● Renewing economy of life businesses through carbon neutrality and circular economy concepts</li> </ul>	

**Investment for the realization of a decarbonized society: 1.6 trillion yen by 2030**





# Battery WG Road Batteries: Carbon Neutrality Innovation Cycle

We will take on a wide range of challenges from battery resource development to rebuilding, reusing, and recycling.

## Approach overview

Contributing to the achievement of carbon neutrality by solving issues in the field of batteries, which is the very key to success for electrification.

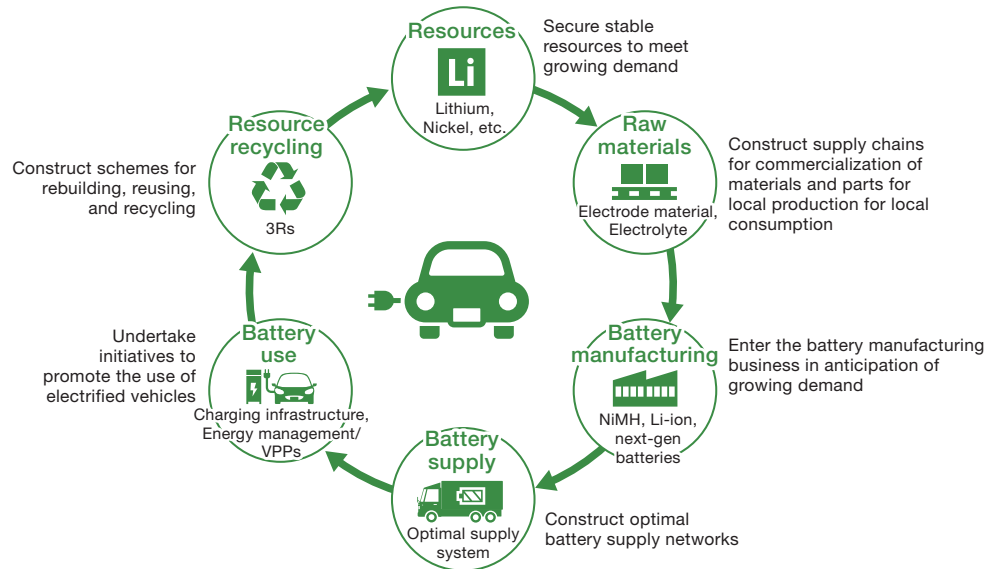
**Take on the issues facing the popularization of electrified vehicles**

**Vehicle and battery issues**

- Vehicle (battery) price
- Securing battery quantities
- Battery performance (Cruising range, charging time, etc.)

**Infrastructure issues**

- Charging infrastructure
- Rebuild, Reuse, Recycle



## Carbon Neutrality Roadmap 2030

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Period of battery electric vehicle introduction					Period of battery electric vehicle popularization				
Resources	Increase in Lithium production and refining capacity					Securement of resources (Lithium, Nickel, etc.) in anticipation of further demand growth				
	Entrance into battery materials and parts manufacturing business					Global rollout of materials and parts manufacturing business				
Raw materials	Entrance into battery materials and parts manufacturing business					Global rollout of materials and parts manufacturing business				
	Accelerated response to technological innovations and accelerated initiatives for next-generation batteries (solid-state batteries, etc.)									
Battery manufacturing & supply	Entrance into battery manufacturing business					Increase in capacity and global rollout of battery manufacturing business				
	Receipt of turnkey equipment orders and construction of an optimal supply function									
Battery use	Acceleration of initiatives for preparing a charging infrastructure					Global rollout of reuse and rebuild business				
	Verification of reuse and rebuild model					Global rollout of reuse and rebuild business				
Resource recycling	Development of recycling technologies					Mass production, global rollout, and development of technologies for producing high-level quality				
	Development of recycling technologies					Mass production, global rollout, and development of technologies for producing high-level quality				

