

Kao's approach

Packaging serves an important role and function as part of our products, protecting contents and preserving quality during transport, providing a wide range of information to consumers during use and facilitating ease of use. We are aiming to maintain these high standards for our packaging while promoting environmentally conscious packaging at the same time.

Kao's creating value to address social issues

Social issues we are aware of

According to the results of a survey on the use and disposal of package waste materials by the Ministry of the Environment in FY 2017, packaging waste accounts for approximately 56.6% of household waste in Japan. Thus for consumers, packaging and waste issues are closely connected. In areas with inadequate waste processing facilities, used packaging, especially which made from plastics cannot be processed properly. This is a major social problem that encompasses many issues.

In addition, improper disposal results in several million tons of plastic trash entering oceans every year. Estimates are that by 2050 there will be more plastic in the ocean environment, by weight, than the weight of all the fish that live there.

To keep temperature rise due to global warming under 2°C, consumption of fossil fuels must be drastically reduced. Consequently, production of plastics, which derive from fossil fuels, may fall dramatically compared to current levels. It is obvious from this that existing plastic containers are not sustainable.

Kao's creating value

On a per unit of sales basis, we have succeeded in reducing consumption of plastic packaging, but because we sold more products, overall consumption is increasing. We are humbled by this and will renew our efforts to further reduce our consumption of plastics.

This means making investments to develop new technologies, and in collaboration with various stakeholders, creating a system that will facilitate packaging disposal by consumers.

With the help of technology, we are determined to develop packaging that will contribute to enriching people's lives without being detrimental to the natural environment.

Risks related to realization of our vision by 2030

Item	Content
Policies, legal restrictions	Increased regulation on consumption of plastic packaging (mandatory use of recycled plastic, taxation), mandatory labeling of information on plastic use, etc.
Technology	Unsuccessful attempts to develop technology for reducing plastic consumption or using recycled plastic.
Markets	Changes in consumer preferences, rising costs for virgin plastic or recycled plastic, etc.
Reputation	Criticism of the industry or of individual companies, stronger concerns among stakeholders, changes in consumer preferences, etc.

Opportunities related to realization of our vision by 2030

Item	Content
Resource efficiency	Lower costs for packaging, better transportation efficiency, lower recycling costs, etc. occasioned by reducing plastic consumption.
Products, services	Higher sales due to expanded use of containers using less plastic and development of innovative packaging, income increase due to licensing of development technology.
Markets	Higher sales due to improved access to new markets, use of public incentives for developing innovative technologies, etc.
Resilience	Improved resilience through actively continuing to promote 3R activities for plastic packaging.

Contributions to the SDGs



Policies

We announced Our Philosophy & Action on Plastic Packaging in October 2018.
We continue our activities in accordance with this philosophy.

Excerpt from Our Philosophy & Action on Plastic Packaging

We strive to lead the way and create innovative solutions that make life beautiful for our consumers without detracting from the vitality of nature.

Our Beliefs



Our Actions

Our action on plastic packaging is driven by our 4R programme based on continuous improvement and bold innovation.

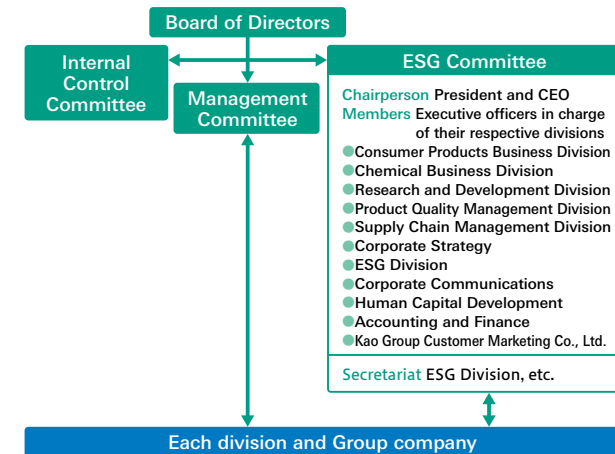


→ Our Philosophy & Action on Plastic Packaging
www.kao.com/global/en/sustainability/environment/statement-policy/eco-friendly-products/plastic-packaging/

Framework

Opportunity management related to plastic packaging is carried out by the ESG committee. Committee members are the persons in charge of the business, sales, R&D, SCM and other divisions, an arrangement which connects divisions horizontally. The ESG committee meets four or more times a year to discuss plastic packaging as well as environmental, social and governance issues. The committee reports on its activities to the board of directors one or more times a year and is audited by the board of directors.

