

The Marubeni Long-Term Vision on Climate Change: Towards Net-Zero GHG Emissions

(Formulated in March 2021)

Marubeni Corporation (hereinafter, “Marubeni”), based on the Paris Agreement, recognizes the importance and urgency of limiting the global average temperature increase by the end of this century to 1.5°C (hereinafter, the “1.5°C pathways”). For the purpose of medium- and long-term contributions to measures addressing climate change, Marubeni has formulated a long-term vision on climate change. In that vision Marubeni has set a goal to strive for net-zero GHG (greenhouse gas) emissions from the group by 2050. To make the goal of net-zero GHG emissions by 2050 an effective one, Marubeni has formulated action plans to be implemented heading towards 2030.

(1) Net-Zero GHG Emissions by 2050

Marubeni will abate GHG emissions at a level consistent with the said 1.5°C pathways. Any residual emissions that cannot be abated will be neutralized (GHG elimination) through internationally recognized nature-based solutions (e.g., forests, farmland, etc.), or through technological solutions, with the aim of achieving net-zero GHG emissions by 2050. ^{*1}

*1 Boundary of the net-zero GHG emissions:

Scope 1: Direct emissions from owned or controlled sources of Marubeni and its consolidated subsidiaries, such as through burning of fuel, industrial process, etc.

Scope 2: Indirect emissions from the generation of purchased energy consumed by Marubeni and its consolidated subsidiaries.

Scope 3, Category 15 (Investments): Among all other indirect emissions that occur in the Marubeni Group’s value chain, Scope 1 and Scope 2 for associate investees account for using the equity method (hereinafter, “associate investees”).

Action Plans towards 2030

Marubeni has formulated the following action plans heading towards the year 2030 in order to make the goal of net-zero GHG emissions by 2050 effectively.

1) Halve the CO₂ emissions of FYE 3/2020, about one million tons of CO₂, emitted by Marubeni and its consolidated subsidiaries (Scope 1 and Scope 2)

Marubeni has revised [the targeted abatement figure released in September 2020](#) (a 25% abatement from FYE 3/2019 levels by 2030) to make it at a more consistent level to the 1.5°C pathways, and will halve its total volume of emissions, which was about one million tons of CO₂ in FYE 3/2020 by 2030.

2) Reduce by one fifth the CO₂ emissions of the FYE 3/2020, about 36 million tons of CO₂^{*2}, emitted by associate investees of the Marubeni Group (Scope 3, Category 15 (Investments))

*2 This emissions volume comprises the FYE 3/2020 performance of existing investees plus the estimated emissions from projects already contracted at the current point in time (as for power generation projects, projects for which associate investees of the Marubeni Group have entered into power purchase agreements but have not yet achieved commercial operations.)

Changes in the emissions volume associated with increased emissions from new investments and fluctuations in the emissions volume by plant load factors, as well as reductions in the emissions volume due to the utilization of new technologies (CCS^{*3}, co-combustion of hydrogen and ammonia, etc.), are not included in the assumptions for the above estimation. In the interest of meeting the needs of society as it makes the low-carbon transition, the development of new gas-related projects such as gas-fired power generation businesses will continue. For aspects which could affect the emissions volume by associate investees going forward, we will monitor the progress of abatement of GHG emissions and conduct reviews thereof. In addition, we will continually perform studies with the aim of establishing milestones towards net-zero GHG emissions by 2050 that are consistent with the 1.5°C pathways.

*3 CCS: Carbon dioxide Capture and Storage

3) Move up the timetable to halve the net power generation capacity of our coal-fired power generation businesses

Based on [our Business Policies Pertaining to Sustainability \(In Relation to Our Coal-Fired Power Generation Business and Renewable Energy Generation Business\) that Marubeni released in September 2018](#), and taking into account the progress made so far in pulling out of coal-fired power generation, we will accelerate our goal of cutting our FYE 3/2019 coal-fired power net generation capacity in half by 2030 to 2025, and aim for approximately 1.3 GW as our coal-fired power net generation capacity in 2030 (included in the above reduction figure 2) for associate investees), and further, aim for zero by 2050.

