



IV Group Collection of Steel Cans

1. How Many Municipalities Practice Group Collection?

About 80% of Municipalities Practice Group Collection Programs

The rate of municipalities involvement in group collection, all forms included is 79.4%. This would probably be higher if resource collections performed privately were included. Most of municipalities (97.1%) where population is more than 500,000, conduct practice group collection.



People are sorting recyclable wastes

The Rate of Practicing Group Collection

79.4% of municipalities are practicing group collection that around 80% of municipalities conduct practice group collection.

	FY2008		FY2012		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Practice	593	80.7	603	81.9	586	79.4
Do not practice	111	15.1	94	12.8	90	12.2
Unknown	27	3.7	39	5.3	55	7.5
Others	4	0.5	0	0.0	4	0.5
Total	735	100.0	736	100.0	738	100.0

Note: [Do not practice] and [Unknown] include municipalities that have no information because group collection is performed privately.

The Rate of Practicing Group Collection according to the Scale of Population in FY2017

In large cities where more than 500,000 people reside conduct practicing group collection, however the trend indicates that the ratio gets lesser in small cities. Others are municipalities do not involve in practicing group collection but some groups like school or community do it by themselves.

	Practice		Do not practice		Unknown		Others		Total	
	# 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	42	54.5	16	20.8	18	23.4	0	0.0	77	100.0
30,000 ~ 50,000	118	72.4	30	18.4	12	7.4	2	1.2	163	100.0
50,000 ~ 100,000	187	82.7	25	11.1	14	6.2	0	0.0	226	100.0
100,000 ~ 200,000	124	84.4	13	8.8	8	5.4	1	0.7	147	100.0
200,000 ~ 300,000	39	90.7	3	7.0	1	2.3	0	0.0	43	100.0
300,000 ~ 500,000	43	89.6	3	6.3	2	4.2	0	0.0	48	100.0
More than 500,000	33	97.1	0	0.0	0	0.0	1	2.9	34	100.0

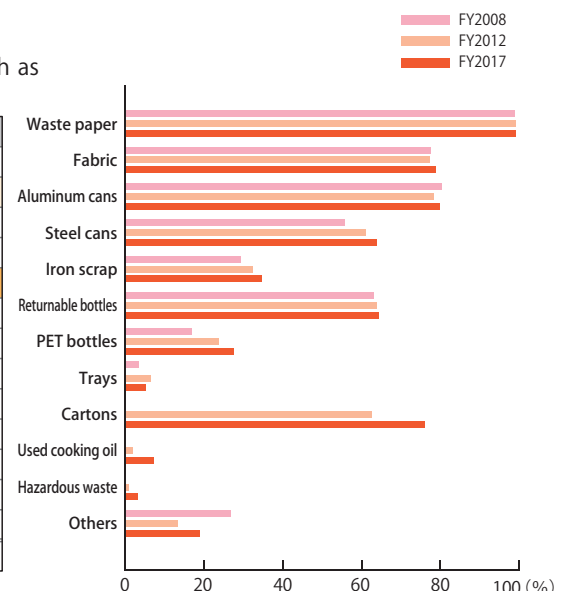
Target Item for Group Collection (multiple answers)

63.7% of municipalities collect steel cans in group collection. Items such as waste paper, cartons are collected in most of municipalities(99.1%).

	FY2008		FY2012		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Waste paper	586	98.8	602	99.8	581	99.1
Fabric	459	77.4	465	77.1	462	78.8
Aluminum cans	475	80.1	471	78.1	468	79.9
Steel cans	329	55.5	368	61.0	373	63.7
Iron scrap	174	29.3	195	32.3	203	34.6
Returnable bottles	373	62.9	385	63.8	376	64.2
PET bottles	100	16.9	143	23.7	161	27.5
Trays	20	3.4	39	6.5	30	5.1
Cartons	-	-	376	62.4	446	76.1
Used cooking oil	-	-	12	2.0	43	7.3
Hazardous waste	-	-	6	1.0	18	3.1
Others	158	26.6	81	13.4	111	18.9
Total	593	100.0	603	100.0	586	100.0

Note1: [Others] indicates plastic containers for beer, mixed paper, plastic items, etc.

