

Climate Change

■ Our basic approach and strategy

Background and approach of TCFD initiatives

The impact of climate change is increasing every year and gaining in severity. Under the Paris Agreement reached at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in December 2015, signatories agreed to keep the increase in global average temperature to under 2°C above pre-industrial levels.

The Task Force on Climate-related Financial Disclosures (TCFD) disclosed its final report in June 2017 as recommendations to encourage disclosure of climate-related financial information by corporations to allow investors to make appropriate investment decisions. The content of the report is globally recognized as an important framework for disclosure of information on climate change. Under TCFD, corporations need to consider the risks and opportunities of climate change and make disclosures in the areas of “Governance,” “Strategy,” “Risk Management” and “Metrics and Targets.” “Strategy” also requires disclosure of results of analysis including climate scenarios that keep the increase in temperature to below 2°C. Unicharm recognizes that climate change is an issue to be worked on as a priority. Therefore, in order to contribute to achieving the 2°C scenario in the Paris Agreement, we received certification in June 2018 under the Science-Based Targets (SBT) initiative for our CO₂ reduction plans up to 2045. We also expressed our endorsement of TCFD in May 2019 and will continue to report in accordance with the TCFD framework going forward.

To achieve the “Net Zero CO₂ Emissions Society by 2050” target set forth in our “Environmental Targets 2030,” our Representative Director will take the lead on setting targets

and monitoring the progress and aim to achieve a switch to renewable electricity for 100% of the electricity used in the business development as set out in our group-wide “Kyo-sei Life Vision 2030.” To this end, we joined the Japan Climate Leaders’ Partnership (JCLP) in 2020. We will continue to strive to reduce CO₂ emissions associated with the various business activities within the group while also continuing to actively encourage all those involved in the supply chain to reduce their emissions throughout the product life cycle. We are also striving to pursue such activities in partnership with all of our stakeholders.

■ Management structure

Governance

Our Representative Director is responsible for evaluating risks and opportunities related to climate change and for setting and enforcing CO₂ reduction targets. The ESG Committee chaired by the Representative Director and staffed by directors and main executive officers meets four times a year (once in each quarter) to report and deliberate on overall environmental activities including those related to the climate (also including “Eco Plan 2020” progress updates), our response to social issues and important issues for governance. For these Committee meetings, the ESG Division which is responsible for response to the group-wide environmental issues collects and checks environmental data and information on our activities monthly for each site. This information is discussed with CQO and the ESG Senior Executive Officer and forms the agenda for the ESG Committee. The activities of the ESG Committee are then supervised by the Board of Directors who receive reports on Committee activities from the CQO and ESG Senior Executive Officer at least once a year. The ESG Committee and the Board of Directors perform checks and provide guidance and instructions on the activities in accordance with the progression of “Eco Plan 2020.” To allow Unicharm

to achieve its goals, we also set the term (years) for return on investment, deliberate on investment decisions on a case-by-case basis, implement the necessary measures and aim to meet our targets. Following the recommendations of the TCFD, we publicly share information about specific plans based on our “Eco Plan 2020,” “Environmental Targets 2030” and “Kyo-sei Life Vision 2030” (the former until the end of 2020 and the latter two from 2021 onward).

ESG evaluation was also added to the metrics used to evaluate the executive remuneration in 2020 and we are making efforts toward achieving our targets, with not only climate change but also the SDGs forming part of our company purpose, in the aim of prompting sustainable growth and improving the medium-to-long term corporate value.

Strategy

A joint team of researchers from Stanford University and the University of California, both in the United States, commented in a report of their findings published in “MIT Technology Review” in 2017 that Asia will be the hardest hit region if measures to mitigate and adapt to climate change are not taken. Unicharm’s business activities are concentrated in Asia and we see the risks and opportunities associated with climate change as an important factor in our business strategy.

Given this, in 2018, Unicharm independently estimated the financial impact of energy based on the “450 Scenario” of the International Energy Agency (IEA) and the operational impact due to physical risk based on the “RCP 2.6 Scenario” of the Intergovernmental Panel on Climate Change (IPCC). Unicharm considers risks and opportunities with reference to our situation year-by-year (the short-term), in alignment with management plan (the medium-term; 3–5 years) and international prospects (the long-term; 10–20 years, encompassing factors such as the SDGs and the Paris Agreement).

Message from the President & CEO	Unicharm Group's COVID-19 Initiatives	Kyo-sei Life Vision 2030	Unicharm Group Sustainability	Key Topics	Environment	Human Rights	Responsibility to Our Customers	Quality	Labor Standards	Health and Safety	Human Resources Data	Local Community	Supply Chain (Society)	Shareholders and Investors	Governance	Third Party Assurance Report	List of Awards and Commendations Received in Fiscal 2020
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We also use an ERM (enterprise risk management) approach to identify risks to the group as a whole and engage with climate change risks as one of them.

In order to respond to the risks and opportunities identified in the table to the right, we are implementing the ideas listed below in conjunction with our financial plan.

