Voluntary Action Plan
for Establishing a Sound Material-Cycle Society
－Results of Fiscal 2018 Follow-up
& Industry-Specific Plastic-Related Target－
<Summary>

April 16, 2019
Keidanren（Japan Business Federation）

1. Efforts under the Voluntary Action Plan for Establishing a Sound Material-Cycle Society

Keidanren formulated the Voluntary Action Plan for Establishing a Sound Material-Cycle Society to promote voluntary efforts on the part of Japan's business community and implements the plan with the participation of 43 industries (refer to Reference 1 & 2 for details on its background).

Determined not to increase the final disposal volume of industrial waste from the current level, Japanese industry as a whole "aims to reduce by fiscal 2020, the final disposal volume of appropriately treated industrial waste by 70% from the actual performance level in fiscal 2000 with consideration of the achievement of a low-carbon society" (Fourth Target, revised in March 2016) and individual industries have also set up industry-specific targets for final disposal volumes.

Furthermore, with a view to improving the quality of resource circulation and based on industry-specific characteristics and circumstances, each industry has set up individual targets, including a target recycling rate for byproducts produced during manufacturing processes and a target for reducing municipal solid waste from business activities.

The Voluntary Action Plan is included in the Government's Fundamental Plan for Establishing a Sound Material-Cycle Society (Cabinet Decision of June 2018).

In addition, from this fiscal year, against the backdrop of rising domestic and global concerns regarding marine plastic litter issues, we have established "industry-specific plastic-related targets" based on the Keidanren Policy Proposal "Opinion on formulating "Japan's Resource Circulation Strategy for Plastics" in order to promote measures to deal with plastic issues and to widely communicate the efforts made by Japan's business community.

Keidanren not only aims to steadily achieve these goals but also conducts a follow-up survey every fiscal year to share the status of efforts with a wide audience. We have surveyed the performance achieved in fiscal 2017 and compiled the progress made toward meeting the economy-wide target and industry-specific targets and specific efforts dedicated to achieving these targets. We will also announce the "industry-specific plastic-related targets" that have been newly added this fiscal year.

*Industries participating in the Voluntary Action Plan for Establishing a Sound Material-Cycle Society (43 industries)

Electric power, gas, petroleum, iron and steel, non-ferrous metals, aluminum, brass, electric cable and wire, rubber, flat glass, cement, chemical, pharmaceuticals, pulp and paper, electrical and electronics, industrial machinery, bearing, automobiles, auto parts, auto-body, industrial vehicles, rolling stock, shipbuilding, flour, sugar, milk and dairy products, beverages, beer, construction, aviation, telecommunications, printing (The above 32 industries are counted when calculating the industry-wide industrial waste final disposal volume.); housing (Waste from the housing industry is included in that from the construction industry, and therefore is not added to total in order to avoid double-counting.), real estate, machine tools, trade, department stores, railway, maritime transport, banking, nonlife insurance, securities, and life insurance.

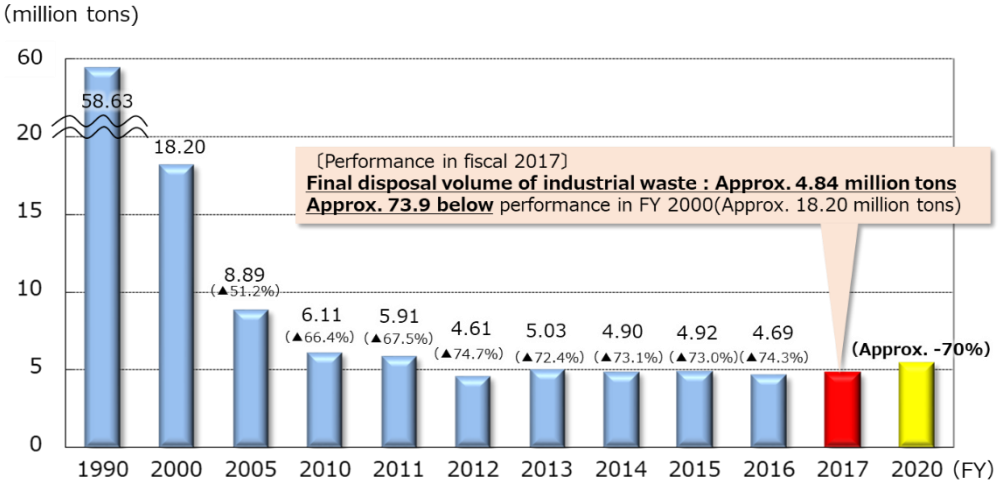
2. Results of efforts in fiscal 2017

(1) Final disposal volume of industrial waste

In fiscal 2017, the final disposal volume of industrial waste (32 industries) was approximately 4.84 million tons, approximately 73.9% below the fiscal 2000 level (approximately 18.20 million tons), or the baseline year level (and approximately 91.7% below the fiscal 1990 level), thus overachieving the Plan's target. (cf. Figure 1. Final disposal volume of industrial waste generated by the industries participating in the plan).

However, the final disposal volume of industrial waste marked an increase of approximately 0.15 million tons (approximately 3.1%) over the previous year (fiscal 2016 performance). This is inferred mainly to be a result of increased construction demand trends continuing since fiscal 2013 against the backdrop of a continuing gradual economic recovery trend, post-earthquake reconstruction demand, and demand related to the Tokyo Olympic and Paralympic Games.

Figure 1. Final disposal volume of industrial waste generated by the participating industries



*1: The rate (%) of reduction from final disposal volume of industrial waste in fiscal 2000 (baseline year) is provided in round brackets.
*2: Total final disposal volume of industrial waste in 32 industries out of the 43 industries participating in the Plan. The sum has been recalculated for the fiscal years before 2016 to accommodate changes made in the figures reported by some industries.
*3: The sum for fiscal 1990 does not include figures for the cement, bearing, shipbuilding, aviation and printing industries. Performance provided for fiscal 2000 does not include figures for the cement and printing industries, and includes figures from past reports for the rubber industry. The

five industries mentioned above collectively account for approximately 0.4% of total final disposal volume of industrial waste in fiscal 2017.

*4: The final disposal volume of industrial waste recorded in fiscal 2017 amounted to approximately 4.84 million tons, accounting for around 49% of total nation-wide final disposal volume of industrial waste, which was approximately 9.89 million tons (according to Ministry of the Environment survey). Industrial waste from organizations and companies that are not included in the Keidanren survey include for example, industrial waste (mainly sludge) from the water and sewage works, mining, and ceramics industries and industrial waste (animal and plant residue and animal feces).

(2) Industry-specific efforts with a view to improving the quality of resource circulation

Industries set up individual targets accommodating industrial-specific characteristics and circumstances. The targets and performance in fiscal 2017 for each industry are presented in Table 1 [List of industry-specific targets]. (Details can be found in the "Industry-specific targets" section of the *Industry-specific Report* (Japanese version only). Keidanren will continue to encourage industries to set up industry-specific targets that will contribute to improving resource circulation.

Table 1. List of industry-specific targets

〔Explanation of targets〕
○ : Quantitative targets with a view to improving the quality of resource circulation
□ : Qualitative targets for improving the quality of resource circulation
〔＊〕: Overachieved targets
※: Targets are for industrial waste unless otherwise indicated.

Electric power	○ Make efforts to achieve recycling rate of 95% in fiscal 2020. ➢ Performance in fiscal 2017: 98%〔＊〕
Gas	○ Maintain volume of industrial waste generated at city gas manufacturing plants at levels not exceeding 1,000 tons through fiscal 2020 (79% below fiscal 2000 level). ➢ Performance in fiscal 2017: 1,000 tons〔＊〕 ○ Reduce drilling mud from city gas conduit construction by no less than 17%, using an integrated indicator that combines drilling mud reduction and recycling. ➢ Performance in fiscal 2017: 19.6%
Petroleum	○ Maintain and continue zero emission (final disposal rate of no more than 1%) through fiscal 2020. ➢ Performance in fiscal 2017: 0.3%〔＊〕
Iron and steel	○ Achieve steel can recycling rate of at least 90% ➢ Performance in fiscal 2017: 93.4%〔＊〕 ○ Make efforts towards using 1 million tons of waste plastic annually, assuming that the establishment of a sound material-oriented society will be further promoted through laws and government-led pickup systems. ➢ Performance in fiscal 2017: 0.47 million tons
Aluminum	○ Maintain aluminum dross recycling rate of no less than 99% in fiscal 2020. ➢ Performance in fiscal 2017: 99.9%〔＊〕
Brass	○ Maintain recycling rate of no less than 90% in fiscal 2020. ➢ Performance in fiscal 2017: 96%〔＊〕
Electric cable and wire	○ Make efforts to maintain a recycling rate of no less than 95% in fiscal 2020. ➢ Performance in fiscal 2017: 95.6%
Rubber	○ Achieve recycling rate of no less than 70% in fiscal 2020. ➢ Performance in fiscal 2017: 79.3%〔＊〕
Flat Glass	○ Achieve recycling rate ([recycled volume] / [volume of waste generated]) of no less than 95%. ➢ Performance in fiscal 2017: 93.8%〔＊〕
Chemicals	○ Achieve recycling rate of no less than 65% in fiscal 2020. ➢ Performance in fiscal 2017: 66%〔＊〕
Pharmaceuticals	○ Achieve recycling rate of no less than 55% in fiscal 2020. ➢ Performance in fiscal 2017: 60.1%〔＊〕 ○ Improve waste generation intensity in fiscal 2020 to 50% of the fiscal 2000 level. (Achieve a level of no more than 2.2 tons/0.1 billion yen.) ➢ Performance in fiscal 2017: 2.0 tons/0.1 billion yen〔＊〕

Pulp and paper	○ Make efforts to maintain current level (97%) of effective utilization (([volume of waste generated] – [final disposal volume]) / [volume of waste generated]). ➢ Performance in fiscal 2017: 98.4%〔＊〕
Electrical and electronics	○ Reduce the final disposal rate to no more than 1.8% in fiscal 2020. ➢ Performance in fiscal 2017: 1.9%
Industrial machinery	○ Make efforts to achieve recycling rate of no less than 90%. ➢ Performance in fiscal 2017: 91.8%〔＊〕
Bearing	○ Make efforts to achieve recycling rate of no less than 96% in fiscal 2020. ➢ Performance in fiscal 2017: 98.5%〔＊〕
Automobile	○ Maintain recycling rate of no less than 99% in fiscal 2020. ➢ Performance in fiscal 2017: 99.9%〔＊〕
Auto parts	○ Achieve recycling rate of no less than 85% in fiscal 2020. ➢ Performance in fiscal 2017: 95.4%〔＊〕
Auto-body	○ Achieve industry participation rate of no less than 95% in terms of sales (ratio of companies of the industry participating in the Voluntary Action Plan). ➢ Performance in fiscal 2017: 98.2%
Industrial vehicles	○ Make efforts to maintain recycling rate of no less than 90% for industrial waste generated during the manufacturing process. ➢ Performance in fiscal 2017: 90.3%〔＊〕
Rolling stock	○ Achieve recycling rate of no less than 99% in fiscal 2020 and make efforts to come as close to 100% as possible. ➢ Performance in fiscal 2017: 99.9%〔＊〕
Shipbuilding	○ Make efforts to achieve recycling rate of around 86% at the manufacturing phase of shipbuilding in fiscal 2020. ➢ Performance in fiscal 2017: 81.2%
Flour	○ Achieve recycling rate of no less than 90% in fiscal 2020. ➢ Performance in fiscal 2017: 96.1%〔＊〕
Sugar	○ Achieve recycling rate of no less than 98% in fiscal 2020. ➢ Performance in fiscal 2017: 97.9%
Milk and dairy products	○ Achieve a recycling rate of no less than 97% in fiscal 2020. ➢ Performance in fiscal 2017: 95.17%
Soft drinks	○ Achieve a recycling rate of no less than 99% in fiscal 2020. ➢ Performance in fiscal 2017: 99.3%〔＊〕
Beer	○ Maintain 100% recycling rate. ➢ Performance in fiscal 2017: 100%〔＊〕
Construction	○ Achieve construction sludge recycling rate of no less than 90% in fiscal 2020. ➢ Performance in fiscal 2017: 85% ○ Achieve a mixed construction waste recycling rate of no less than 60% in 2020. ➢ Performance in fiscal 2017: 58.2%
Aviation	○ Aim to achieve final disposal rate of no less than 2.4% in fiscal 2020. ➢ Performance in fiscal 2017: 3.7%
Telecommunications	○ Achieve zero emissions (final disposal rate of no more than 1%) for waste from telecommunications facilities. ➢ Performance in fiscal 2017: 0.13%〔＊〕
Printing	○ Achieve recycling rate of no more than 95% in fiscal 2020. ➢ Performance in fiscal 2017: 99.1%〔＊〕

