

# Recommendation Paper on the Implementation of a Plastic Bag Charge in Singapore



## Did you know...

About 2.5 billion plastic shopping bags are used every year. That's about 2,500 bags per family per year.

Plastic bags are made of oil, a finite resource. Use of plastic bags can help conserve Earth's resources.

## Let's do our part

Excessive use of plastic bags depletes natural resources and creates waste.

Let's do our part to **reduce** the **wastage** of plastic bags!

- Switch to **reusable bags** and remember to bring them along when shopping.
- Say **'NO'** to plastic bags when buying only a few small items and when the items are packaged with handles (eg, toilet rolls, rice bags, etc.).
- Take only sufficient plastic bags for **reuse** (eg, bagging refuse), don't throw them away as trash.



For more information on recycling, please refer to: [www.nea.gov.sg/recycling](http://www.nea.gov.sg/recycling)



*Bring Your Own Bags for shopping*

## Introduction

Zero Waste SG is a non-profit organisation dedicated to help Singapore accelerate the shift towards zero waste and the circular economy. In June 2016, we published our Position Paper on the Reduction of Single-Use Plastic Disposables in Singapore, to urge the government and businesses to develop concrete plans and take bold actions to reduce the consumption of single-use plastic disposables.

As a follow-up to our Position Paper and to focus specifically on the problem of excessive usage and wastage of single-use plastic bags in Singapore, Zero Waste SG recently conducted a public survey on a plastic bag charge. The survey would help us to understand the opinion of supermarket shoppers on a charge for plastic bags and whether they are ready for a plastic bag charge in the future.

This recommendation paper shows the results of the survey and recommends that the government introduce a mandatory plastic bag charge scheme to reduce the excessive usage and wastage of single-use plastic bags and to encourage people to bring their own reusable bags.

## Current Situation

Singaporeans use about 2.5 billion plastic bags a year for bagging their purchases,<sup>1</sup> which is equivalent to each person using about 452 plastic bags a year or 1.2 bags every day. Although most households reuse the plastic bags from supermarkets to bag their waste before throwing it into the rubbish chutes, the problem is that we still have excessive usage and wastage of plastic bags.

We take more plastic bags than we need for bagging our waste, and plastic bags which are not suitable for bagging waste are thrown away.

---

<sup>1</sup> State of the Environment 2008 Report Singapore, Land, Chapter 4, Ministry of Environment and Water Resources

This problem is evident from a position paper published in 2013 by the Singapore Environment Council (SEC),<sup>2</sup> which indicated that:

- about 25% of Singaporeans obtained more than 10 bags a week from various sources (4% even obtained more than 20 bags a week);
- about 60% of Singaporeans have more than 20 plastic bags currently stored at home (30% even had more than 40 bags stored at home); and
- about 6% of Singaporeans throw away the plastic bags that they had brought home without reusing them.

Excessive usage and wastage of plastic bags contributes to the wasting of non-renewable oil resources, generation of carbon dioxide emissions from incineration, littering of bags which could become breeding grounds for mosquitoes, and posing harm to the marine lives when the bags ends up in the sea.

Previous voluntary national campaigns to reduce excessive usage and wastage of plastic bags such as the “Why waste plastic bags? Choose reusable bags!” campaign by the National Environment Agency (NEA) in 2006 and the “Bring Your Own Bag Day” campaign from 2007 to 2010 by NEA and SEC, helped to increase awareness on the problem and encourage more people to use their reusable bags. However, the campaigns have not been sustained over time, and with the voluntary nature of the campaigns and low public education, have not resulted in much success.