Conforming to regulations and standards

In Japan, we are prioritizing capital expenditure that allows us to aim for the target of an annual 1% increase in energy efficiency, as stipulated in the “Japanese Act on Rationalizing Energy Use.”

Financial optimization calculations

For investment in energy conservation, we are expanding our criteria for assessing expected depreciation periods, facilitating assessment of return on investment.

Budget dedicated to research and development of low carbon products

We are investing in establishing a system that we can implement with our suppliers and use to exchange data relating to CO₂ emissions by weight of material, linked to each of the code we use to categorize the raw materials and are implementing database management to establish and execute a budget that will allow developers to more easily select low carbon materials.

Climate change risks and opportunities identified by Unicharm

	Category	Details
Risks	Procurement risks	Over 90% of the pulp used by Unicharm comes from North America and factors including the possibility of a global increase in the frequency of heavy rainfall and the increase seen in North America between the 1970s and 2010s of both the frequency of hurricanes and the damage they inflict lead us to believe that physical risks pose a threat of acute damages to production areas supplying timber for pulp, the main raw material for our products. Meanwhile, if we also consider Brazil, another production area, factors such as reported annual losses of two to five Mha of forest across every region of Brazil and North America in the ten-year period from 2008 to 2017 mean that it is becoming increasingly necessary to procure forest resources that take sustainability into account and lead us to believe that there is a risk of pulp procurement becoming restricted if deforestation accelerates.
	Regulatory risks	Once regulations arising from the Paris Agreement and relating to GHG emissions are applied not only to developed countries but also to developing nations, we can project that all Unicharm factories will come within their scope. Due to this strengthening of regulations in all countries going forward, we believe that there is a risk that further measures for energy conservation and purchasing of emissions credits will become necessary and that the adoption of carbon taxation and other schemes will increase costs for electric power companies, manufacturing sites and suppliers.
	Market risks	Large-scale disasters caused by major typhoons, cyclones and other abnormal weather attributable to climate change are occurring in approximately 80% of the countries, primarily in Asia, where we are focusing on and expanding and are beginning to elicit changes in consumers' psychology. Energy saving features are already an important factor influencing purchasing decisions for automobiles, home appliances and other durables and, as this awareness spreads to daily necessities for everyday use, we believe that there is a risk that products that do not take the global environment into account will lose consumer support.
Opportunities	Market opportunities (services)	In over 90% of the countries into which Unicharm is expanding (approximately 80 countries and regions as of December 2020), used diapers are either incinerated or disposed of in open dumps or landfill sites. Unicharm is therefore advancing an initiative to recycle used disposable diapers. If and when such recycling could be implemented, our trial calculations suggest that it could reduce production of GHGs, including the CO ₂ from incineration and methane from open-dump and landfill disposal. We therefore see possibilities for recognition of our commitment to used disposable diaper recycling and increasing support for our products utilizing recycled pulp.
	Market opportunities (management)	Unicharm is striving toward sustainable management and was chosen as a constituent of various indexes in December 2020, including the “FTSE4Good Index Series,” “FTSE Blossom Japan Index,” “MSCI Japan ESG Select Leaders Index” and “S&P/JPX Carbon Efficient Index.” We hope to maintain and expand this position going forward. By pursuing sustainable initiatives centered around the SDGs, we believe that we will increase our chances of being recognized by corporate investors and other entities and attracting stable, long-term shareholders.
	Market opportunities (products)	A first in the category of daily commodities, Unicharm has granted certain products the “Eco Charming Mark” (a Type II ecolabel based on our own criteria) and rolled out environmentally-friendly products. We believe that the speed at which we have brought environmentally friendly products to the market will lead to Unicharm being viewed as quickly meeting customer expectations and put the company in an excellent position to secure a competitive edge for our products.

We believe that the most significant climate change-related impact on our business strategy will be our participation in the scientific approach to the COP21 Paris Agreement’s reduction targets aimed at keeping warming below 2°C. With our 2030 reduction targets having been endorsed by the SBT, environmental consciousness has been promoted as part of the company’s product development strategy within our operations and development divisions, while plans incorporating both short- and long-term perspectives, including energy conservation activities and adoption of renewable energy, are being instituted as part of our strategy within our manufacturing division.

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Scenarios and planning

Unicharm uses the RCP scenario* as a basis from which to calculate estimated physical impacts. These include risks related to operating plants in coastal zones with rising sea levels, operating risks linked to supply chain disruption caused by cyclones and other disasters, the risk of falling GDP in equatorial regions due to heat waves and the impact of increased raw material costs due to reduced production capacity in terrestrial eco-systems.

Warming will have a significant impact not only on the global environment but also on our business development. In order to observe the Paris Agreement, we will continue to proceed with the efforts in cooperation with various stakeholders. We believe that this situation in which global warming is becoming an increasingly urgent problem presents an opportunity to showcase Unicharm's "used disposable diaper recycling technology." By means of this technology, we will be contributing to efforts such as forest conservation and decarbonization.

