

# Paper Carton Collection Rate in Fiscal 2011



Paper carton collection rate in fiscal 2011 was 42.9%.

The status of recycling in 2011 has been clarified by the "Basic survey on the present status and trends of beverage paper carton recycling", which has been conducted since 1995 to collect information on recycling of paper cartons and provide information to relevant organizations. The latest survey was carried out between June and October 2012. Shipment volumes of paper cartons in fiscal 2011 increased because of the extreme heat and the Tohoku disaster, but the collection rate did not increase. Overall, the paper carton collection rate was 42.9% (a reduction of 0.7% over the previous year). One of the reasons behind the decrease in the collection volume was the Great East Japan Earthquake. It has reduced recycling of paper wastes (industrial paper waste) that are produced along with production of paper cartons. Primarily, it was due to the stagnation of paper carton collection activities in the affected and nearby areas.

※During the fiscal 2011 survey, we conducted a questionnaire-based survey of nine paper carton manufacturers, 313 beverage manufacturers, 1,728 Japanese municipalities, 2,130 elementary schools, 983 supermarkets, six citizen's groups and welfare work places, and 33 recycled paper manufacturers. In addition, we interviewed staff members at four locations. Note that basic research could not be carried out in some areas due to the large earthquake that struck northern Japan in March 2011.  
 ※Faulty paper cartons and base paper (raw paper) that have been generated by the paper carton manufacturing and beverage filling processes at beverage plants, and edge trims created during paper carton manufacturing are called "paper wastes" or "industrial paper wastes".  
 ※Paper cartons that are discarded after their contents are used at stores, business facilities, schools and households are called "used paper".

## Paper Carton Collection Rate in Fiscal 2011

**Paper carton collection rate**  
(Including industrial paper wastes and used paper)

**42.9%**

(43.6% in fiscal 2010)

= Collection volume of domestic paper cartons ÷ Amount of base paper (raw paper) used  
 =105.7 thousand tons/246.6 thousand tons

**Used paper carton collection rate**  
(Used paper cartons)

**32.5%**

(33.0% in fiscal 2010)

= Used paper carton collection volume ÷ Shipping volume of paper cartons from beverage manufacturers  
 =67.7 thousand tons/208.3 thousand tons

Paper carton transaction price of municipalities have increased two years consecutively.

As paper fibers are long and strong, used paper cartons are considered to be raw materials that contain good quality recycled paper and are traded at a relatively expensive price.

However, the transaction price of paper cartons differs by municipality, and it is difficult to calculate a standard price. Here, we have calculated the price of paper cartons when they are traded in municipalities without any additional conditions besides the transaction price. We divided the prices into two types: the "delivery price" and the "carry-in price". We also calculated the cost for group collection of paper cartons.

The average transaction price in fiscal 2011, as a whole, continued to increase from the previous year. Sales prices to used paper recyclers and direct delivery wholesalers of used paper, which are the primary trading partners for municipality collection, have increased except for the delivery price paid to paper recyclers.

## Average transaction price of used paper cartons

Fiscal year		2008	2009	2010	2011	
Municipality collection	Used paper recycler	Delivery price	8.5	6.2	7.5	7.1
		Carry-in price	7.8	5.4	6.9	7.5
	Direct delivery wholesalers of used paper	Delivery price	9.3	7.0	8.9	9.4
		Carry-in price	9.4	7.0	8.0	8.7
	Paper manufacturer	Delivery price	11.9	8.8	12.3	10.8
		Carry-in price	9.7	8.0	10.2	10.3
Voluntary group collection	(Unknown traders)	Delivery price	5.6	4.3	5.2	5.2
		Carry-in price	5.8	6.9	5.1	5.9

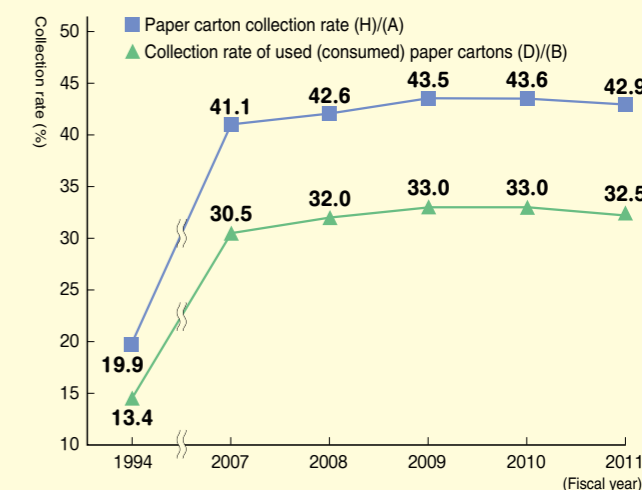
(Yen / kg)

Paper carton collection volume in fiscal 2011 was 105.7 thousand tons.