Real estate	○ Aim to achieve paper recycling rate of no less than 85%. ➢ Performance in fiscal 2017: 85.9% ○ Make efforts to maintain recycling rate of 100% for glass bottles, cans and PET bottles. ➢ Performance in fiscal 2017: glass bottles 99.9%; cans 100%: PET bottles 99.4% ☐ Improve purchasing rate of recycled paper. ☐ Improve green procurement rate.
Machine tools	○ Achieve recycling rate of no less than 90% in fiscal 2020. ➢ Performance in fiscal 2017: 88.9%
Trade	○ Reduce disposal volume of municipal solid waste from business activities by 80% from fiscal 2000 level in fiscal 2010. ➢ Performance in fiscal 2017: 82.3%〔＊〕 ○ Achieve recycling rate of no less than 86% for municipal solid waste from business activities in fiscal 2020. ➢ Performance in fiscal 2017: 84.1% ○ Reduce volume of municipal solid waste from business activities to no more than 4,000 tons in fiscal 2020 (reduce by 55% from fiscal 2000). ➢ Performance in fiscal 2017:3,800 tons〔＊〕
Department stores	○ Aim to reduce final disposal volume of waste generated in stores by 50% from year 2000 level (per $1m^2$) in 2020. ➢ Performance in fiscal 2017: 49% reduction ○ Reduce intensity (volume used per unit sales) of paper containers and packaging (wrapping paper, carrier bags, paper bags, paper boxes) use by 45% relative to year 2000 levels in 2020. ➢ Performance in fiscal 2017: 40% reduction ☐ Make efforts to reduce use of plastic containers and packaging to the largest extent possible.
Railway	○ Achieve recycling rate of 94% for waste from stations and railcars. ➢ Performance in fiscal 2017: 94%〔＊〕 ○ Achieve recycling rate of 96% for waste generated at General Rolling Stock Centers, etc. ➢ Performance in fiscal 2017: 95% ○ Achieve recycling rate of 96% for waste generated in facility construction. ➢ Performance in fiscal 2017: 94%
Maritime transport	☐ Appropriately manage waste in accordance with international standards. ☐ Make efforts to control waste generation.
Banking	○ Achieve paper recycling rate of no less than 90% in fiscal 2020. ➢ Performance in fiscal 2017: 90.1%〔＊〕 ○ Increase purchasing rate of recycled paper and environment-friendly paper to no less than 75% in fiscal 2020. ➢ Performance in fiscal 2017: 75.9%〔＊〕

Non-life insurance	☐ At individual insurance companies, 1. Establish a corporate waste management scheme to promote reductions in municipal solid waste from business activities generated at offices and collaborate with waste collection companies to ensure segregated collection and improve recycling rate. 2. Make efforts to purchase office supplies that contribute to increasing the utilization rate of environment-friendly products. 3. Reduce OA paper use through efforts made toward achieving corporate targets including the active utilization of two-sided copying, 2in1 copying, tablet devices, etc. ☐ Reach out to society through automobile insurance (promote use of recycled auto parts).
Securities	☐ Make efforts to reduce paper use by utilizing two-sided copying and 2in1 copying and promoting paperless operations by digitalizing documents. ☐ Make efforts to reduce environmental burden and reuse resources by promoting the use of paper produced in processes reducing environmental-burden and ensuring segregated waste collection.
Life insurance	☐ Make efforts to reduce paper use by promoting paperless practices. ☐ Make efforts to engage in green procurement of paper and office supplies. ☐ Make efforts to engage in fully segregated waste collection. ☐ Make efforts that will lead to the reuse of paper and other resources.

Furthermore, given the announcement of the Keidanren Proposal "Toward the Establishment of an Effective Recycling System for Containers and Packaging" (October 2005), in March 2006, the Liaison Committee of Associations Promoting 3R, comprising eight containers and packaging recycling organizations, formulated the "Voluntary Action Plan for Promoting the 3Rs in Containers and Packaging." Under the Plan, the Liaison Committee has set up individual targets for each material type of container or packaging and conducts annual follow-up surveys, renewing target levels, as required. According to the "Fiscal 2018 Follow-Up Results (performance in fiscal 2017)" (December 2018), the recycling and collection rates of steel cans, aluminum cans and cardboard boxes have remained above 90%, steadily achieving success. (see Table 2. Status of recycling targets).[1]

Regarding plastics, in particular, PET bottles have become 23% lighter per bottle compared to fiscal 2004 levels. The business community is also contributing to promoting the 3Rs in plastic resources, succeeding in cumulative reductions of other plastic packaging and containers by 15.9 % (see Figure 2. Weight reduction rate of PET bottles and weight reduction rate of plastic containers and packaging).

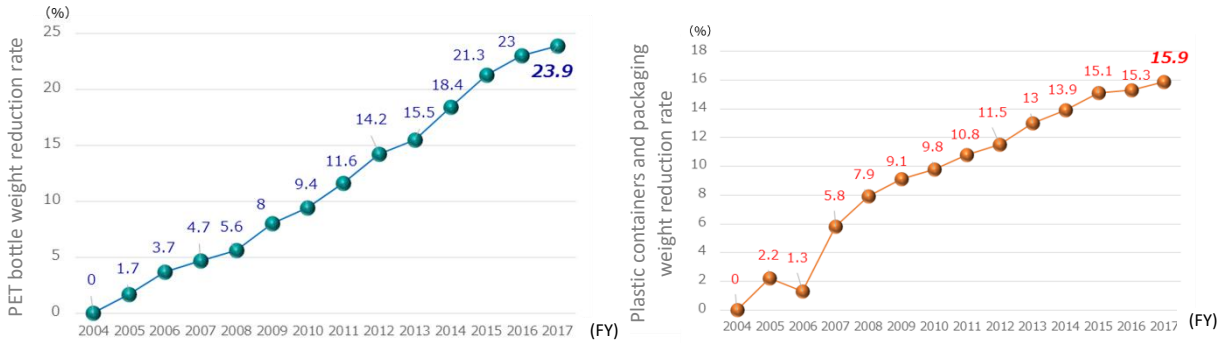
[1]Refer to the Liaison Committee of Associations Promoting 3R website for details: http://www.3r-suishin.jp

Table 2. Status of recycling targets

Material	Indicator	Fiscal 2020 target	Fiscal 2017 performance	<Reference> Fiscal 2016 performance
Glass bottles	Recycling rate	No less than 70%	69.2%	(71.0%)
PET bottles		No less than 85%	84.8%	(83.9%)
Steel cans		No less than 90%	93.4%	(93.9%)
Aluminum cans		No less than 90%	92.5%	(92.4%)
Plastic containers and packaging	Recycling rate	No less than 46%	46.3%	(46.6%)
Paper containers and packaging	Collection rate	No less than 28%	24.5%	(25.1%)
Paper containers for beverages		No less than 50%	43.4%	(44.3%)
Cardboard boxes		No less than 95%	96.1%	(96.6%)

<Source: Liaison Committee of Associations Promoting 3R>

Figure 2. Weight reduction rate of PET bottles and weight reduction rate of plastic containers and packaging



<Source: Liaison Committee of Associations Promoting 3R>

(3) Other efforts towards establishing a sound material-cycle society

In addition to efforts under self-determined industry-specific targets, industries are engaged in efforts exemplified in Table 3. Examples of efforts towards establishing a sound material-cycle society. (Details can be found in Section 2 (Industry-specific targets) of the *Industry-specific Report* (Japanese version only).)

Table 3. Examples of efforts towards establishing a sound material-cycle society

<table>
<tr><th colspan="2">Promoting the 3Rs and effective utilization of resources</th></tr>
<tr><td><Reduce>
・ Maintain and improve heat efficiency of thermal power
・ Develop thin-wall product packaging
・ Develop high-strength materials and components to allow thinner wall
・ Reduce defective products by reviewing manufacturing processes
・ Reduce sludge by reviewing sewage treatment processes
・ Reduce waste volume through intermediate treatment
・ Reduce manufacturing process loss by consolidating manufacturing bases
Encourage customers to bring their own shopping bags; reduce checkout bags</td><td><Reuse>
・ Utilize recycled raw material
・ Effectively use by-products
・ Accept waste from other industries
・ Recycle used uniforms
・ Use waste disposal operators that can recycle waste
<Other effective utilization of resources>
・ Conduct thermal and energy recovery</td></tr>
<tr><th colspan="2">Efforts to reduce environmental burden through product life cycles</th></tr>
<tr><td colspan="2">・ Establish recovery and recycling routes to collect and recycle waste equipment and cable lines from customers and business clients
・ Formulate guidelines for designing products that are easy to recycle
・ Use products that are easy to recycle
・ Ensure high-recyclability by eliminating Substances of Concern
・ Label products to indicate what materials they contain to facilitate waste segregation.
・ Perform environmental assessment of new products at product planning stage; formulate manuals for environmental assessment of newly planned products
・ Perform environmental assessment of equipment when deploying new equipment</td></tr>
<tr><th colspan="2">Technology development and commercialization serving the establishment of a sound material-cycle society</th></tr>
<tr><td colspan="2">・ Research and develop technologies to recover resources from products
・ Develop high-strength thin-wall material technologies
・ Implement demonstrative tests to turn food waste into biogas
・ Develop and operate process management systems using location information and images</td></tr>
</table>

Countermeasures against municipal solid waste from business activities
・ Promote paperless operations using OA equipment, electronic “ringi” decision-making systems, and web conferences ・ Reduce paper waste (by using email and two-side copying, etc.) ・ Review types and numbers of service products ・ Deploy food waste disposal equipment to produce feed and compost. ・ Implement segregated collection of paper, glass bottles, cans, PET bottles, fluorescent tubes, metals and batteries, etc. ・ Educate employees to ensure segregated waste collection ・ Establish a recycling manager; conduct periodical patrols by environment managers
Efforts associated with international material cycles and overseas business activities
・ Extend domestic zero emissions campaigns to overseas plants ・ Develop recycling businesses overseas ・ Provide information and instruct environmental administrators in developing countries ・ Supply high-efficiency facilities to Southeast Asia, etc. ・ Provide waste treatment devices featuring low environmental burden
Other
・ Cooperate with local governments in treating waste from natural disasters ・ Showcase good practices of environment-friendly design; award environmental projects of excellence ・ Provide information on cutting-edge environmental technologies and manufacturers

3. Addressing marine plastic litter issues and plastic resource circulation

(1) Increasing concerns for plastic issues

Canada, European countries and EU endorsed the Ocean Plastics Charter (including quantitative targets with deadlines for achievement) at the G7 Charlevoix Summit held in June 2018, while Japan and the US did not. However, Prime Minister Shinzo Abe has announced that this issue would be addressed at the G20 Summit to be held in Osaka in June 2019.