* The RCP (Representative Concentration Pathway) scenarios are series of scenarios setting out several "representative concentration pathways" and predicting the future climate for each pathway, as well as allowing the formulation of various socioeconomic scenarios that would lead to each of these concentration pathways

Unicharm's envisaged scenarios

	Details	Impact on Unicharm
RCP 2.6 Scenario	<p>We use the IEA 450 ppm scenario as a basis from which to calculate the anticipated economic impact of Scope 1 (fuel usage) and Scope 2 (electricity usage). Specifically, we calculate financial impact using BAU energy costs and the estimated costs of a scenario in which we achieve SBT with regard to the predicted 2030 sales revenue. Our calculations also use anticipated carbon pricing costs of 90 dollars per ton in 2030 and assume governmental change.</p> <p>We create transition risk time lines based on these hypotheses which then form the basis of our scenario analysis.</p> <p>We have created multiple scenarios based on the IEA's transition risk time line and the IPCC's physical risk time line.</p> <p>While achieving RCP 2.6 would entail significant price volatility risks and increased risks associated with carbon pricing and changes in consumer tastes, we believe that it would present a strong possibility of sustainable economic development. In addition, if the scope of carbon pricing is extended to cover Scope 3, we will have increased the opportunities to utilize our used disposable diaper recycling technology.</p>	<p>If international agreements progress and reduction targets keeping warming under 2°C are met, sales in Asia will see an increase in CAGR (compound annual growth rate) from 7% to 9%, allowing the increase in related energy costs to be absorbed. We would continue to achieve sustainable growth after 2050 as well.</p>
RCP 4.5 Scenario	<p>Under RCP 4.5, the private green economy would continue to actively develop and transition risks would be limited to a reasonable economic level. Although physical risks would increase, economic development would accelerate and we believe that the consequent financial surplus available would bring an increase in opportunities to absorb the costs of used disposable diaper recycling technology. Further, we believe that a worldwide balancing of environment and economy would prompt consumers to reevaluate the value of products with a low impact on the environment and lead to the expanded possibilities for increasing added value and expanding sales.</p>	<p>If global warming is limited to approximately 2°C, we believe that proactive adoption of the private sector-led "WASI" (We Are Still In: an American non-state actor) declaration would keep physical risks to a minimum and increases in costs of raw materials at permissible levels. In addition, we could expect to maintain sufficient time and financial resources to preserve our corporate assets (responding to storm surges and rising temperatures, related insurance, etc.). In this scenario, we would expect over 15% ROE.</p>
RCP 6.0 Scenario	<p>In RCP 6.0, transition risk perception would be minimized and economic development would accelerate, but physical risks would increase and the supply of pulp, the main material used in our products, would become unstable leading to increased costs. Even in such circumstances, Unicharm could reduce materials costs as compared to other companies by making our sophisticated used disposable diaper recycling technology practicable, creating opportunities to expand sales. However, with Asia—where the majority of our key customers are located—being particularly in danger of physical damages due to climate change, there would be a heightened risk of being unable to maintain our market expansion.</p>	<p>If the focus of the SDGs shifted to the pursuit of economic development, with a consequent rise of more than 3°C in global temperature, sales in Asia would see an increase in CAGR from 7% to 10%. As the associated increase in energy costs would be lower than in the RCP 2.6 scenario, we would expect ROE to be over 15%. However, the impacts of global warming would render this growth unsustainable and we would face declining sales from 2050 onward.</p>
RCP 8.5 Scenario	<p>In RCP 8.5, there is a possibility that accelerated economic growth would, in the short term, create increased demand for products with a low impact on the environment and an increase in sales.</p>	<p>A focus on economic growth would result in an increase in CO₂ emissions, but sales revenue would also increase in the short term. However, physical risks would increase, costs of raw materials would rise and corporate environmental protection costs would grow. As a result, it would become difficult to maintain a 15% ROE.</p>

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Risk Management

We use an ERM (enterprise risk management) approach to identify risks to the group as a whole and engage with climate change risks as one of them.

Group-level climate-related risk assessment is conducted by the ESG Division. First, we run simulations of climate change impact that cover severity, scope and transition risks (carbon pricing, energy prices, etc.) based on the recommendations of the TCFD and create multiple qualitative scenarios (based on RCP 2.6, RCP 4.5, RCP 6.0 and RCP 8.5) of the period up to 2050, using information from sources such as the IPCC Climate Change Report and the IEA World Energy Outlook.

These four scenarios are then used, together with the estimated value of damages (calculated as part of site level risk assessment), to estimate the group-level total damage costs. The results of this evaluation are reported to the ESG Committee and the Board of Directors which then are used in the formulation of business strategy and business plan. In the event that the ESG Committee in which the Board of Directors and heads of departments participate judged that they would influence the aforementioned scenarios, a responsible department will be placed for developing an action plan with the ESG Division acting as a secretariat. This will then be approved at the next ESG Committee meeting and the responsible department will implement the plan. Further, the responsible department will provide progress reports on all action plans at ESG Committee meetings.