As shown in the figure to the right, the paper carton collection rate had dropped for the first time since the start of the survey. The following table presents details of the collection volume and rate.

The collection volume of domestic paper cartons in fiscal 2011 was 105.7 thousand tons. This was a reduction of 1.9 thousand tons (1.8%) from the previous year. Although the collection volume of used paper cartons dropped by 0.7 thousand tons (1.0%), the volume from the voluntary group collection increased 0.4 thousand tons (4.2%). The collection volume of 105.7 thousand tons is approximately equivalent to the amount of paper that could be used to produce 600 million toilet rolls.

## Trends in paper carton collection rate



## Trends in key data (1,000 tons)

Category	Fiscal 1994	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2010	Fiscal 2011	Percent increase over previous year
<b>Used amount of paper cartons for beverages (A)</b>	216.0	255.9	251.0	244.3	246.8	<b>246.6</b>	<b>0.0%</b>
Industrial paper wastes of paper carton manufacturers	16.5	36.6	37.1	35.9	37.3	<b>35.1</b>	<b>-6.0%</b>
Industrial paper wastes of beverage manufacturers	-	3.6	3.0	2.6	2.1	<b>3.3</b>	<b>56.4%</b>
<b>Shipping volume of paper cartons for beverages from beverage manufacturers (B)</b>	197.9	215.7	210.9	205.8	207.3	<b>208.3</b>	<b>0.5%</b>
<b>Residential homes (C)</b>	168.7	194.1	189.3	184.3	184.6	<b>184.8</b>	<b>0.1%</b>
Vending machines (business)	18.5	9.9	9.8	9.7	10.8	<b>11.7</b>	<b>8.1%</b>
Milk for school lunches (business)	10.7	11.7	11.8	11.8	11.8	<b>11.8</b>	<b>-0.1%</b>
<b>Collection volume of used (consumed) paper cartons (D) = (E) + (F)</b>	26.5	65.8	67.4	68.0	68.4	<b>67.7</b>	<b>-1.0%</b>
<b>Collection volume from residential homes (E)</b>	25.9	55.6	56.7	57.3	56.6	<b>56.2</b>	<b>-0.7%</b>
Collection volume from stores	13.8	31.8	33.4	34.5	33.6	<b>33.0</b>	<b>-1.8%</b>
Municipality collection volume	4.3	14.4	14.4	13.9	14.1	<b>13.9</b>	<b>-1.4%</b>
Voluntary group collection volume	7.8	9.4	8.9	8.9	8.9	<b>9.3</b>	<b>4.2%</b>
<b>Collection volume from business organizations (F)</b>	0.6	10.2	10.7	10.7	11.8	<b>11.5</b>	<b>-2.4%</b>
Collection volume of milk cartons from schools	0.6	8.8	9.3	9.3	9.4	<b>9.2</b>	<b>-2.3%</b>
Vending machines, restaurants and others	-	1.3	1.4	1.4	2.3	<b>2.3</b>	<b>-2.8%</b>
<b>Collection volume of industrial paper wastes and used paper cartons (G)</b>	16.5	39.4	39.7	38.2	39.3	<b>38.1</b>	<b>-3.0%</b>
Collection volume by paper carton manufacturers	16.5	36.6	37.1	35.9	37.3	<b>35.1</b>	<b>-6.0%</b>
Collection volume by beverage manufacturers	-	2.9	2.6	2.3	1.9	<b>3.0</b>	<b>55.0%</b>
<b>Collection volume of domestic paper cartons (H) = (D) + (G)</b>	43.0	105.2	107.1	106.2	107.6	<b>105.7</b>	<b>-1.8%</b>
Import volume of used paper cartons	-	12.3	13.9	10.9	12.7	<b>14.0</b>	<b>10.2%</b>
<b>Total volume of accepted paper cartons</b>	43.0	117.5	120.9	117.1	120.3	<b>119.7</b>	<b>-0.5%</b>
<b>Recycling volume of paper cartons</b>	30.1	89.2	93.8	93.2	96.3	<b>95.7</b>	<b>-0.7%</b>
<b>Paper carton collection rate (H)/(A)</b>	19.9%	41.1%	42.6%	43.5%	43.6%	<b>42.9%</b>	<b>-0.7point</b>
<b>Collection rate of used (consumed) paper cartons (D)/(B)</b>	13.4%	30.5%	32.0%	33.0%	33.0%	<b>32.5%</b>	<b>-0.5point</b>
<b>Collection rate of used paper cartons in residential homes (E)/(C)</b>	15.4%	28.7%	30.0%	31.1%	30.6%	<b>30.4%</b>	<b>-0.2point</b>

※ Recycling volume of paper cartons = Total volume of accepted paper cartons X Yield rate The yield rate after fiscal 2001 is computed based on the questionnaire survey.  
 ※ Industrial paper wastes for fiscal 1994 include aluminum laminated paper cartons.  
 ※ Collection volume of paper cartons from business organizations is calculated from fiscal 2004 based on the questionnaire survey.  
 ※ A review of the weight of milk cartons for schools conducted in fiscal 2005 has affected the value of some items.  
 ※ Some of the total values may include errors due to rounding to the nearest 100 tons. Also, due to the same reason, some figures may not add up if you calculate the collection rate and percentage over the previous year's figures using the values in the table.