Packaging Management System



* As of December 2018.

Education and promotion

To promote activities and understanding internally, Packaging Development Research holds packaging review meetings when new and improved products are launched. Members from the relevant divisions, including business units, the SCM Division and the Consumer Communication Center, evaluate the environmental performance of the packaging. In 2018, we held packaging review meetings 68 times in Japan, and 7 times elsewhere in Asia.



A packaging review meeting.

Collaboration with stakeholders

“eco together” with consumers

Kao introduces its initiatives in packaging at EcoPro exhibition, at the Kao Eco-Lab Museum and elsewhere, to help consumers opt to use more product refills and replacements, in order to greatly reduce plastic consumption.

“eco together” with business partners

Recognizing that it is essential to collaborate with manufacturers producing materials, recycled resins and packaging when developing and launching new packaging, we work together with a wide range of business partners.

“eco together” with society

We proactively participate in activities organized by the central and local governments, where we provide information about Kao technologies and exchange opinions with other participants. We participated in the 2018 Containers and Packaging Diet Campaign sponsored by a group of nine prefectures and cities in Japan for the ninth year running, ever since the program began. This campaign addresses consumers to promote reducing the amount of packaging waste discharged by households.

To build a more solid recycling flow of used plastic packaging, we promote the use of recycled resins and work to devise new recycling systems.

Together with outside organizations, we are involved in recovering packaging, etc. discharged into the natural environment. We also independently conduct clean-up activities for river and ocean waste and in the community. In 2018, 7,765 persons participated in these clean-up activities.



EcoPro exhibition



River clean-up (cleaning the Suiken River in Wakayama Prefecture)



Cleaning up around a worksite

Mid- to long-term targets and performance

Mid-term targets

2030 mid-term target

- Promote widespread adoption of innovative film packaging to achieve annual usage of 300 million units

2025 mid-term targets

- Develop film container packaging made from a single material
- Shift to 100% recyclable, reusable packaging
- Consumption of recycled plastics: x5
- Consumption of bio-based plastics: x3



Anticipated benefits from achieving mid- to long-term targets

Cost reductions or profit increase

By using innovative plastic packaging both internally and externally and meeting our targets for reducing plastic consumption, we can boost sales in new markets and earn revenue from licensing our patents. By increasing consumption of recycled and recyclable resins, we can also avoid new taxes on the use of virgin resin.

Impacts on society

Meeting these targets will contribute substantially to reducing the amount of new resources consumed and realizing a recycle-based society and make it possible to offer consumers clean products in a future society with limited resource availability.

Performance in 2018

Performance

In October 2018, we announced Our Philosophy & Action on Plastic Packaging, outlining our thoughts on plastic packaging.

At a November 2018 meeting to present technological innovations, we announced our Package RecyCreation program to completely eliminate plastic trash in the oceans, move to 100% use of recycled plastics, and aim to completely eliminate liquid residue from AFB (air-in film bottles).

New 4R activities undertaken in 2018 were as follows.

Reduce

- We redesigned the packing boxes used to transport Kanebo Cosmetics products and stop using the packing boxes for 27 skin care products in the line.
- We changed the composition of our large-format refill pouches for *Merit*, *Essential* and *Biore u*, replacing the aluminum foil lining with a shrink-wrap PET lining and reducing the layers from four to three. This helped reduce plastic consumption and CO₂ emissions by 7% and 25%, respectively.

- We changed the package dispenser for *Asience Urutsuya Shintou Care Oil* to a hinged cap, which reduced plastic consumption and CO₂ emissions by 8% and 6%, respectively.

Replace

- We are continuing our efforts to reduce plastic use. There were no new activities in this area in 2018.

Reuse

- We adopted a three-refill pouch for *CuCute CLEAR Foam Spray*, thus reducing plastic consumption by 66%.
- We began selling *Smart Holder* through major retailers.

Recycle

- We are continuing our recycling efforts. There were no new activities in this area in 2018.