 See P.122 "Governance > Risk Management"

Risk assessment based on TCFD

Risk category	Details
Transition risks	Electricity prices in Japan are showing an upward trend due to carbon taxation and the cost structure for purchasing renewable energies. If carbon taxation is introduced in all of the overseas countries where Unicharm carries out manufacturing or the purchasing cost structure for renewable energies is not improved, operating costs may rise. In 2020, we took actions by switching to LED lighting, reviewing our air conditioning running practices and replacing the centrifugal chillers and transformers. These risks and countermeasures are evaluated and implemented at the discretion of the ESG Division and the ESG Committee.
Physical risks	The IPCC AR5 WG3 Report points to the possibility of an increase in the frequency of heavy rainfall on a global scale. Further, the news that hurricanes have been increasing in both frequency and scale of destruction in North America in the period from the 1970s to the 2010s carries the physical risk of sudden damage to forests being used for timber production. We believe that these factors may have an effect on pulp, the key raw material for Unicharm products. Accordingly, in order to avoid deforestation, we have set procurement guidelines for forest-derived raw materials and requested our suppliers to observe these guidelines. As part of our efforts to fully eliminate deforestation, we have been requiring our suppliers to supply wood products from areas that avoid High Conservation Value Forests (HCVF) and High Carbon Stock Forests (HCSF) since 2016. In 2020, we switched over 95% of our wood-derived materials by weight (not including recycled paper) to sustainable forest resources certified by the FSC, PEFC, SFI and other bodies. These risks and countermeasures are evaluated and implemented at the discretion of the ESG Division and the ESG Committee.
Regulatory risks	As a manufacturer, Unicharm's CO ₂ emissions are tied to our sales volume. Unless we devise countermeasures, an increase in sales will lead directly to a correspondent increase in CO ₂ emissions. If Japan's Global Warming Countermeasure Tax is set at European levels, this will entail a risk of increased operating costs. We are making preliminary calculations of the degree to which our operating profit may change, encompassing calculations of combined expenses from China's Shanghai ETS (Emissions Trading Scheme) and Japanese surcharges and calculations of expenses adjusted to the most expensive region according to our current expenditure. Consensus on an international framework to tackle climate change has been achieved in the Paris Agreement and regulations relating to GHG emissions will be applied not only to developed countries but also to developing nations. Electricity forms the bulk of the energy used in Unicharm factories. We estimate that this is equivalent to approximately 400,000 tons of annual CO ₂ emissions across the Unicharm Group as a whole. The OECD's Effective Carbon Rates: Pricing CO ₂ through Taxes and Emissions Trading Systems state that a minimum carbon price of 30 euros per ton of CO ₂ is necessary to achieve the 2°C target. As a result, we believe that there is a risk that development of energy saving measures and the purchase of emissions credits will become necessary and that costs will rise for electric power companies, manufacturing sites and suppliers.
Technology risks	Within the sector of the Unicharm Group's main product, the disposable paper diaper, there is a risk that our competitors will change the configuration of their products, develop technologies that increase efficiency in terms of quantity of materials required and manufacturing processes and lead the way in launching low-CO ₂ -emissions products that address climate change. Our strategic business unit is looking into patent information, conducting supplier surveys and performing evaluations and assessments of the risk of reduced sales.
Legal risks	We believe that there may be an increased risk of litigation throughout the supply chain, principally as a result of NPO or NGO investigations as well as whistle-blowing. In addition to the recent focus on human rights issues, there is also a risk of litigation linked to deforestation caused by the production of primary products such as palm oil or timber grown in plantations established through slash-and-burn agriculture. We believe that deforestation is intimately linked to climate change.
Market risks	Approximately 80% of our products are disposable products providing hygienic and convenient ways to create a more sanitary environment. We believe that radical changes in the market as a result of consumer movements for environmentally oriented products designed to mitigate climate change (such as the recent movement to stop the use of plastic straws in order to reduce marine pollution) could potentially lead to market contraction.
Reputational risks	Approximately 70% of Unicharm products contain pulp. As a company that uses pulp, we believe that we run the risk of developing a reputation as participants in deforestation. We are conducting risk evaluations and assessments into whether a judgment of Unicharm as unenthusiastic in our measures to counter deforestation could turn into a judgment that our company is also unenthusiastic in measures to address climate-related issues, adversely affecting our brand value.
Urgent physical risks	Unicharm procures materials on a global scale, principally using materials derived from conifers and petroleum. We believe that unexpected, large-scale cyclones and floods caused by climate change could result in the destruction of supply chains or insufficient supply as a consequence of damage to forest resources and lead to a reduced operating uptime rate of Unicharm.
Chronic physical risks	We project increased costs in energy for the air conditioning that will be necessary to maintain working conditions and product quality due to rising temperatures, increased damage insurance costs accompanying increased damage caused by heavy rain and depreciation of real-estate values. These will be negative factors for our profits and assets. We review these benchmarks for ISO14000 environmental impact evaluation once a year and use them to conduct risk assessments. Unicharm procures materials on a global scale, principally using materials derived from conifers and petroleum. We also have manufacturing bases in 16 countries and there is a risk that high temperatures or torrential rain caused by global warming could lead to reductions in operating uptime rate, shut-down of manufacturing plants and suspension of supply chains.

