

Annual Report on Steel Can Recycling 2023



JAPAN STEEL CAN RECYCLING ASSOCIATION

スチール缶リサイクル協会

Annual Report on Steel Can Recycling 2023

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50th Anniversary Greeting

～ About the Steel Can Recycling Annual Report ～

This year marks the 50th anniversary of the Japan Steel Can Recycling Association. We would like to thank you for your understanding, cooperation, and support of our efforts to date.

The association was established in 1973 as the Association for Disposal of Empty Cans by members from steel companies, can manufacturing companies, and trading companies. At that time, the number of beverage cans was increasing along with the spread of vending machines, and littering and scattering of empty cans after consumption became a social problem, for which our predecessors took on the responsibility of finding a solution. To address the littering problem, we have worked with the beverage industry, local governments, tourist associations, and others to conduct beautification campaigns and promote the sorting and collection of empty cans to prevent them from becoming litter. We have established a world-class recycling system and maintained a high steel can recycling rate of 92.7% in FY2022.



Although the recycling rate is high, we need to think about and promote ways to reduce the burden on the global environment. Steel cans are used as beverage and food containers for filling, distribution, drinking, and other purposes, thanks to their high functionality. Steel cans also contribute to solving the problem of food waste, since the contents can be stored at room temperature for a long period of time and delivered anywhere. And because they are made of steel, they can be recycled over and over again after use. Recycling one ton of steel is said to reduce CO₂ emissions by 1.39 tons compared to the process of making steel from natural resources. We will continue to promote recycling of steel cans to deepen the understanding of more people and actively promote activities for the formation of a more resource-recycling society.

This year marks the 28th year of publication of the Steel Can Recycling Annual Report, which reports on the status of recycling by municipalities, scrap manufacturers, and trends in the scrap market to help promote the steel can recycling business. We hope you will make use of this report in your activities.

October, 2023 Japan Steel Can Recycling Association



I Present Conditions for Recycling Steel Cans

1. What are Steel Cans? How Many Steel Cans are Produced?

- Steel cans are used for beverages such as juice and coffee (beverage cans), foods such as canned fish and orange (food cans), dried seaweed, Japanese tea and cookies (general-purpose cans), and foods and other products (18-liter cans).
- The production of beverage and food cans together amounted to 173,000 tons in 2022. This was for approximately 65% of all steel cans produced.
- In 2022, the number of beverage steel cans was approximately 4.1 billion, and the number of food cans was approximately 700 million, for a total of approximately 4.8 billion.



Beverage and food cans together amounted to 173,000 tons



General-purpose cans 72,000 tons



18-liter cans 22,000 tons

The data were from the ferrous and Steel Statistics of 2022 published by the Ministry of Economy, Trade and Industry.

The number of total beverage and food steel cans (Estimated values: The research conducted by Japan Steel Can Recycling Association) (million cans)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Beverage cans	10,234	9,577	7,184	6,814	6,433	5,740	5,277	4,627	4,442	4,087
Food cans	858	886	872	815	790	786	772	766	736	715
Total	11,092	10,463	8,056	7,629	7,223	6,526	6,049	5,393	5,178	4,802

Marks of Steel Can

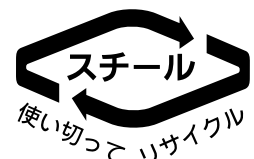
"Law for Promotion of the Utilization of Recyclable Resources" requires putting a mark on beverage cans to indicate their materials. And for general cans (i.e., cans for tea or confectioneries), the All Japan Federation of General Can Industries Association established a mark for their cans to indicate the can material. For 18 liter cans, The National Federation of 18 Liter Cans Manufacturers Corporative Union established a mark so that consumers can easily identify "steel cans" when sorting waste.



Beverage Cans' Mark



General Cans' Mark



18 Liter Cans' Mark

Components of Steel Can

Steel sheets for beverage cans have high durability, workability, and intensity material. Steel cans are recycled in various forms such as in the production of cars, rails, household electric appliances, reinforcing bars, and recycled steel cans.

Steel materials ():reference number	The content of carbon and alloy components (%)	Major alloy components (%)
Steel sheets for beverage cans(SPTE T-4 CA)	Fe 99.9 + Carbon 0.02 to 0.06	Aluminum 0.005 Manganese 0.03
Steel plates for cars (SPCE)	Fe 99.99 + Carbon 0.005 to 0.01	Titanium 0.0001
Steel plates for construction (SPCC)	Fe 99.8 + Carbon 0.1	Manganese 0.5 max
Steel wire for construction (SWRM)	Fe 98 + Carbon 0.1 to 0.4	Manganese 0.03 to 1.5
H-type steel (SG415H)	Fe 98 + Carbon 0.1 to 0.4	Manganese 0.03 to 1.5 Chromium 0.85 to 1.25

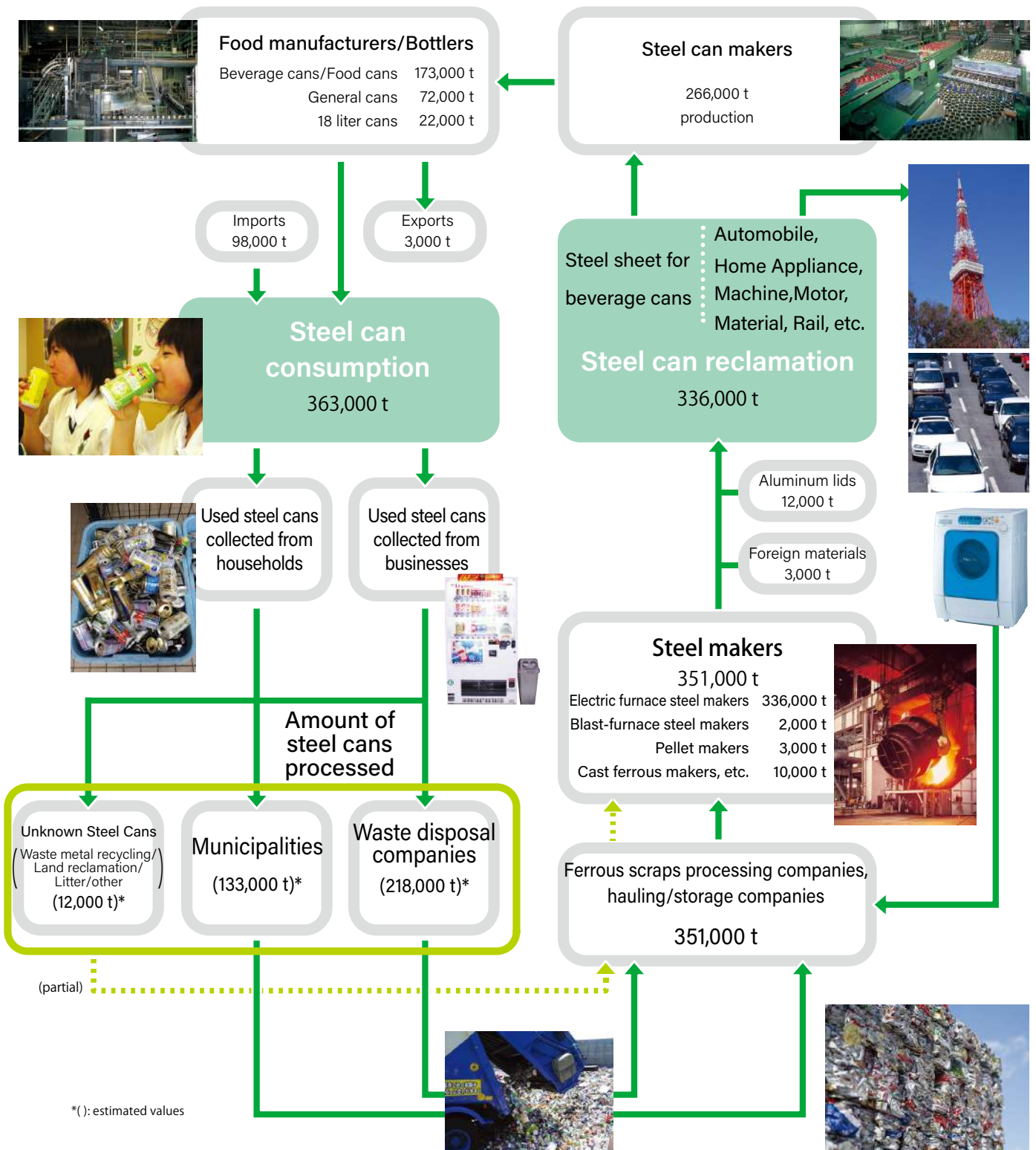


I Present Conditions for Recycling Steel Cans

2. What Routes are Used to Recycle Steel Cans?

- Used steel cans are collected using separate collection systems or noncombustible collection routes operated by municipalities as well as through business-operated recovery routes for collecting from automatic vending machines, offices and plants. In both cases, steel cans are separated by magnetic separators at recycling facilities and processed into pressed blocks state for easy transportation.
- This ferrous scrap is purchased by ferrous and steel makers (mostly electric furnace steel makers) from scrap processors. The steel cans are recycled in many ways such as raw material for producing steel materials for construction, and steel plates for automobiles, refrigerators, washing machines, and new steel cans, etc.

(t/year)





I Present Conditions for Recycling Steel Cans

3. How Much Steel Can is Recycled?

The steel can recycling rate in FY2022 was 92.7%

Since exceeding 90% for the first time in fiscal 2011, it has continued to exceed 90% for 12 years. The target of "maintaining 93% or more" for recycling in the Voluntary Action Plan 2025, which covers the period from FY2021 to FY2025, was fell short by 0.3 points.

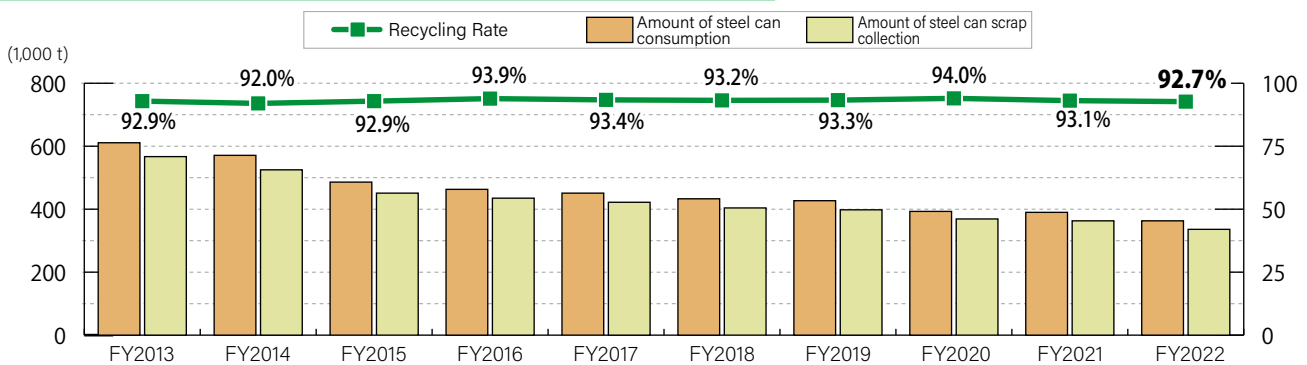
Steel Can Recycling Rate

$$\frac{\text{Amount of steel can recycling } 336,098 \text{ tons}}{\text{Amount of steel can consumption } 362,606 \text{ tons}} = 92.7\%$$

Factors of high recycling rate

- ① Global crude steel production in 2022 was approximately 1,885,026,000 tons. It fell 3.9% from the previous year, the first year-on-year decline in seven years, as demand for steel products declined against the backdrop of ongoing global inflation and a slowdown in the global economy. However, global crude steel production remained at a high level, surpassing that of two years ago.
- ② The quality of raw materials in steel can scraps has improved year by year, since separate collection has well promoted through citizens' cooperation, separate collection system from municipalities as well as business activities has been fully equipped, and the accuracy of separation and processing at the recycling facilities and scrap processors have improved.
- ③ Since FY2008, we have known parts of the amounts which were shredded because a part of the can scraps shredded were distributed as standard except the can scraps.