4) Absorb and sequester CO₂ through our forests

Marubeni will strive to expand the volume of carbon stocks in our forests (currently about 11 million tons of CO₂ equivalents^{*4}) and, at the same time, expand the sequestered volume of carbon through the multi-purpose utilization of afforested assets.

*4 By enlarging some of our plantation areas, improving stock volume per-unit area, and through the proper management of managed forests, estimated volume of carbon stocks in our forests will be about 19 million tons of CO₂ equivalents in 2030.

By executing these actions, by 2030 the Marubeni Group will try to abate its FYE 3/2020 emissions by

one fifth over the total scope covered by our net-zero GHG emissions goal. This plan was formulated to apply to the Marubeni Group's business portfolio at the present time and is based on certain assumptions about current international recognition and foreseeable changes in system and technological innovations. Marubeni will revise them appropriately in light of any future changes to these premises.

(2) Contributing to low-carbon/carbon-free goals through business activities

The Marubeni Group views the transition to low-carbon/carbon-free goals as a business opportunity, and will use its business activities to continue contributing to the abatement of GHG emissions that our society produces. In terms of contribution by energy supply, Marubeni strives to construct the energy systems that will serve as the foundations for a decarbonized society, and in terms of energy demand, Marubeni will help other emitters to control/abate GHG emissions over a broad range of industries. Moreover, in the realm of land use, Marubeni will promote initiatives towards sustainable agri-input businesses and forest management.

For further details, please see The Marubeni Long-Term Vision on Climate Change.

The Marubeni Group aims to transform the total environmental impact of its business activities to a positive one by contributing to low-carbon and decarbonization through its business activities while itself achieving net-zero GHG emissions.



The Marubeni Long-Term Vision on Climate Change

March 2021
Marubeni Corporation



Contributions to Measures Addressing Climate Change

(Marubeni Group's efforts so far and the direction of future initiatives)

2018

- **Disclosure of business policies pertaining to coal-fired power generation business/renewable energy power generation business**
 - As a general principle, Marubeni had no longer entered into any new coal-fired power generation business since Sept 2018.
 - By 2030, Marubeni will cut its FYE 3/2019 coal-fired power net generation capacity of approx. 3GW in half.
 - Strive to expand the ratio of power generated by renewable energy sources in its own net power supply to approx. 20% by 2023

Ratio of power generated by renewable energy sources in our own net power supply, around 15% (projected as of end of March 2021)

*As a factor of the net generation capacity

2019

- **Identifying climate change as a materiality**
 - **Affirm the Recommendations of the TCFD**
- **Enhancing disclosure based on the TCFD Recommendations**

2020

- **Disclosure of business policy pertaining to equity interests in thermal coal**
 - Marubeni has no equity interests in thermal coal and will not acquire any in the future (from disclosure in line with the TCFD disclosure)
- **Establishing targets for emissions abatements for Scopes 1 & 2** [Cut of 25% for Scopes 1 & 2 by 2030]

2021 The Marubeni long-term vision on climate change

~2050
Net-zero GHG emissions

~2030

- Action Plans
- Pursuit of business opportunities



The Marubeni Group Long-Term Vision on the Climate Change

- **Transforming the environmental impact of our businesses to a positive one**

The Marubeni Group aims to transform the total environmental impact of its business activities to a positive one by contributing to low-carbon and decarbonization through its business activities while itself achieving net-zero GHG emissions.