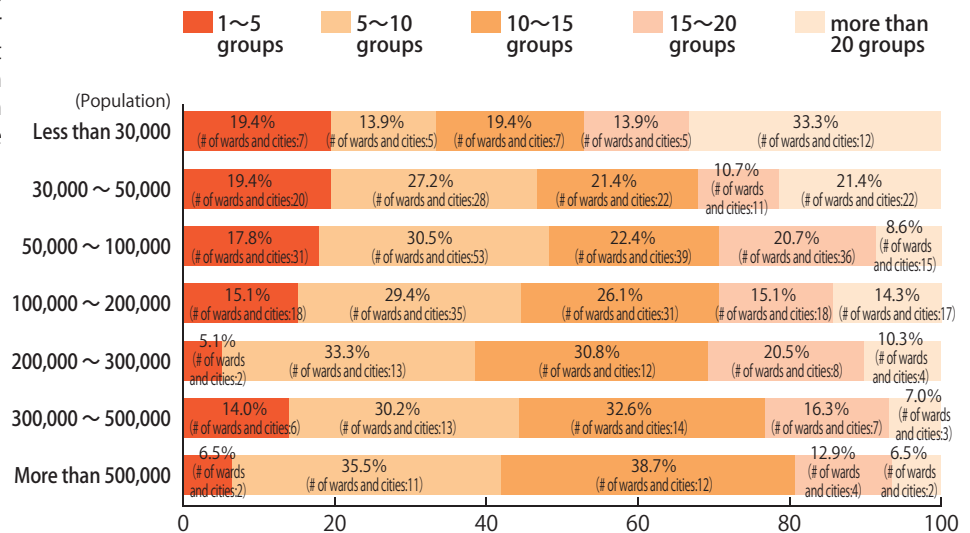
Note2: [Used cooking oil] and [Hazardous waste] are added since FY2011



Number of Groups Practicing Group Collection according to the Scale of Population per 10,000 in FY2017

Average number of groups practicing group collection per 10,000 population is shown that less population region has high rate of participants and high population region has low rate of participants.

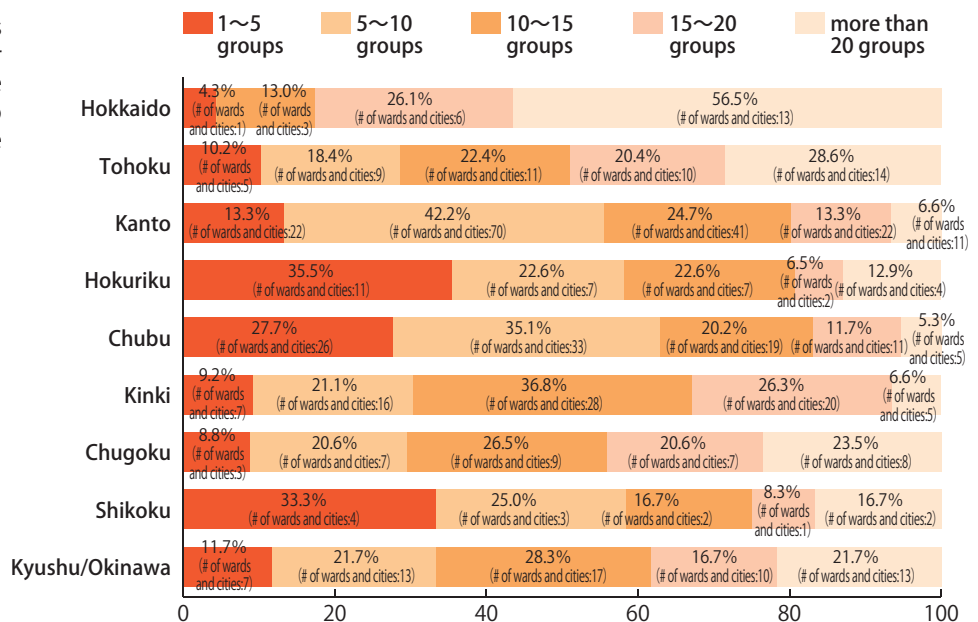
	Average practicing groups
Less than 30,000	18.6
30,000 ~ 50,000	14.2
50,000 ~ 100,000	12.2
100,000 ~ 200,000	12.6
200,000 ~ 300,000	12.5
300,000 ~ 500,000	14.4
More than 500,000	11.5
Total	13.3



Number of Groups Practicing Group Collection per 10,000 by Region in FY2017

The highest rate of groups practicing group collection per 10,000 is 56.5% among "more than 20 groups" in Hokkaido region where the average practicing groups is 25.2%.