Change of the Recycling Rate for Steel Cans for the Past 10 Years



The Recycling Rate by Items

Items	Recycling rate (%)	Index	Method of calculation (Note)
Steel cans	92.7 (FY2022)	Recycling rate	Amount of steel can recycling / Amount of steel can consumption (Steel cans=Beverage cans+Food cans+General cans+Some 18-liter cans)
Glass bottles	70.2 (FY2022)	Recycling rate	Amount of re-merchandising / Amount of domestic shipping rate
PET bottles	86.0 (FY2021)	Recycling rate	Amount of PET bottles recycled in domestic and overseas / Amount of designated PET bottles sold
Paper containers/ packaging	23.6 (FY2021)	Collection rate	Amount of collection / Amount of discharge by households
Plastic containers	66.4 (FY2021)	Recycling rate	Amount of re-merchandising + Amount of self-collected / Prospective amounts of discharge
Aluminum cans	93.9 (FY2022)	Recycling rate	Amount of recycling of aluminum cans in domestic and overseas / Amount of sales of aluminum cans
Cartons	38.8 (FY2021)	Collection rate	Amount of domestic collection / Amount of cartons used (Included loss paper and old paper)
Cardboard	96.7 (FY2021)	Collection rate	Amount of actual domestic collection / Amount of consumption of cardboard + Balance of amount of cardboard accompanied with exported good sand those with imported goods

Sited from each organization's HP



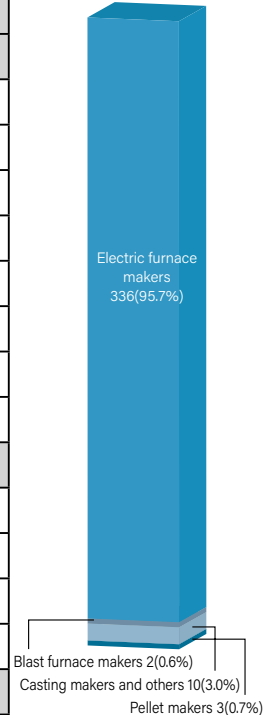
II Present Conditions for Steel Can Scraps

1. Types and Amount of Steel Can Scraps

Steel Can Scrap Purchase Amount According to Area and Type of Business

	FY2021(B)					FY2022 (A)					(A-B)
	Press	Shredder	Others	Total	%	Press	Shredder	Others	Total	%	
Hokkaido	9	0	0	9	2.4%	10	0	0	10	2.8%	1
Tohoku	22	1	0	23	6.0%	20	0	7	28	8.0%	5
Kanto	79	19	4	102	26.9%	78	20	3	101	28.8%	-1
Hokuriku	2	5	5	12	3.2%	1	4	1	6	1.6%	-6
Tokai	33	10	43	86	22.7%	33	4	3	40	11.5%	-46
Kinki	89	5	2	96	25.3%	71	4	41	116	33.1%	20
Chugoku/Shikoku	16	1	0	17	4.6%	17	1	0	19	5.3%	1
Kyushu/Okinawa	15	15	4	34	8.9%	14	14	3	31	8.9%	-2
Total	265	56	58	379	100.0%	244	48	59	351	100.0%	-28
Electric furnace makers	258	52	53	363	95.7%	237	45	55	336	95.7%	-27
Blast furnace makers	0	0	3	3	0.8%	0	0	2	2	0.6%	-1
Casting makers and others	6	4	0	10	2.6%	7	4	0	10	3.0%	0
Pellet makers	1	0	2	3	0.8%	0	0	2	3	0.7%	0
Total	265	56	58	379	100.0%	244	48	59	351	100.0%	-28

The amount of steel can scrap purchased according to the type of business (1,000 t)

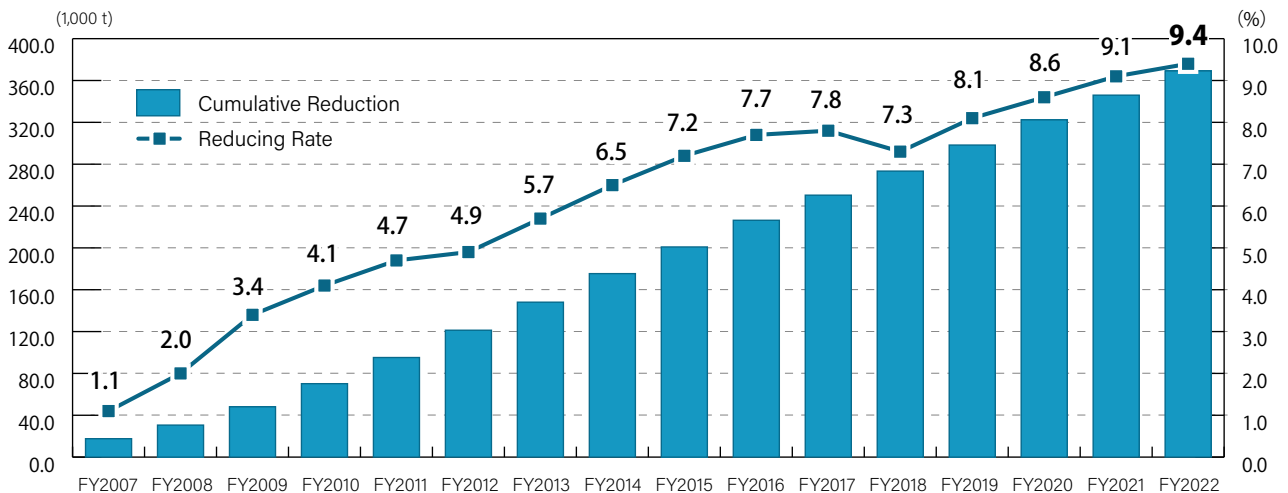


Concerning the Reducing of Steel Cans

In June 2006, the Japan Can Manufacturers Association established the Steel Can Weight Reduction Promotion Committee, which formulated a voluntary action plan with volume reduction targets set for FY2004, engaging in initiatives to reduce the volume across the industry. As a result, the targets of the 1st Voluntary Action Plan (FY2006-2010), the 2nd Voluntary Action Plan (FY2011-2015), and the Voluntary Action Plan 2020 (FY2016-2020) were achieved ahead of schedule.

In the Voluntary Action Plan 2025 covering the period from 2021 to 2025, we set a goal of reducing the average weight per can by 9% or more by 2025 compared with that in 2004. As a result of our continuous efforts, we have achieved our goal, with a reduction rate of 9.4% in 2022.

The cumulative reduction amount was 369,000 tons.





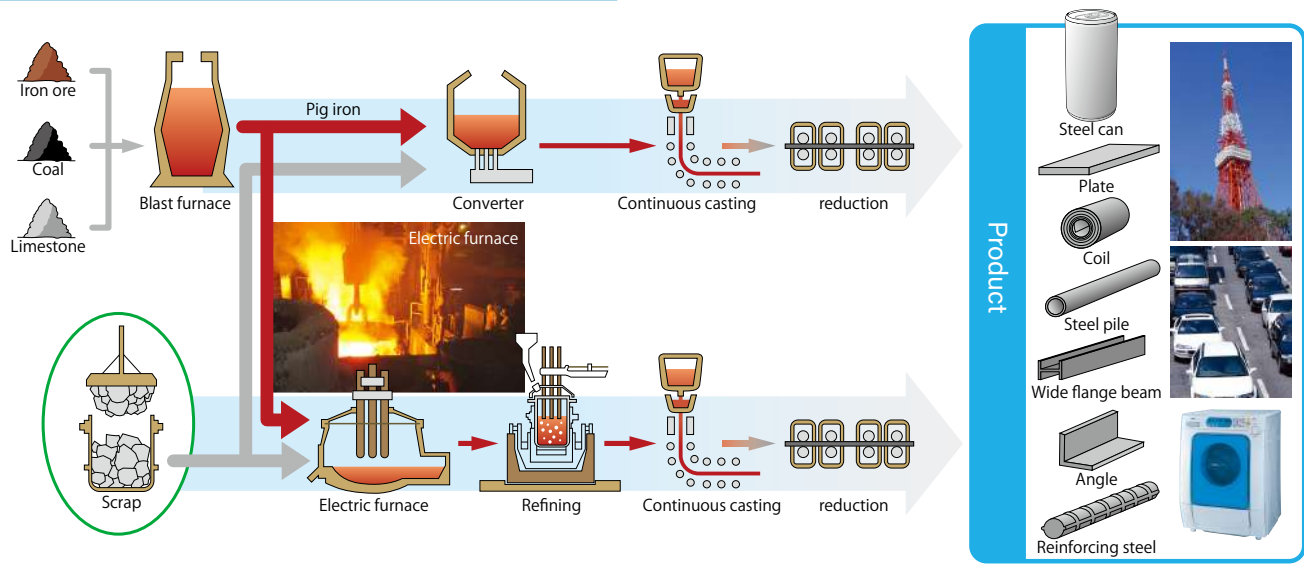
II Present Conditions for Steel Can Scraps

2. How is Ferrous Scarp Recycled?

- The annual production of ferrous in Japan is approximately 87,840,000 tons in FY2022. Blast furnace and electric furnace methods are available to manufacture ferrous and steel. In Japan, 73.2% of ferrous and steel is manufactured by blast furnaces and 26.8% by electric furnaces.
- Ferrous that remains from use in construction, automobiles, machines, can containers, etc. are recycled at ferrous and steel manufacturers (blast furnaces, electric furnaces, casting makers, etc.) as ferrous scrap.
- Ferrous scrap that is traded in the Japanese market (commercial scrap) amounts to 25,570,000 tons (increasing 1,360,000 tons from the previous year). And 6,550,000 tons were exported in FY2022(increasing 310,000 tons from the previous year).

	Production Method	Number of makers and plants
Electric furnace maker	ferrous scrap is melted in electric furnaces (by discharge heat from electrodes) to manufacture steel.	44 makers with 63 works
Blast furnace maker	ferrous scrap is inserted when pig iron reduced from iron ore in a blast furnace is supplied to a converter to manufacture steel.	3 makers with 13 works

A Production Process of Ferrous and Scrap Recycle



Domestic Ferrous Scrap Supply and Demand (FY 2022)



Note: The amount of domestic purchased scrap (for domestic iron makers) is the value added the past correction value to the sum of the factory scrap and the end-of-life scrap

Source: The Japan Ferrous Raw Materials Association

Technical Terms

- Electric furnace** | A heating chamber with a discharge heat to melt ferrous scrap
- Blast furnace** | A furnace used to produce pig iron from iron ore, coal and limestone
- Converter** | A furnace used to produce steel from melting pig iron and blowing oxygen into it. It is able to rotate 360 degree
- Steel** | An iron contains less than 2% of carbon
- Pig iron** | An iron contains more than 2% of carbon
- Industrial scrap** | Scrap generated in rolling process, and consumed inside of factories
- Purchased scrap** | Scrap transacted in the scrap market
- Factory scrap** | Scrap generated in processes using steel as a material (e.g. cars, machines and shipbuilding)
- End-of-life scrap** | Scrap from dismantled buildings, disused cars, disused domestic electric equipments, and steel can scrap



II Present Conditions for Steel Can Scraps

3. Trends in Price of Domestic Steel Can Scraps

Factors Determining the Price of Ferrous Scrap

- ① Changes in the supply-demand balance in each region
- ② Comparative values internationally
(e.g., overseas market conditions resulting from the international availability of commodities, etc.)
- ③ Costs of scrap collection from the market, scrap collection by scrap processors, and scrap-processing.
- ④ Costs of material price variance (iron ore and others), and a ferrous dissolution by blast furnace makers.

Relation between the Price of Steel Can Scrap and the Price of H2 (Heavy and Other General Scrap)

The price of steel can scrap moves almost in parallel with that of H2 (see the next page). The difference in price between the scrap steel cans (C press) and H2 is anywhere from JPY2,000 to 9,000 depending on supply and demand, overseas market trends, and its region. C press with good quality could sell at higher price than H2.

The Sale Price of Pressed Steel from Cans vs. the Base Price of Steel Can Scrap in Municipalities

The pressed steel from cans separated and processed in municipalities is delivered to steel makers via scrap processors, hauling/storage companies, and others. Thus, the sale price for the steel press in the municipalities is equivalent to the scrap purchase price by the steel manufacturers minus the amount spent on delivery via the intermediate routes.

The Trend of Ferrous Scrap Price (2022-2023)

Prices remain at high levels after a sharp rise and fall, while the depreciation of the yen is a strong factor in Japan.