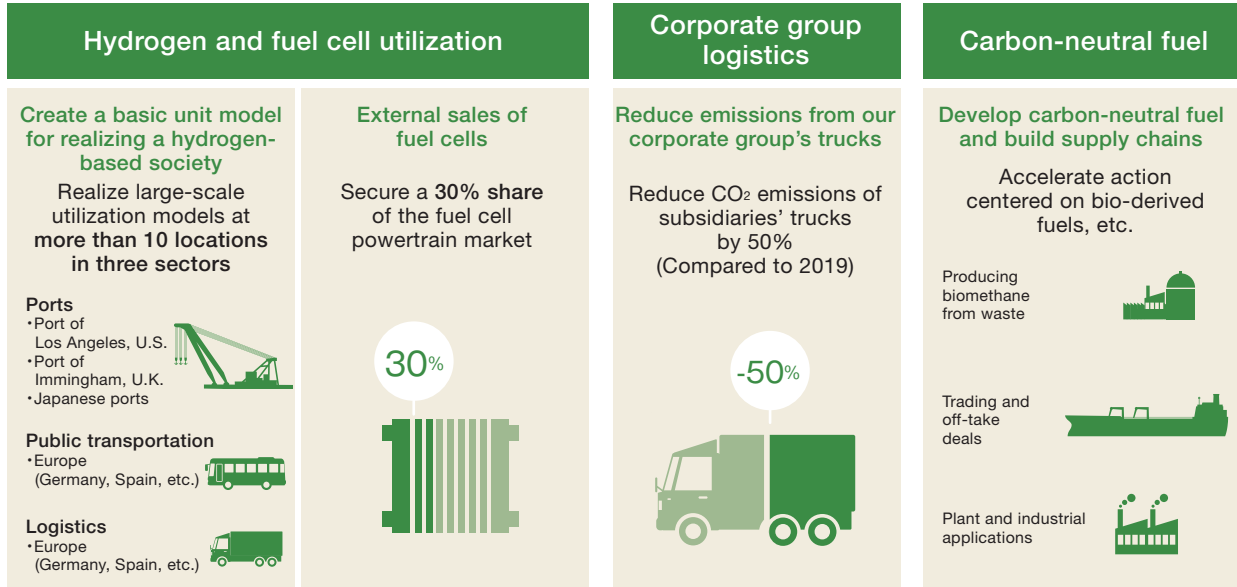




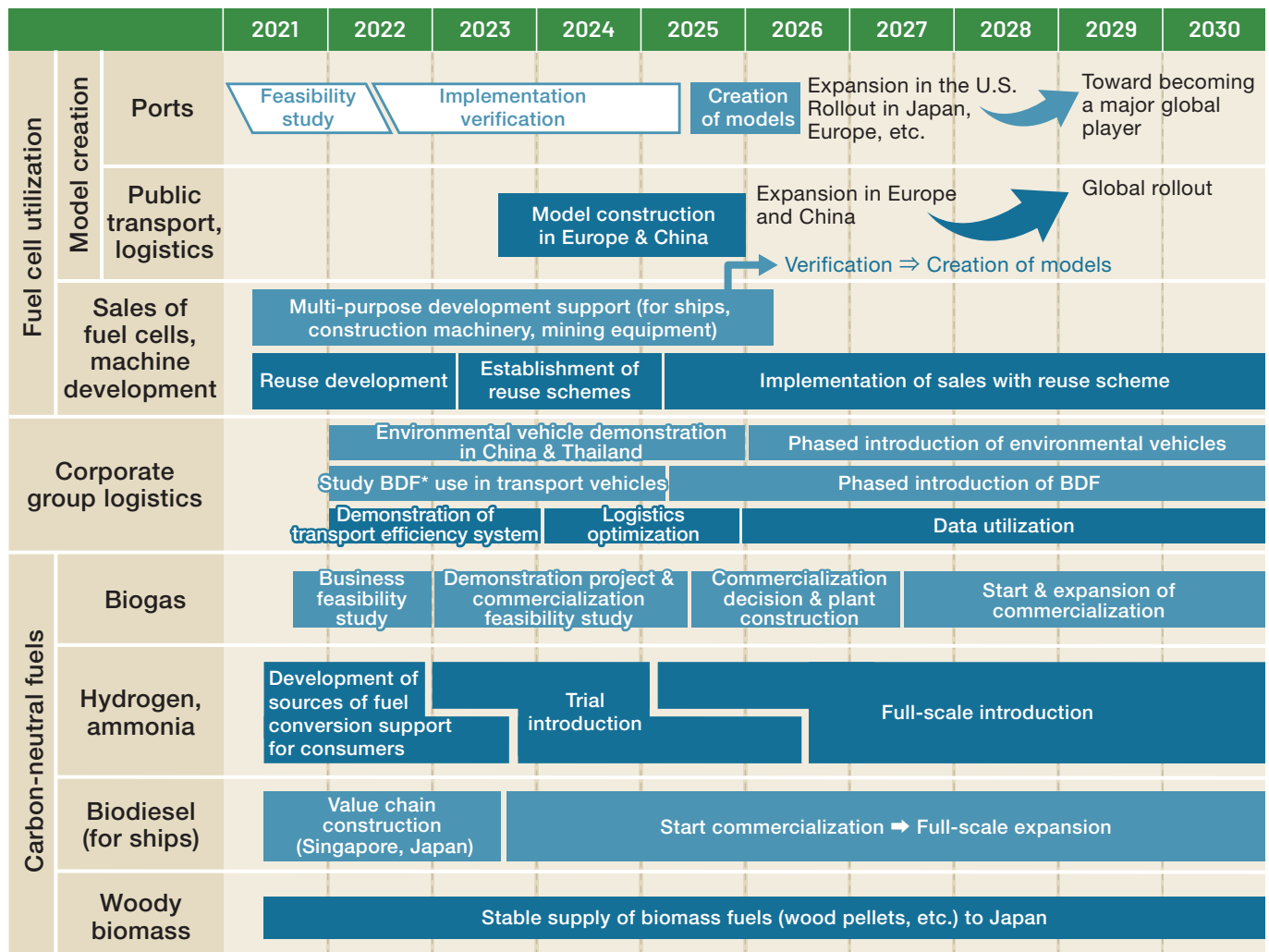
# Hydrogen & Carbon Neutral Fuel WG Road Hydrogen: Path Toward Future Energy

