

Strengthening Murata's response to climate change

Background of setting the issue of materiality

In recent years, companies have been asked to take measures to tackle climate change such as decarbonization in order to address serious environmental issues in different parts of the world. Murata has set this key issue in response to these social demands.

Our goal

We aim to reduce the amount of greenhouse gases emitted during manufacturing, by operating in accordance with RE100 and SBT^{*1}.

Fiscal 2024 goals	• Greenhouse gas emissions (vs. fiscal 2019): 1.28 million t-CO ₂ e (-20%)* • Usage rate of renewable energy: 25%
Fiscal 2030 goals	• Greenhouse gas emissions (vs. fiscal 2019): 0.87 million t-CO ₂ e (-46%)* • Usage rate of renewable energy: 50%
Fiscal 2050 goals	• Usage rate of renewable energy: 100%

* Scope: Scope 1 + Scope 2

Promoting climate change measures

Murata continues efforts to reduce the environmental load of manufacturing. Strengthening Murata's response to climate change has been selected as one of the key issues, and a target amount of total greenhouse gases (GHG^{*2}) reduction has also been set.

Total GHG emissions increased rapidly until fiscal 2018, due to increased production spurred by higher demand for electronic components in recent years, M&As, and new business expansion. However, with the enactment of the Paris Agreement, companies are now required to reduce total GHG emissions even as they expand. Murata is therefore working toward reducing total GHG emissions by promoting energy conservation and the use of renewable energy, with the Climate Change Committee (chaired by the Member of the Board of Directors and Executive Vice President) taking a central role. The Initiative Promotion Subcommittee, a subordinate organization of the Climate Change Committee, works with the committee on supporting major climate change initiatives, setting goals, and promoting discussion on disclosing information in accordance with the TCFD^{*3} recommendations. In fiscal 2020, the Subcommittee worked on making the RE100 declaration.

Murata has received third-party certification with regard to total GHG emissions, and has been highly praised for actively disclosing information on total GHG emissions and climate change countermeasure efforts, even from outside organizations such as CDP^{*4} climate change survey.

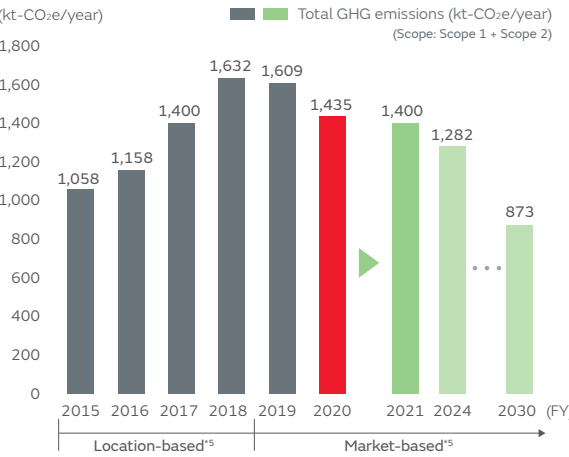
*1: SBT (Science Based Targets): Science-based greenhouse gas emission reduction targets in accordance with the Paris Agreement
*2: GHG: Greenhouse gas
*3: TCFD: Task Force on Climate-related Financial Disclosures
*4: Carbon Disclosure Project: An international nongovernmental organization (NGO) that surveys and evaluates the environmental initiatives of entities such as companies and cities and publishes the results

Trends in total GHG emissions, and efforts to reduce GHG emissions

Murata has long been involved in implementing energy conservation initiatives, and continues to implement anywhere from 450 to 600 energy conservation measures annually (equivalent to 40,000 to 50,000 t-CO₂ reduction). However, recent business expansion has outpaced these efforts, and total GHG emissions have increased in recent years.

In response, Murata has implemented measures to conserve energy and expand its use of renewable energy. GHG emissions peaked in fiscal 2018 and then began decreasing, with GHG emissions for fiscal 2020 totaling 1.435 million t-CO₂e (a reduction of 174,000 t-CO₂e year-over-year). We have set a goal of 1.4 million t-CO₂e or less for fiscal 2021, and continue to implement initiatives to further reduce this number by fiscal 2024 and fiscal 2030.

In order to accumulate future CO₂ reductions, we designed an internal carbon pricing system and began putting it into operation in fiscal 2021. Specifically, we are assigning a monetary value to CO₂ reduction and embedding it into the investment index to introduce shadow pricing, which encourages decision-making that executes investments that are effective at reducing CO₂. We will continue to implement systems that can even more effectively help to reduce CO₂.



*5: CO₂ calculation method
Location-based: Calculated using the average CO₂ emission coefficient for the power network in that region
Market-based: Calculated using the CO₂ emission coefficient for each power purchase agreement
Murata's calculation method changed since FY2019 because market-based calculation is more accurate and has become the mainstream method used in recent years

Participation in RE100 initiatives

In fiscal 2020, Murata joined the RE100 global initiative which aims to switch the power used in business activities to 100% renewable energy. Murata has set a goal of using 50% renewable energy for business purposes by fiscal 2030, and 100% by fiscal 2050.