After the sharp rise and fall in prices due to the war in Russia and Ukraine, ferrous scrap prices have continued to maintain a certain level while repeatedly rising and falling. The import price of U.S. ferrous scrap (No1 heavy) in major ferrous scrap importing countries soared to over CFR \$680 per ton in mid-March 2022, and then plummeted to around CFR \$350 per ton in late July. Since then, the price has had roughly five upswings and five downswings through August 2023, with the centre of the range of fluctuation remaining at CFR \$400 per ton. Although world crude steel production continued to decline and demand for ferrous scrap continued to fall, the market for ferrous scrap remained at a high level due to factors such as high energy prices. In addition to these overseas factors, the Japanese domestic market for ferrous scrap has also been strongly affected by the depreciation of the yen. The average price for H2 in Japan's three main regions (Kanto, Chubu, and Kansai) was 52,600 yen, the highest level on record. In 2023, the average price up until July remained in the 50,000-yen range at 50,100 yen, the second-highest level on record, with the central price in the Kanto market and high prices in the Osaka and Tohoku markets remaining in the 50,000-yen range as of the end of July.

*CFR stands for Cost and Freight, a term of international trade under which the seller bears the freight costs and the buyer pays the insurance premiums.

The Trend in Steel Can Press Price (2022-2023)

Steel Can Press Prices Remain High, Second Highest on Record for 2023

Steel can press prices continue to remain high. The average annual price of steel can presses in the Kanto region (purchase price of electric furnace makers) reached a record high of 47,100 yen per ton in 2022, and averaged 44,900 yen through July 2023, the second highest level ever. Since September 2022, the monthly average price has never fallen below 40,000 yen and has remained high. Electric furnace manufacturers, who use steel can scrap as raw material, highly value steel can scrap with stable quality and clear composition. The use of ferrous scrap is expected to further expand both in Japan and overseas as a means of reducing CO₂ emissions in anticipation of the realization of carbon neutrality in the steel industry. In this context, steel can scrap is likely to have an even higher value. Because of their growing presence as a raw material for steelmaking, high-quality steel cans are still traded at high prices.

(JPY/t)

	Average in 2013	Average in 2014	Average in 2015	Average in 2016	Average in 2017	Average in 2018	Average in 2019	Average in 2020	Average in 2021	Average in 2022	Average in 2023 (Jan-Aug)
Kanto region	26,200	25,600	16,200	14,500	23,800	29,400	22,200	19,600	41,300	47,100	44,900
Osaka region	29,000	27,300	16,700	15,100	23,900	29,600	22,700	20,500	43,600	49,100	46,000
Representative factory in West Japan	31,600	30,200	19,100	18,100	27,200	32,200	24,600	23,000	46,700	51,300	48,800

For more information about the price trend of pressed steel from cans

Nikkan Shikyo Tsushinsha Co., Ltd. publishes "MRM (Metal Recycle Monthly)" that carries

international and domestic scrap market trends, topics, hot issues, and explanation of recycling laws. TEL: +81-3-3864-6021

The ferrous scrap market, which rose and fell sharply in the spring and summer of 2022 due to the strong impact of the war between Russia and Ukraine, has remained at a certain level for more than a year, although it has repeatedly risen and fallen. The price of ferrous scrap is constantly being driven down by forces that are pushing prices down, but also by forces that are pushing prices up in the opposite direction. The fact that these two forces are competing against each other is the reason why the ferrous scrap market remains at a high level. In addition to these factors, Japan is also being affected by the ongoing depreciation of the yen. A weaker yen has the effect of pushing up yen-denominated prices.

Factors Contributing to High Ferrous Scrap Prices

1 Strong and Weak Factors at Play

Strong Factors

- (1) High energy and resource prices
- (2) Sluggish ferrous scrap generation
- (3) Decreased supply from Russia
- (4) Carbon neutrality, etc.

Weak Factors

- (1) Global economic slowdown
- (2) Decrease in steel demand
- (3) Decrease in crude steel production
- (4) Measures to control inflation, dollar appreciation, etc.

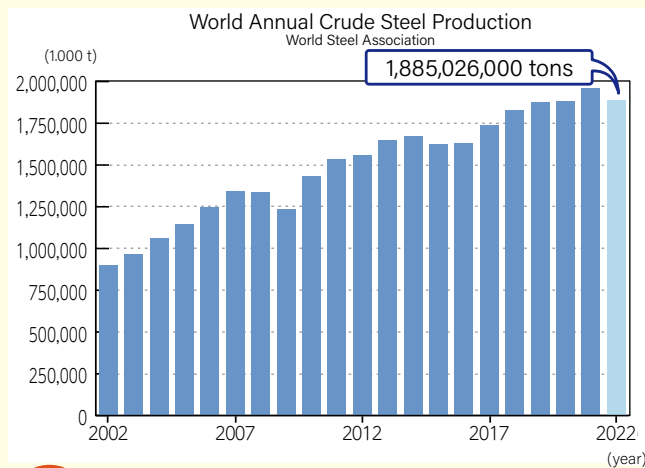
2 Additional Factors in Japan

- (1) Weak yen
- (2) Strong purchasing stance of electric furnace steelmakers for ordinary steel, etc.

1 Both strong and weak factors are at play

Since the outbreak of the war between Russia and Ukraine, the global economy has slowed down due to soaring energy prices and rising inflation. This has led to a decrease in demand for steel products, and crude steel production continues to decline. According to the World Steel Association, world crude steel production in 2022 was 1,850,026,000 tons, down 3.9% from the previous year and the first year-on-year decline in seven years. The total production for the first six months of 2023 decreased by 1.1% to 94.39 million tons (preliminary figures for 63 countries worldwide), showing a 4.2% decrease in production excluding China. The decline in crude steel production was mainly due to a decrease in the production of iron and ferrous scrap. Lower crude steel production means lower demand for scrap steel, which in turn drives down prices. Inflation-control measures implemented by various countries also have the effect of suppressing the rise in ferrous scrap prices. A stronger U.S. dollar is also a weak factor for ferrous scrap prices denominated in U.S. dollars.

On the other hand, persistently high energy and resource prices are a factor pushing up the price of ferrous scrap, the same resource. The global economic slowdown is another factor contributing to the sluggish generation of ferrous scrap. The decline in ferrous scrap exports from Russia following the outbreak of war also contributed to tightening global supply and demand for ferrous scrap. Looking at Turkey's imports, ferrous scrap imports from Russia in 2021 were just over 2 million tons. This declined to 450,000 tons in 2022 and 60,000 tons in the January-May 2023 period. In addition to these factors, the global steel industry is moving toward achieving carbon neutrality. The steelmaking process using ferrous scrap and electric arc furnaces is said to "reduce CO₂ emissions by a quarter" compared to blast furnaces and converter furnaces, which reduce iron ore. In developed countries that generate a large amount of ferrous scrap, new electric furnace facilities are being introduced, and conversion from the blast furnace/converter method is also progressing. This has led to an increasing trend to secure ferrous scrap, and in



Europe and the U.S., some steelmakers are acquiring metal recyclers in order to secure ferrous scrap for their own use, starting from the collection stage. In addition, efforts are being made to increase the amount of ferrous scrap fed into converter furnaces to reduce CO₂.

Due to these competing forces, the global ferrous scrap market is expected to continue to fluctuate around a certain level from August 2022, after a sharp rise and fall. The import price of U.S. ferrous scrap (No.1 heavy) from Turkey and other major Asian ferrous scrap importing countries has been hovering around CFR \$400 per ton, which is about 40% lower than the import price (CFR \$680) at the time of the 2022 surge. For example, the New York crude oil futures price was over \$120 per barrel at the time of the sharp rise in June 2022, but the average price from August 2022 to July 2023 was \$80 per barrel, down about 35%. The price fluctuation of ferrous scrap has also been in line with this trend, reflecting the trend of international commodity prices.

2 Forcing Factors in Japan

Within Japan, there are further effects due to a weak yen. A weaker yen pushes up the price of ferrous scrap denominated in yen. The H2 annual average price in 2022 in the three main regions in Japan (Kanto, Chubu and Kansai) was 52,600 yen. In 2023, the average price from January to July remains at 50,100 yen, maintaining the 50,000-yen level.

A weaker yen lowers the dollar-denominated price of Japanese ferrous scrap, giving an advantage to exports. With the market for scrap in a slump, an increase in exports will tighten the domestic supply-demand balance, further raising the price of scrap in the domestic market. In order to curb exports, domestic steelmakers will have no choice but to raise purchase prices and increase credit. This is especially true for domestic electric furnace steelmakers, whose production has been booming. To defend exports, they are trying to secure the necessary volume by offering prices that are more attractive than export prices. As a result, the high domestic, low export price situation continues, with domestic market prices exceeding export prices.



III The Method of Sorted Collection of Steel Cans

1. How Many Municipalities Sort Out Steel Cans?

The Implementation of "the Questionnaires on the Recycling of Steel Cans"

We carried out a questionnaire survey annually to figure out the present condition of sorted collection practices by municipalities, such as collection methods and conditions of recycling facilities focusing on the recycling of steel cans.

Subjected research period : From April 2022 to March 2023

Research period : From May to July 2023

Research subject : The cities all over Japan and the 23 wards in Tokyo (815 Wards and cities)

Number of responding municipalities : 729 Wards/Cities

The return rate : 89.4%

The population coverage rate : 87.1%

Note: Total population (estimated) is 124,947,000 as of October 1st, 2022 (data from the Statistics Bureau).



The Rate of Municipalities Practicing Sorted Collection of Recycling

The highest response rate of 99.2% was for "Practiced throughout the Municipal District" with most municipalities implementing the same sorting and collection system as in FY2012.

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Total	808	-	813	-	815	-
Number of responding municipalities (The return rate)	736	91.1	738	90.8	729	89.4
Practiced throughout the Municipal District	724	98.4	730	98.9	723	99.2
Practiced in parts of the Municipal District	10	1.4	5	0.7	5	0.7
Not practiced	2	0.3	3	0.4	1	0.1

The Rate of Municipalities Collecting Resource Waste by Items (multiple answers)

"PET bottles", "Glass bottles", "Beverage steel cans", and "Aluminum cans" accounted for more than 90% of the total, and are still collected separately in many municipalities, unchanged from FY2012. In addition, almost all items have increased. "Plastic product", which became a material to be recycled under the Act on Promotion of Resource Circulation for Plastics enacted in 2021, accounted for 20.5% of the total.

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
PET bottles	704	95.9	711	96.7	718	98.6
Glass bottles	723	98.5	727	98.9	716	98.4
Beverage steel cans	705	96.0	710	96.6	711	97.7
Aluminum cans	707	96.3	713	97.0	709	97.4
Food steel cans	-	-	-	-	675	92.7
General cans	-	-	-	-	655	90.0
Cardboard	624	85.0	632	86.0	637	87.5
Newspaper and Magazine	-	-	-	-	631	86.7
Waste paper	-	-	-	-	609	83.7
Cartons	572	77.9	586	79.7	598	82.1
Spray cans/ Cassette cylinders	-	-	430	58.5	542	74.5
Plastic container	473	64.4	485	66.0	495	68.0
Small household appliances	-	-	315	42.9	480	65.9
Fabric	397	54.1	420	57.1	466	64.0
Paper container	320	43.6	406	55.2	415	57.0
Metals	312	42.5	348	47.3	364	50.0
Used cooking oil	-	-	-	-	261	35.9
Food trays	-	-	-	-	224	30.8
Plastic product	-	-	-	-	149	20.5
Others	340	46.3	313	42.6	132	18.1
Number of responding municipalities	734	100.0	735	100.0	728	100.0



III The Method of Sorted Collection of Steel Cans

2. How Do Municipalities Collect Steel Cans?

Items Discharging together with Steel Cans (multiple answers)

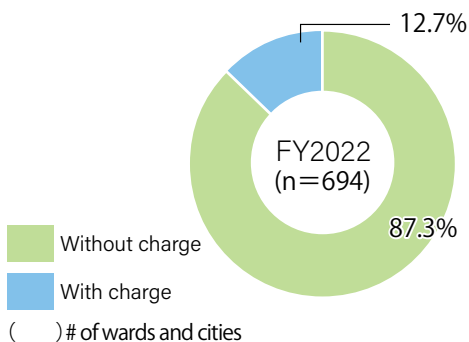
The percentage of municipalities that collects "Beverage aluminum cans", "Food steel cans" (canned food, etc.), and "General cans" in the same container is over 80%, a trend that has not changed since FY2012.

On the other hand, 2.5% collect "Only beverage steel cans".