# Paper Carton Material Flow in Fiscal 2011

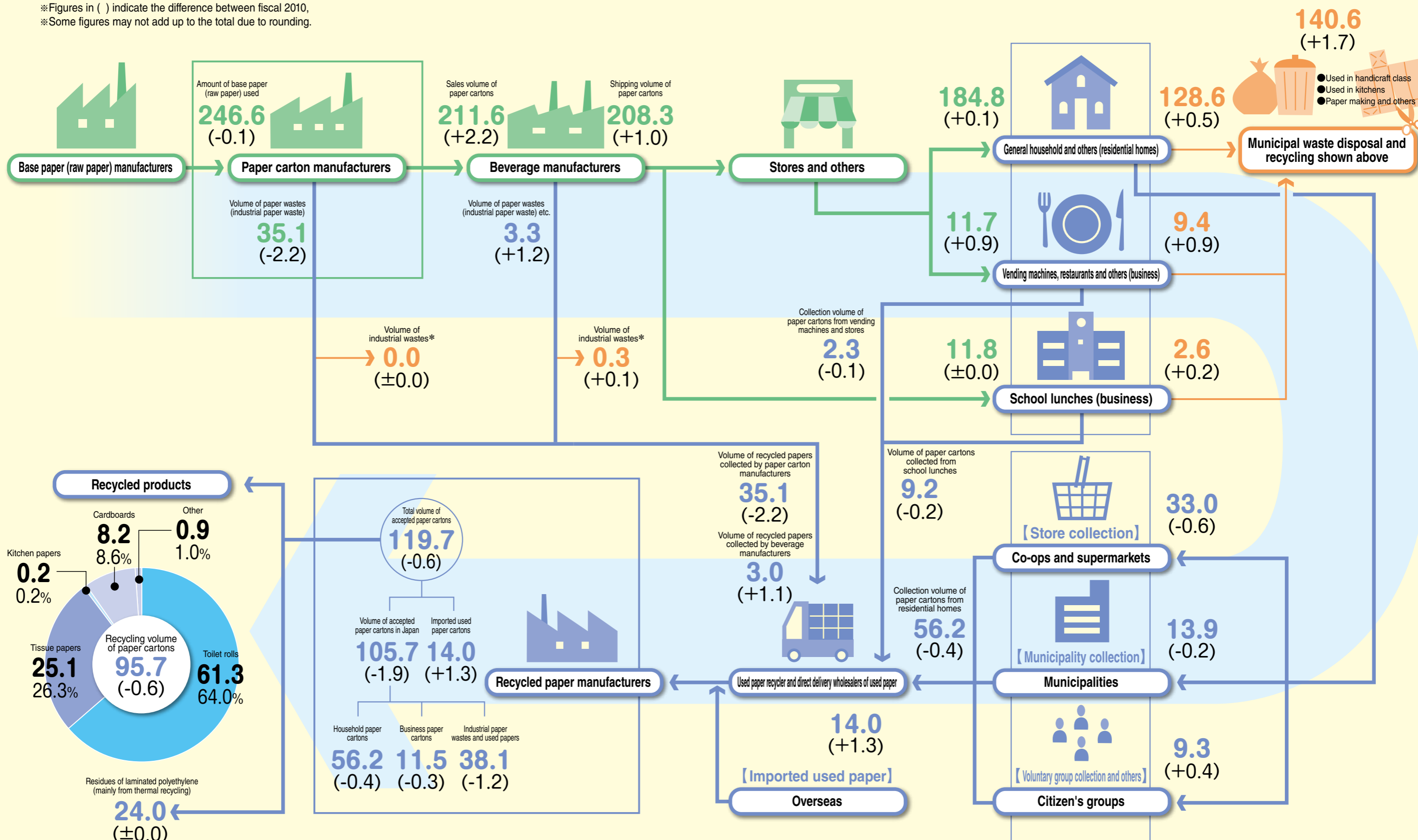


The following shows the overall state of paper carton recycling in fiscal 2011.

※Unit: 1,000 tons

※Figures in ( ) indicate the difference between fiscal 2010,

※Some figures may not add up to the total due to rounding.



\* The volume of industrial wastes includes that from thermal recycling.