Given these circumstances and with a view to the G20 Osaka Summit, the Japanese Government seeks to resolve marine plastic litter issues. Concerned ministries and agencies have been engaged in discussions about domestic and international approaches to the issue with a view to leading global plastic countermeasures.

In order to formulate Japan’s Resource Circulation Strategy for Plastics based on the Fourth Fundamental Plan for Establishing a Sound Material-Cycle Society (Cabinet Decision of June 2018) before the G20 Summit this year, discussions were held in the Subcommittee for Japan’s Resource Circulation Strategy for Plastics of the Central Environment Council in August 2018. The Strategy aims to comprehensively promote the resource circulation of plastics, including the agenda and quantitative targets set out in the Ocean Plastics Charter.

Furthermore, with an aim to achieve “a world that does not generate new pollution” the Government will formulate an “Action Plan for Marine Plastic Litter Countermeasures (tentative title)” comprising eight pillars, including the recovery and

proper treatment of plastic litter before the G20 meeting.

Also, with the amendment of the Act on Promoting the Treatment of Marine Debris Affecting the Conservation of Good Coastal Landscapes and Environments to Protect Natural Beauty and Variety in June 2018, the Expert Meeting on Measures against Articles that Drift Ashore reviewed amendments to the Basic Policy based on the Act, adding items including the reduction of microplastics flowing out into the ocean.

Concerned ministries and agencies are also promoting efforts to address this issue. The Ministry of the Environment has launched a nationwide campaign to disseminate "wise ways to live with plastics" and a "Plastic Smart Campaign" to communicate Japan's efforts both domestically and internationally. The Ministry of Economy, Trade and Industry promotes the Clean Ocean Material Alliance to encourage collaboration among companies of relevant industries with an aim to achieve innovation towards the reduction of marine plastic litter. The Ministry of Agriculture, Forestry and Fisheries promotes voluntary approaches by companies and industrial associations of the agriculture, forestry, fisheries and food sectors based on the Plastic Resource Circulation Action Declaration.

(2) Keidanren's efforts

Given these developments, in November 2018, Keidanren announced 1) Opinion on formulating the "Japan's Resource Circulation Strategy for Plastics" and 2) Contributing to the UN SDGs through Measures Addressing Plastic Waste Issues, a compilation of plastic-related efforts.

①Opinion on formulating "Japan's Resource Circulation Strategy for Plastics

In August 2018, we compiled and announced "Opinion on formulating "Japan's Resource Circulation Strategy for Plastics," covering the Japanese business community's basic approach toward marine plastic issues, with which we are challenged on a global scale, and the resource circulation of plastics in Japan, as well as prospective measures to address these issues (see Appendix 1: Outline of Opinion on formulating "Japan's Resource Circulation Strategy for Plastics)[2]. In the Opinion, we included our intentions to "discuss how to enhance the Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society in a more plastic-conscious way."

②Contributing to the UN SDGs through Measures Addressing Plastic Waste Issues: Efforts toward a positive future for plastics

For the purpose of promoting voluntary approaches and communicating these efforts both domestically and internationally, in September 2018, Keidanren conducted a questionnaire survey targeting member companies and organizations on efforts serving

[2]Details can be found at: http://www.keidanren.or.jp/en/policy/2018/098.html

plastic resource circulation and ocean plastic issues. During the survey period, which was only one month, 208 cases were reported by 119 companies and industry associations. These case studies were compiled and published (First Edition published in November 2018)[3].

After extending the survey period to February 8, 2019, 300 efforts were reported by a total of 164 companies and industry associations, and we published the Third Edition on February 15, 2019. Efforts included 115 reduction efforts, 49 reuse efforts, 146 recycling efforts and 115 other efforts (including multiple answers).

Reported efforts covered a broad range of approaches, including reducing plastic use to the furthest extent possible in products (reduce), using recycled material and recycling used plastics (recycling), research and development for bioplastics and alternatives to plastics such as paper, coastal cleanups, PET bottle cap collection, and consumer awareness-raising campaigns.

The features and details of industry-specific efforts can be found in Appendix 2: "Contributing to the UN SDGs through Measures Addressing Plastic Waste Issues: Efforts toward a positive future for plastics 'TORIKUMI' <Outline>"[4].

(3) Setting up industry-specific plastic-related targets

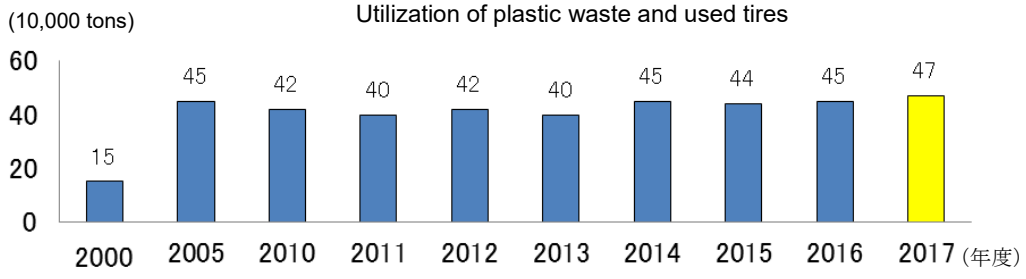
Based on the Keidanren Opinion of November 2018, organizations and companies participating in the Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society considered targets that would contribute to resolving marine plastic litter issues and promote plastic resource circulation (industry-specific plastic-related targets) from the perspective of deepening voluntary approaches by the business community and expanding the horizons of such efforts. As a result, as indicated in Table 4. Industry-specific plastic-related targets, 43 targets were announced by 20 industries. In fiscal 2019, industries will continue to consider ways to enhance their targets, as well as promote efforts to achieve the targets that they have set up.

Keidanren will communicate the voluntary approaches taken by these industries to a wide audience both in Japan and overseas, seeking to promote the correct understanding of the efforts made by Japan's business community.

[3]Details can be found at: http://www.keidanren.or.jp/en/policy/2018/099.html

[4]In the collection of case studies, "industries" are categorized by the Keidanren secretariat based on the 33 industries of the Tokyo Stock Exchange.

Table 4. Industry-specific plastic-related targets

Electric power (The Federation of Electric Power Companies of Japan)		
Target / Performance to present		
〔Target〕 Promote recycling of materials, including plastic waste		
〔Performance to present〕 Reuse of waste plastics from power distribution facilities as plastic raw material.		
Target / Performance to present		
〔Target〕 Promote beautification and cleanup activities		
〔Performance to present〕 Hosted beautification and cleanup activities at riversides and beaches nationwide		
Gas（The Japan Gas Association）		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 Aim for 100% effective utilization of used polyethylene gas pipes, including thermal recovery.	FY2030	—
〔Performance to present〕 The city gas industry has promoted the recycling of used polyethylene gas pipes. The effective utilization rate of major operators has remained higher than 95% since fiscal 2000.		
Iron and Steel (The Japan Iron and Steel Federation)		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 Aim for reductions by 2 Mt-CO2 by expanding feedstock recycling of plastic waste at steel plants (utilization of 1 million tons, assuming that a collection system will be established under Government leadership. (Note: Used tires are included in the 1 million tons utilized.)	FY2030	FY2005
〔Performance to present〕 Plastic waste and used tires received by the iron and steel industry are as follows:  Source: Japan Iron and Steel Federation		

Cement (Japan Cement Association)

Target / Performance to present

〔**Target**〕

Increase receipt and treatment of plastic wastes

〔Performance to present〕

Since the cement industry first began to receive waste plastics on a full scale in fiscal 1998, it has increased capital investment and currently receives waste plastics at all plants, utilizing them in cement production.

The total volume of waste plastics received by the industry as a whole amounted to 20,000t in fiscal 1998 and has increased by 30 times, reaching 600,000t in fiscal 2017. In recent years, the industry also receives automotive shredded residue and disaster-generated waste, which include plastic debris, and will continue to take measures to contribute to the effective utilization of domestic resources.

Chemical (Japan Chemical Industry Association)

Target 1 / Performance to present	Target FY	Baseline FY
〔**Target**〕 [JPIF] Make efforts to prevent resin pellet spill Measures to be taken by all relevant JPIF member companies	FY2019	FY1992

〔Performance to present〕

The Japan Plastics Industry Federation (JPIF) formulated the “Resin Pellet Spill Prevention Manual” in 1992-1994, conducted a survey on the status of preventive measures against resin pellet spill, published the booklet “Resin Pellet Spill Prevention Measures” in 2002, launched the “Resin Pellet Spill Prevention” Campaign and conducted the 2015 survey on the status of preventive measures against resin pellet spill.

Target 2/ Performance to present	Target FY	Baseline FY
〔**Target**〕 [JPIF] Declarations towards resolving marine plastic litter issues Measures to be declared by all JPIF member companies	FY2019	FY2017

〔Performance to present〕

The Japan Plastics Industry Federation (JPIF) launched the campaign at the end of fiscal 2017. Forty companies and 11 organizations, including non-members, have made declarations toward resolving marine plastic litter issues.

Target 3/ Performance to present

〔**Target**〕

[JCIA LRI] Evaluate exposure or risk of environmental organisms to chemical substances absorbed by microplastics

〔Performance to present〕

The Japan Chemical Industry Association will support research aiming to gain understanding of the level of impacts that chemical substances absorbed by microplastics acting as vectors have upon environmental organisms. Selected research projects: Professor Norihisa Tatarazako, Ehime University “Research on biological accumulation and inter-organism concentration among fish in environments with and without microplastics”; Professor Yuji Oshima, Kyushu University, “Constructing a model for the disposition of and assessing the impacts of absorbed chemical substances of degraded microplastics origin.”