Benchmarks and targets

In terms of Unicharm's CO₂ emissions reduction targets, our plan for reductions by 2045 was certified by the SBT (Science-Based Targets) initiative in June 2018. Working toward these targets, we have set specific long-term CO₂ reduction targets for both "Scope 1" (direct emissions: from our own factories, offices, vehicles, etc.) and "Scope 2" (indirect energy-related emissions: energy consumed by Unicharm, such as electricity).

SBT CO₂ emissions reduction targets

By 2030, Unicharm aims to achieve a reduction of 90% for Scope 1 (direct emissions: from our own factories, offices, vehicles, etc.) and of 30% for Scope 2 (indirect energy-related emissions: energy consumed by Unicharm, such as electricity), both as compared to 2016 level. These targets function as our management indicators.

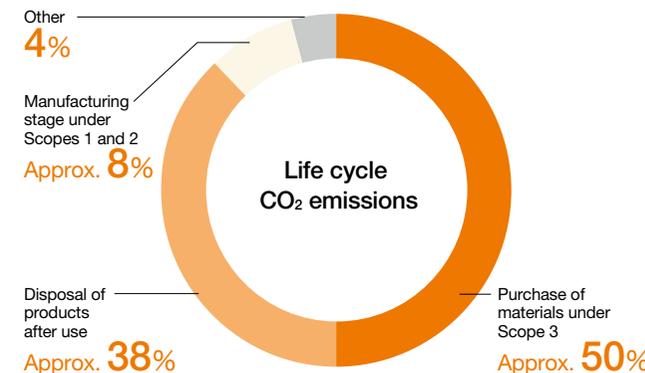
Under the 2020 targets set in our "Eco Plan 2020" formulated in 2016, we realized an annual reduction of 2% for Scopes 1 and 2 and a reduction in environmental impacts throughout the life cycle as compared to baseline figures from 2005 for Scope 3 covering supply chains as well as pursuing activities aimed at bringing total products with improved environmental performance to 100%.

By achieving these goals, we will also be preparing for the following risks. If regulations are strengthened in order to achieve the goals of the Paris Agreement, we believe that there is a risk that development of energy saving measures and the purchase of emissions credits will become necessary and that costs will rise for electric power companies, manufacturing sites and suppliers. Electricity prices in Japan have risen by approximately 10% on average due to carbon taxation and the cost structure for purchasing renewable energies. If carbon taxation is introduced in all of the overseas countries where Unicharm carries out manufacturing or the cost structure for purchasing renewable energies is not

improved, we believe that there is a risk that operating costs could rise by 10%.

Contributions to life cycle CO₂ emissions are, from highest to lowest, approximately 50% for materials purchased within Scope 3, approx. 38% for disposal of products after use and approx. 8% for the manufacturing stage under Scopes 1 and 2, with other transport and business activities accounting for the remaining 4% (all figures are for Japan).

For Scopes 1 and 2, we run energy conservation working activities with EMS activity promoters at each site four times a year, implement annual plans and monitor their progress. For CO₂ emissions from raw materials which form the bulk of our Scope 3 emissions, we perform LCA (life cycle assessments) to calculate CO₂ emissions for each product from the design phase onward and product developers and the ESG Division discuss these emissions and consider countermeasures from the perspectives of product function and CO₂ emissions.



[PDF](#) See P.045 "Initiatives for reducing CO₂ through products"

"Eco Plan 2020" goals and results of measures against climate change (from "Eco Plan 2020")

	Implementation items	2015 results	2016 results	2017 results	2018 results	2019 results	2020 targets	2020 results	Evaluation
(3) Measures for climate change	■ Environmentally-Friendly Products (Japan)	72%	78%	80%	86%	89%	100%	93%	×
	■ Products with the Eco Charming label (Japan)	50%	56%	58%	66%	66%	60%	81%	○
	■ Products with the Eco Charming label (Overseas)	0%	Survey	Understanding Completion	Operation Start Delay	Operation Start	Operation Start	Review	—
	■ CO ₂ emissions base unit during manufacturing compared to 2015 (Japan)	Base year	-2.4%	-4%	-6%	-8%	-10%	-10%	○
	■ CO ₂ emissions base unit during manufacturing compared to 2015 (Overseas)	Base year	—	-3%	-6%	-8%	-10%	-10%	○
	■ Collection of overseas site data (compared to sales)	73%	77%	81%	83%	88%	80%	84%	○

Third-party assurance

In order to increase the reliability of non-financial data, we are receiving third party assurance from PwC Sustainability LLC based on ISAE3000 /3410.

[PDF](#) See P.038 "Environmental Management > Energy/material flow from the entire life cycle perspective"

[PDF](#) See P.129 "Third Party Assurance"

[Japan] CO₂ emissions throughout the supply chain (overall picture of Scope 1 - 3)

Unicharm (in Japan) estimates its CO₂ emissions according to the Greenhouse Gas Protocol*, the standard for calculating greenhouse gases (GHG) most widely used in the world today.

