



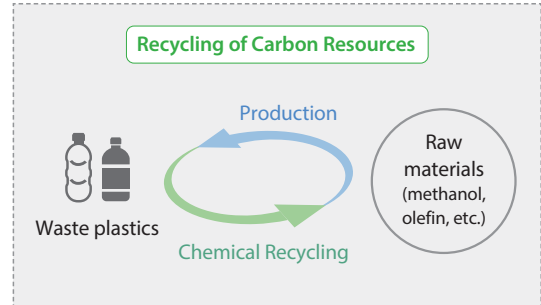
Climate Change Mitigation and Adaptation

Specific Initiatives for "Contribution"

Establishment of Carbon Resource Recycling System

We are developing chemical recycling technologies to convert garbage and waste plastics into basic raw materials for chemicals, such as methanol, ethanol, and olefins, and to use them as raw materials for new plastics.

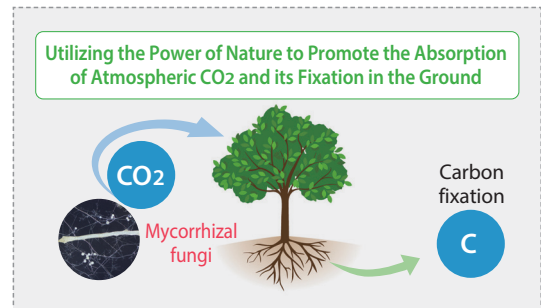
[Contribute to Recycling Resources](#)



Challenges to Carbon Negative Emissions

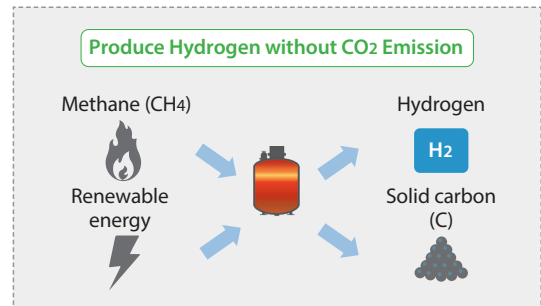
We are developing a technology whereby attaching useful micro-organisms existing in soil to the roots of plants and allowing them to coexist, we not only promote the absorption of CO₂ by plants through photosynthesis, we also fix CO₂ in the ground in the form of carbon compounds. This will enable ordinary fields, forests, and other natural spaces to absorb and fix even greater amounts of CO₂, contributing a net negative amount of carbon to the atmosphere.

[Sustainable Use of Natural Capital](#)



Response to Methane Gas

The future shift to clean energy will require the availability of CO₂-free hydrogen. To address this issue, we are developing a technology to produce hydrogen from methane without CO₂ emissions. This technology will help reduce methane, a GHG, and contribute to the realization of carbon neutrality.



External Cooperation Initiatives

● Dissemination efforts of Carbon Footprint of Products (CFP)* calculation tool

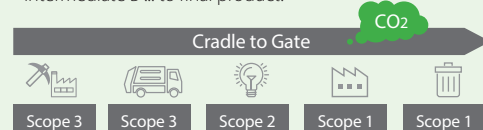
Although the evaluation of product CFP is essential to reduce GHG emissions in society, it is not easy to analyze the CFP of chemical products due to the complexity of their manufacturing processes. In response, we have developed our own automated calculation tool and calculated the CFP of approximately 20,000 products. Currently, we are expanding the scope of evaluation to Group company products. We also provide the tool free of charge to other companies, and at present, more than 70 companies are using the tool, and we have also started collaboration with the Japan Chemical Industry Association.

* Greenhouse gas emissions from each stage of the product lifecycle, from procurement of raw materials to manufacturing, use, and disposal, expressed in terms of CO₂ emissions.