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Only beverage steel cans	12	1.7	8	1.1	18	2.5
Beverage aluminum cans	605	85.8	611	86.1	613	86.2
Food steel cans	618	87.7	643	90.6	613	86.2
General cans	598	84.8	606	85.4	561	78.9
Spray cans	286	40.6	263	37.0	244	34.3
18 litter cans	112	15.9	107	15.1	149	21.0
Metals	92	13.0	88	12.4	98	13.8
Glass bottles	149	21.1	142	20.0	88	12.4
Pet bottles	45	6.4	43	6.1	41	5.8
Others	41	5.8	52	7.3	27	3.8
Number of responding municipalities	705	100.0	733	100.0	711	100.0

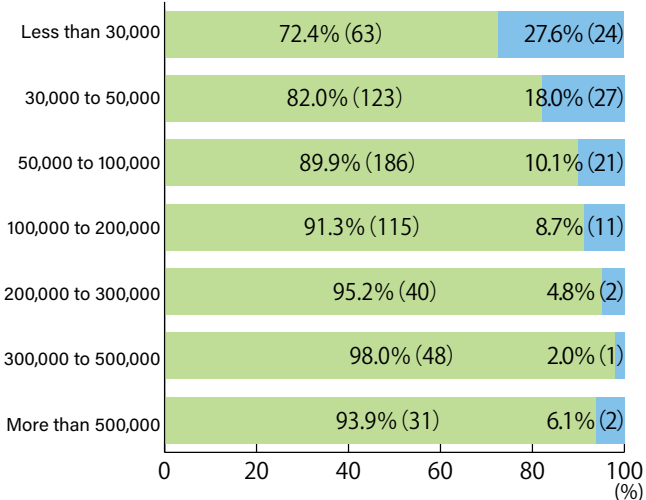
Charge for Collecting Steel Cans

"Without charge" was 87.3%.



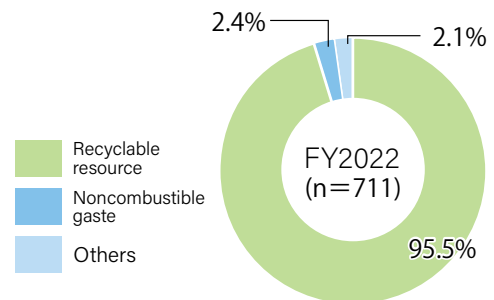
"With charge" rate was highest among municipalities with less than 30,000 residents at 27.6%, and the rate tends to be higher in municipalities with smaller populations.

By Population



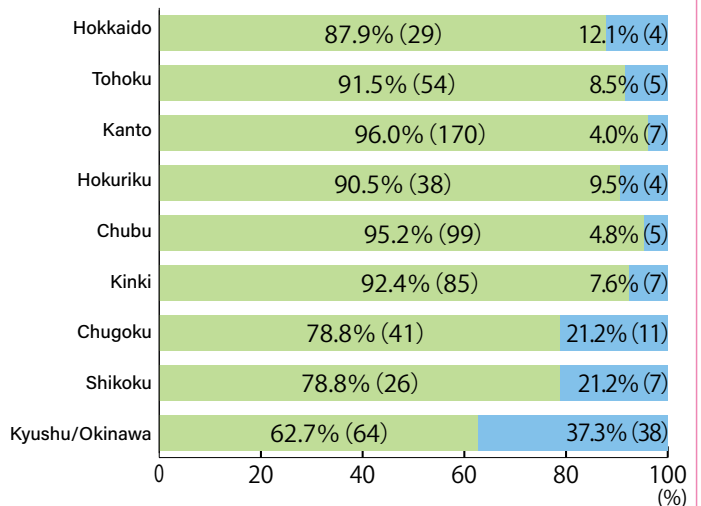
Classification of steel cans

"Recyclable resource" was 95.5%.



By Region

"With charge" was 20% in Chugoku and Shikoku, and exceeded 30% in Kyushu/Okinawa.





III The Method of Sorted Collection of Steel Cans

3. How Are Steel Cans Recycled?

Selection Process of Cans

Selection process of cans was "Magnetic separation & hand separation" was the most common at 48.4%, followed by "Magnetic separation only" at 33.4%. "No selection" was 8.7%.

		FY2022	
		# of wards and cities	rate (%)
No selection		59	8.7
Selection	Magnetic separation & Hand separation	328	48.4
	Magnetic separation only	226	33.4
	Hand separation only	28	4.1
	Others	36	5.3
	Number of responding municipalities		677

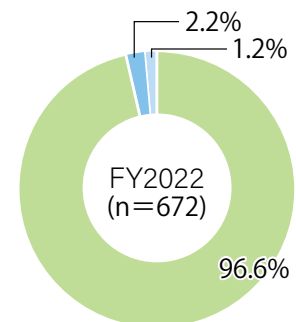
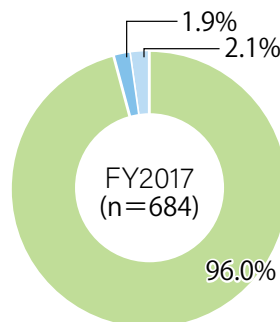
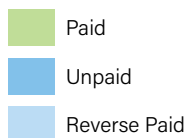
Forms after Selection of Cans

85.2% of steel cans are "Press".
7.0% of steel cans are "No process".

		FY2022	
		# of wards and cities	rate (%)
No process		48	7.0
Process	Press	580	85.2
	Round cans (steel and aluminium sorting only)	22	3.2
	Shredder	17	2.5
	Press (individual cans)	3	0.4
	Others	11	1.6
	Number of responding municipalities		681

Price Conditions of Steel Cans

The majority of transactions were "Paid" at 96.6%. Only 1.2% (8 wards and cities) were "Reverse Paid." This trend has not changed since FY2017.



In the case of transactions for reverse payment (multiple answers)

In the case of transactions for reverse paid, the most common reason given was that "The seller (municipality or public association) has not determined the sale price or obtained the proceeds of the sale" in 3 out of 8 wards (37.5%). The reason given for the "Others" category in 3 cases was because the sorting work is outsourced.

	FY2022	
	# of wards and cities	rate (%)
The seller (municipality or public association) has not determined the sale price or obtained the proceeds of the sale	3	37.5
Not made into block pressed products	2	25.0
Fluctuations in the ferrous scrap market	2	25.0
Price is determined collectively with metals other than steel cans	1	12.5
There are not enough suppliers to sell to	1	12.5
Sales volume is below the minimum take-back unit price	0	0.0
Transportation costs are high and transportation distances are long	0	0.0
Others	3	37.5
Number of responding municipalities	8	100.0



III The Method of Sorted Collection of Steel Cans

4. How Much Steel Can is Collected by Municipalities?

The Total Recycling Quantity of Steel Cans is Estimated about 117,000 tons

Based on the responses of the 651 wards/cities that responded to the questionnaire regarding the quantity of steel cans recycled, a total of 92,556 tons were recycled in FY2022. When converted to a national basis, this would be 117,217 tons, down 5,027 tons from the previous fiscal year.

Recycling Quantity of Steel Cans per Capita

(Estimated based on the record in FY2022)

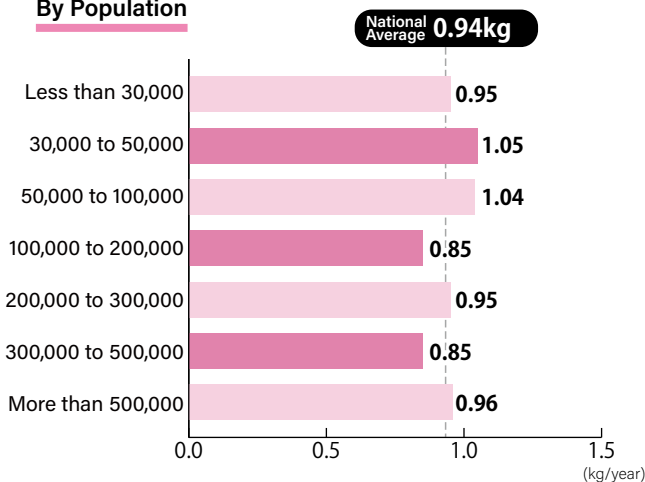
		(t/year)	
	# of wards and cities	Recycling quantity of steel cans per capita	
No process	41	4,078	
Process	Press	546	78,645
	Shredder	16	1,373
	Press (individual cans)	3	171
	Round cans (steel and aluminium sorting only)	20	1,441
	Others	25	6,848
Number of responding municipalities		651	92,556

Note: [Others] indicates unknown or multiple answers.

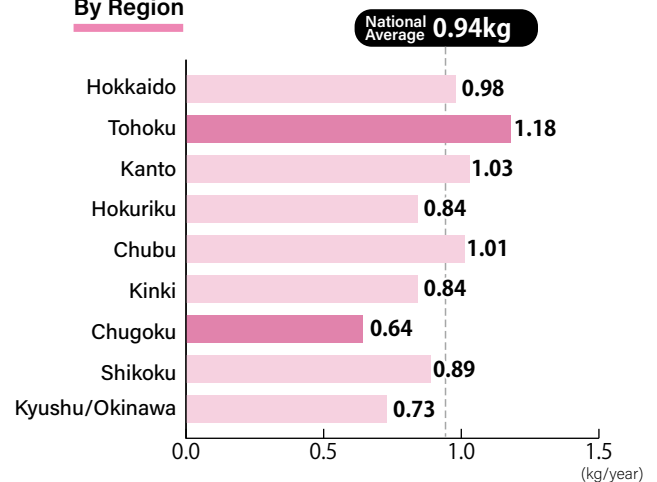
The Amount of Steel Can Recycled per Capita is 0.94 kg Annually Based

The average quantity of recycled waste per person by municipality is 0.94 kg, and by population, the largest quantity was for population less than 30,000 persons. By region, Tohoku had the largest quantity at 1.18 kg, while Chubu had the lowest quantity at 0.64 kg.

By Population



By Region



How do you feel compared to last year's steel can collection (multiple answers)

The highest response rate of 45.3% was "No changes felt/No impact from COVID-19" which has increased when compared to the three years of the pandemic.

The percentages for "The burden of infection prevention measures increased" and "Increased time to perform collection" decreased.

	FY2020		FY2021		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
No changes felt/No impact from COVID-19	131	31.3	145	34.6	322	45.3
Collection decreased	27	6.4	172	41.1	297	41.8
Collection increased	165	39.4	40	9.5	33	4.6
Sorting worsened/Impurities increased	18	4.3	5	1.2	20	2.8
The burden of infection prevention measures increased	54	12.9	27	6.4	18	2.5
Increased time to perform collection	29	6.9	11	2.6	10	1.4
Sorting improved/Impurities decreased	1	0.2	5	1.2	6	0.8
Other	6	1.4	4	1.0	2	0.3
Number of responding municipalities	419	100.0	419	100.0	711	100.0



5. How Do You Handle Noncombustible Waste?

The Amount of Steel Cans Collected from Noncombustible Waste is National estimated 16,000 tons

According to the research data collected from 567 municipalities, the amount of ferrous collected is 218,247 tons in FY2022 (including 11,533 tons of steel can). This translates into the recycling of 301,692 tons nationwide (including 15,943 tons of steel can).

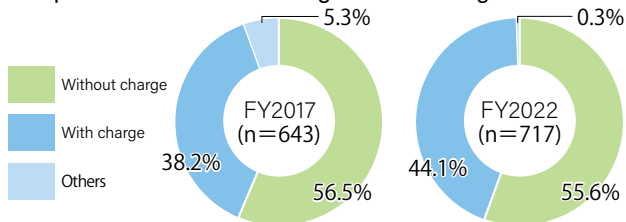
The amount of Steel Cans Collected from Noncombustible Waste
(Estimated based on the record in FY2022)

	# of wards and cities	The amount of ferrous collected	The amount of steel can collected (t/year)
Magnetic separation & shredding	234	109,929	4,836
Magnetic separation & press & shredding	116	34,585	3,539
Only hand separation	83	19,837	933
Only shredding	14	6,502	313
Press & magnetic separation	11	4,069	280
Others	109	43,325	1,632
Number of responding municipalities	567	218,247	11,533

Note1: The 23 wards are calculated from the data of the Tokyo 23 Clean Association.
Note2: [Others] indicates unknown or multiple answers.

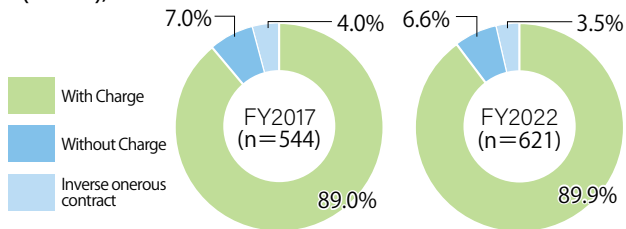
Charge for Noncombustible Waste

55.6% of respondents selected "without charge" for non-combustible waste, accounting for more than half of the total, unchanged from FY2017. The number of respondents who "with charge" is increasing.