We will accelerate our efforts related to hydrogen and carbon neutral fuels, which are key for achieving carbon neutrality.

## ► Approach overview



## ► Carbon Neutrality Roadmap 2030



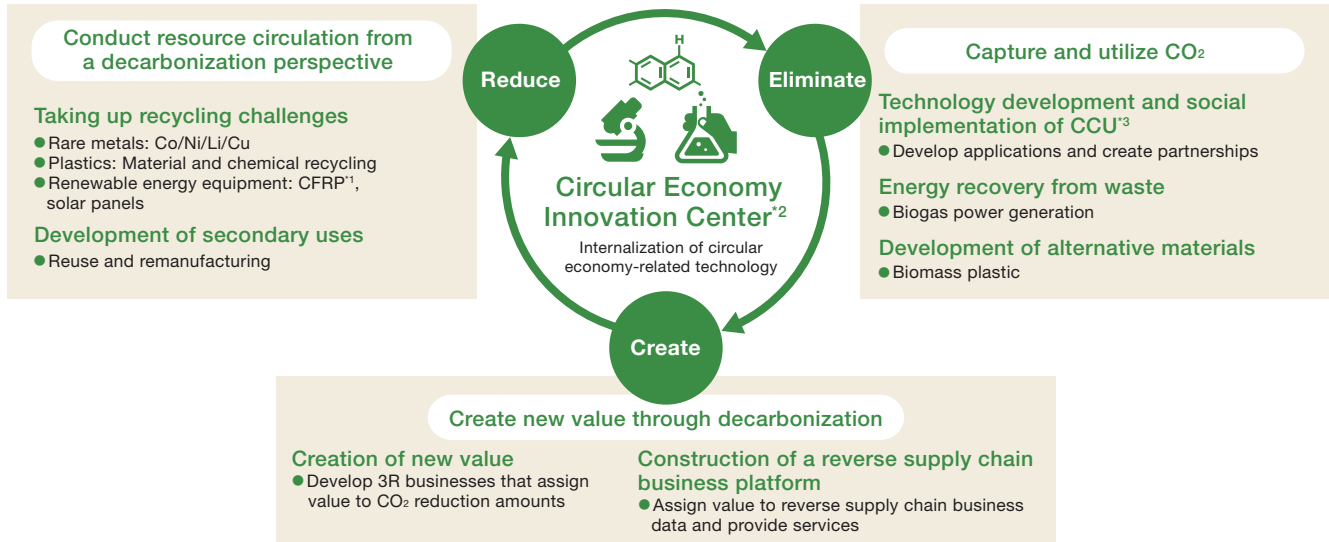
\* Bio Diesel Fuel



# Resource Circulation & 3R WG Road Circular Economy: Toyota Tsusho as a leading venous business expert

We will deepen our resource circulation efforts under the banner of “reduce CO<sub>2</sub>, eliminate CO<sub>2</sub>, and create from CO<sub>2</sub>”.