- ① **Net-zero GHG emissions by 2050 (including zero coal-fired power generation)**
- ② **Promote contributions to low-carbon/carbon-free goals through Marubeni Group businesses**

The ideals that Marubeni Group aims for

To generate a positive impact on the climate change and grow as a corporate group

- ① Achieve net-zero GHG emissions by 2050 ② Contribute to low-carbon/carbon-free goals through our businesses

Net-ZERO Emissions

Positive Impact

- **Action Plans towards 2030**

Marubeni has formulated action plans heading towards 2030 in order to make the 2050 net-zero GHG emissions effective. (See following page)

*The boundary of the net-zero GHG emissions goal

- The scope of the 2050 net-zero GHG emissions goal: In addition to Scope 1 and Scope 2, given the influence that the Marubeni Group is capable of wielding on the matter of emissions as well as its lines of business, Marubeni is including emissions by associate investees accounted for using the equity method (hereinafter, "associate investees") covered by Scope 3, Category 15 (Investments)
- Targets for inclusion in carbon dioxide removal: Marubeni will make determinations going forward in light of new trends in international standards, etc.

Action Plans Towards 2030

1

Halve the CO₂ emissions of FYE 3/2020, about one million tons of CO₂, emitted by Marubeni and its consolidated subsidiaries (Scope 1 and Scope 2)

Marubeni has revised [the targeted abatement figure released in September 2020](#) (a 25% abatement from FYE 3/2019 levels by 2030) to make it at a more consistent level to the 1.5°C pathways, and will halve its total volume of emissions, which was about one million tons of CO₂ in FYE 3/2020 by 2030.

2

Reduce by one fifth the CO₂ emissions of FYE 3/2020, about 36 million tons of CO₂*¹, emitted by associate investees of the Marubeni Group (Scope 3, Category 15 (Investments))

Changes in the emissions volume associated with increased emissions from new investments and fluctuations in the emissions volume by plant load factors, as well as reductions in the emissions volume due to the utilization of new technologies (CCS*², co-combustion of hydrogen and ammonia, etc.), are not included in the assumptions for the above estimation. In the interest of meeting the needs of society as it makes the low-carbon transition, the development of new gas-related projects such as gas-fired power generation businesses will continue. For aspects which could affect the emissions volume by associate investees going forward, we will monitor the progress of abatement of GHG emissions and conduct reviews thereof. In addition, we will continually perform studies with the aim of establishing milestones towards net-zero GHG emissions by 2050 that are consistent with the 1.5°C pathways.

*1 This emissions volume comprises the FYE 3/2020 performance of existing investees plus the estimated emissions from projects already contracted at the current point in time (as for power generation projects, projects for which associate investees of the Marubeni Group has entered into power purchase agreements but has yet achieved commercial operations.)

*2 Carbon dioxide Capture and Storage

3

Move up the timetable to halve the net power generation capacity of our coal-fired power generation businesses

Based on [our Business Policies Pertaining to Sustainability \(In Relation to Our Coal-Fired Power Generation Business and Renewable Energy Generation Business\) that Marubeni released in September 2018](#), and taking into account the progress made so far in pulling out of coal-fired power generation, we will accelerate our goal of cutting our FYE 3/2019 coal-fired power net generation capacity in half by 2030 to 2025, and aim for approximately 1.3 GW as our coal-fired power net generation capacity in 2030 (included in the above reduction figure ② for associate investees), and further, aim for zero by 2050.

4

Absorb and sequester CO₂ through our forests

Marubeni will strive to expand the volume of carbon stocks in our forests (currently about 11 million tons of CO₂ equivalents*³) and, at the same time, expand the sequestered volume of carbon through the multi-purpose utilization of afforested assets.

*3 By enlarging some of our plantation areas, improving stock volume per-unit area, and through the proper management of managed forests, estimated volume of carbon stocks in our forests will be about 19 million tons of CO₂ equivalents in 2030.

By executing these actions, by 2030 the Marubeni Group will try to abate its FYE 3/2020 emissions by one fifth over the total scope covered by our net-zero GHG emissions goal. This plan was formulated to apply to the Marubeni Group's business portfolio at the present time and is based on certain assumptions about current international recognition and foreseeable changes in system and technological innovations. Marubeni will revise them appropriately in light of any future changes to these premises.