	Average practicing groups
Hokkaido	25.2
Tohoku	20.3
Kanto	10.9
Hokuriku	10.0
Chubu	9.5
Kinki	14.0
Chugoku	14.7
Shikoku	10.6
Kyushu/Okinawa	15.6
Total	13.3



Group Collection Support Project

Since the 2008 fiscal year, the Steel Can Recycling Association has been providing support to organizations that conduct group collections every year for the purpose of contributing to the creation of a recycling-oriented society. Quo card (gift card) equivalent to 5,000 yen ~ 25,000 yen per group were given to organizations that are undertaking group collection of steel cans that vitalize the local community, improve environmental awareness of residents, or reduce social cost. In 2017 fiscal year, 53 organizations such as neighborhood associations, senior citizens' associations, children's associations, and PTAs were selected for their support and were given a letter of appreciation. Apart from the above, we also provide support for elementary and junior high schools that are conducting or planning to conduct group collections that include steel cans, for the purpose of environmental learning to educate students who are responsible for the future.

For details, please refer to the association website <http://steelcan.jp/>.





IV Group Collection of Steel Cans

2. How Do Municipalities Participate in Group Collection?

Participating Conditions of Municipalities toward Group Collection (multiple answers)

As the supporting measures by municipalities, 95.9% of them granted are financial incentives for practicing group, followed by PR (50.9%), and appeal to citizens (25.8%), and subsidies to collecting companies (24.6%). Number of grants for practicing groups have increased and number of subsidies to collecting companies have decreased since FY 2008.

	FY2008		FY2012		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Provide grants	553	93.3	569	94.4	562	95.9
PR	242	40.8	289	47.9	298	50.9
Provide subsidies	166	28.0	163	27.0	151	25.8
Appeal to citizens	125	21.1	142	23.5	144	24.6
Provide equipments	47	7.9	44	7.3	47	8.0
Coordination	58	9.8	70	11.6	72	12.3
Others	18	3.0	20	3.3	30	5.1
Unknown	22	3.7	15	2.5	4	0.7
Total	593	100.0	603	100.0	586	100.0

Grants to Practicing Groups for General Recyclables

¥3-5/kg (39.7%) is the highest ratio and second highest ratio is ¥5-7/kg (24.1%), and less than ¥3/kg (19.0%).

	FY2008		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Less than ¥3/kg	113	22.7	99	19.0
¥3~¥5/kg	167	33.6	207	39.7
¥5~¥7/kg	138	27.8	126	24.1
¥7~¥10/kg	58	11.7	65	12.5
More than ¥10/kg	21	4.2	25	4.8
Total	497	100.0	522	100.0

Note: [Total] indicates the number of wards and cities providing financial aids toward groups.

Subsidies to Collecting Companies for General Recyclables

In FY 2008, ¥3-5/kg is shared more than half. The numbers over ¥5/kg are increased.

	FY2008		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Less than ¥3/kg	87	59.6	72	59.5
¥3~¥5/kg	40	27.4	26	21.5
¥5~¥7/kg	11	7.5	10	8.3
¥7~¥10/kg	3	2.1	7	5.8
More than ¥10/kg	5	3.4	6	5.0
Total	146	100.0	121	100.0

Note1: [Total] indicates the number of wards and cities providing financial aids toward companies.

Note2: it does not show the average price since calculation system is varied in each municipality.

Grants for Steel Cans

¥3-5/kg is the highest ratio for 36.3%.

	FY2008		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Less than ¥3/kg	30	15.7	44	17.0
¥3~¥5/kg	60	31.4	94	36.3
¥5~¥7/kg	60	31.4	74	28.6
¥7~¥10/kg	26	13.6	34	13.1
More than ¥10/kg	15	7.9	13	5.0
Total	191	100.0	259	100.0

Note: [Total] indicates the number of wards and cities providing financial aids for steel cans.

Subsidies for Steel Cans

Less than ¥3/kg is the highest ratio for 44.7%.

	FY2008		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Less than ¥3/kg	23	53.5	21	44.7
¥3~¥5/kg	10	23.3	13	27.7
¥5~¥7/kg	4	9.3	6	12.8
¥7~¥10/kg	2	4.7	3	6.4
More than ¥10/kg	4	9.3	4	8.5
Total	43	100.0	47	100.0

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¥7~¥10/kg	2	4.7	3	6.4
More than ¥10/kg	4	9.3	4	8.5
Total	43	100.0	47	100.0

Note: [Total] indicates the number of wards and cities providing financial aids for steel cans.