The results of calculations made using this standard indicate that approximately 50% of Unicharm's emissions are from materials purchased and approx. 38% from the disposal of products after use. We will continue our efforts toward activities aimed at establishing a low-carbon society.

* In 1998, the GHG Protocol Initiative was established as a meeting for developing standards of calculating and reporting GHG primarily by the World Resources Institute (WRI), an environmental NGO based in the United States and the World Business Council for Sustainable Development, comprising 200 multinational corporations. In 2001, version one of the GHG Protocol was established and since then this approach to GHG calculation has become a worldwide standard.

[PDF](#) For Scopes 1 and 2, see P.038 "Environmental Management"

CO₂ emissions by Scope (Japan)

Scope	Category	Emissions (thousand tons) 2018	Emissions (thousand tons) 2019	Emissions (thousand tons) 2020
Scope 1		29	24	25
Scope 2		160	141	140
Scope 3	1 Purchased goods and services	800	771	1,065*
	2 Capital goods	119	84	41
	3 Fuel- and energy-related activities	2.7	2.7	3.0
	4 Upstream transportation and distribution	47	48	48
	5 Waste generated in operations	1.2	1.1	1.1
	6 Business travel	0.4	0.4	0.1
	7 Employee commuting	1.8	1.8	1.7
	8 Upstream leased assets	1.2	1.1	0.7
	9 Downstream transportation and distribution	not applicable	not applicable	not applicable
	10 Post-processing of products	not applicable	not applicable	not applicable
	11 Use of products	not applicable	not applicable	not applicable
	12 End-of-life treatment of products	538	531	817*
	13 Downstream leased assets	not applicable	not applicable	not applicable
	14 Franchises	not applicable	not applicable	not applicable
	15 Investments	not applicable	not applicable	not applicable
Scope 3 Total		1,512	1,440	1,978
Total of Scopes 1, 2, 3		1,701	1,606	2,143

Our scope for non-financial auditing was expanded to cover Scope 3 in addition to Scopes 1 and 2 in 2019. Any categories that have received third-party assurance are marked with a ✓ (Scope 3, Category 12). The combined total for Scope 3 covers all of our business sites in Japan (taking into account only fuel, electricity and CO₂ for our sales offices and Unicharm Mölnlycke K.K.): Unicharm (headquarters, sales offices, development, Itami Factory, Mie Factory, Saitama Factory), Unicharm Products Co., Ltd. (Fukushima Factory, Shizuoka Factory, Shikoku Factory), Unicharm Kokko Non-Woven Co., Ltd. (No. 1 Manufacturing Group, No. 2 Manufacturing Group), Cosmotec Corporation, Unicharm Mölnlycke K.K., Unicare Corporation, Peparlet Co., Ltd. and Kinsei Products Co., Ltd. Please see Environmental Management for information on Scopes 1 and 2.

We have added the following two elements to Scope 3, Categories 1 and 12, based on our 2020 results.
 (1) Emissions arising from the purchase of OEM goods.
 (2) Emissions linked to sales made to non-Unicharm Group companies by Unicharm Group materials subsidiaries.
 Results totaled using the same scope as in 2019 are as follows.
 Category 1: 769,000 tons, Category 12: 511,000 tons

[Japan and overseas] CO₂ emissions from business activities (Scopes 1 and 2)

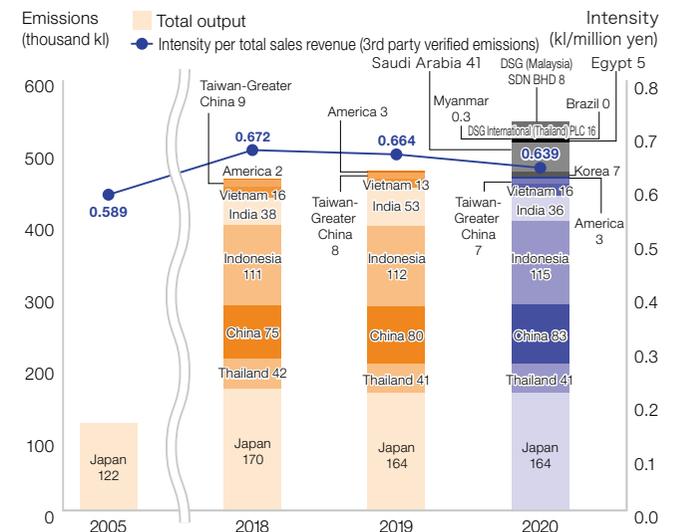
In 2020, CO₂ emissions were 31,000 tons for Scope 1 and 435,000 tons for Scope 2. Going forward, we will promote activities to lower CO₂ emissions in each country and region and work to lower base unit per net sales.

[PDF](#) For details about goals, see P.036 "Eco Plan 2020"

Reducing CO₂ emissions

In 2020, we did not add any new business sites to the data range for non-financial auditing. However, we began data collection for non-target sites and can now provide data for all sites. We will proceed with emissions reduction activities at all sites.