Sales Price of Processing Ferrous from Noncombustible Waste

Noncombustible waste scrap is sold "With charge" (89.9%), same as 2017.



Form of Processing Ferrous [only in items with charge]

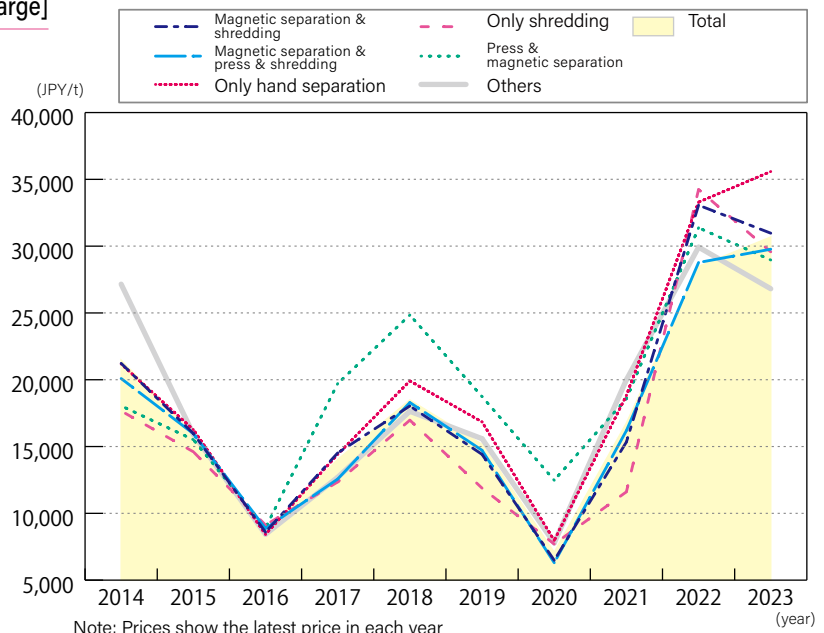
"Magnetic separation & shredding" was the most common at 43.8%. This was followed by 18.8% of the respondents who selected "Magnetic separation & press & shredding".

	FY2022	
	# of wards and cities	rate (%)
Magnetic separation & shredding	238	43.8
Magnetic separation & press & shredding	102	18.8
Only hand separation	84	15.7
Only shredding	19	3.5
Press & magnetic separation	11	2.0
Others	90	16.5
Number of responding municipalities	544	100.0

Latest Sale Price of Ferrous [only in items with charge]

Prices fell sharply in 2016 due to developments in China and in 2020 due to the impact of the coronavirus. Prices recovered and rose from 2021, but the latest prices in 2023 varied depending on the type of processing.

	June-July, 2023	
	# of wards and cities	Price (JPY/t)
Magnetic separation & shredding	222	30,970
Magnetic separation & press & shredding	96	29,770
Only hand separation	79	35,585
Only shredding	16	29,574
Press & magnetic separation	11	28,964
Others	84	26,810
Number of responding municipalities	508	30,686



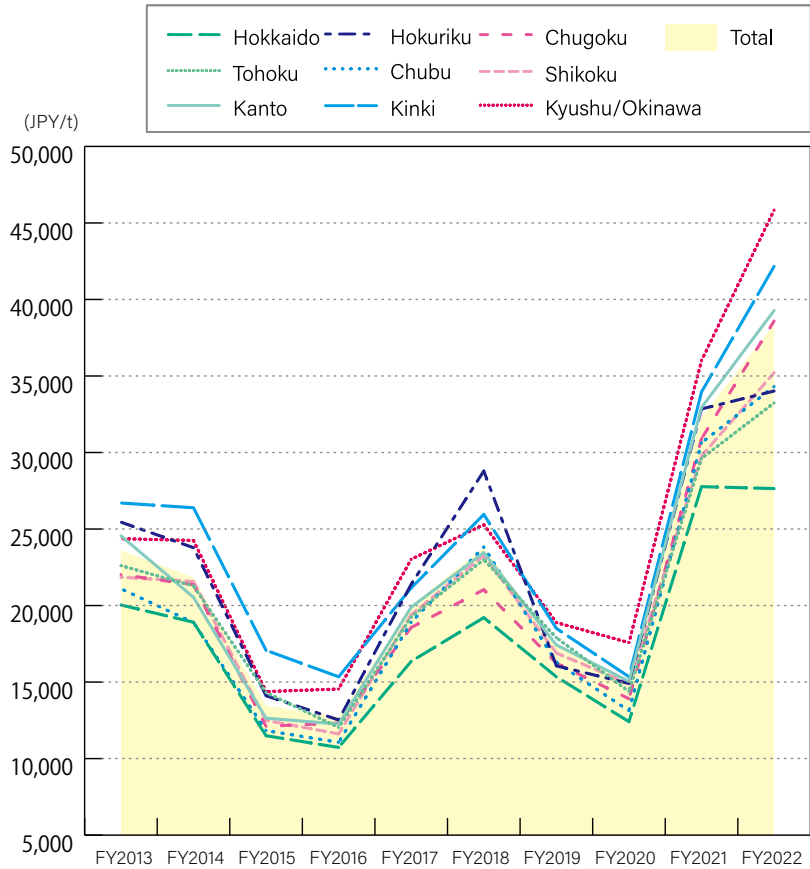


6. What Are the Trading Circumstances of Steel Cans?

Average Sales Price of Pressed Steel Cans by the Fiscal Year by Region

They declined in FY2016 and FY2019, but rose significantly from FY2021, and rose in FY2022 in all regions except Hokkaido. Hokkaido remains the lowest, while Kyushu/Okinawa has been the highest in recent years.

	FY2022	
	# of wards and cities	rate (%)
Hokkaido	30	27,644
Tohoku	44	33,243
Kanto	140	39,277
Hokuriku	31	34,018
Chubu	59	34,309
Kinki	63	42,160
Chugoku	39	38,592
Shikoku	24	35,212
Kyushu/Okinawa	83	45,840
Number of responding municipalities	513	38,364



Latest Sale Price of Steel Cans by Form

The highest price for "1 can press" was 38,202 yen/t, while the lowest price for "Round cans (steel and aluminium sorting only)" was 28,200 yen/t.

	June-July,2023	
	# of wards and cities	rate (%)
Press	525	37,669
Shredder	17	30,576
1 can press	3	38,202
Round cans (steel and aluminium sorting only)	20	28,200
Others	10	30,239
Number of responding municipalities	575	36,944

Note: Prices show the latest price in each year

Latest Sale Price of Pressed Steel Cans by Region

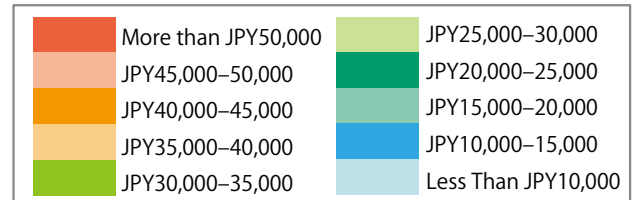
The highest price for Kyushu/Okinawa was 46,151 yen/t, while the lowest price for Hokkaido was 28,049 yen/t.

	June-July,2023	
	# of wards and cities	rate (%)
Hokkaido	30	28,049
Tohoku	45	33,270
Kanto	142	37,881
Hokuriku	32	34,022
Chubu	60	34,292
Kinki	63	39,380
Chugoku	42	38,165
Shikoku	25	34,384
Kyushu/Okinawa	86	46,151
Number of responding municipalities	525	37,669

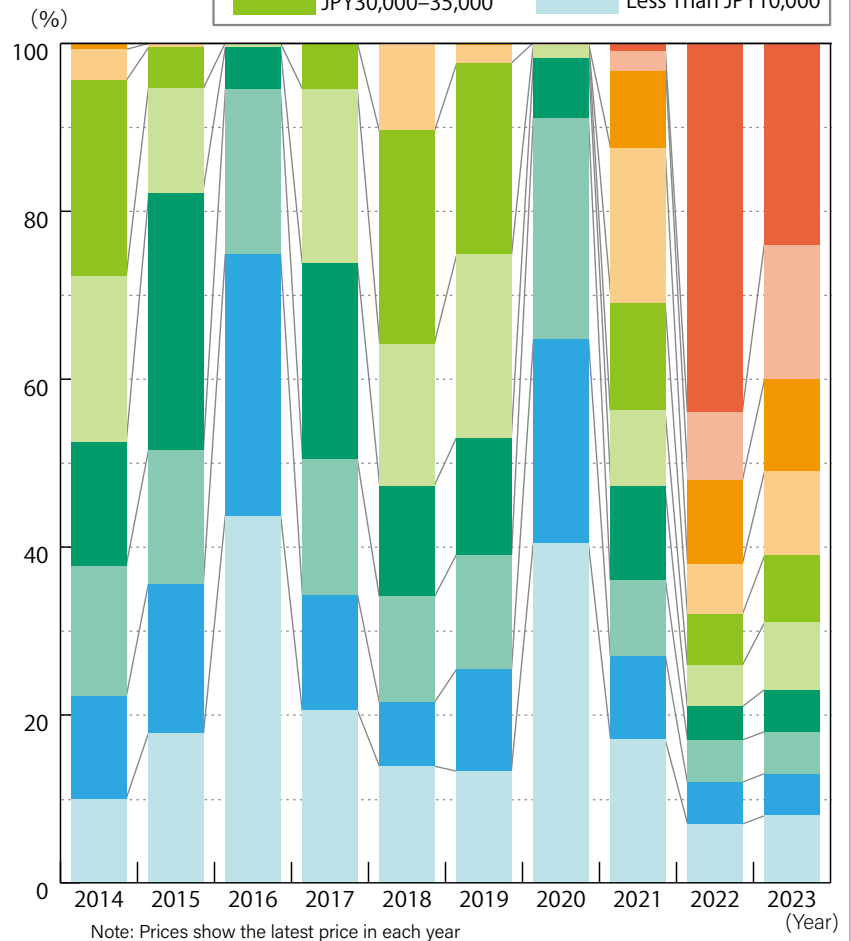
Note: Prices show the latest price in each year

Latest Sale price of Pressed Steel Cans by Price

In 2023, as in 2022, "50,000 yen or more" accounted for the highest percentage at 23.6%, followed by "45,000-50,000 yen" at 16.0%. The percentage of respondents who chose "30,000 yen or more" has increased significantly since 2021.



(JPY/t)	June-July,2023	
	# of wards and cities	rate (%)
More than JPY50,000	124	23.6
JPY45,000-50,000	84	16.0
JPY40,000-45,000	60	11.4
JPY35,000-40,000	53	10.1
JPY30,000-35,000	40	7.6
JPY25,000-30,000	41	7.8
JPY20,000-25,000	26	5.0
JPY15,000-20,000	28	5.3
JPY10,000-15,000	25	4.8
Less Than JPY10,000	44	8.4
Number of responding municipalities	525	100.0



Recommended Selection and Processing Forms of Steel Cans

Conformity to the segregation standard specified in the Containers and Packaging Recycling Law is the most necessary to smoothly recycle steel cans as resources.

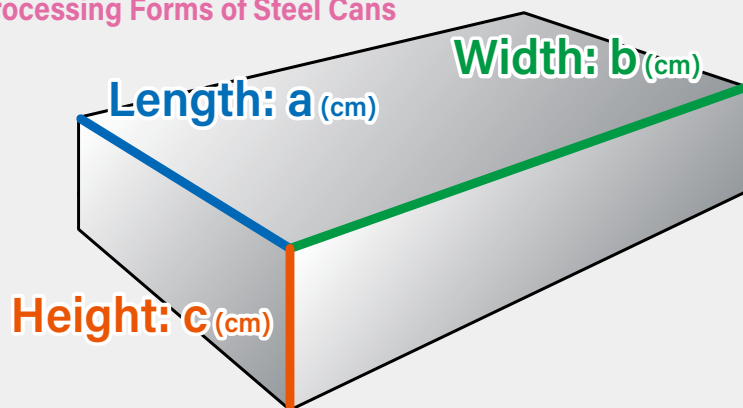
Recommended Selection and Processing Forms of Steel Cans

Source: The Japan ferrous raw materials association, "Uniform Standards of Ferrous Scraps"

- Maximum Length ≤ 80 (cm)
- 60 (cm) $\leq a + b + c \leq 180$ (cm)

[Bulk specific gravity]

- More than $0.6t/m^3$



It is regulated not to contain foreign materials by legislation however, it still has identified lots of foreign materials. Please take a caution.