Target 4 / Performance to present
〔**Target**〕 [JCIA LRI] Clarify the mechanism of microplastics generation
〔Performance to present〕 The Japan Chemical Industry Association will support research to clarify the mechanism of how microplastics are produced from what kind of plastic products. Selected research project: Professor Shinichi Kuroda, Gunma University “Clarifying the mechanism of microplastics generation”
Target 5 / Performance to present
〔**Target**〕 [Japan Initiative for Marine Environment (JaIME)] Organize training seminars for dissemination in Asia
〔Performance to present〕 In the chemical industry, thePlastic Waste Management Institute has made annual sums of the plastic material flow and compiled flow diagrams. The Japan Initiative for Marine Environment (JaIME) will organize and host training seminars to introduce this knowledge and knowhow to emerging countries in Asia.
Target 6 / Performance to present
〔**Target**〕 [Japan Initiative for Marine Environment (JaIME)] Verify the effectiveness of energy recovery
〔Performance to present〕 The Japan Initiative for Marine Environment (JaIME) will use the Life Cycle Assessment (LCA) method to quantitatively evaluate environment burden (energy consumption and CO2 emissions) reductions achieved by plastic recycling methods (material recycling, feedstock recycling) and energy recovery methods.
Pulp and Paper (Japan Paper Association)
Target 1
〔**Target**〕 Develop and supply biodegradable materials from paper pulp
Target 2
〔**Target**〕 Accelerate the replacement of plastics by improving the functionality of existing paper products.

Automobiles (Japan Automobile Manufacturers Association)		
Target 1 / Performance to present	Target FY	Baseline FY
〔**Target**〕 Recycling rate of all industrial waste generated at factories: maintain 99+%	FY2020	—
〔Performance to present〕 Member companies of the Japan Automobile Manufacturers Association are engaging in efforts to achieve the industry-specific target of maintaining a recycling rate of no less than 99% for all industrial waste, including plastic waste. The recycling rate has exceeded 99.5% and this rate has been maintained in recent years. The current target will be unchanged and status quo will be maintained.		

Target 2 / Performance to present	Target FY	Baseline FY
〔**Target**〕 Recycling rate of automobile shredder residue: maintain 90+%	FY2030 (maintain status quo)	FY2005 (62%)

〔Performance to present〕

Since the Automobile Recycling Law promulgated in 2005 provides for an automobile shredder residue recycling rate of more than 70%, the Japan Automobile Manufacturers Association has engaged in various efforts to improve the automobile shredder residue recycling rate, and as a result, member companies are currently maintaining recycling rates of more than 95%. While there are concerns that recycling processes may become overloaded in the future, the industry intends to maintain a recycling rate of more than 90%.

Auto-body (Japan Auto-Body Industries Association)

Target / Performance to present	Target FY	Baseline FY
〔**Target**〕 Reduce final disposal volume of industrial waste by 89% relative to the fiscal 2000 level.	FY2020	FY2000

〔Performance to present〕

●Reduction rate of final disposal volume of industrial waste relative to fiscal 2000: 90% (performance in fiscal 2017)

Milk and dairy products (Japan Dairy Industry Association)

Target 1 / Performance to present

〔**Target**〕

Design products to minimize the use of plastic in containers and packaging

〔Performance to present〕

The Japan Dairy Industry Association has formulated the "Environment-friendly Containers and Packaging Guidelines" to realize both the "basic functions" of containers and packaging and "environmental consideration." The Guidelines have been made available on the Association's website along with an introduction of efforts made by member companies.

The industry has taken measures to reduce environmental burden by replacing conventional plastic containers and packaging to those using more lightweight and thin-walled plastics or to paper containers.

Target 2 / Performance to present

〔**Target**〕

Promote the use of environment-friendly materials as raw material for plastics used in containers and packaging

〔Performance to present〕

The following items have been listed in the Association's "Environment-friendly Containers and Packaging Guidelines" to reduce environmental burden.

・Use recyclable material for plastic packaging

・Consider the use of recycled PET bottles

・Advance the utilization of environment-friendly biomass and recycled material

Target 3 / Performance to present

〔**Target**〕

Facilitate the recycling of waste plastics generated from manufacturing processes by using recycling operators.

〔Performance to present〕

The collective recycling rate of waste plastics among the ten companies which are members of the Association's Environment Committee was 95.3% in fiscal 2017, maintaining a recycling rate of more than 95% since fiscal 2011.

Soft drinks (Japan Soft Drink Association)

Target 1 / Performance to present

〔**Target**〕

The Soft Drink Industry's Plastic Resource Circulation Declaration

〔Performance to present〕

On November 29, 2018, the Japan Soft Drink Association, as an industrial association using PET bottles and other containers and packaging, announced the "Soft Drink Industry's Plastic Resource Circulation Declaration" regarding plastic resource circulation and measures to address marine plastic litter. The soft drink industry declared that it would make a concerted effort to seriously engage in plastic resource circulation, joining forces with customers, government, local government, and related organizations, and determining targets for the near-, medium- and long-term toward the goal of achieving 100% effective use of PET bottles in fiscal 2030.

*Details can be found in Appendix 3 [Industry-specific plastic-related targets: details of performance to present].

Target 2 / Performance to present	Target FY	Baseline FY
〔**Target**〕 PET bottle weight reduction rate of no less than 25%	FY2030	FY2004

〔Performance to present〕

●Performance in fiscal 2017: 23.9% (2020 target under Voluntary Action Plan: 25%)

Target 3 / Performance to present	Target FY	Baseline FY
〔**Target**〕 PET bottle recycling rate of no less than 85%	FY2030	—

〔Performance to present〕

●Performance in fiscal 2017: 84.8% (2020 target under Voluntary Action Plan: 25%)

Target 4 / Performance to present	Target FY	Baseline FY
〔**Target**〕 PET effective utilization rate of 100%	FY2030	—

〔Performance to present〕

●Performance in fiscal 2017: 92.1%

Target 5 / Performance to present

〔**Target**〕

Enhance awareness-raising campaigns against littering of containers

〔Performance to present〕

As littering issues cannot be addressed by one company alone, beverage manufacturer associations joined forces to establish the Beverage Industry Environment Beautification Association in 1973 with the purpose of "serving the advancement of public welfare by seeking to prevent the littering of food containers and endeavoring to beautify the environment of our traditional landscape." In April 2011, the association became a public interest incorporated association, under which member companies of the beverage industry are making concerted efforts to achieve the aims of establishing the Association, promoting the prevention of littering in light of surrounding circumstances.

*Details can be found in Appendix 3 [Industry-specific plastic-related targets: details of performance to present].

Target 6 / Performance to present
〔**Target**〕 Establish an effective collection system to achieve a collection rate of 100%
〔Performance to present〕 The industry is engaged in producing PET bottle products that contribute to the 3Rs, including post-use reprocessing and sanitation, complying with the Voluntary Design Guidelines for Designated PET Bottles formulated in 1992. In April 2016, it presented the soft drink industry's "Approach to Environment-Friendly Containers and Packaging Design," and promotes the 3Rs of containers and packaging, seeking to reduce environmental burden and effectively utilize resources. In fiscal 2017, the collection rate for PET bottles was 92.2%. The industry is currently considering a system that will contribute to improving the recovery rate and quality of recovered commercial PET bottles.

Beer (Brewers Association of Japan)		
Target / Performance to present	Target FY	Baseline FY
〔**Target**〕 Effective utilization of 100% of all used plastics generated during production (or final disposal volume of 0 tons), as a part of efforts to achieve a recycling rate of 100% for all byproducts and waste generated during the production of beers, etc. ("beer" and "sparkling liquor"; "other brewed liquors (effervescent) and "liqueurs (effervescent) ①" as stipulated in item 3, paragraph 3, article 23 of the Liquor Tax Law) at all beer factories of the five member beer companies of the Brewers Association of Japan.	FY2030	―
〔Performance to present〕 All beer factories of the five member beer companies of the Brewers Association of Japan have continued to achieve a recycling rate of 100% for all byproducts and waste generated during the production of beers, etc. from fiscal 2000 through 2017.		

Construction (Japan Federation of Construction Contractors)
Target / Performance to present
〔**Target**〕 Further promote onsite waste segregation to facilitate plastic recycling
〔Performance to present〕 The industry promotes reduction at source and onsite segregation of metal scrap and plastic waste, in addition to the items compulsory under the Construction Material Recycling Law, at construction sites for new buildings and building demolition sites. These are explicitly included as measures to be taken under the "Japan Federation of Construction Contractors' Voluntary Action Plan for the Environment Sixth Edition" (formulated in April 2016).

Printing (Japan Federation of Printing Industries)
Target 1
〔**Target**〕 Further promote waste reduction of single-use containers and packaging in the near-term through collaboration with upstream and downstream industries of the supply chain.
Target 2
〔**Target**〕 Aim to design plastic containers and packaging that are technically easy to segregate and reusable or recyclable, while also ensuring their functionality.

Real estate (Real Estate Companies Association of Japan)		
Target 1 / Performance to present	Target FY	Baseline FY
〔**Target**〕 Maintain a recycling rate of 100% for plastic waste generated at buildings used for the industry's own business operations through fiscal 2030.	FY2030	FY2019
〔Performance to present〕 The industry engages in various measures to address waste generated at offices used for its own business operations: installing recycling (waste segregation) bins, asking employees for their cooperation, supporting waste reduction activities undertaken by tenants etc., providing information to tenants, etc. Details can be found in Appendix 3 [Industry-specific plastic-related targets: details of performance to present]. ●Recycling rate of waste plastics generated at offices used for its own business operations: 99.5% (performance in fiscal 2017)		
Target 2 / Performance to present		
〔**Target**〕 Improve the green procurement rate of products purchased in buildings used for the industry's business operations		
〔Performance to present〕 The industry already includes improving the green procurement rate of all items as a target under the Voluntary Action Plan for Establishing a Sound Material-Cycle Society, and thus covers plastic-related measures.		
Trade (Japan Foreign Trade Council)		
Target 1	Target FY	Baseline FY
〔**Target**〕 （Corporate-level） Aim for 100% segregated disposal of PET bottles at the office	FY2020	－
Target 2		
〔**Target**〕 Make industry-wide efforts to promote handling products and businessthat contribute to the reduction, reuse and recycling of plastics.		
Target 3		
〔**Target**〕 Organize an annual forum for member companies to exchange information on corporate efforts addressing plastic-related issues and make an effort to expand measures.		
Department stores (Japan Department Stores Association)		
Target / Performance to present	Target FY	Baseline FY
〔**Target**〕 Reduce the volume of plastic containers and packaging used by 50% in terms of intensity (volume of use per unit sales) in 2030 relative to the 2000 baseline level.	FY2030	FY2000
〔Performance to present〕 ●Performance in fiscal 2017: 71.6 (kg/100 million yen) [Relative to target year: 37.1% reduction]		

<Reference> Performance in fiscal 2000: 113.9 (kg/100 million yen)

Railway (East Japan Railway Company)

Target

〔**Target**〕
Promote recycling by installing segregated garbage bins at stations and separately collect PET bottles with the cooperation of customers.

Banks (Japan Bankers Association)

Target 1	Target FY	Baseline FY
〔**Target**〕 Engage in segregated collection of used PET bottles at 100% of member banks	FY2030	―

Target 2	Target FY	Baseline FY
〔**Target**〕 Engage in clean-ups and other measures to reduce marine plastic litter at 100% of member banks	FY2030	―

Target 3 / Performance to present

〔**Target**〕
The bank industry will engage in the effective use of resources and waste reduction.

〔Performance to present〕
Article 7 of the Corporate Behavior Charter provides for the practice of "effective use of resources and waste reduction."

Target 4

〔**Target**〕
The bank industry will actively support companies that take measures to address plastic-related issues in line with government policy.