Our original calculation tool speeds up the calculation of CFP for our products

Created the original automatic CFP calculation tool

- Built based on commercially available software (Microsoft Access/Excel)
- Prepared multiple calculation models accounting for the characteristics of chemical manufacturing processes (co-products, by-product fuels, steam generation, etc.) (Choose from the pull-down menu of models and execute calculation)
- Can easily calculate carbon footprint for each stage (intermediates or final product). E.g., raw material to Intermediate A to Intermediate B ... to final product.





● Initiatives through Regional Collaboration

Since there are limits to what individual companies can do to achieve carbon neutrality, it is necessary to accelerate regional collaboration with external parties such as companies outside our group and government agencies. In addition to participating in the Keiyo Coastal Industrial Complex Council on Carbon Neutrality, which was established in November 2022 mainly in Chiba Prefecture, we are also studying ways to achieve carbon neutrality, such as securing biomass feedstock and recovering waste, in cooperation with Maruzen Petrochemical Co. Ltd. And Mitsui Chemicals, Inc. We are proceeding with the study about the port decarbonization plan which is currently promoted by government agencies in cooperation with the local community.

Development of Hydrochloric Acid Oxidation Process Technology

Sumitomo Chemical has achieved a major reduction in environmental impact by recycling hydrochloric acid—a manufacturing byproduct—into a raw material through the development of technology that efficiently produces chlorine from hydrogen chloride. This technology allowed us to switch from energy-hungry conventional chlorine manufacturing to a process that uses less than one-fifteenth the energy and, over the next few years, will reduce our GHG emissions by two million tons per year (compared with electrolysis and other processes). We received the Grand Prize at the 54th JCIA Technology Awards (May 2022) for this technology from the Japan Chemical Industry Association (JCIA) for enabling the development and commercialization of a low-environmental impact process for manufacturing chlorine using hydrogen chloride (HCl).

JCIA Responsible Care Award

Sumitomo Chemical received the Grand Award at the 17th JCIA Responsible Care Awards from the Japan Chemical Industry Association. This year's theme at the awards was contributing to carbon neutrality for society as a whole. The Company was lauded for its efforts to assess and reduce greenhouse gas (GHG) emissions with business partners and industry groups with the aim of realizing carbon neutrality for society as a whole. Examples include quickly working to calculate Scope 3 emissions, which is important for reducing supply chain emissions,*1 and providing a proprietary system for calculating Carbon Footprint of Product*2 to the public for free.

*1 The volume of emissions totaling all emissions related to business activities, not just the operator's own emissions. (Scope 1 emissions + Scope 2 emissions + Scope 3 emissions)

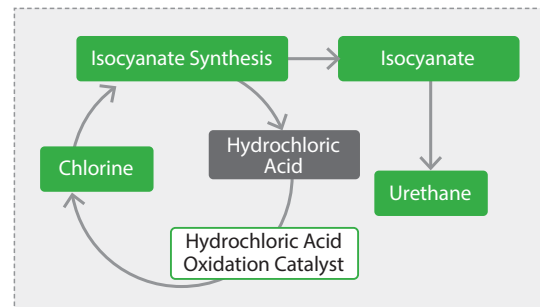
Scope 1: Direct emissions of GHGs from operators themselves (fuel combustion, industrial processes)

Scope 2: Indirect emissions arising from the purchase of electric power and heat from outside the plant

Scope 3: Indirect emissions other than Scope 1 and Scope 2 (emissions from other companies related to business activities)

*2 CFP: The CO₂ equivalent of GHG emissions from each stage of the product lifecycle, from the procurement of raw materials to manufacture, use, and disposal

■ Hydrochloric Acid Oxidation Process



Looking Ahead

In line with the Grand Design aimed at achieving carbon neutrality by 2050, which was released in December 2021, Sumitomo Chemical will leverage the technological capabilities and insights it has cultivated as a diversified chemical company to continue promoting initiatives to “fulfill its obligation” to realize zero Group GHG emissions and to “contribute” to the promotion of carbon neutrality throughout society via Group products and technologies.

Going forward, under Sumitomo Chemical's Business Philosophy of “working to contribute to society through our business activities,” we will continue actively working to solve climate change problems and achieve carbon neutrality.