IV Group Collection of Steel Cans

1. How Many Municipalities Practice Group Collection?

About 80% of Municipalities Practice Group Collection Programs

"Group collection" refers to resource collection by resident groups (town associations, neighborhood associations, etc.) registered with a local government.

79.7% of municipalities have practiced group collection programs since FY2012. This would probably be higher if resource collections performed privately were included.



People are sorting recyclable wastes

The Rate of Practicing Group Collection

"Practice" rate was the highest at 79.7%, remaining unchanged from FY2012 at approximately 80%. The number of respondents who answered "Do not practice" remained unchanged from FY2012 at around 10%. The number of respondents who "Have not implemented since the pandemic" was low at 0.4%.

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Practice	603	81.9	586	79.4	577	79.7
Do not practice	94	12.8	90	12.2	89	12.3
Have not implemented since the pandemic					3	0.4
Unknown	39	5.3	55	7.5	55	7.6
Others	0	0.0	7	0.9	0	0.0
Number of responding municipalities	736	100.0	738	100.0	724	100.0

By Population

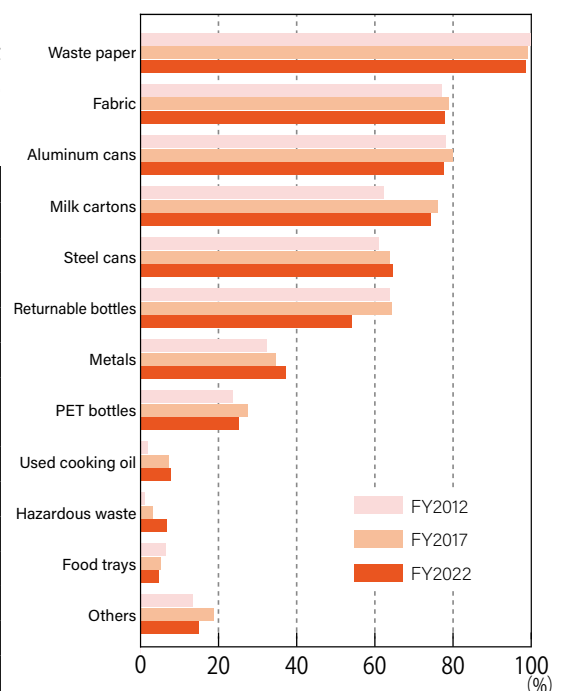
In large cities where more than 500,000 people reside conduct practicing group collection(97.1%). However the trend indicates that the ratio gets lesser in small cities.

	Practice		Do not practice		Have not implemented since the pandemic		Unknown	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Less than 30,000	50	54.9	34	37.4	0	0.0	7	7.7
30,000 to 50,000	122	76.7	21	13.2	1	0.6	15	9.5
50,000 to 100,000	172	80.0	20	9.3	1	0.5	22	10.2
100,000 to 200,000	116	87.9	8	6.1	1	0.7	7	5.3
200,000 to 300,000	41	93.2	2	4.5	0	0.0	1	2.3
300,000 to 500,000	43	87.8	4	8.1	0	0.0	2	4.1
More than 500,000	33	97.1	0	0.0	0	0.0	1	2.9
Number of responding municipalities	577	79.7	89	12.3	3	0.4	55	7.6

Target Item for Group Collection (multiple answers)

"Steel cans", increased to 64.6%, remained almost unchanged from FY2012 at more than 60%. "Waste paper" accounted for the highest percentage at 98.6%, exceeding 90%, unchanged from FY2012. "Metals" and "Hazardous waste" are also increasing. "Others" included miscellaneous paper and glass bottles.

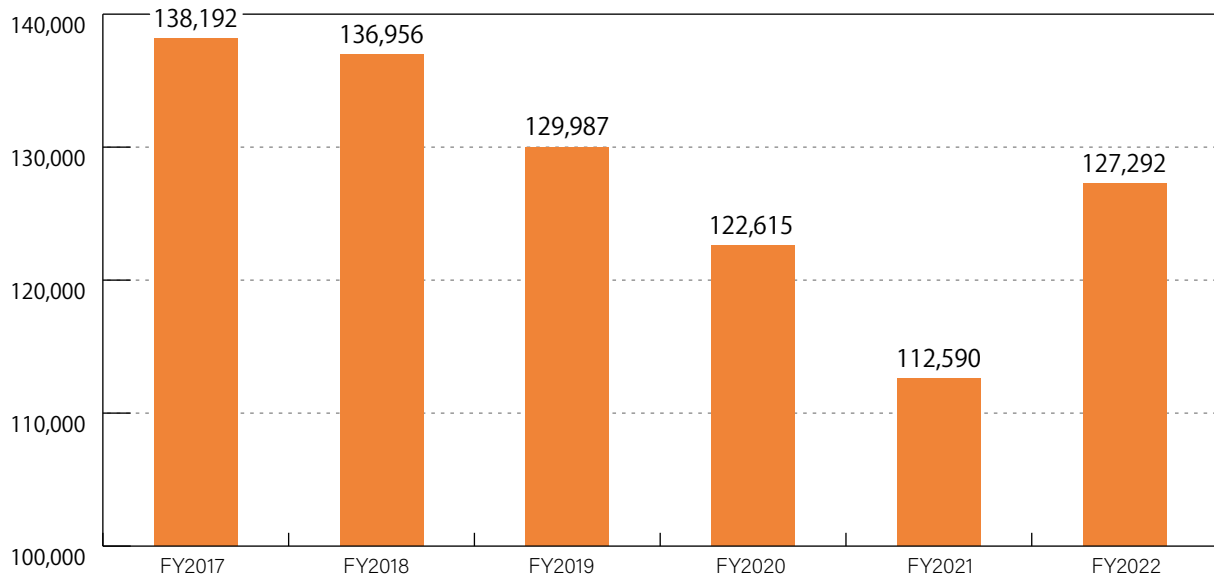
	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Waste paper	602	99.8	581	99.1	569	98.6
Fabric	465	77.1	462	78.8	450	78.0
Aluminum cans	471	78.1	468	79.9	448	77.6
Milk cartons	376	62.4	446	76.1	428	74.2
Steel cans	368	61.0	373	63.7	373	64.6
Returnable bottles	385	63.8	376	64.2	312	54.1
Metals	195	32.3	203	34.6	214	37.1
PET bottles	143	23.7	161	27.5	146	25.3
Used cooking oil	12	2.0	43	7.3	45	7.8
Hazardous waste	6	1.0	18	3.1	39	6.8
Food trays	39	6.5	30	5.1	27	4.7
Others	81	13.4	111	18.9	86	14.9
Number of responding municipalities	603	100.0	586	100.0	577	100.0



Number of Groups Practicing Group Collection

The number of group collection organisations in the 729 wards and cities that responded to the survey was estimated and converted to a national base, which was 127,292 organisations. In FY2020, the number of organisations was 122,615, and in FY2021, it was 112,590, a significant decrease, which may be attributed to the pandemic. In FY2022, the number increased, although it did not reach the level of that of before the pandemic.

(organisation)



Number of Groups Practicing Group Collection per 10,000

By Population

The "less than 30,000" category was the most common at 19.1, while the "300,000-500,000" category was the least common at 10.8. Compared to FY2017, the number of "300,000-500,000" decreased significantly by 3.6 while the number of respondents in the "Nationwide" category decreased by 1.5.

	FY2017	FY2022
Less than 30,000	18.6	19.1
30,000 to 50,000	14.2	14.5
50,000 to 100,000	12.2	11.9
100,000 to 200,000	12.6	11.7
200,000 to 300,000	12.5	11.7
300,000 to 500,000	14.4	10.8
More than 500,000	11.5	11.7
Total	13.3	11.8

By Region

Hokkaido had the highest number of respondents at 22.5, while Chubu had the lowest at 9.1. Although the trend has not changed since FY2017, the number of respondents decreased except for Hokuriku and Shikoku.

	FY2017	FY2022
Hokkaido	25.2	22.5
Tohoku	20.3	12.8
Kanto	10.9	9.7
Hokuriku	10.0	14.0
Chubu	9.5	9.1
Kinki	14.0	13.8
Chugoku	14.7	13.6
Shikoku	10.6	12.1
Kyushu/Okinawa	15.6	13.0
Total	13.3	11.8

Reason for implementing organisation collection (multiple answers)

"To raise residents' environmental awareness" was the most common response at 80.8%, accounting for about 80% of the respondents, unchanged from FY2012. Many respondents chose "To reduce waste" and "To promote recycling" as "Others".

	FY2012		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)
To raise residents' environmental awareness	478	79.3	466	80.8
To revitalize local communities	306	50.7	288	49.9
To improve opportunities to discharge waste	308	51.1	274	47.5
To reduce the cost of separate collection	207	34.3	179	31.0
To increase collection volume	-	-	115	19.9
To meet residents' requests	-	-	64	11.1
Others	138	22.9	74	12.8
Number of responding municipalities	603	100.0	577	100.0



IV Group Collection of Steel Cans

2. How Do Group Collection?

Group collection implementation status during the pandemic

The highest percentage of respondents (65.6%) chose "Continued implementation in all regions", a gradual increase from the 3 years of the pandemic. On the other hand, "Implemented, but discontinued in some areas (still discontinued)" increased by 20%.

	FY2020		FY2021		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Continued implementation in all regions	226	53.9	220	52.5	374	65.6
Implemented, but discontinued in some areas (still discontinued)	85	20.3	120	28.6	131	23.0
Resumed after discontinuation in some areas	28	6.7	21	5.0	12	2.1
Discontinued temporarily but resumed in all regions	10	2.4	2	0.5	1	0.2
Discontinued in all regions	1	0.2	0	0.0	3	0.5
Unknown	43	10.3	44	10.5	47	8.2
Other	26	6.2	12	2.9	2	0.4
Number of responding municipalities	419	100.0	419	100.0	570	100.0

Reasons for suspending organisation collection (multiple answers)

"Impact of the pandemic" was the most common reason (72.1%). However, when compared to the 3 years of the pandemic, it is gradually decreasing. "Decrease in the price of sales to collection agencies and buyers" is decreasing. The "Others" category results were high and included "situation of organisations such as ageing".

	FY2020		FY2021		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Impact of the pandemic	131	87.9	120	84.5	106	72.1
Withdrawal of collection agencies	13	8.7	13	9.2	13	8.8
Decrease in the price of sales to collection agencies and buyers	9	6.0	8	5.6	5	3.4
Reduction or suspension of incentive payments to organisations	0	0.0	0	0.0	5	3.4
Restriction of the number of items collected or the volume of collection	3	2.0	3	2.1	2	1.4
Reverse charge of selling price to collectors and buyers	5	3.4	2	1.4	2	1.4
The collector requested an increase in subsidy amount	0	0.0	0	0.0	0	0.0
Others	39	26.1	46	32.4	47	32.0
Number of responding municipalities	149	100.0	142	100.0	147	100.0

Participating Conditions of Municipalities toward Group Collection (multiple answers)

"Provide grants" was the most common at 94.7%, and has remains above 90% since FY2012.

"Provide equipments" increased.

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Provide grants	569	94.4	562	95.9	549	94.7
PR	289	47.9	298	50.9	212	36.6
Provide subsidies	163	27.0	151	25.8	146	25.2
Provide equipments	70	11.6	72	12.3	81	14.0
Expansion of the number of participating organizations through briefings, etc.	-	-	-	-	52	9.0
Coordination	44	7.3	47	8.0	41	7.1
Appeal to citizens	142	23.5	144	24.6	-	-
Others	20	3.3	30	5.1	16	2.8
Number of responding municipalities	603	100.0	586	100.0	580	100.0

Method of Calculating Incentives and Rewards to Organizations (multiple answers)

The highest percentage of respondents (69.4%) calculate incentives and rewards to organizations based on the "amount collected (uniform for all items)".

	FY2022	
	# of wards and cities	rate (%)
Amount collected (uniform for all items)	381	69.4
Per item	149	27.1
Number of times collected	41	7.5
Others	45	8.2
Number of Responding Municipalities	549	100.0

Grants to Practicing Groups for General Recyclables

"More than 3 yen to less than 5 yen/kg" and "more than 5 yen to less than 7 yen/kg" for all types accounted for more than half of all sales with the trend unchanging since FY2017. The average per kg was higher for steel cans, but all have increased since FY2017.