Securities (Japan Securities Dealers Association)

Target

〔**Target**〕
Promote the use of paper manufactured in ways that reduce environmental burden, while making efforts to reduce environmental burden and reuse resources by ensuring the segregated collection of waste, etc. with a view to plastic resource circulation and measures to prevent the plastic outflow into the ocean

* See "③ Establishing a circular economy and society in "The Securities Industry's Action Plan for Environmental Issues."
https://a.msip.securewg.jp/docview/viewer/docN9C17C1B039E609363f834d099907d4c949bec932c41c2b62691f5cc69498e09dbd144d646085

<Reference> Plastic Containers and Packaging (Plastic Packaging Recycling Council)

Target 1 / Performance to present	Target FY	Baseline FY
〔**Target**〕 Weigh reduction rate of plastic containers and packaging: 16% (cumulative)	FY2020	FY2004

〔Performance to present〕

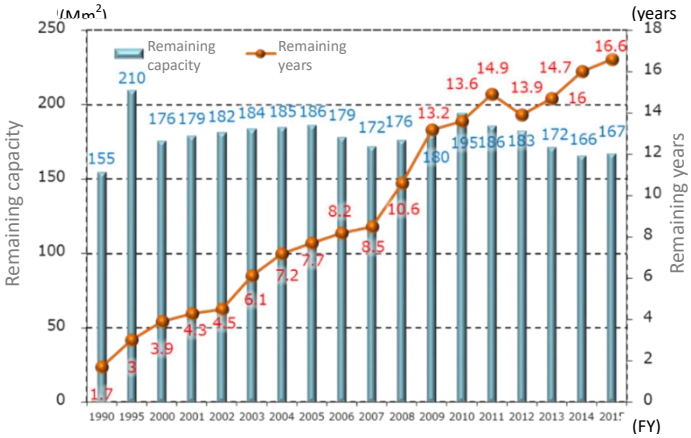
●Weight Reduction rate: 15.9% (cumulative performance as of 2017); total reduction volume: 87,718 tons (cumulative total as of 2017)		
Target 2 / Performance to present	Target FY	Baseline FY
〔**Target**〕 Recycling rate of plastic containers and packaging: 46%	FY2020	FY2004
〔Performance to present〕 ●Recycling rate: 46.3% (performance in fiscal 2017); total volume recycled: 498,694 tons (performance in fiscal 2017)		

4. Challenges to be addressed in the near future for establishing a Sound Material-Cycle Society

(1) Remaining capacity at final disposal volume for industrial waste

As aforementioned, efforts by individual industries have led to the achievement of reductions in the final disposal volume of industrial waste by approximately 92% relative to the fiscal 1990 level. As a result, the years of remaining capacity at final disposal sites increased from 1.7 years in fiscal 1990 to 16.6 years in 2015 (see Figure 3).

Figure 3. Trends in remaining capacity at final disposal sites for industrial waste in Japan

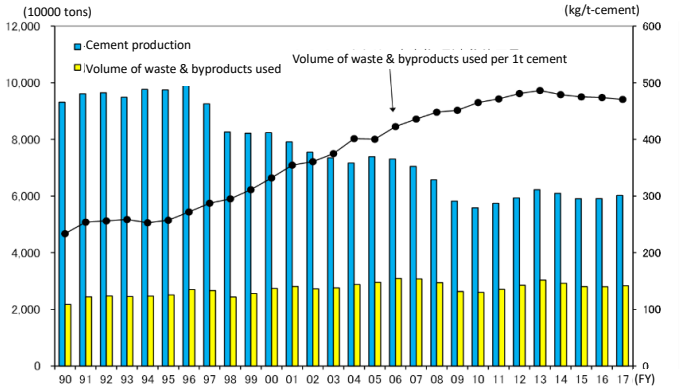


<Source: Ministry of the Environment>

However, in recent years, there has been very limited room for more reductions in the final disposal volume of industrial waste; and therefore, the pace of reductions has slowed down. The final disposal volume increased by 3.1% in fiscal 2017 on a year to year basis. This is inferred mainly to be a result of increased construction demand trends continuing since fiscal 2013 against the backdrop of a continuing gradual economic recovery trend, post-earthquake reconstruction demand, and demand related to the Tokyo Olympic and Paralympic Games.

The cement industry utilizes waste and byproducts from other industries in cement production. However, the amount of waste accepted per ton of cement as alternatives to raw materials is already reaching its capacity limits. Moreover, in recent years, total production of cement has dropped to approximately 60% of peak production. Therefore, the volume of waste and byproducts accepted by the cement industry has remained stagnant (see Figure 4).

Figure 4. Trends in the utilization of waste and byproducts in the cement industry



<Source: Japan Cement Association>

(2) Challenges to be addressed in the near future

Needless to say, Japan has been very successful in its endeavors, with the enactment of various recycling laws, such as the Basic Act on Establishing a Sound Material-Cycle Society, supported by active public cooperation, as well as efforts of stakeholders, including the national government, local governments, the business community and non-profit organizations.

The Government's Fundamental Plan for Establishing a Sound Material-Cycle Society, adopted by Cabinet Decision in June 2018, refers to efforts made under the Voluntary Action Plan for Establishing a Sound Material-Cycle Society in line with industry-specific characteristics with positive evaluations and expectations for further efforts.[5]

On the other hand, the circumstances related to efforts towards the cyclic use of resources are changing significantly. One example is the adoption of the SDGs (Sustainable Development Goals) by the UN General Assembly in 2015[6]. Keidanren promotes "Integrated Environmental Corporate Management" in its revised edition of the Declaration of Biodiversity by Keidanren, in addition to revising the Charter of Corporate Behavior with the primary aim of "delivering on the SDGs through the Realization of Society 5.0.[7]"

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[5] The Fundamental Plan for Establishing a Sound Material-Cycle Society (Cabinet Decision of June 2018) says that "On top of the efforts to reduce the final disposal amount that have been made successfully to date, trade associations are expected to further deepen their industry-wide efforts by, among others, voluntarily setting targets—such as one for resource productivity—that match the circumstances of each industry."

[6] Among the seventeen SDGs, on goals aims ensure sustainable consumption and production patterns (responsible consumption and production).

[7] The Declaration of Biodiversity by Keidanren (revised edition) promotes "Integrated Environmental Corporate Management" from the two perspectives of: 1) integrating climate change countermeasures, resource circulation and biodiversity conservation activities, and 2) incorporating a wide variety of environmental countermeasures in corporate.

Moreover, with increasing environmental consciousness in emerging countries experiencing significant growth, more countries are introducing and enhancing import controls on waste plastics, that were conventionally imported as resources. Therefore, there is an urgent need in Japan to address proper treatment of waste plastics.

Furthermore, the marine plastic litter issues that have raised great concerns among the international community are global issues that need to be resolved by promoting the 3Rs by securing the proper treatment of waste, preventing the outflow of waste plastics into the oceans and avoiding their landfilling. Acknowledging the above, Japan will be able to lead global measures to circulate plastic resources by developing international cooperation based on its outstanding efforts to date, including the data, technologies and knowhow accumulated through Japan's experiences, and contributing to proper waste treatment and the promotion of the 3Rs in developing counties.

In light of these circumstances, Keidanren will by actively and voluntarily engage in the promotion of the 3Rs through continued efforts to promote the Voluntary Action Plan for Establishing a Sound Material-Cycle Society and to reduce the final disposal volume of industrial waste, as well as to enhance industry-specific targets other than those for industrial waste final disposal volumes that aim to improve the quality of the material-cycle and industry-specific plastic-related targets.

To this end, roles must be appropriately shared among not only the business community but also various actors including national and local governments and citizens. It is important that each actor fulfills its role in partnership with other actors. Given limited room for the further reduction of the final disposal volume of industrial waste under current levels of available technologies and the existing legislative framework in Japan, in particular, it is critical that the Japanese Government improve and review related legislations and its administration and provide additional policy support. In addition, the digitalization of waste information and the utilization of data promise to lead to innovation and higher productivity.

Keidanren is determined to continue to engage in recycling method innovations, including developing new feasible low-cost technologies, as well as non-technology socio-economic innovations, including lifestyle transformations through collaboration and cooperation with various sectors and levels of society.

<Appendix 1>

Outline of Opinion on formulating "Japan's Resource Circulation Strategy for Plastics"

1. Basic Approach

(1) Contributing to multiple SDGs

① Global efforts to address ocean plastic issues and plastic resource circulation contribute to Goal 12 (Responsible consumption and production), Goal 14 (Life below water), and Goal 17 (Partnerships for the goals).

② There is a global call for preventing plastic waste flows into the oceans, minimizing final disposal in landfills, and ensuring appropriate treatment the implementation of the 3Rs. Heat and energy recovery are also effective choices.

③ Japan should continue to promote appropriate waste treatment and the 3Rs and deploy its excellent technologies and knowhow in developing countries through partnership and cooperation among Government, local governments, business operators, consumers, and NGOs.

(2) "Responsible consumption and production" of plastic products

① Plastic material has contributed to solving many societal issues through its physical properties and technological improvements.

② Promote a correct understanding of plastic among the wide general public.

③ It is critical for business operators and consumers to wisely produce, consume, and treat plastics, bearing in mind environmental burden reduction, technological feasibility, and economic efficiency.

④ Global ocean plastic issues and domestic plastic resource circulation issues are not necessarily equivalent issues. Level-headed and appropriate consideration of measures in line with policy objectives is called for.

2. Toward solving global ocean plastic issues

(1) Appropriate management and treatment of plastic waste and preventing the flow of plastics into the ocean

①It is imperative that each country appropriately manages and treats domestic plastic waste and prevents it from flowing out to the oceans.

②Measures accommodating country-specific circumstances are called for.

③In Japan, secure public understanding that littering and illegal dumping are unlawful and and enhance measures to eradicate such acts.

(2)Importance of technological development

①Promote product design that facilitates collection or recycling and develop recycling technologies that can reduce recycled material costs and improve quality

②It is essential that when we develop and deploy alternative materials, such as biodegradable plastics, we do not undermine the inherent functions of products, containers and packaging and we achieve economic rationality and technological feasibility. Accumulation of scientific knowledge is also important.

(3) Drawing on Japan's experiences, technology and knowhow to promote international cooperation

①Export or technology transfer to developing countries as packaged systems, the waste collection system and waste treatment and recycling technologies. Lead the world in addressing plastic issues.

②Careful support is needed not only in terms of hard infrastructure but also soft aspects, such as maintaining and managing facilities and awareness-raising and environmental education.

3. Toward further promotion of resource circulation in Japan

(1) Efforts to date

①An enhanced law system and voluntary approaches by business operators

◇Enactment of the Basic Act on Establishing a Sound Material-Cycle Society, Containers and Packaging Recycling Law and other recycling laws

◇Promotion of "Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society" and the "Voluntary Action Plan for the Promotion of the 3Rs in Containers and Packaging"

※23% reduction in the average weight of P E T bottles; 15% reduction in plastic containers and packaging (FY2006→FY2016)

②Improving the effective utilization rate of used plastics around 46% (2000)→ around 84% (2016)

〔total of 30 countries, including EU: around 73% in 2016〕

(2) Future measures, etc.

①Continuing and enhancing voluntary approaches by the business community

◇Recently compiled a collection of case studies: Contributing to the UN SDGs through Measures Addressing Plastic Waste Issues.

◇Considering a plastic-conscious enhancement of the Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society.