IV Group Collection of Steel Cans

3. How Do Municipalities Participate in Site Collection?

The site collection is located in city council or public facilities as a complementary role so that some wards and cities play site collection to collect batteries or hazardous waste which is not collected in sorted waste.

Site Collection Carried Out by Municipalities (multiple answers)

The ratio of involvement of site collection in municipalities are around 64.8% which increased 15% from FY 2013. Although number of the municipalities where set out boxes at store, set out boxes at vacant lots and parks, and set out boxes at voluntary places are increased since 2013.

	FY2013		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Set out boxes at public facilities	358	49.4	478	64.8
Set out boxes at stores	88	12.2	100	13.6
Set out boxes at vacant lots and parks	36	5.0	43	5.8
Set out boxes at voluntary places	28	3.9	37	5.0
No Implementation	262	36.2	225	30.5
Total	724	100.0	738	100.0

Target Items for Site Collection Practiced by Municipalities (multiple answers)

“Tokyo 2020 Medal Project” is being carried out to manufacture medals to be used for the 2020 Tokyo Olympic Games from consumer electronics such as used mobile phones. Municipalities are setting up collecting bases of small household appliances with collection boxes distributed to local governments nationwide by the Ministry of the Environment. This is likely to be the cause of the increase.

	FY2013		FY2016		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Newspaper	161	41.5	194	39.2	191	38.0
Waste paper	156	40.2	192	38.8	188	37.4
Cardboard	152	39.2	189	38.2	185	36.8
Fabric	128	33.0	175	35.4	176	35.0
Aluminum cans	118	30.4	150	30.3	151	30.0
Steel cans	110	28.4	139	28.1	139	27.6
Metals	40	10.3	53	10.7	57	11.3
Returnable bottles	96	24.7	119	24.0	122	24.3
PET bottles	166	42.8	193	39.0	191	38.0
Trays	115	29.6	121	24.4	120	23.9
Milk cartons	190	49.0	246	49.7	246	48.9
Small household appliances	132	34.0	277	56.0	315	62.6
Hazardous waste	150	38.7	193	39.0	201	40.0
Others	143	36.9	215	43.4	228	45.3
Unknown	10	2.6	7	1.4	5	1.0
Total	388	100.0	495	100.0	503	100.0

The Rate of Practicing Group Collection by Region

Site collection at public facilities is major in Kanto and Chubu. In Chubu region, set out boxes at public facilities (76.0%), set out boxes at vacant lots and parks (13.2%) are major sites. On the other hand, the municipalities where do not conduct group collection by region are 46.3% in Tohoku and 45.9% in Kyushu/Okinawa.

	Set out boxes at public facilities		Set out boxes at stores around carpark		Set out boxes at vacant lots and parks		Set out boxes at voluntary places		No Implementation	
	# 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(%)
Hokkaido	23	71.9	2	6.3	0	0.0	2	6.3	6	18.8
Tohoku	33	49.3	11	16.4	1	1.5	2	3.0	31	46.3
Kanto	144	74.6	33	17.1	10	5.2	5	2.6	46	23.8
Hokuriku	27	57.4	6	12.8	1	2.1	4	8.5	17	36.2
Chubu	92	76.0	20	16.5	16	13.2	8	6.6	18	14.9
Kinki	56	62.2	13	14.4	5	5.6	3	3.3	31	34.4
Chugoku	30	63.8	5	10.6	4	8.5	2	4.3	17	36.2
Shikoku	20	62.5	1	3.1	0	0.0	5	15.6	9	28.1
Kyushu/Okinawa	53	48.6	9	8.3	6	5.5	6	5.5	50	45.9



IV Site Collection of Steel Cans

4. How Do Municipalities Participate in Store collection?

Few areas cooperate with municipalities and retailers for store collection, however most of retailers make an effort independently as a part of their corporate social responsibility.

Basically, the method of cooperation is PR and some municipalities provide recycling box and collect recyclable waste from store.

Cooperation for store collection (multiple answers)

Lots of the municipalities do not have relationship with retailers (62.5%). 20.1% of municipalities conduct PR.

	FY2013		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
No Cooperation	438	60.4	461	62.5
Collecting recyclable waste from retailers	106	14.6	136	18.4
PR	106	14.6	148	20.1
Providing a recycling box	65	9.0	79	10.7
Set up a recognition system	60	8.3	70	9.5
Set up a forum for discussion with retailers	28	3.9	38	5.1
Set up a forum for discussion with public and retailers	18	2.5	22	3.0
Total	725	100.0	738	100.0

Understanding of collection amount (multiple answers)

In case retailers manage store collection itself, 44.2% of municipalities know only under taken amount, and 43.8% of municipalities do not know what items they collect or how much they collect.