On the other hand, mandatory efforts by IKEA Singapore to charge 5 cents for plastic bags in 2007 (and to stop the sale of plastic bags completely since 2013), and by the National University of Singapore’s Students Against Violation of the Earth (NUS SAVE) club to implement a 10-cent plastic bag tax since 2010, have resulted in much success. IKEA Singapore saw a reduction of 5.34 million plastic bags in the first year while there has been an 86% reduction in plastic bag use on the NUS campus.<sup>3</sup>

---

<sup>2</sup> Identifying and mitigating the wastage and inefficient use of plastic bags in Singapore, Singapore Environment Council, 2013

<sup>3</sup> Plastic Bags in Singapore: A Critical Examination of Issues in Sustainability by Marra Lin Teasdale-Hensby and Lye Lin-Heng, Sustainability Matters: Environmental and Climate Changes in the Asia-Pacific, World Scientific Publishing Co. Pte. Ltd., 2015

Another effort to reduce excessive usage and wastage of plastic bags is through an incentive scheme. NTUC FairPrice introduced the Green Rewards scheme to reward customers who bring their own reusable bags with a 10-cent rebate for purchases above \$10. This has resulted in 6 million bags saved in 2010 and 10 million bags saved in 2015, with a 10% decrease in usage of plastic bags year-on-year.<sup>4</sup>

The rewards scheme costs FairPrice about \$500,000 every year,<sup>5</sup> so although an incentive scheme could result in substantial reduction of plastic bags, it might not be financially sustainable for supermarkets and retailers in the long run. The rebate might have to be subsidised by the government, or supported by companies and non-profit organisations with sufficient financial resources.

Based on the success of mandatory plastic bag charge schemes in the local context at IKEA Singapore and NUS, and in other countries such as Hong Kong, England and Ireland (with 90% reduction in bags), and in contrast to the unsuccessful voluntary campaigns over the past 10 years by NEA and SEC, we believe that a mandatory plastic bag charge scheme is a better policy to reduce excessive usage and wastage of plastic bags.

We have already built awareness and introduced voluntary measures over the past 10 years with limited success. It is time to go a step further and introduce a policy that works.

## **Survey Results**

Our survey was done by a team of volunteers and paid interviewers from July to September 2016. They conducted face-to-face interviews with shoppers who have just exited the supermarkets. The number of shoppers surveyed at the four major supermarkets, including NTUC FairPrice, Cold Storage, Sheng Siong and Giant, and the supermarket locations are shown in Table 1.

Based on Singapore's population of 5,535,000 in 2015, and a 95% confidence level and 5% confidence interval, the sample size required is 385. The total number of shoppers who were surveyed is 457.

---

<sup>4</sup> NTUC FairPrice Sustainability Report FY2105, NTUC FairPrice Co-operative Ltd

<sup>5</sup> NTUC FairPrice Sustainability Report FY2105, NTUC FairPrice Co-operative Ltd

<b>Supermarket Name</b>	<b>Supermarket Locations</b>	<b>Number of Shoppers Surveyed</b>	<b>%</b>
NTUC FairPrice	Ang Mo Kio, Bedok, Bishan, Bukit Batok, Bukit Panjang, Cambridge Road, Changi Business Park, Hougang, Jurong Point, Kallang Bahru, Kallang Wave, Potong Pasir, Punggol, Simei, Serangoon, Sembawang, Teck Whye, Thomson Plaza, Woodlands, and Yishun	194	42.5
Giant	Beauty World Centre, Bukit Panjang, Sembawang, Simpang Bedok, Tampines, and Ubi Avenue	162	35.4
Cold Storage	Bedok, Bugis Junction, Holland Village, Great World City, Marine Parade, Novena, Plaza Singapura, Tanglin, and West Mall	68	14.9
Sheng Siong	Boon Keng, Clementi, Jurong West, Geylang, and Toa Payoh	33	7.2

*Table 1: Shoppers surveyed at different supermarkets and locations*

The profile of the shoppers surveyed, including gender, age and type of housing, are shown in Tables 2-4.