Net-Zero GHG Emissions

Scope of the 2050 net-zero GHG emissions goal: About 37 million tons of CO₂*1

Scope 3 (investments): About 36 million tons of CO₂*2

2030 Action Plans Abate CO₂ emissions by one fifth

- ① Scopes 1 & 2 CO₂: Abate in half
- ② Scope 3 (investments) CO₂: Abate by one fifth
- ③ Coal-fired power generation businesses : Move up the schedule for halving: 2030→2025
2030: About 1.3GW
- ④ Forests: CO₂ absorption/carbon sequestration
Expand the volume of carbon stocks

Net-zero GHG emissions by 2050

- Zero emissions from coal-fired power generation
- Further abatements in volume of emissions via technological innovations, etc.
- Neutralizing residual emissions via carbon sequestration in forests, etc.(GHG removal)

Scopes 1 & 2 (CO₂): About 1 million tons of CO₂

The volume of sequestered carbon in forests

Annual absorption of CO₂ in plantation: About 4 million tons of CO₂
The volume of carbon stocks *3: 11 million tons of CO₂ equivalents

Amount of avoided emissions

Amount of avoided emissions

Amount of avoided emissions

FYE 3/2020

Action plans heading towards 2030

2050 Long-Term Vision

Amount of avoided emissions: Positive Impact
Contributions to avoided emissions via Marubeni Group businesses

*1 Includes GHGs that are biological in origin (in tons of CO₂ equivalents)

*2 This emissions volume comprises the FYE 3/2020 performance of existing investees plus the estimated emissions from projects already contracted at the current point in time (as for power generation projects, projects for which associate investees of the Marubeni Group has entered into power purchase agreements but has yet achieved commercial operations.)

*3 Equivalent volume in CO₂ of carbon currently stored in standing timber of plantation.

This was formulated to apply to the Marubeni Group's business portfolio at the present time and is based on certain assumptions about current international recognition and foreseeable changes in system and technological innovations. Marubeni will revise them appropriately in light of any future changes to these premises.

*This figure is a graphical rendering of actual numerical figures. Note that the proportionally smaller items have been adjusted.

Contributions to Measures Addressing Climate Change

Contributing to low-carbon/carbon-free goals through our businesses (Major business opportunities)

- **Supply of power from renewable energy (power generation business and power retail business)**

- Strive to expand the ratio of power generated by renewable energy sources in our own net power supply to approx. 20% by 2023 (around 15%, projected as of end of March 2021)
- Fully-owned subsidiary SmartestEnergy Ltd., a power retail provider in the UK, derives approx. 80% of its contracted power capacity from renewable energy sources