	FY2013		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Known only undertaken amount	97	44.5	121	44.2
Informed by a retailer	19	8.7	33	12.0
No Grasp	95	43.6	120	43.8
Unknown	11	5.0	7	2.6
Total	218	100.0	274	100.0

The Rate of Municipalities Collection Resource Waste from Retailers (multiple answers)

Most of the items collected by local governments are PET bottles (44.1%), but they are decreasing compared to 2013 fiscal year. Meanwhile, 33.8% of municipalities collect small household appliances, which has been increasing since 2013.

	FY2013		FY2017	
	# of wards and cities	rate(%)	# of wards and cities	rate(%)
Newspaper	0	0.0	5	3.7
Waste paper	0	0.0	6	4.4
Cardboard	0	0.0	4	2.9
Fabric	0	0.0	7	5.1
Aluminum cans	4	3.8	9	6.6
Steel cans	3	2.8	7	5.1
Metals	1	0.9	3	2.2
Returnable bottles	3	2.8	8	5.9
PET bottles	53	50.0	60	44.1
Trays	24	22.6	26	19.1
Milk cartons	24	22.6	28	20.6
Small household appliances	13	12.3	46	33.8
Hazardous waste	23	21.7	27	19.9
Others	20	18.9	31	22.8
Unknown	11	10.4	4	2.9
Total	106	100.0	136	100.0



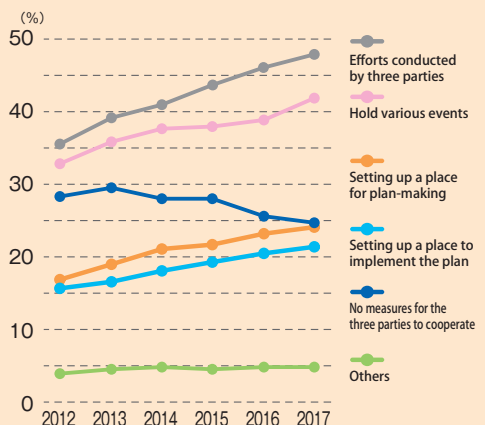
Triple Collaboration Among Municipalities, Citizens, and the Businesses in the Field of Environment.

Recycling administration or not, the word "Tripartite Collaboration" is often heard recently. This is the questionnaire about how many collaborative measures are implemented at the municipality level.

Tripartite Collaboration Measures (multiple answers)

There are many municipalities implementing policies through cooperation among the three parties, which is an increasing trend since the 2012 fiscal year. The most frequent measures implemented are the three-party collaborative activities such as cleaning and waste reduction activities (48.0%), followed by events such as environmental fairs (42.0%), and setting up a place for planning (21.4%). Others include "agreement to reduce plastic shopping bags," such as promoting bringing their own shopping bags and charging for plastic shopping bags.

	FY2017	
	# of wards and cities	rate(%)
Efforts conducted by three parties	354	48.0
Hold various events	310	42.0
Setting up a place for plan-making	177	24.0
Setting up a place to implement the plan	158	21.4
No measures for the three parties to cooperate	182	24.7
Others	34	4.6
Total	738	100.0



Report on the Proportion of Steel Cans Included in Non-Combustible Waste

In the steel can recycling annual report, we calculated the amount of steel cans recycled from separated collection and the amount of steel cans recovered from non-combustible waste based on the results of the questionnaire survey for local governments. However, there was a large variance in the amount of steel cans recovered from non-combustible waste and the questionnaire responses. Therefore, in order to examine the percentage of steel cans in the amount of iron collected from non-combustible waste from FY2016 to 2017, we conducted a research on the actual situation. Here are the results.