In order to achieve the RE100 target and GHG emission reduction targets, Murata will endeavor to reduce energy consumption through energy conservation measures, while also replacing the current energy consumption with renewable energy through combination of various methods such as onsite/offsite renewable energy generation, change

of energy contracts and utilization of renewable energy certificates.

As an example of specific measures, multilayer ceramic capacitors (MLCCs) and other electronic components which are our main products require that a high temperature state be maintained in the sintering process and use a considerable amount of power. Due to the space restrictions on the number of units that can be sintered at one time, we are promoting initiatives to make MLCCs lighter, thinner, shorter and smaller to reduce the environmental load (use of power and raw materials) during sintering. Murata will deliberate on and work towards further improvement of energy efficiency from the design and development phase of the products.



RE100 is led by The Climate Group in partnership with CDP, as part of the We Mean Business Coalition. Since 2017, Japan Climate Leaders' Partnership (JCLP) has been the Regional Delivery Partner on RE100 initiative in Japan.

Murata has joined Japan Climate Leaders' Partnership (JCLP) as an official member and is working through JCLP towards realization of a decarbonized society for the Japanese government, as well as social contribution to decarbonization through Murata's products.

Introduction of renewable energy

Murata endeavors to expand the use of renewable energy. As a global company, we have actively promoted the introduction of solar power generation both in Japan and other countries, and we have incorporated the utilization of renewable energy certificates. During fiscal 2020, electricity originating from generation via solar power generation equipment, renewable energy certificate procurement, and other forms of renewable energy reached approximately 400 million kWh (the ratio of renewable energy to the total consumption is about 15%), which is equivalent

to a reduction of approximately 240 kt-CO₂. We are continuing to explore the introduction of renewable energy in Japan and overseas to help reduce the environmental load.

As part of the initiatives in fiscal 2020, we installed solar panels on the roofs of six plant buildings at our production site in Thailand (Murata Electronics (Thailand), Ltd.), and in August 2020, we put into operation a 4.5 MW mega solar system, which is the largest of its kind in Murata. Murata also installed 2.2 MW solar panels on the roofs of the plant buildings at our production site in Singapore (Murata Electronics Singapore (Pte.), Ltd.). In addition, excess solar energy is stored in batteries installed on the premises of the plant, and Murata efficiently utilizes such renewable energy.

This way, Murata will contribute to the realization of a sustainable society by accelerating responses to climate change, combining Murata's products and systems.

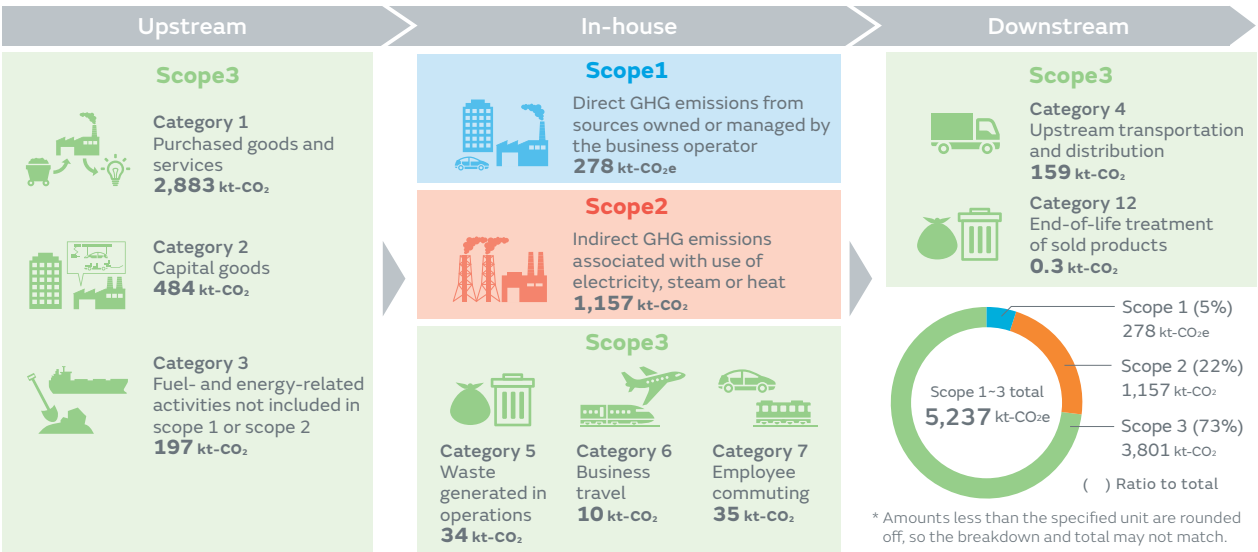


Solar power generation system at Murata Electronics (Thailand), Ltd.

Climate change countermeasure initiatives throughout the supply chain

73% of all Murata's GHG emissions are Scope 3 emissions. We realize that reducing Scope 3 GHG is just as important as reducing Scope 1 and Scope 2 GHG, and we are currently looking into setting new Scope 3 reduction goals in accordance with SBT criteria.

Once these goals have been set, a wide variety of involved departments will work together to promote climate change countermeasures across the entire Murata supply chain.



* Amounts less than the specified unit are rounded off, so the breakdown and total may not match.