## ► Approach overview



\*1 Carbon fiber-reinforced plastic \*2 Tentative name \*3 Carbon dioxide capture and utilization: A technology for capturing and using CO<sub>2</sub> before it is emitted into the atmosphere

## ► Carbon Neutrality Roadmap 2030

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>① Circular Economy Innovation Center</b>		Establishment preparation	● Establish	Expand scope going forward → Commercialize in each domain						
<b>Battery 3Rs</b>	Expansion of factory waste material recycling business				Expansion of end-of-life battery recycling business					
	Technology development				● Introduce prototype machines	Development of technologies for multi-base mass production and achieving a high level of quality				
<b>Renewable energy and new energy</b>	Solar panels	Verification of separation technology		Development of recycling technology			Commercialization			
	CFRP	Application development			Laboratory-scale verification	Development of large-scale and mass production		Plant verification		
	CCU basic technology development		Laboratory and small-scale verification		Large-scale verification	Product business development		Commercialization		
<b>Metals and plastic materials</b>			● Start plastic material recycling operations	Expansion of material recycling business		Composite plastic, chemical recycling technology development and commercialization				
				Commercialization of biomass plastics						
	● Introduce prototype machines		Expansion of electronic components circulation business							
<b>② Creation of new values Platform business</b>	C2B <sup>*1</sup> platform/ELV <sup>*2</sup> collection platform	Demonstration	Commercialization	Investment in global platform companies		Dissemination of platform to other domains and markets				
	Demonstration	Commercialization	Development of expanded platform functions							