	Recyclables resource				Steel can			
	FY2017		FY2022		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Less than JPY3/kg	99	19.0	87	16.5	44	17.0	26	11.2
JPY3-5/kg	207	39.7	188	35.7	94	36.3	78	33.5
JPY5-7/kg	126	24.1	143	27.1	74	28.6	74	31.8
JPY7-10/kg	65	12.5	78	14.8	34	13.1	31	13.3
More than JPY10/kg	25	4.8	31	5.9	13	5.0	24	10.3
Number of responding municipalities	522	100.0	527	100.0	259	100.0	233	100.0
Average (JPY/kg)	4.96		5.79		5.15		6.61	

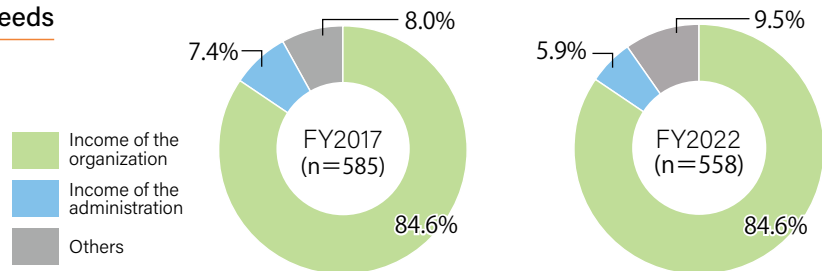
Subsidies to Collecting Companies for General Recyclables

"Less than 3 yen/kg" accounted for about half of the total for all types with the trend unchanging since FY2017. The average per kg is higher for steel cans.

	Recyclables resource				Steel can			
	FY2017		FY2022		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Less than JPY3/kg	72	59.5	74	54.0	21	44.7	21	51.2
JPY3-5/kg	26	21.5	37	27.0	13	27.7	8	19.5
JPY5-7/kg	10	8.3	10	7.3	6	12.8	4	9.8
JPY7-10/kg	7	5.8	5	3.6	3	6.4	5	12.2
More than JPY10/kg	6	5.0	11	8.0	4	8.5	3	7.3
Number of responding municipalities	121	100.0	137	100.0	47	100.0	41	100.0
Average (JPY/kg)	3.67		4.40		5.18		5.11	

Handling of Group Collection Sale Proceeds

The "Income of the organization" accounted for 84.6% of the total, unchanging from FY2017. The "Others" category includes "Income of the collection agency" and "Depends on the item".



Issues/Problems with Group Collection (multiple answers)

The highest percentage (74.5%) was "Decrease in the number of groups (ageing population, lack of board members, increased workload, etc.)" followed by "Group collection alone cannot cover all areas," at 22.8%.

	FY2022	
	# of wards and cities	rate (%)
Decrease in the number of groups (ageing population, lack of board members, increased workload, etc.)	468	74.5
Group collection alone cannot cover all areas	143	22.8
Collection volume is low	110	17.5
No or few collection agencies	80	12.7
Heavy administrative workload	70	11.1
Others	51	8.1
Number of responding municipalities	628	100.0

Future Intentions Regarding Group Collection

The highest percentage of respondents (57.7%) chose "Currently implemented and will maintain the status quo", followed by 20.3% who chose "Currently in place and would like to expand in the future".

On the other hand, 17.5% of respondents chose "Not currently implemented or investigating and will not be implemented or investigated in the future".

	FY2022	
	# of wards and cities	rate (%)
Currently in place and would like to expand in the future	140	20.3
Currently implemented and will maintain the status quo	398	57.7
Currently implemented, but would like to scale back in the future	9	1.3
Not currently implemented or investigating, but would like to implement or investigate in the future	12	1.7
Not currently implemented or investigating and will not be implemented or investigated in the future	121	17.5
Others	10	1.5
Number of responding municipalities	690	100.0

In the 2023 Survey on Steel Can Recycling, a nationwide survey of municipalities (cities and the 23 wards of Tokyo; 815 wards in all), we asked about innovations and ideas for revitalizing group collection, as well as their support for organizations that implement such collection. The following are some of the best practices from the results of the survey.

79% online application rate for group collection incentives **Fukaya City, Saitama**

In August 2021, Fukaya City established the "Fukaya City Policy for Online Procedures" to enable online receipt of administrative applications and procedures anytime, anywhere. Based on this policy, Fukaya City introduced a system in October 2022 to allow online applications for group collection incentives. To apply online, a QR code is scanned to open the application screen, where the amount collected and other necessary information is entered, and a photo of the collection certificate (document issued by the collection agency) is attached. Since April 2023, the city has been offering an additional incentive for online applications, and as of the end of July, the online application rate was as high as 79%. This has been well received by residents, as even those who are too busy to go to the city office can easily apply. In addition, it has reduced the workload for city employees, allowing them to concentrate on other tasks. Of course, they continue to accept in-person applications and are also taking into consideration those who have difficulty with online applications.



Responding to the ageing population! Point-based Collective Collection **Taito Ward, Tokyo**

In recent years, an increasing number of town councils are finding it difficult to continue their group collection activities due to a lack of volunteers and increased workload caused by an ageing population. In response to such requests, Taito City has implemented a "point-type group collection" system in which collection companies directly visit multiple points designated by town councils to collect resources.

Since the model project was implemented in some areas for two years from FY2014 and showed positive results in reducing the workload, the program was expanded to other areas in FY2016 and has been implemented in all areas in the ward since FY2018. During the five years (FY 2014 - FY 2018) including the model implementation, explanations were given to town councils, and as of FY2018, 61 out of 154 town councils implementing organisation collection have introduced the point-of-sale type of group collection. This method has enabled residents to dispose of resources near their residences, and has also led to an increase in the amount of resources collected, in addition to making it easier for those in charge of town councils to transport the collected resources. The Taito Recycle Business Cooperative, an association of activity groups and collection companies, is coordinating with the ward to implement the project.



Publicizing interviews with activity groups **Muko City, Kyoto**

Muko City just started the "Collective Paper Collection Subsidy Program" in July 2022, and is currently focusing on increasing the number of active groups. The city's website lists the benefits of collective paper collection as well as the application procedure and subsidy amount, but in order to get the message to as many residents as possible, information was published in a special article in the PR magazine. The June 2023 issue of "Koho Muko" (Public Relations Muko), which is published monthly and distributed to all households in the city, featured an article on the waste situation in Muko City in conjunction with Environment Month. They interviewed a group that has been conducting group collection for some time and reported that the income from this leads to the enhancement of the group's activities and that the application procedures are easy to follow. After the interview, they received about 10 inquiries from community associations and children's groups, and by mid-August, they had received applications from two new groups. They will continue to promote the use of this system.



PR Muko (June 2023)



V Actual Status of Beautification

1. What is the Reality of Beautification?

Community beautification activities tidy up the city, such as picking up trash and cleaning up, and various efforts are being made throughout Japan. This section describes cleanup activities led by local governments, excluding those led by local residents (town councils, neighbourhood associations, PTAs, etc.), private organizations, and businesses.

Current State of Beautification (multiple answers)

In FY2012, 54.6% of municipalities conducted "Cleanup" and 20.7% conducted both "Cleanup & Public awareness campaign", with a total of over 70%.

During the pandemic, in FY2021, the number was less than half (45.6%) of the total number of municipalities, but in FY2022, it rebounded to 73.9%.

	FY2012		FY2017		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Cleanup	402	54.6	334	45.6	539	73.9
Public awareness campaign	7	1.0	28	3.8	61	8.4
Cleanup & Public awareness campaign	152	20.7	-	-	-	-
Others	45	6.1	16	2.2	31	4.3
Noperforme (Including noresponse)	130	17.7	379	51.8	169	23.2
Number of responding municipalities	736	100.0	732	100.0	729	100.0

By Population

While more than half of all municipalities "Cleanup" are implemented regardless of population, "Public awareness campaign" tend to be more common in municipalities with larger populations. More than 20% of municipalities with a population of less than 100,000 was "Noperforme".

	Cleanup		Public awareness campaign		Others		Noperforme		Number of responding municipalities	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Less than 30,000	55	60.4	3	3.3	2	2.2	33	36.3	91	100.0
30,000 to 50,000	116	72.5	3	1.9	5	3.1	40	25.0	160	100.0
50,000 to 100,000	161	75.2	10	4.7	10	4.7	49	22.9	214	100.0
100,000 to 200,000	110	85.3	17	13.2	7	5.4	15	11.6	129	100.0
200,000 to 300,000	38	86.4	9	20.5	1	2.3	4	9.1	44	100.0
300,000 to 500,000	36	75.0	10	20.8	2	4.2	9	18.8	48	100.0
More than 500,000	23	82.1	9	32.1	4	14.3	4	14.3	28	100.0

Response to activities during the pandemic (multiple answers)

Compared to the three years of the pandemic, "Discontinuation" decreased from less than 60% to 10%, while "implemented as usual" increased from 10% to over 60%. Those who "implemented pandemic control measures" such as wearing masks and disinfecting hands continued at around 30%.

	FY2020		FY2021		FY2022	
	# of wards and cities	rate (%)	# of wards and cities	rate (%)	# of wards and cities	rate (%)
Discontinuation	351	57.5	224	30.6	58	11.0
Implemented as usual	61	10.0	135	18.4	338	64.1
Implemented pandemic control measures	207	33.9	214	29.2	202	38.3
Reduced the number of persons	58	9.5	40	5.5	32	6.1
Implemented by reducing and dispersing the target area	56	9.2	37	5.1	32	6.1
Reduced the number of times	91	14.9	55	7.5	25	4.7
Postponement	38	6.2	16	2.2	6	1.1
Others	53	8.7	44	6.0	29	5.5
Number of responding municipalities	610	100.0	732	100.0	527	100.0

The Method for Calculating the Steel Can Recycling Rate

Following is the method for calculating the steel can recycling rate.

Amount of Steel Can Consumption

Calculation Method

The weight of domestically produced steel cans shipped, weight of steel cans used for import/export of canned food and weight of steel cans imported as empty cans between January and December of 2022 were monitored based on the Ministry of Economy, Trade and Industry Statistics and "Japan Exports and Imports" from the Ministry of Finance, as well as the surveyed weight of steel cans.

Calculation Results: 362,606 tons (① + ② + ③ + ④)

① Weight of domestically produced steel cans shipped: 266,427 tons

Figures in tons from the Ministry of Economy, Trade and Industry Statistics were used for Beverage cans, food cans and general cans.

The weight of 18-liter cans is calculated by multiplying figures in tons from the Ministry of Economy, Trade and Industry Statistics by the (food) ratio announced by the National Federation of 18 Liter Cans Manufacturers Corporative Union.

② The weight of steel cans used for exporting canned food: 1,441 tons

Calculated based on "Japan Exports and Imports" from the Ministry of Finance.

③ The weight of steel cans used for importing canned food: 95,658 tons

Calculated based on "Japan Exports and Imports" from the Ministry of Finance. We assumed that the main types of cans used for manufacturing in Japan were used for food, tomatoes/vegetables and pet foods imported in "air-tight containers" (including not only cans but also other containers), and we estimated the number of cans and calculated the weight of containers by multiplying by the unit can weight.

Exported pet food cans: 15,567 tons (*Calculated based on the data from the Pet Food Manufacturers Association, Japan)

④ Weight of steel cans imported as empty cans: 1,962 tons

Figures in tons from "Japan Exports and Imports" from the Ministry of Finance.

Amount of steel can recycling

Calculation Method

We assumed that 3 months elapses between the sale of steel can goods and the collection of the cans for recycling and we sent a survey form regarding usage amounts of scrap steel cans during the period from April 2022 to March 2023 to a total of 76 manufacturers including furnace manufacturers, blast furnace manufacturers, Pellet manufacturers, and casting manufacturers.

In addition, we estimated, according to the survey data, the amount of steel cans for steelmaking raw materials recycled under the standard other than C Shredder through shredding process of ferrous scrap dealers across the country, and incorporated it into the subject calculation.

We subtracted the weight of aluminum caps for beverage cans included in the scrap steel cans and foreign substances such as ferrous scraps except steel can from this total value.