②Improving the effective utilization rate of used plastics

◇Optimally use material recycling, feedstock recycling and heat and energy recovery to maximize the effective utilization rate of resources and to minimize costs.

◇Enhance the competitiveness and sophistication of resource circulation industries.

③Promoting technology development, including recycled material and biomass plastics

◇Product design facilitating collection and recycling

◇Technological development for recycled materials and alternative materials

※Important to ensure quality and economic rationality, technological feasibility and supply stability

④Approaches toward reducing plastic shopping bags (compulsory charge on plastic bags, etc.)

◇Major retailers are already voluntarily charging customers for plastic shopping bags to reduce plastic shopping bags

◇In order to let these campaigns take root among the general public, the Government must lead efforts to foster public understanding.

When implementing a compulsory charge on plastic shopping bags (abolition of free distribution), legislative measures to create a nationwide system is required so that a sense of unfairness does not prevail among business operators and there is no confusion among consumers.

⑤Ambitious "milestones" defining the direction in which we should be headed

◇Extremely ambitious "milestones" exceeding the quantitative targets set out in the G7 Ocean Plastic Charter

◇Indicate the "direction in which we should be headed through increased understanding and partnership/cooperation among the general public, all industries and all levels" and are not mandatory targets for business operators and consumers to achieve.

◇The business community will engage in the 3Rs to the furthest extent possible toward achieving these milestones, thus contributing to a sustainable society.

<Appendix 2>

Contributing to the UN SDGs through Measures Addressing Plastic Waste Issues: Efforts toward a positive future for plastics

February 15, 2019
Keidanren

Ⅰ. Outline

1. Outline of survey

(1) Purpose and aim

Amid increasing international concerns regarding marine plastic litter issues, the Japanese Government has announced that the issue would be addressed at the G20 Summit meeting that it will host in Osaka in June and is currently considering the promotion of the "Japan's Resource Circulation Strategy for Plastics" in order to contribute to transboundary marine plastic litter issues and promote plastic resource circulation in Japan.

Japan's declination from approving the "Ocean Plastic Charter" at the G7 Charlevoix Summit has been received by some parties as an indication of Japan's delayed efforts for plastic resource circulation. However, as Japan has already established an advanced recycling-based society under the partnership of Government, local governments, business operators, consumers and NPOs, and is determined to continue to engage in proper waste management and the promotion of the 3Rs.

Keidanren conducted a questionnaire survey targeting member companies and organizations on efforts for plastic resource circulation and marine plastic litter issues and compiled a collection of case studies on current efforts and to undertake in the future.

(2) Survey targets: Keidanren member companies and organizations, etc.

(3) Survey coverage: Efforts contributing plastic resource circulation and marine plastic litter issues

(4) Survey periods: **First survey period:** September 12 – October 12, 2018
Second survey period: October 13 – November 30, 2018
Third survey period: December 1 – February 8, 2019

2. Features of efforts

During the one-month survey period, **300 cases were received from 164 business operators**. These included **115 reducing efforts, 40 reusing efforts, 146 recycling efforts and 115 other efforts** (including multiple answers).

Reported efforts covered a broad range of approaches, from reducing plastic use to the furthest extent possible in products or research and development for bioplastics and alternatives to plastics to coastal cleanups, PET bottle cap collection, consumer awareness-raising campaigns.

*The details of each effort are introduced on the Keidanren website:
http://www.keidanren.or.jp/policy/2018/099.html

【Reference】Number of cases for each effort type

- Having implemented the Voluntary Action Plan for Establishing a Sound Material-Cycle Society (see Appendix for background and details) since 1997 to promote voluntary approaches by the business community, Keidanren received reports of a wide range of efforts from many industries despite the short period of time offered to submit responses.
- The 300 cases reported comprised mainly efforts promoting the 3Rs, especially recycling and reducing. Future challenges include promoting the various efforts based on the 3Rs as well as other efforts not only in Japan but also overseas.

Figure 5. Breakdown of efforts (Domestic/ Overseas activities)

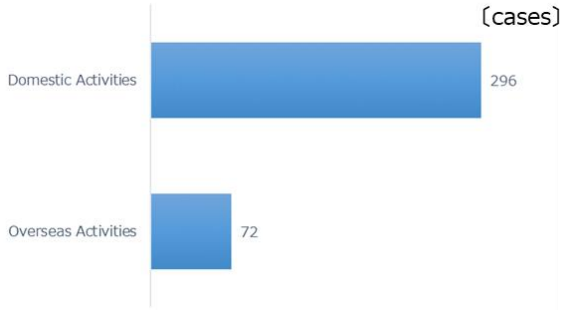


Figure 6. Breakdown of efforts (3Rs and other efforts)

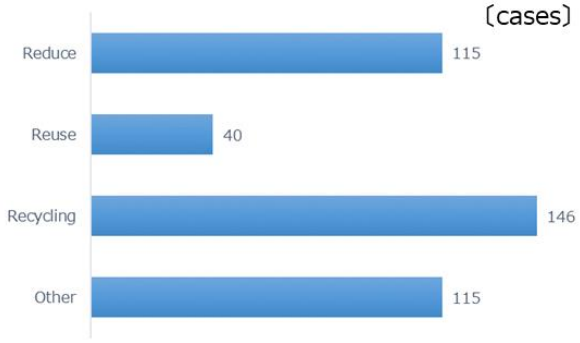
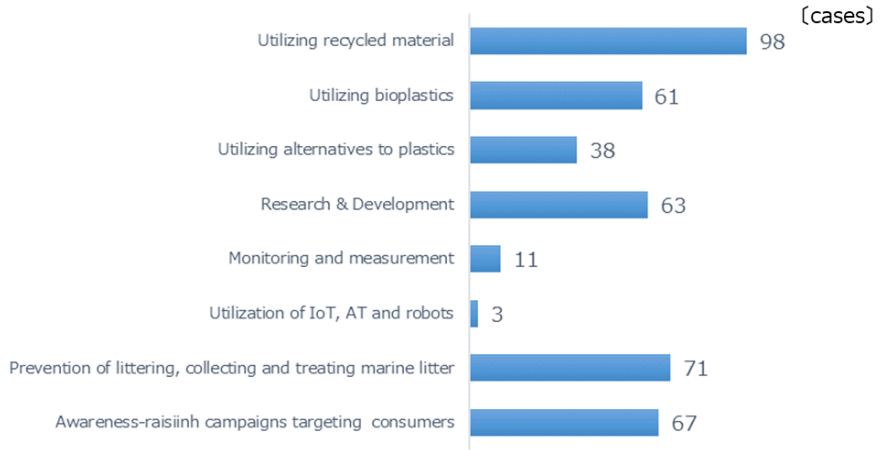


Figure 7. Breakdown of efforts (Descriptions of efforts)



*The figures in the graphs count multiple answers.

3. Excerpts of efforts

Table 5. Excerpts of efforts

Reduce
<Introducing thin-walled/lightweight products and utilizing alternatives to plastics> 1. In 2013, introduced the lightest domestically manufactured PET bottles, weighing 550ml. 【Food】 2. Reduced the amount of plastics used in PET bottle labels by approximately 90% (relative to conventional products)【Food】 3. Reduced the amount of plastics used in PET bottles by 29.6% (relative to conventional products)【Food】 4. Introduced smaller and thinner packaging for single cup stick coffee sachets, thus reducing plastics by 200 tons/year, or by 13%, and achieving CO_2 emission reductions of 1,200 tons/year (relative to conventional products)【Food】 5. Set up a target to reduce the use of virgin plastic by an average of 10% per product by 2020, and thus introduce recycled plastics in manufactured products as well as downsize them toward achieving the target【Electrical appliances】 ・ Reconsidered the use of plastic straws and replaced them with paper straws and biodegradable plastics【Insurance; real estate】 <Reducing the use of plastic products / using alternatives to plastics> ・ Launched the "Bring your own bag" campaign to reduce the use of plastic shopping bags. Reduced the use of plastic shopping bags by 2,735,420,000 bags in fiscal 2017.【Retail】 ・ Promoted "Smart Wrapping," encouraging consumers to choose the type packaging or wrapping that best suited their purpose.【Retail*】
Reuse
1. Collected used multifunctional printers from customers, disassembled and cleaned components for reuse in new multifunctional printers.【Electrical appliances】 2. Developed easy-to-refill packaging that minimizes the burden imposed upon consumers when refilling containers. The number of refillable products increased to 289 items in 2017, converting around 85% of all products to refillable products【Chemical】
Recycle
<Material recycling> ・ Efficiently manufactured high-quality PET resin from collected used PET bottles for use in PET bottles for cosmetic products manufactured by the company. Reduced approximately 22 tons of CO_2 annually through this effort.【Chemical】 ・ Installed reverse vending machines (automated drink container collection points) that can sort, crush and compress PET bottles onsite. Collected approximately 50,000 tons cumulatively since 2008.【Wholesale】 ・ Installed PET collection points in group retail stores and implemented a campaign offering "environmental points" to consumers returning bottles【Retail】 ・ Introduced in international flight meals, cups and salad bowls made of recycled plastics made from returned PET bottles.【Air transport】 ・ Achieved a 100% recycling rate for byproducts and waste generated at 36 domestic factories and the main office building of the corporate group. Waste plastics generated at relevant business locations are recycled into recycled plastic products【Food】 ・ Collected bumpers removed during automobile repairs from domestic retailers for recycling into plastic auto-parts, such as bumpers for new vehicles. Collected 61,796 bumpers in fiscal 2016【Transportation equipment】 ・ Sorted and recovered three main types of resin from shredder residue of collected used electric home appliances using NIR separation technologies that can achieve a high-precision rate of 99%. Recycled resin is used in air conditioners, IH cooking heaters, internal components of refrigerators.【Electrical appliances】

- Developed technologies for the separation an recovery of high-purity plastics, improving the self-circulation (electric home appliances-to-electric home appliances) recycling rate of products【Electrical appliances】
- Improve the efficiency of resource (including plastics) use by 50% relative to fiscal 2010 levels by fiscal 2050.【Electrical appliances】
- Collaborate with partner companies that possess the recycling technologies for waste materials generated in the aircraft main wing manufacturing process, therefore extending the value chain to the stage of extracting recyclable fibers from waste material. Expected CO_2 emission reductions amount to almost 10,000 tons per year.【Machinery】

<Feedstock recycling>
- Recycled almost 100% of plastic containers and packaging collected from households through feedstock recycling using coke ovens at steel plants. Cumulative amount processed was 3 million tons as of November 2018.【Iron and steel】
- Generated ethanol from inflammable waste (including plastics) for recycling and reuse as raw material for plastic.【Chemical】
- Performed feedstock recycling of plastics to extract hydrogen from used plastics for the purpose of securing a stable supply of raw materials to produce ammonia【Chemical】

<Thermal recovery>
- Received and processed waste plastics at cement plants for highly efficient recovery and reuse of heat energy. Used 643,000 tons of waste plastics in fiscal 2017.【Cement*】
- Concluded a contract with a waste treatment business to recycle (manufacture RPF from) plastics contained in the waste generated at business locations. The recycling rate was 94% in fiscal 2017.【Chemical】

6. Collected plastic cards, such as used magnetic train passes, at station entrance gates, to ground and recycle into solid fuels.【Land transportation】

Overseas efforts

3. From 2014, reduced the number of plastic packets included in one package of spices sold in Indonesia from three to two, retaining the total amount contained in one package, therefore reducing plastic use. Reduced use by 27% relative to 2013 levels. Reducing approximately 2,000 tons/year every year.【Food】
4. Introduced lightweight PET bottles for sales in the UK. Annual reductions in plastic use by 900 tons.【Wholesale】
5. Global deployment of hybrid beads made from a combination of cellulose, a plant-derived biodegradable plastic, and silicon dioxide as an alternative to microplastics.【Chemical】

Other (Research and development, cleanup activities)

6. Research and development and use of biomass plastics using plants and other recyclable organic resources.【Chemical and other products】
7. Developed an original bioplastic with high plant-derived ingredient content for deployment in the electrical appliance bodies.【Electrical appliances】
8. Formulated the Standardized Beautification Symbol (Recycling Symbol) in 1981 to raise awareness among consumers toward preventing the littering of drink containers, and expands efforts in line with the changing times.【Food*】
9. Sold PET bottle caps as resources to a recycling business through a cap-collecting volunteer organization. Collected 15,883,240 caps as of June 2018.【Securities】
10. Performs annual cleanups along rivers and beaches nationwide. In fiscal 2018, held two group-wide cleanup events with the participation of 500 corporate management and staff and their families from different workplaces and group companies【Banking】
11. Performed cleaning and beautification activities around factories and the local communities in which they are situated.【Chemical】

*indicates an effort promoted by an industrial organization
(Unmarked efforts have been made by individual companies.)