\*1 Consumer-to-business \*2 End-of-life vehicle





Economy of Life WG

# Road Economy of Life (EoL): For Smiles on the Faces of the Children of the Future

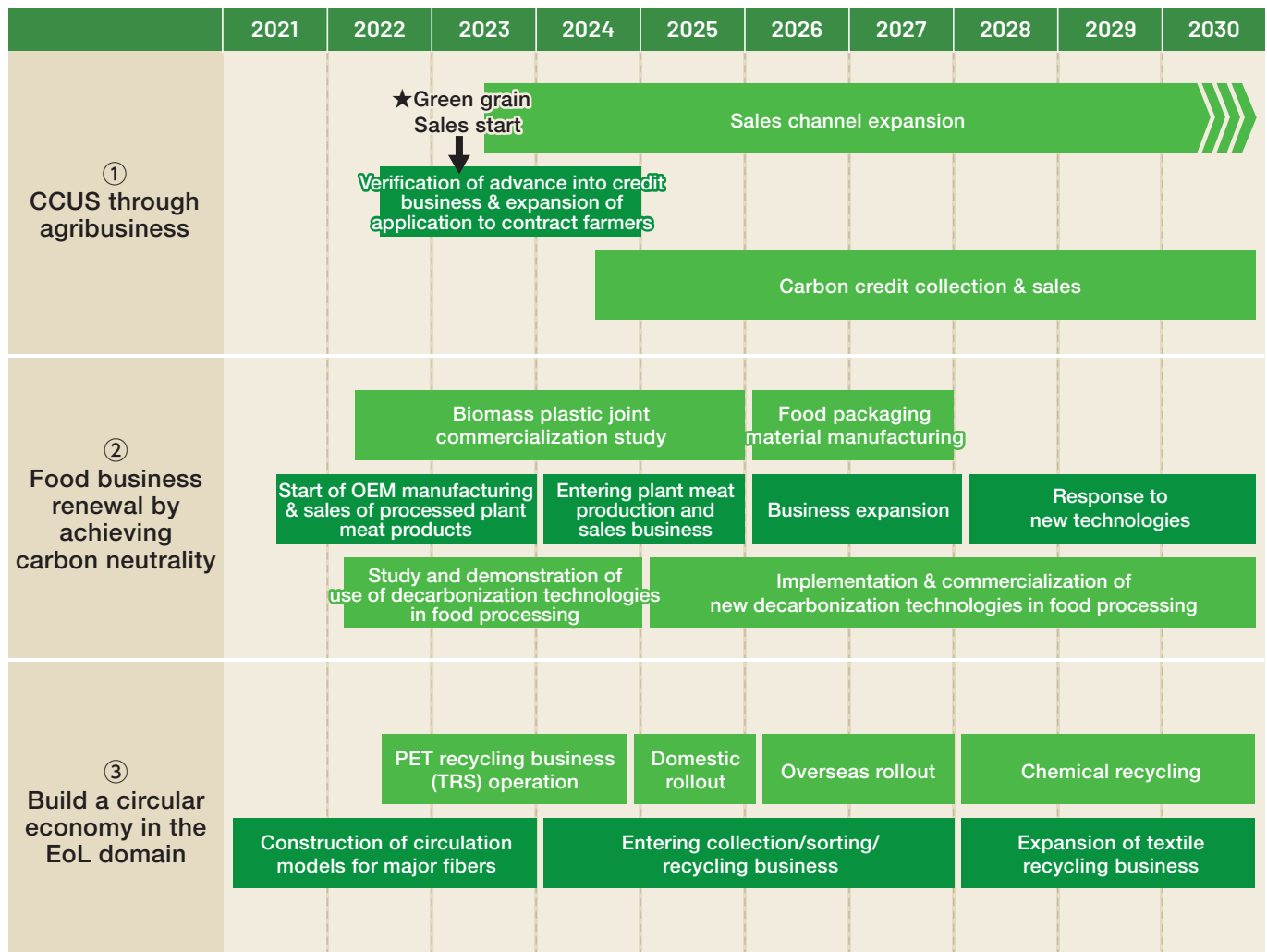
We will work to reduce, absorb, and utilize GHG emissions in domains related to medicine, textiles, food, and housing.

## ► Approach overview



\*<sup>1</sup> Carbon dioxide capture, utilization, and storage \*<sup>2</sup> Grains produced and collected in an environment- friendly manner

## ► Carbon Neutrality Roadmap 2030



## Various initiatives being advanced by each WG

Our five carbon-neutrality WGs, which are striving to contribute to the achievement of a decarbonized society, are accelerating various actions. Here are some examples of advances in new challenges on the world stage.



RdRE



Renewable Energy & Energy Management WG

### Contributing to customers' carbon neutrality by utilizing renewable energy



Eurus Energy, which is now a wholly owned subsidiary, is constructing one of Japan's largest power plants with storage batteries in Hokkaido.



Directly supplying renewable energy electricity from on-site solar power generation at Tianjin Toyota Tsusho Steel Co.

RdBT



Battery WG

### Expanding battery businesses, which are key in the popularization of electrified vehicles



Established automotive battery producer TBMNC\*<sup>1</sup> with TMNA\*<sup>2</sup>. The plant will start operation in 2025 to produce batteries for hybrid electric vehicles and battery electric vehicles.

\*<sup>1</sup> Toyota Battery Manufacturing, North Carolina \*<sup>2</sup> Toyota Motor North America, Inc.



Invested with Nippon Shokubai Co., Ltd. in Chinese electrolyte lithium salt (LiFSI) manufacturer Hunan Fluopont New Materials Co., Ltd. Planning sales in China, Japan, other countries in Asia, and Europe.



Hydrogen & Carbon Neutral Fuel WG

## Accelerating the use of hydrogen and alternative fuels in port operations and logistics



Supplied biodiesel fuel—made from waste cooking oil collected from Toyota Tsusho Group companies—to car carriers at the Port of Nagoya.



Launched a model demonstration of hydrogen use for port mobility at the Port of Los Angeles. Also initiated studies on the potential of model introduction at the Port of Nagoya and the Port of Onahama and a study for a fuel cell truck demonstration in Thailand.