Calculation Results: 336,098 tons (① - ② - ③)

① Weight of scrap steel cans used: 351,403 tons

② Weight of foreign substances such as aerosol cans, ferrous scrap included in ① above: 2,857 tons

③ Weight of aluminum lids for beverage containers included in ① above: 12,448 tons

The Steel Can Recycling Rate in FY2022

$$\frac{\text{Amount of steel can recycling (336,098 tons)}}{\text{Amount of Steel Can Consumption (362,606 tons)}} = 92.7\%$$

Distribution Diagram of Ferrous Makers (Electric Furnace & Blast Furnace) and Pellet Works

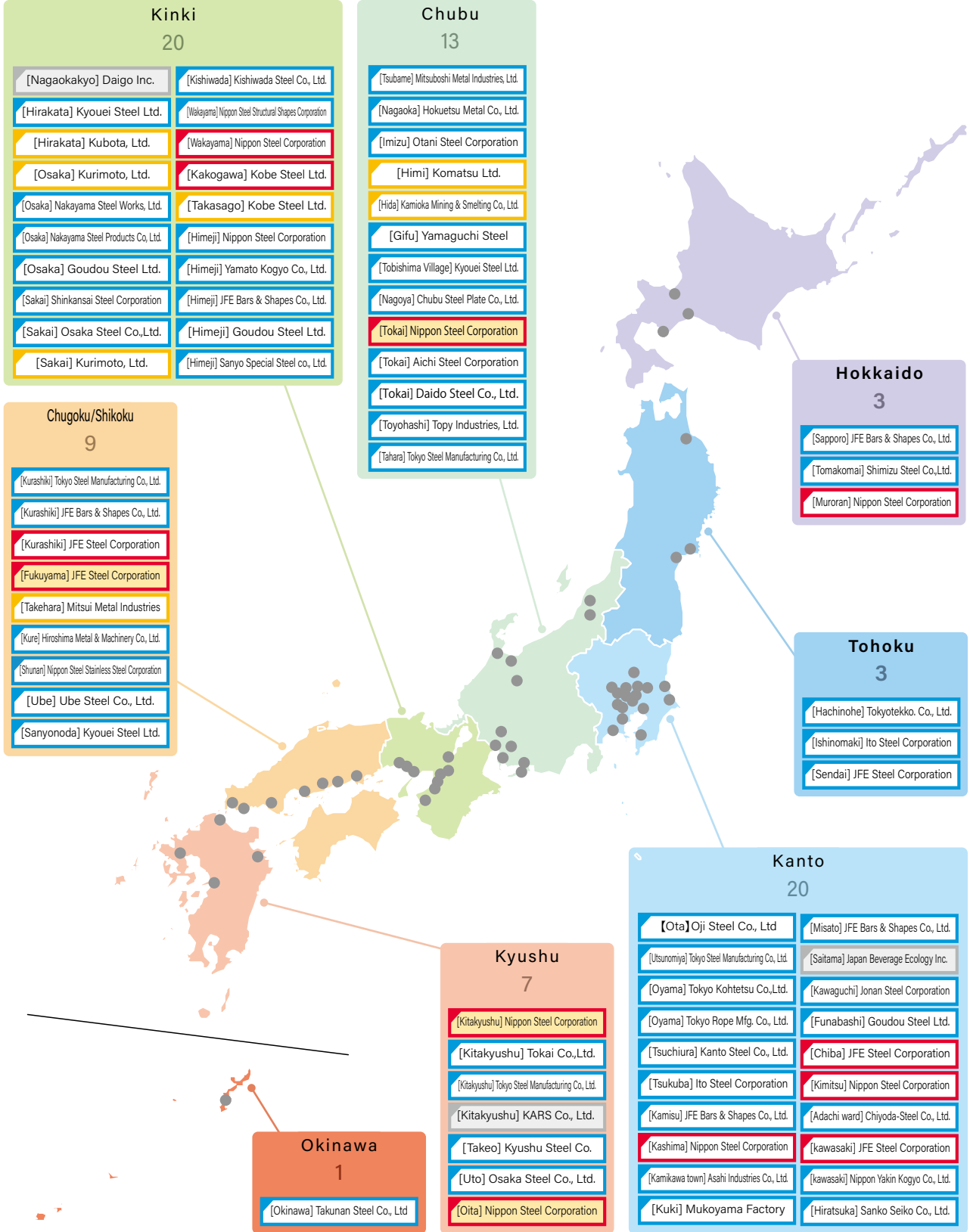
* The research conducted by Japan Steel Can Recycling Association(As of July 2023)

Total in Japan 76

- Blast furnace steel works 8
- Electric furnace steel works .. 54
- Manufacturing plant of steel sheets steel for cans 4
- Casting works, etc. 7
- Pellet works 3

At 4 works (included number of 76 works), steel sheets for cans are produced to make steel cans.

- Steel cans are recycled in most of these steel works and foundries.
- Recycled products are produced in nearest plant in each region to recycle efficiently.



Activities of the Japan Steel Can Recycling Association (October 2022–September 2023)

November

- The 511th anti-littering and beautification campaign was held in Tsu City, Mie Prefecture.
- Kocokara Earth: Published a page explaining steel cans and recycling on a website for young people
- Exhibited at JFE West Japan Festa in Kurashiki
- Exhibited at Handa Fureai Industrial Festival
- Exhibited at Carbon Neutral Fair in Kagoshima



Anti-littering and beautification campaign in Tsu City, Mie Prefecture

January 2023

- Support for the promotion of environmental education in elementary and junior high schools: 29 schools nationwide selected for support and commendation



commendation

May

- Questionnaire on steel can recycling (1. Household sorted collection, 2. Recycling status)

June

- The 512th anti-littering and beautification campaign in Sendai City, Miyagi Prefecture
- Incorporation class: Students from five schools on school excursions visited companies in May and June



Incorporation class

September

October 2022

- Annual Report on Steel Can Recycling 2022
- Held Association Activities Press Briefing Session
- Exhibited at Children's Environmental Festival
- Exhibited at JFE Chiba Festival
- Updated website



Press Briefing



Children's Environmental Festival

December

- Exhibited at Eco Pro 2022

February

- Twitter Quiz Campaign
- Support for Group Collection of Steel Cans: Support for 47 Private Organizations Nationwide

March

- Toei Subway: Strap ads on 4 subway lines (ongoing until February 2024)



Strap ads

July

- Created an Ad to commemorate the 50th anniversary, "Certificate of Appreciation -CAN SYA JYO"

August

- Office relocation
- Visiting lectures for Chuo City Children's Eco Summer Week: Elementary school students learned about steel can recycling
- Recycling tour for teachers (elementary and junior high school teachers in the Tokyo metropolitan area): Saitama Plant of Toyo Seikan Co., Ltd./ Saitama City Sakura Environmental Centre



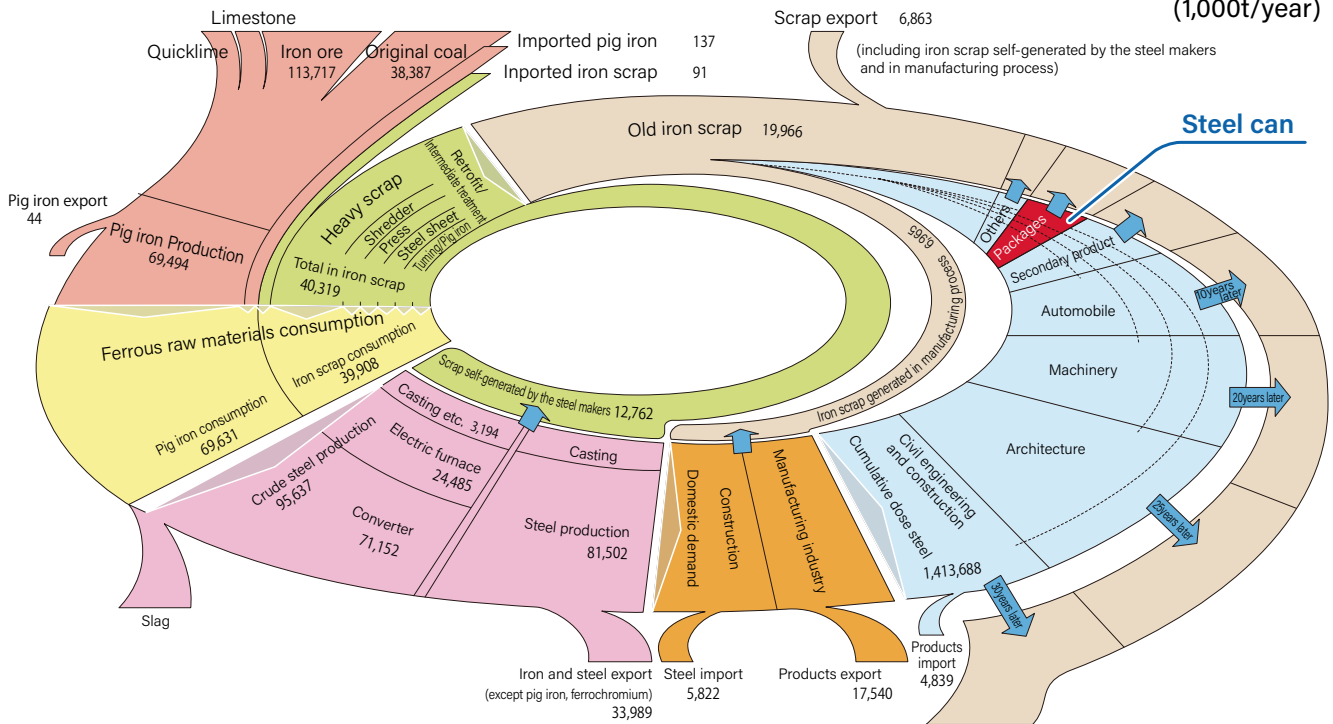
Visiting lectures



Field trip

Japanese Steel Circulation Figure (FY2021)

(1,000t/year)



*1 Cumulative dose steel as of March 2021

*2 Iron and steel import and export are from "Cumulative Dose Steel in FY2021 (estimated)" Figure4, quarterly Tetsugen, vol. 95.

*3 Supply and Demand of pig iron/ferrous scrap are from "Annual Report on Ferrous Raw Materials No.33 (2022)," vol.II-1-Figure 2.

*4 Due to the discontinuation of the Consumption Survey (January 2004), iron ore imports are from the Ministry of Finance's "Trade Statistics." Coking coal is based on coking coal's total consumption from the Japan Iron and Steel Federation's "Steel Statistics Handbook."

Data from the Japan Ferrous Raw Materials Association

Steel cans are excellent in recycling that regenerate many ferrous and steel products



Summary of a Steel Can Recycling Association

Purpose of Foundation

We are a private organization that pursues social contributions through researches about litter prevention measures by used steel cans and steel cans recycle. We mainly conduct recycling measures, beautification, litter prevention measures, and promotional activities.

Foundation

April 17, 1973

Representatives

Chairman.....HIROSE Takashi (Representative Director and Executive Vice President, Nippon Steel Corporation)
 Vice-Chairman.....KURAMOCHI Takashi (Operating Officer Quality Assurance Function, Toyo Seikan Co., Ltd.)
 Vice-Chairman.....OKOSHI Toshiyuki (Senior Managing Director)
 Executive Director...TAKAHASHI Hirofumi

Member corporations (12 companies)

Steel makers.....Nippon Steel Corporation, JFE Steel Corporation, Toyo Kohan Co., Ltd.
 Can manufacturers...Toyo Seikan Co., Ltd., Daiwa Can Company, Hokkai Can., Ltd.
 Distributors.....Mitsui & Co. Steel Ltd., Marubeni-Itochu Steel Inc., Metal One Corporation,
 JFE Shoji Corporation, Nippon Steel Trading Corporation, Tokan Trading Corporation



THANK  YOU
for
recycling

Since 1973

缶謝状

このたび、スチール缶リサイクル協会は、
設立50周年を迎えました。

皆さまが、日々リサイクル活動にご協力いただいたおかげです。
本当に缶謝、缶激しております。

「あき缶処理対策協会」としてスタートしたのが50年前。
今ではスチール缶のリサイクル率は93%に達し、
鉄資源の循環に大きく貢献しています。

この場を借りて、皆さまに深く缶謝申し上げます。
今後も環境、未来のために、
缶謝を忘れず取り組み続けていきます。

JAPAN STEEL CAN RECYCLING ASSOCIATION

 スチール缶リサイクル協会



Annual Report on Steel Can Recycling 2023

Issue: October 2023

Japan Steel Can Recycling Association

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Editor: Dynax Urban Environment Research Institute

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DTP & Designed by ANYOJI Hisanori

Steel cans can be recycled again and again into anything, and are the most eco-friendly container.