<Appendix 3>

Industry-specific plastic-related targets: details of performance to present

Table 6. Industry-specific plastic-related targets: details of performance to present

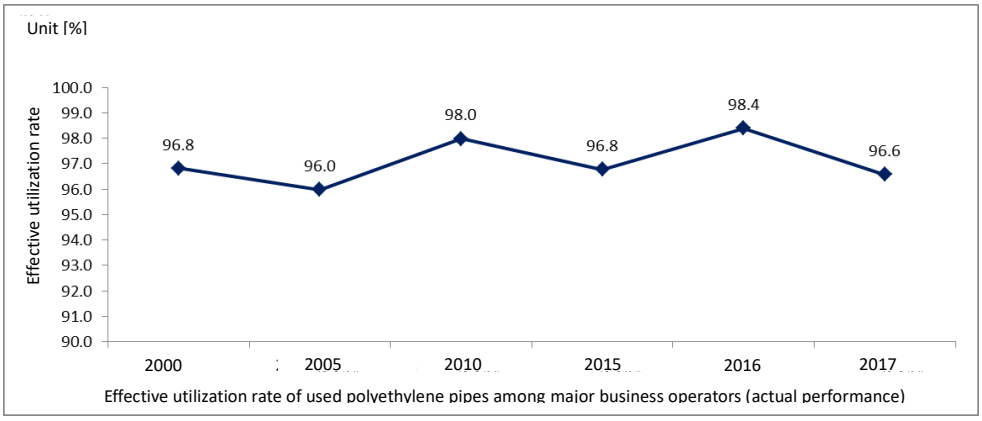
Gas（Japan Gas Association）		
Target / Performance to present	Target FY	Baseline FY
【Target】 Aim for 100% effective utilization of used polyethylene gas pipes, including heat recovery.	FY2030	-

〔Details of performance to present〕

The city gas industry gas promoted the deployment of polyethylene gas pipes, which demonstrate high strength against earthquakes and corrosion, as well as outstanding workability. The increased use of polyethylene gas pipes has resulted in the generation of cut-offs from construction and used gas pipes taken out due to changes in the pipeline or diameter; and thus each gas business operator is engaged in recycling used polyethylene gas pipes. Used polyethylene gas pipes are functionally difficult to reuse; and therefore, they go through a material recycling process after shredding. Gas companies use some of the recycled material in gas pipe indication piles, underground gas pipe markers, cards hanging from gas meters that explain the procedures for recovery, and office supplies.

The industry has conducted annual follow-ups since 2000. Major business operators that provide aggregated data are those highly conscious of formulating a sound material-cycle society and continue their efforts. Therefore, the effective utilization rate has maintained a high level of more than 95%.

With the Chinese ban on plastic waste imports, it is expected that domestic resource circulation will be challenged with even more difficult circumstances, but the industry is determined to further continue its efforts with an aim not only to maintain the status quo but to reach an effective utilization rate of 100%.



Cement (Japan Cement Association)		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 Increase receipt and treatment of waste plastics	FY2030	FY1998

〔Details of performance to present〕

The cement industry has received plastic waste on a full scale in fiscal 1998.

Given the need to address the changing circumstances of Japan's energy supply and demand, including securing a stable energy supply and dealing with global warming issues, the Government introduced the "taxation system for promoting investment in the reform of the energy supply and demand structure" as a part of required energy supply and demand structure reforms. Under the guidance of then Ministry of International Trade and Industry, plastic waste processing equipment gained approval as equipment meeting the requirements of new taxation system.

This was followed by hundreds million and billions of yen in capital investment, and the industry currently receives waste plastics at all plants.

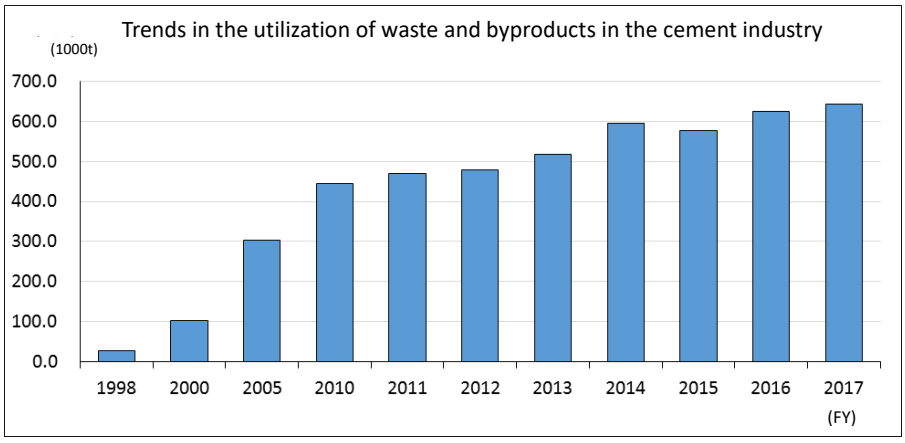
Much of the plastic waste received at cement plants are residues from intermediate treatment plants where valuables are separated from the waste plastics generated at the source.

The received plastic waste are first stored at the facility and foreign matters are removed using a magnetic separation systems, etc. and shredded. The shredded plastics are weighed and injected into a preheater or firing furnace via pneumatic or mechanical transmission to be used as thermal energy.

In order to process plastics as intermediate treatment (burning) of waste, cement plants have acquired relevant permits from local governments pursuant to the Waste Management and Public Cleansing Act.

The total volume of plastic waste received by the industry as a whole amounted to 20,000t in fiscal 1998 and has increased by 30 times, reaching 600,000t in fiscal 2017.

In recent years, the industry also receives automotive shredded residue defined by the Law for the Recycling of End-of-Life Vehicles, as well as disaster-generated waste, which include plastic debris. The cement industry is making efforts to reduce the amount of natural resources used in cement production and is determined to increase the amount of plastic waste received as alternatives to fossil fuel energy.



Soft drinks (Japan Soft Drink Association)		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 The Soft Drink Industry's Plastic Resource Circulation Declaration	FY2030	－

〔Details of performance to present〕

On November 29, 2018, the Japan Soft Drink Association, as an industrial association using PET bottles and other containers and packaging, announced the "Soft Drink Industry's Plastic Resource Circulation Declaration" regarding plastic resource circulation and measures to address marine plastic litter. The soft drink industry declared that it would make a concerted effort toward the goal of achieving 100% effective use of PET bottles in fiscal 2030, joining forces with customers, government, local government, and related organizations.

<Background>

The soft drink industry has conventionally been engaged in promoting the 3Rs, including preventing the littering of containers and recycling, recording a globally high PET bottle recycling rate of 84.8% in fiscal 2017. However, given increasing social concerns regarding marine plastic litter, the industry formulated the "Soft Drink Industry's Plastic Resource Circulation Declaration" as a renewed approach to plastic resource circulation.

<Targets in details>

【Short-term (fiscal 2020)】

・Enhance awareness-raising activities and public communications as an industry working closely with public campaigns.

・Achieve the Third Voluntary Action Plan in cooperation with the Liaison Committee of Associations Promoting 3R.

・Fiscal 2020 target: recycling rate of no less than 85%, weight reduction rate of no less that 25% (relative to fiscal 2004 levels)

・Use "Recycling Box Exclusive for Containers from Vending Machines" to raise public awareness of recycling and enhance efforts toward efficient collection of used containers.

・Strengthen partnerships with stakeholders, including environmental NGOs.

・Identify the challenges pertaining to increasing the use of recycled material (bottle to bottle, etc.) and promote enhanced use

*Approximately 61,300 tons in fiscal 2017, 106.7% relative to previous year

・Encourage the utilization of alternative materials (biomass plastics, etc.)

【Medium term (fiscal 2025)】

・Join forces with the national and local governments to establish a more effective collection system

・Request the strengthening of litter prevention ordinances

・Promote the proactive use of recycled and alternative materials

【Long-term (fiscal 2030)】

・Industrial attitude and efforts aiming to effective utilize 100% of all PET bottles.

・Quantitatively and scientifically demonstrate the value and evidence of Japan's world-leading collection system, and work closely with relevant organizations for global deployment.

Soft drinks (Japan Soft Drink Association)		
Target / Performance to present	Target FY	Baseline FY
〔 Target 〕 Enhance awareness-raising campaigns against littering of containers	—	—

〔Details of performance to present〕

1. As littering issues cannot be addressed by one company alone, beverage manufacturer associations joined forces to establish the Beverage Industry Environment Beautification Association in 1973 with the purpose of "serving the advancement of public welfare by seeking to prevent the littering of food containers and endeavoring to beautify the environment of our traditional landscape."

In April 2011, the association became a public interest incorporated association, under which member companies of the beverage industry are making concerted efforts to achieve the aims of establishing the Association, promoting the prevention of littering in light of surrounding circumstances.

・Support for "Adapt" activities: provided grants to a total of 350 environmental beautification organizations as of fiscal 2017

・Award program for excellence in environmental beautification education: awarded a total of 1147 schools across 1st – 18th Award (2000-2017)

2. Gave the recycling box standing next to vending machines a unified name, the "Recycling Box Exclusive for Containers from Vending Machines" for wide use within and outside the industry to raise awareness that boxes have been installed for the purpose of collecting used containers for recycling.

3. Launched a demonstrative experiment in December 2018 with an aim to improve the quality of collected containers given people's tendency to dispose of waste materials other than beverage containers in the "Recycling Box Exclusive for Containers from Vending Machines."

"Recycling Box Exclusive for Containers from Vending Machines" stickers labeled on recycling bins for the demonstrative experiment of segregated waste collection

Printing (Japan Federation of Printing Industries)		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 Promote the 3Rs in plastic containers and packaging	—	—

〔Details of performance to present〕

The Japan Federation of Printing Industries has addressed environmental issues from its establishment and has continuously taken voluntary approached to “promote the recycling of containers and packaging.”