Reviews of performance

We received positive comments from business partners and many other external stakeholders concerning the announcement of Our Philosophy & Action on Plastic Packaging. On the other hand, there were requests that we announce more specifics concerning future actions and goals at an early date.

Our RecyRecreation initiative was also lauded as innovative, and we have received suggestions for collaboration. We take these requests from society sincerely and will proactively engage in this activity.

We believe that the 4R activities we have engaged in have more or less run their course in Japan. Accordingly, we had comparatively little to report concerning the 4Rs in 2018. Since more action is demanded now with regard to plastic packaging mainly by European public, we will place more emphasis on 4R activities in Europe and other areas outside Japan in the future.

Our initiatives

Reduce: Reduce packaging materials

We are reducing our plastic consumption by making our packaging thinner and reducing product volumes through concentration. Reducing plastic consumption for packaging lowers environmental impact and reduces costs at the same time.

In addition to consuming less plastic related to packaging that reaches consumers, we are also continuing activities to reduce the amount of cardboard or packaging boxes used at the distribution stage.

We have received positive reviews for our approach of optimizing the height of refill pouches without changing the volume to improve loading efficiency for transport of products by truck. This has been characterized as an activity typical of Kao that is mindful of environmental impact throughout the lifecycle of our products.



Making refill packs shorter led to a 50% improvement in pallet loading efficiency.

Using heat shrink film more extensively, mainly for small size products, to move away from the use of blister packs is becoming the norm in Japan.



Packaging that uses shrink film which is becoming the norm in Japan.

In 2018, there were 45 cases of reducing costs for packaging materials, which also reduced environmental impact. In total, these cases reduced annual CO₂ emissions approximately 1,184 tons and saved approximately 170 million yen.

In 2018, working together with Norihiro Itsubo, Professor of Faculty of Environmental Studies, Tokyo City University, using the LIME2 method we conducted an environmental assessment of the use of refill packaging common in Japanese society. Results of the assessment indicated that societies that use refill packaging have a lower environmental impact than societies that recycle original plastic packaging.

Replace: Switching to renewable raw materials

Given the strong likelihood that use of petrochemical-based plastics will be limited in the future, we are actively developing technologies for using bio-based plastics for bottles and refills. Since we began this initiative in 2012, our consumption of bio-based plastics and the range of products for which they are used have continued to expand.



Products using packaging made from bio-polyethylene.

Reuse: Promoting refill and replacement products

Since we introduced our first refill product in 1991, the number of such products has continued to grow, and as of December 2018 the number of refill and replacement products reached 295 (figures from Kao). Thanks to the widespread use of plastic film refill packaging in Japan, our plastic consumption has dropped dramatically compared to plastic bottles (79%, in the case of shampoo), and we are continuing to expand use of plastic film refills, mainly in Asia.

We have also continued to make improvements to these refill products according to bottle size, the viscosity of the contents and so on to make refilling easier for the consumer.

Since 1997, the ratio of refill products to unit sales has rapidly increased, and is currently at more than 80% (based on the number of units). For example, the refill ratio for fabric softener and fabric bleach now stands at more than 90%. Consumption of plastic for refills and replacements has dropped by 59,500 tons, totaling 93,100 tons when making products more compact is accounted for, compared to if products had been in original plastic packaging. (Figures for 2018 from Kao Corp.)

Our Raku-raku Eco Pack Refill can now be used with our *Smart Holder*, improving usability and allowing the product to be completely consumed, thus reducing environmental impact. This eliminates the need for an original plastic bottle, and consumers can choose the *Smart Holder* label design they prefer to suit their personal preferences.