Progress on CO₂ emissions (Scope 1 + Scope 2)



■ [Overseas and Japan] Pursuing renewable energy initiatives (Scope 2)

[PDF](#) For renewable energy initiatives, see P.030 “Key Topic: Safeguarding the Well-being of Our Planet > Introducing renewable power”

■ [Japan] Initiatives to reduce CO₂ through products (Scope 3, Categories 1, 4 and 12)

Unicharm has set a target ratio for environmentally-friendly products as part of its environmental goal and is working on product development by having an environmentally-friendly mindset. Products with improved environmental performance are defined as “environmentally-friendly products”* based on an evaluation of whether environmental impacts were successfully reduced within the life cycle as compared to baseline figures in 2005. Certification is carried out by the ESG Division. In 2020, we achieved our goal of 93% environmentally-friendly products.

Additionally, Eco Charming products are further evolved version of environmentally-friendly products defined as top tier product that help contribute to the realization of a sustainable society. As of today, a total of 220 items fulfilled this definition (certification was extended to pet care products and institutional-use products in addition to personal care products starting in 2017).

Framework of environmentally-friendly products



* The scope is products sold in Japan (excludes products listed in general catalogues, OEM products and imported products).

[PDF](#) For details about goals, see P.036 “Eco Plan 2020”

Example - Sanitary Product

“Sofy Ultra-Sound-Sleep Best-Fit Slim” which is sold as part of the “Sofy Ultra-Sound-Sleep” brand of nighttime feminine napkins features two-thirds the thickness of the ordinary “Sofy Ultra-Sound-Sleep Guard.” This means that, in comparison with the “Sofy Ultra-Sound-Sleep Guard,” the slim product weighs 84.0% as much and its CO₂ emissions from manufacturing and distribution processes are reduced to 82.4%.



■ [Japan] Sharing the Importance of Climate Change Countermeasures with Suppliers (Scope 3 Category 1)

At our Quality Policy Briefing Session held for suppliers in 2017, we presented “Eco Plan 2020” to address procurement of sustainable materials. With approximately 80% of our CO₂ emissions coming from purchased materials and disposal of products after use, we were able to reinforce awareness of the importance of taking countermeasures together with our suppliers. While we planned to hold another Quality Policy Briefing Session in 2020, this had to be postponed due to COVID-19, leading us instead to make individual requests to our suppliers for cooperation on the introduction of environmentally-conscious materials.

■ [Japan and overseas] Initiatives to reduce waste at production sites (Scope 3 Category 5)

At our overseas subsidiary in Thailand, we installed facilities to crush out-of-spec products from the production process, with approximately 97% of the waste generated at the site being recycled. In conjunction with domestic recycling activities, we have achieved zero landfill waste.



■ [Japan] Initiatives to reduce CO₂ in distribution and retail (Scope 3 Category 4 and 9)

Unicharm Products is actively promoting initiatives to build a sustainable distribution system. Specifically, it has been working with business partners to shorten transportation distances, reduce the volume of movement between production sites or warehouses, promote modal shift and enhance loading efficiency by making corrugated cardboard sizes smaller and streamlining pallet modules, in addition to other measures. The aforementioned initiatives not only make distribution more efficient but are also effective for reducing CO₂. In fact, we managed to reduce CO₂ emissions in 2020 to 96.0% compared with those in 2019 (a reduction of 1,556 tons). Going forward, we will continue promoting further initiatives aimed at building a sustainable distribution system and reducing the environmental impact.

Acquiring Eco Rail Mark Certification

Unicharm is promoting a “modal shift” as an initiative to reduce CO₂ and became an “Eco Rail Mark”-certified company in 2019. We are expanding the use of environmentally-friendly rail transportation, primarily for long-distance transport between Fukushima and Shikoku factories.

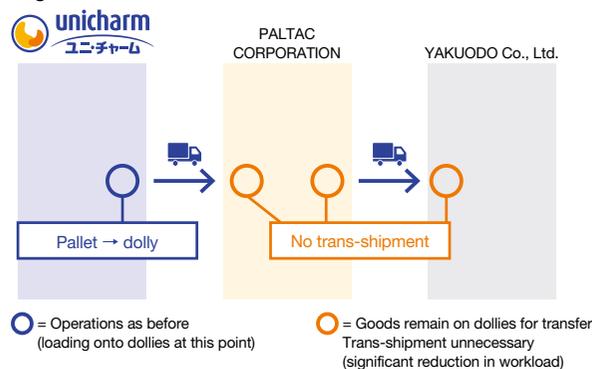


Granted Supply Chain Innovation Award

Unicharm is working with its business partners to continue making the supply chains more efficient. The three-way initiative toward an industry-first “Standardized Unit Load System Utilizing Dollies” created in collaboration with PALTAC CORPORATION and YAKUODO Co., Ltd. was recognized on July 3, 2020, receiving “FY2020 Supply Chain Innovation Award” from the Distribution System Research Institute, an organization administered by the Ministry of Economy, Trade and Industry. This award recognizes the achievements of businesses aiming to optimize their supply chains as a whole, engaging in excellent initiatives with collaboration between each area of manufacture, distribution and sales and acting as a driving force within the industry. Through this initiative, we have achieved reductions in the frequency of operations such as trans-shipment which had been occurring at each point in the distribution process as well as reducing the strain on warehouse workers and drivers and reducing long working hours (a reduction of approximately 60% as compared to previous work time). We aimed to further optimize and improve the efficiency of the supply chain as a whole.