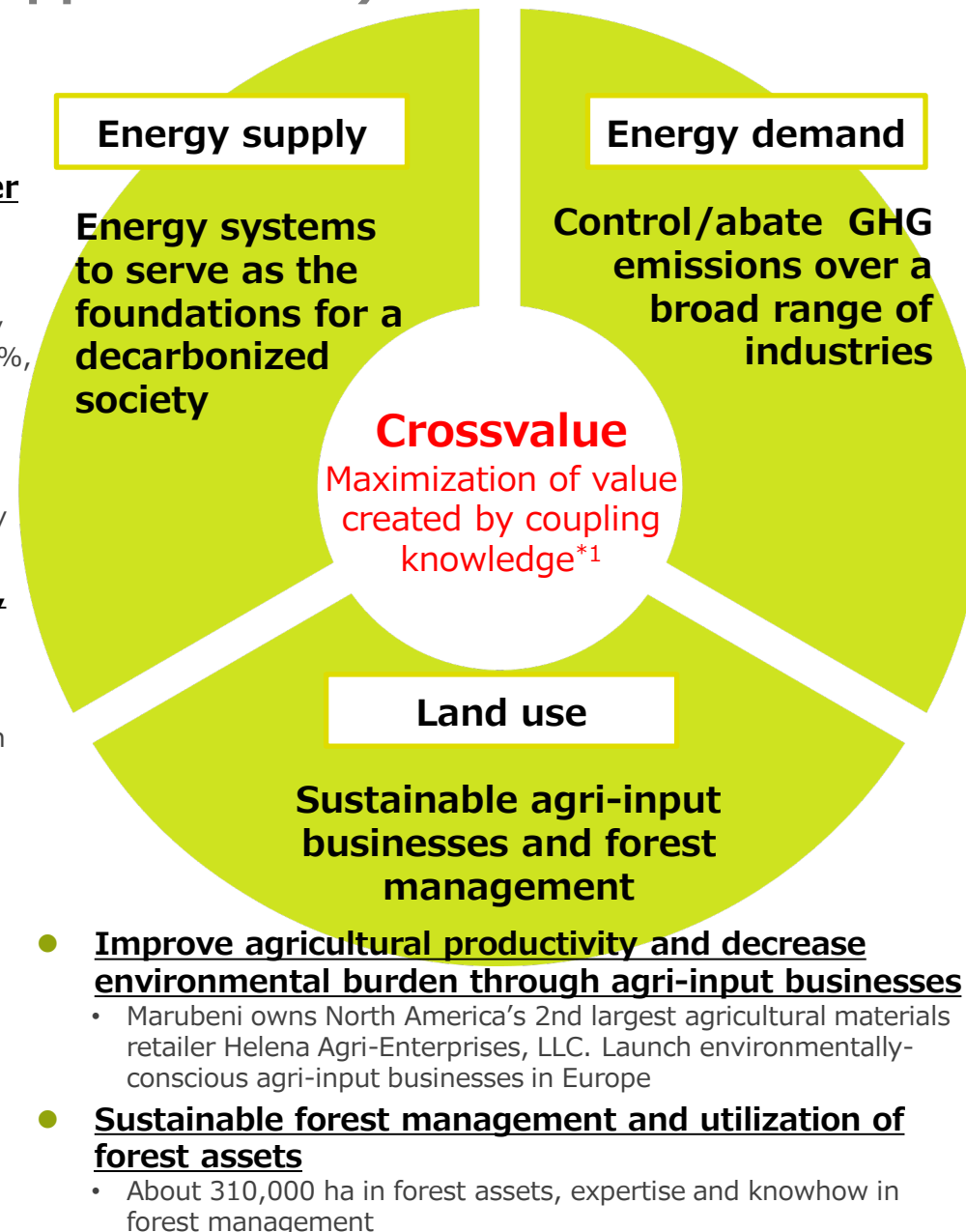
- **Alternative energy businesses, including new energy sources such as hydrogen/ammonia**

- Participate in demonstration projects to develop CO₂-free fuel supply chain
- Invest in US-based biojet fuel producer, Fulcrum BioEnergy, Inc.

- **Develop distributed energy systems**

- **Carbon-free mobility and EV-infrastructure/battery related businesses**

- Supply cobalt, nickel and other raw materials for lithium battery for EVs



- **Initiatives contributing to recycling and the circular economy**

- Invest in U.S.-based Circ LLC (formerly known as Tyton BioSciences LLC), which has technologies to recycle textile products such as textile and used clothes into raw textile materials
- Develop in the lithium-ion battery recycling business

- **Supply energy-saving materials, products, and services**

- **Solutions using decarbonization technologies such as CCUS*2**

- *2 Carbon dioxide Capture, Utilization and Storage
- Invest in the UK's Carbon Clean Ltd., which develops CO₂ capture technology

- **Responding to modal shifts**

***1 Promote Group-wide initiatives**

- Hydrogen and Fuel Ammonia Business Strategy Committee
- Strategy Committee for Renewable Energy/Storage Battery/Distributed Power Business