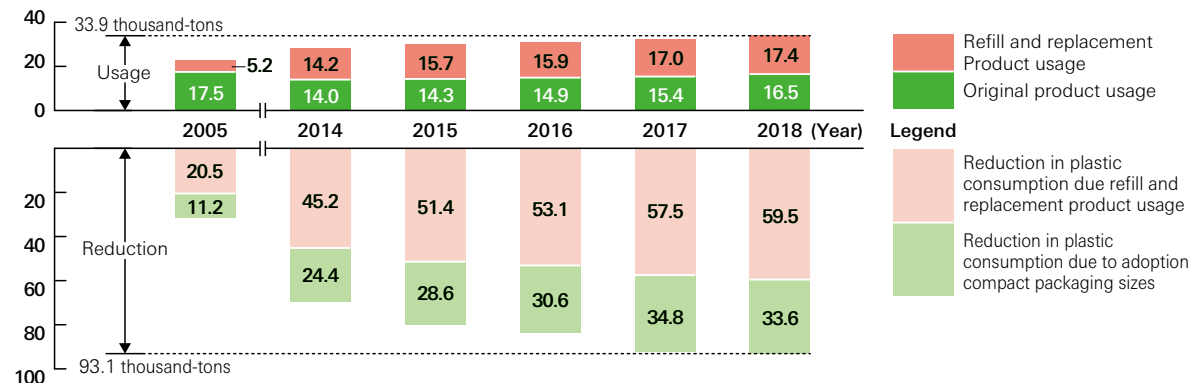
For this technology we were awarded the Minister of Economy, Trade and Industry Prize, the grand prize at the 57th Japan Packaging Competition, and a Good Design Award, all in 2018.

We plan various events to promote use of the *Smart Holder* and raise environmental awareness. At the Kankyo Hiroba Sapporo 2018 environmental event, visitors had the opportunity to create their own one-of-a-kind *Smart Holder*, an event organized by Kao Group Customer Marketing.



The Kao booth at Kankyo Hiroba Sapporo 2018.

Volume of packaging materials used



* Boundary: Kao Corporation.

* Body wash, hand soap, shampoo & rinse, liquid laundry detergent, fabric softener, kitchen cleaner, household cleaner, bleach, mold remover.

Recycle: Introducing recycled materials

We actively introduce and use recycled materials such as recycled paper and recycled plastics. We have been using recycled paper for the carton boxes and instructional inserts for many products, including powdered laundry detergent, since the 1960s.



In Taiwan, we have been using 100% recycled plastics for *Kao Shampoo* and *Kao Body Wash* since 2016.



Packaging for *Quickle Wiper Wet Sheets* uses 80% recycled plastics

RecyCreation activities

We have been engaged in research toward creating a new resource recycling system for packaging. Since 2015 we have proposed the RecyCreation approach, which involves investigating the potential and value of recycling together with members of the community. In a demonstration experiment, we collected used detergent, shampoo, etc. film refill packs and transformed them into recycled plastics in collaboration with business partners. We are continuing activities that will contribute to building

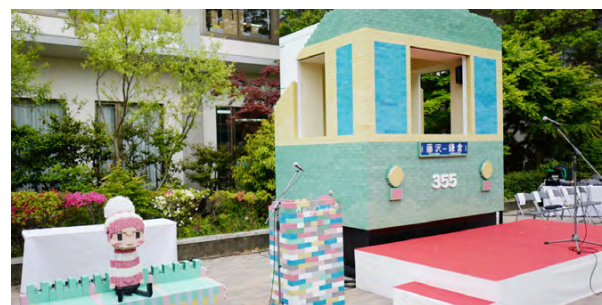
new community ties and new lifestyle.

We created a block out of recycled plastics that symbolizes “creation” of various objects and values.

This is our RecyCreation activity, applying technology, knowledge and ideas to create new things out of used objects.

→ RecyCreation on Facebook
www.facebook.com/RecyCreation.jp/

The RecyCreation Concept



Kamakura RecyCreation project

Introducing packaging technologies and exchanging views

We have presented our packaging technologies and exchanged views at the following events in 2018.

- Japan’s Ministry of the Environment and the Finnish Innovation Fund (Sitra) jointly held the World Circular Economy Forum 2018, where we described our activities to reduce plastic consumption in our packaging and presented our RecyCreation activity.



World Circular Economy Forum 2018

- We provided examples of our initiatives for the Ministry of the Environment’s “Plastics Smart” program.

→ Plastics Smart
plastics-smart.env.go.jp/en/

- In the Japanese government’s process of formulating its plastic resources recycling strategy, our activities to reduce overall plastic consumption through our plastic film packaging were mentioned, describing the technology, etc. involved, which will contribute to meeting the strategy’s targets for reducing plastic consumption.
- We provided examples of our plastics-related initiatives for contributing to the SDGs which was compiled by Keidanren (the Japan Business Federation).