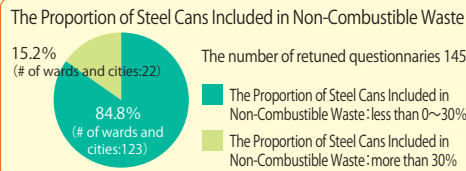
Questionnaire survey

Research Method

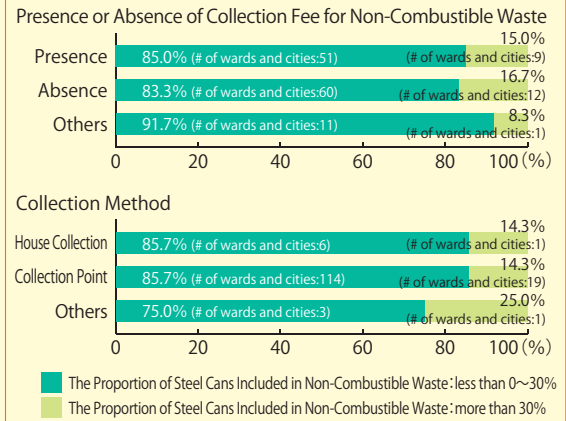
Research subject: The cities all over Japan and the 23 wards in Tokyo (813 Wards and cities)
 Research period: From June to July 2018 (Attached in the Questionnaires on the Recycling of Steel Cans.)
 The number of returned questionnaires: 739 Wards/ Cities (The return rate: 90.8%)

Investigation result

When asked the percentage of steel cans contained in irons recovered from non-combustible waste, 80% or more of the municipalities responded that there were less than 30%, while more than 10% of the municipalities answered over 30%. There were a few municipalities who responded that they contained 80 to 90%. For that reason, we analyzed the factors to see what the difference between municipalities with a high contamination rate of steel cans are compared to municipalities with low contamination rate.



We analyzed the relationship between frequency of collection, collection method, presence or absence of collection fee for non-combustible waste, and the acceptance of business non-combustible waste with the fluctuation of contamination ratio of steel cans, but there was no significant difference. It was hypothesized that collection method (house collection or collection point) and the presence or absence of collection fee would have an effect, but it was difficult to prove the relevance to the fluctuation from the result of the questionnaire.



Composition Study

Research Method

Research on the Actual Situation: The research was conducted for six municipalities with different styles of collection. One is "collection fee exists or free for both non-combustible and recyclable waste" and the other is "collection fee is charged for non-combustible waste but not for the recyclable waste."

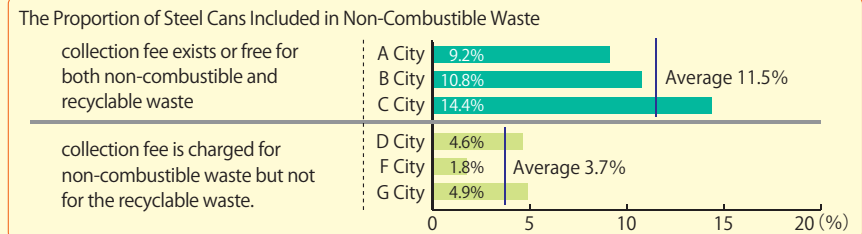
Investigation result

Assuming again that the contamination rate of steel cans will fluctuate due to differences in collection fee, following six municipalities were divided in to two categories: "collection fee exists or free for both non-combustible and recyclable waste" and "collection fee is charged for non-combustible waste but not for the recyclable waste." The composition of the non-combustible waste was analyzed.

We sampled 500kg to 1 ton of non-combustible waste of each municipality three times for the amount of steel can contained in it. We estimated the average annual amount of steel cans included in non-combustible waste based on the following data.

- ① Amount of non-combustible waste collected
- ② Amount of iron collected in non-combustible waste
- ③ Amount of steel can included in the non-combustible waste sample on the day of the non-combustible waste composition survey
- ④ Amount of steel cans collected for recycled collection (analysis of seasonal variation)

collection fee exists or free for both non-combustible and recyclable waste	A City, B City, C City
collection fee is charged for non-combustible waste but not for the recyclable waste.	D City, E City, F City



As a result of the estimation, the percentage of steel cans included in the amount of recovered iron in non-combustible waste was 3.7% on average for municipalities that charge a collecting fee for non-combustible waste but not for recyclable waste. Municipalities that does not charge (or charge) for both non-combustible and recyclable waste had an average of 11.5%.

Summary

As a result of the composition survey, a significant difference was found in the percentage of steel cans included in non-combustible waste as a result of a difference in the collection fee for non-combustible and recyclable waste. Therefore, by charging for collecting non-combustible waste and making the collection of recyclable waste (steel cans) free, that is using economic incentives, it would lead to the improvement in the degree of separation by the people who are throwing the garbage away.

There was no significant difference in the correlation of fluctuation of the steel can contamination rate in the questionnaire results. It is thought that the answers to the questionnaire reflected the personal experience of the person in charge, and thus it seems the percentage of steel cans included is considered to be of little interest to the them.