Initiative details: no trans-shipment in 3 of 4 cases resulting in large-scale reduction



Received the “Minister of Land, Infrastructure, Transport and Tourism Award” as part of the Green Logistics Partnership Conference’s Excellent Green Logistics Commendation Program

In an initiative aimed at building sustainable transportation systems, we are also promoting “collaboration with different industries.” Unicharm Products is collaborating with Home Logistics Co., Ltd. (a logistics subsidiary of Nitori) and its shared logistics partner, Trancom Co., Ltd., on a three-way project, “Utilizing Swap Body Containers for Joint Transportation.” This initiative was recognized in December 2020, receiving the “Minister of Land, Infrastructure, Transport and Tourism Award,” the highest commendation awarded by the “FY2020 Green Logistics Partnership Conference’s Excellent Company Commendation” sponsored by the Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism and trade industry. Through this initiative, we have achieved a 50% reduction in the number of vehicles in operation, a drop in CO₂ emissions (an annualized reduction of 880.4 tons) and reduced strain on drivers (loading and unloading, single day round-trip operations, etc.). This has contributed significantly to reducing environmental impact and improving drivers’ working conditions. Following Unicharm’s receipt of the “Minister of Economy, Trade and Industry Award” in 2019, this made 2020 the group’s second award-winning year running.

* Total reduction across all three companies



Awards Ceremony at 2020 Green Logistics Partnership Conference

Commencing joint transportation via rail freight container

In February 2021, Unicharm Products and Suntory Logistics, Ltd., a logistics subsidiary of Suntory MONOZUKURI Expert Ltd. hereafter Suntory, began joint transportation via rail freight container over the Shizuoka Prefecture–Fukuoka Prefecture section.

Products delivered from the Suntory shipping hub join products made in our factory in Shizuoka Prefecture to be loaded into rail freight containers and transported by rail to a distribution center in Fukuoka Prefecture. By combining Suntory beverages, which are heavy goods, and our products, light goods, we maximize container loading efficiency. With this joint transportation system in place once per week, we expect to be able to reduce CO₂ emissions by a joint total of approximately 2 tons annually.



Lower layer: Suntory beverages; upper layer: Unicharm products [12 ft rail freight container with combined cargo]



Use of 31 ft large-scale containers also enhances rail transportation [Bringing in 31 ft large-scale rail freight containers]

■ [Japan] Utilization of SBT activities as a specific climate change mitigation plan

In order to draft the specific climate change mitigation plans, Unicharm endorsed the “SBT (Science-Based Targets),” an international initiative, in May 2017 and has performed simulations covering the period up to 2045 to draft the reduction plans. In June 2018, in consultation with SBT, we received Japan’s 17th certification for a plan that is aligned with the 2°C target.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

■ [Japan] Commendation of initiatives aimed at establishing a low-carbon society

The “Zero Carbon Challenge Cup” is a program for commending the daily work of various organizations (including schools, corporations, local governments and NPOs) toward preventing global warming in the aim of building a carbon-free society for the next generation. The program shares know-how and information about excellent initiatives taking place across Japan and fosters cooperation and motivation for further activities. 2021 marks its eleventh year. Unicharm endorses the initiatives of “the Zero Carbon Challenge Cup” and, in our role as a co-sponsor, we have established the “Gentle Care for Life Award of Excellence” to be presented to companies or organizations.

Due to COVID-19, “Zero Carbon Challenge Cup 2021” had to be held remotely. After judging presentations from the 28 finalists, Saga City Nabeshima Municipal Junior High School’s project “Using Disposable Heat Packs for Water Purification and Developing Woodlands” entered in the Junior and Kids category was selected for the “Gentle Care for Life Award of Excellence.”

Saga City Nabeshima Municipal Junior High School has engaged in a water purification initiative, setting up a filtration device utilizing used disposable heat packs collected from neighboring areas in an irrigation channel beside the school. In a further step, once the heat packs have been used in the purification device, their contents were mixed with fallen leaves gathered from the school grounds and made into a leaf-mold compost for the planters, growing flower seedlings and saplings that decorate the school grounds. Once grown, the flower seedlings are distributed throughout the community while the saplings are transplanted to local woods. Through these initiatives, the school is striving to build a “zero carbon cycle.”

Unicharm believes that the activities of everyone taking part at Saga City Nabeshima Municipal Junior High School set a

good example in terms of “sustainability” both in contributing to the realization of a carbon-free society and providing a model for initiatives that will lead to the building of a sustainable society and in their approach that seeks to hand down this series of initiatives to younger students going forward. For these reasons, we selected their project for the “Gentle Care for Life Award of Excellence.”



Report on the activities of Saga City Nabeshima Municipal Junior High School



The award-winning students from Saga City Nabeshima Municipal Junior High School (above)