The printing industry is commissioned with the manufacturing of various plastic products and annually conducts a questionnaire survey asking member companies about “instructions and requests from customers regarding the 3Rs” and “voluntary 3R-related activities by printing companies.” Responses and case studies are compiled into a report and shared within the industry at briefings, etc.

As an industry that manufactures plastic products, the industry is continuously engaged in developing “more lightweight and thin-walled,” “more simple,” and “more recyclable” products and contributes to promoting the 3Rs as an intermediate process of the supply chain.

Real estate (Real Estate Companies Association of Japan)		
Target / Performance to present	Target FY	Baseline FY
〔Target〕 Maintain a recycling rate of 100% for plastic waste generated at buildings used for the industry’s own business operations through fiscal 2030.	FY2030	FY2019

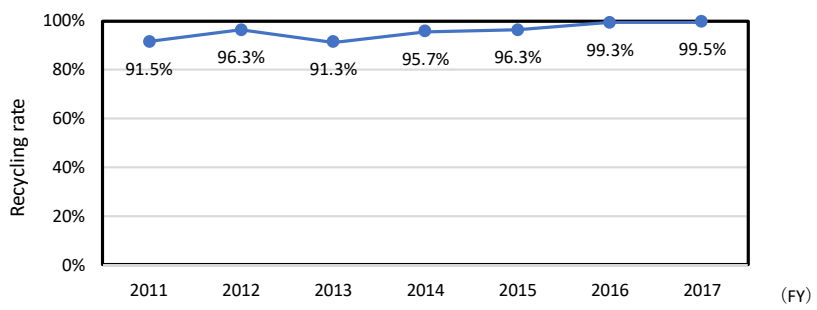
〔Details of performance to present〕

1. Recycling rate of plastic waste

The industry engages in various measures to address waste generated at offices used for its own business operations: installing recycling (waste segregation) bins, asking employees for their cooperation, supporting waste reduction activities undertaken by tenants etc., providing information to tenants, etc.

The industry has also achieved a high recycling rate for plastic waste through similar efforts and has recorded a recycling rate of more than 90% in every fiscal year from fiscal 2011, as shown in the figure below. Given the achievement of almost 100% in fiscal 2016 and 2017, in particular, the industry set up the target of maintaining this level.

Recycling rate for plastic waste generated at buildings used for the industry’s own business operations



Background of the Voluntary Action Plan for Establishing a Sound Material-Cycle Society

Companies of industries participating in the Voluntary Action Plan for Establishing a Sound Material-Cycle Society have promoted voluntary approaches with high standards, endeavoring to achieve self-determined targets since 1997 when the Voluntary Action Plan on the Environment for waste disposal measures was first formulated.

1. Formulating the Voluntary Action Plan on the Environment (Section on Waste Disposal Measures) and setting up an economy-wide target (first target).

In April 1991, Keidanren compiled the Keidanren Global Environment Charter in which it declared that it would promote voluntary and active efforts for environmental conservation. Based on this Charter, in 1997, Keidanren formulated the Voluntary Action Plan on the Environment to address waste disposal issues with the participation of 35 industries and incorporated industry-specific quantitative targets and concrete measures for the achievement of targets. Keidanren has followed up on the progress achieved in each industry every fiscal year thenceforth.

In December 1999, it set up a target covering the entire business community to enhance voluntary industrial efforts: 75% below the fiscal 1990 performance level of final disposal volume of industrial waste in fiscal 2010 (First Target)

1. Upgrading to "Section on the Establishment of a Sound Material-Cycle Society" and renewing the economy-wide target (March 2007)

The business community continued to achieve its economy-wide fiscal 2010 target set up in 1999 for four consecutive years from fiscal 2002 to fiscal 2005 prior to the target year. Therefore, in March 2007, Keidanren revised the Voluntary Action Plan on the Environment (Section on Waste Disposal Measures) to the Voluntary Action Plan on the Environment (Section on the Establishment of a Sound Material-Cycle Society), which aimed to promote a wide range of efforts reaching beyond waste disposal measures toward a sound material-cycle society. This was accompanied by a renewal of targets:

(1) Reviewing the economy-wide target (reduction target for final disposal volume of industrial waste)

The economy-wide target was renewed to: 86% below the fiscal 1990 performance level of final disposal volume of industrial waste in fiscal 2010 (Second Target). Keidanren decided to continue to call for reductions in the final disposal volume of industrial waste in each industry, setting up the abovementioned target for the entire business community and engage in efforts to further promote the 3Rs.

(2) Setting up industry-specific targets

Each industry newly set up individual targets using indicators other than the final disposal volume of industrial waste, further enhancing voluntary approaches to the establishment of a sound material-cycle society. Industry-specific targets include improved recycling rates, reduced waste generation and increased use of waste from other industrial processes.

3. Formulating the post-fiscal 2010 Voluntary Action Plan on the Environment (Section on the Establishment of a Sound Material-Cycle Society) (December 2010)

The second target for reducing final disposal volumes of industrial waste had established fiscal 2010 as its "target fiscal year." In December 2010, for the continued voluntary and active promotion of the 3Rs beyond fiscal 2010, Keidanren formulated a renewed Plan embracing the two following pillars and scheduled follow-up surveys: 1) setting up the Third Target for reductions in the final disposal volume of industrial waste across the entire business community with fiscal 2015 as the target year: 65% below the fiscal 2000 performance level of final disposal volume of industrial waste in fiscal 2015 (third target); and 2) establishing industry-specific targets accommodating industrial features.

4. **Formulating the post-fiscal 2015 Voluntary Action Plan for Establishing a Sound Material-Cycle Society (March 2016)**

Welcoming the "target fiscal year" for the Third Target in March 2016, with a view to continuing voluntary and active promotion of the 3Rs, Keidanren formulated a new post-fiscal 2015 Plan, which would be subject to annual follow-up surveys. The new targets are provided below (see Attachment 2 for details):

(1) Fourth target for economy-wide reductions in final disposal volume of industrial waste

Aim to reduce by fiscal 2020, the final disposal volume of industrial waste appropriately treated with consideration of the achievement of a low-carbon society by around 70% from the actual performance level in fiscal 2000.

(2) Enhancing industry-specific targets to improve quality of resource circulation

5. Setting up industry-specific plastic-related targets (April 2019)

From April 2019, organizations and companies participating in the Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society considered targets that would contribute to resolving marine plastic litter issues and promote plastic resource circulation (industry-specific plastic-related targets) from the perspective of deepening voluntary approaches by the business community.

<Reference 2>

Formulating the Voluntary Action Plan for Establishing a Sound Material-Cycle Society for fiscal years beyond 2015 (March 2016)

March 15, 2016
Keidanren（Japan Business Federation）

1. Continuing and renaming the Voluntary Action Plan on the Environment

The Keidanren Voluntary Action Plan on the Environment (Section on the Establishment of a Sound Material-Cycle Society) has endeavored to meet the economy-wide target to "reduce the final disposal volume of industrial waste in fiscal 2015 by 65% from the fiscal 2000 performance level" (third target) with the participation of 41 industries.

Given the need for ongoing efforts toward establishing a sound material-cycle society, the business community will engage in voluntary efforts beyond fiscal 2015 and seek to communicate industrial efforts to the public at large by continuing the voluntary approach under a renewed name: the Voluntary Action Plan for Establishing a Sound Material-Cycle Society*.

＊Since 1997, the Keidanren Voluntary Action Plan on the Environment comprised the Section on Global Warming Measures and the Section on the Establishment of a Sound Material-Cycle Society. Given the reorganization of the Section on Global Warming Measures into the Keidanren Commitment to a Low Carbon Society in January 2013, the Section on the Establishment of a Sound Material-Cycle Society will also change its name.

2. Outline of post-2015 Voluntary Action Plan

(1) Economy-wide target for continued efforts to reduce final disposal volume of industrial waste

① The Voluntary Action Plan set up an economy-wide target to reduce the final disposal volume of industrial waste. The target was renewed three times in order to pursue higher targets and as a result, the final disposal volume in fiscal 2014 marked a reduction of 73% from the fiscal 2000 level (91% reduction from the fiscal 1990 level). Through such efforts, the Plan has contributed to improving the pressing situation regarding the availability of final disposal sites that had challenged Japan in the 1990s (the years of remaining industrial waste final disposal capacity increased from just two years in the 1990s to approximately 14 years in fiscal 2012).

② In recent years, efforts by business operators to further reductions in the final disposal volume of industrial waste have been approaching their limits; and therefore the pace of reductions has slowed down. It has been pointed out that with the Tokyo Olympics and Paralympics Games to be hosted in Japan, the final disposal volume of industrial waste is likely to increase.

③ Amid such circumstances, the Japanese business community has set up the following economy-wide target under the idea that it "will not increase the final disposal amount of industrial waste above the current level" to continue to engage in reduction efforts.

Aim to reduce by fiscal 2020, the final disposal volume of appropriately treated industrial waste by 70% from the actual performance level in fiscal 2000 with consideration of the achievement of a low-carbon society*

* Some industries point out that further reductions in the final disposal volume may increase energy use and in turn cause regression in the achievement of a low-carbon society or increase waste requiring final disposal as a result of tightened environmental regulations. Under such restrictions, it was decided that it should be indicated that efforts to reduce final disposal volume would be continued with consideration of reducing environmental burden by providing for "the final disposal volume of industrial waste appropriately treated with consideration of the achievement of a low-carbon society."

* In case of large changes in the socioeconomic situation, the target will be reviewed as required after fiscal 2016.

(2) Industry-specific targets with a view to improving the quality of resource circulation

①Given their differences in industrial characteristics and circumstances, industries are quite varied in their approaches, including the 3Rs, toward establishing a sound material-cycle society; and therefore it is difficult to determine an economy-wide target other than reductions in final disposal volume. Therefore, under the Keidanren Voluntary Action Plan on the Environment, industrial organizations have set up "industry-specific targets" since fiscal 2006 to voluntarily engage in establishing a sound material-cycle society.

In the medium- to long-term, amid global constraints on resource availability, Japan, with very limited natural resources, is particularly challenged with resource issues in its endeavors to achieve sustainable socioeconomic development. We need to promote measures focused on the quality of resource circulation for the efficient use of limited resources. A few examples of such measures are curbing the consumption of natural resources and reducing environmental burden.

②Therefore, in the post-fiscal 2015 Voluntary Action Plan, we will set up appropriate industry-specific targets accommodating industrial characteristics and circumstances, in addition to the final disposal volume target. We will consider shifting to quantitative targets aiming to improve the quality of resource circulation, to the furthest extent possible. When it is difficult to set up a qualitative target, we will set up qualitative targets that will serve the purpose of improving the material cycle and report the progress achieved in the annual *Industry-specific Report.*

③Industries have set up individual targets as indicated in the appendix (omitted) to improve the quality of resource circulation. Some examples are: pursuing added-value through the use of byproducts generated in the manufacturing process as raw

materials, promoting the use of high-performance recycling facilities with high recycling rates and waste reduction rates, and reducing the amount of industrial waste generated by reducing construction material input at the planning stage.

④ Some industries have yet to determine an industry-specific target. We are determined to present a clearer view of our concept of improving the quality of resource circulation and continue our endeavors to enhance industry-specific targets that will serve this purpose.