Resource Circulation & 3R WG

## Promoting reuse of recovered resources and proper disposal



Planic Co., Ltd. produces high-quality recycled plastic using the latest technologies in a Japan first, achieving car-to-car recycling\*<sup>1</sup> using mixed plastics as raw material.

\*1 The reuse of resources recovered from vehicles as materials for manufacturing vehicles \*2 End of life vehicle



Maruti Suzuki Toyotsu India Private Limited contributes to the reduction of illegal dumping and the achievement of carbon neutrality and a circular economy through its ELV\*<sup>2</sup> proper disposal business in India.



Economy of Life WG

## Promoting recycling and contributing to the creation of a recycling-based society



Joined Tee-Cycle™\* in collaboration with Patagonia, Inc. (August 2022). Began operations to separate and sort used cotton products collected from consumers and transport them to recycling companies.

\* A T-shirt recycling business

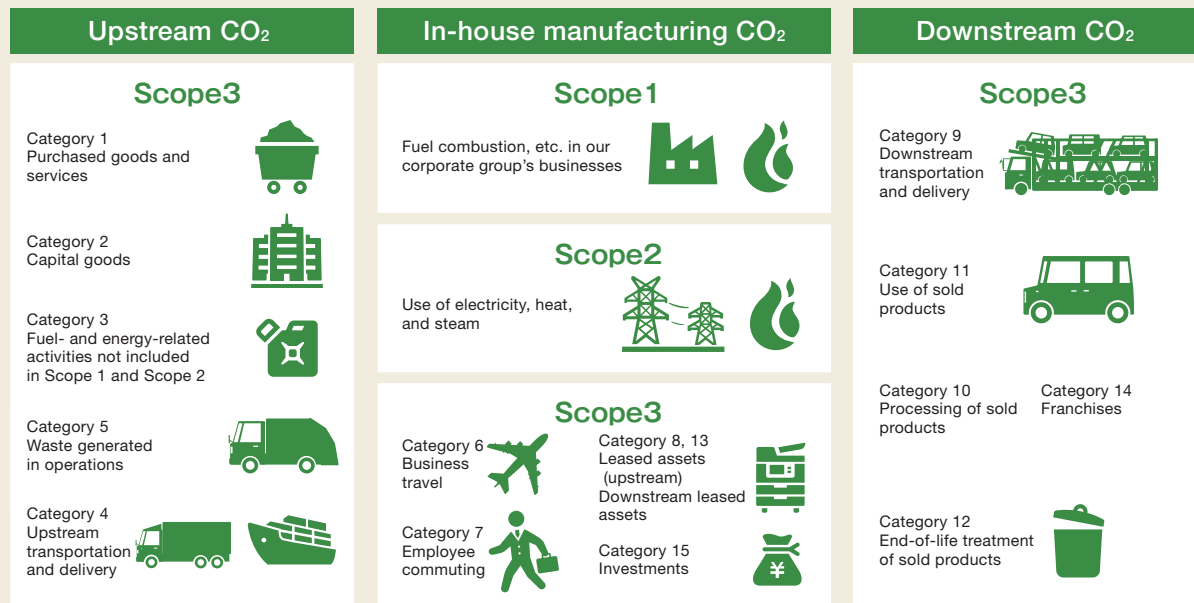


Toyotsu Pet Recycle Systems Corporation started full-scale operation of a horizontal PET bottle recycling plant. It aims to annually produce approximately 40,000 tons of recycled PET plastic for beverage bottles.

# 3 Scopes for Knowing CO<sub>2</sub> Emissions

It is necessary to reduce CO<sub>2</sub> emissions from all company activities, not only direct emissions from business activities, but also indirect emissions during commuting and product transportation.

CO<sub>2</sub> emissions are calculated according to three scopes based on international calculation standards. It is necessary to correctly grasp and address our company's CO<sub>2</sub> emissions.



Source: Green Value Chain Platform

**Supply chain emissions volume = Scope 1 emissions volume + Scope 2 emissions volume + Scope 3 emissions volume**

- Scope1** Direct emissions from the reporting company's factories, offices, vehicles, etc.
- Scope2** Indirect energy-derived emissions from electric power and other energy consumed by the reporting company
- Scope3** Other indirect emissions  
Divided into 15 categories