<b>Gender</b>	<b>Number of Shoppers Surveyed</b>	<b>%</b>
Female	252	55.1
Male	205	44.9

*Table 2: Gender of shoppers*

<b>Age (years)</b>	<b>Number of Shoppers Surveyed</b>	<b>%</b>
10-14	8	1.8
15-19	51	11.2
20-24	57	12.5
25-29	64	14.0
30-34	43	9.4
35-39	52	11.4
40-44	36	7.9
45-49	45	9.8
50-54	42	9.2
55-59	21	4.6
60-64	18	3.9
65-69	8	1.8
70-74	5	1.1
75-79	4	0.9
80-84	1	0.2
85-89	2	0.4

*Table 3: Age of shoppers*

<b>Type of Housing</b>	<b>Number of Shoppers Surveyed</b>	<b>%</b>
HDB 1 or 2-Room Flat	14	3.1
HDB 3-Room Flat	47	10.3
HDB 4-Room Flat	119	26.0
HDB 5-Room or Executive Flat	155	33.9
Condominium or Private Apartment	93	20.4
Landed Property	29	6.3

*Table 4: Type of housing of shoppers*

During the survey, interviewers observed and noted down what the shoppers surveyed were using to store their purchased items after exit from the supermarkets (see Figure 1).

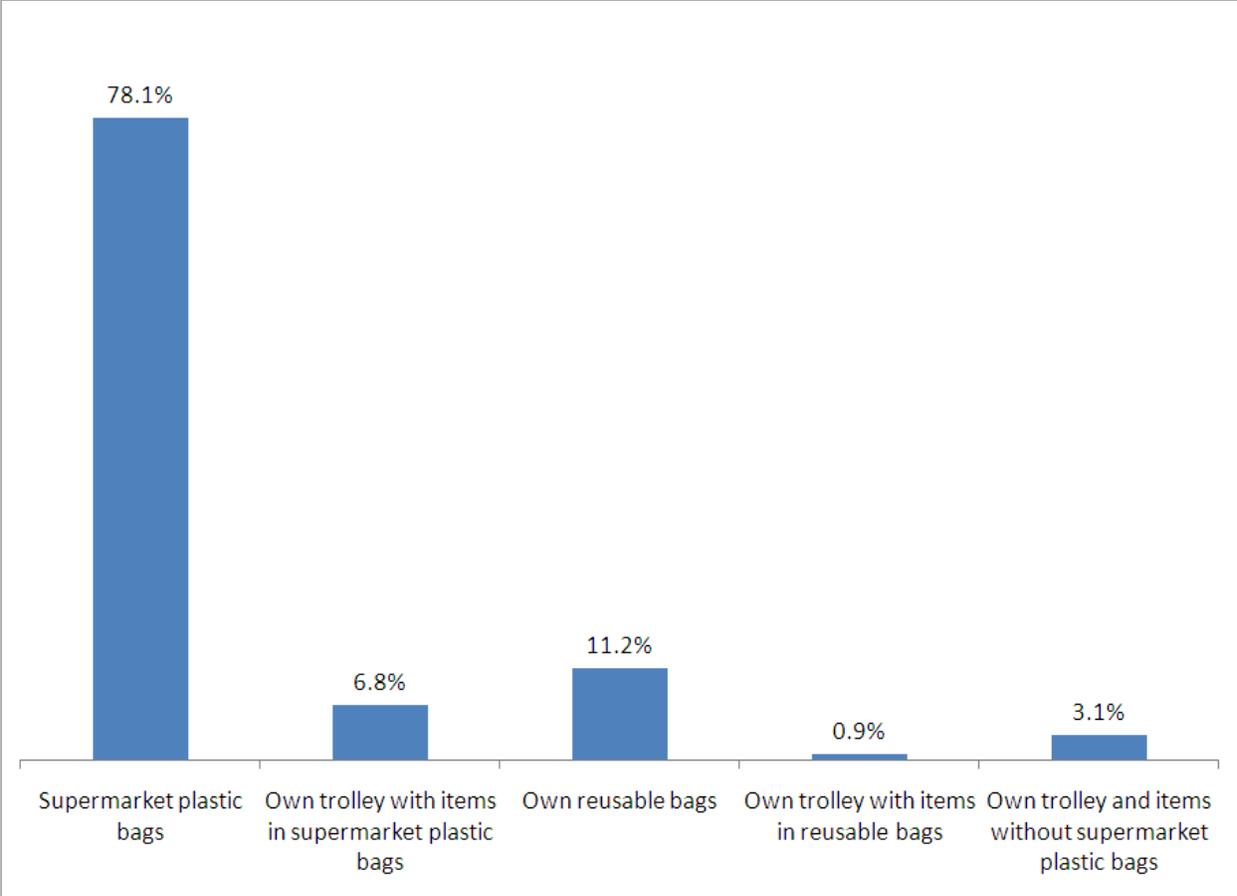
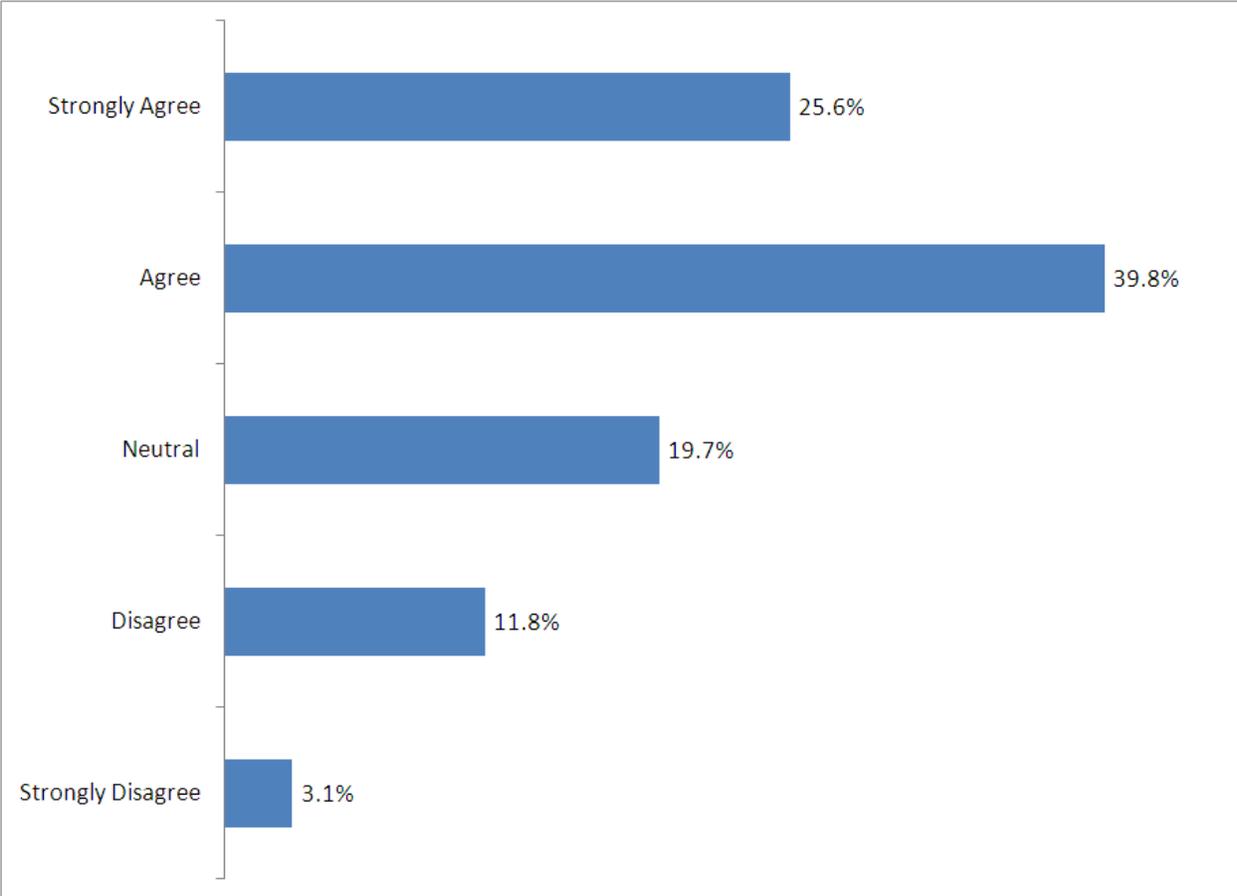


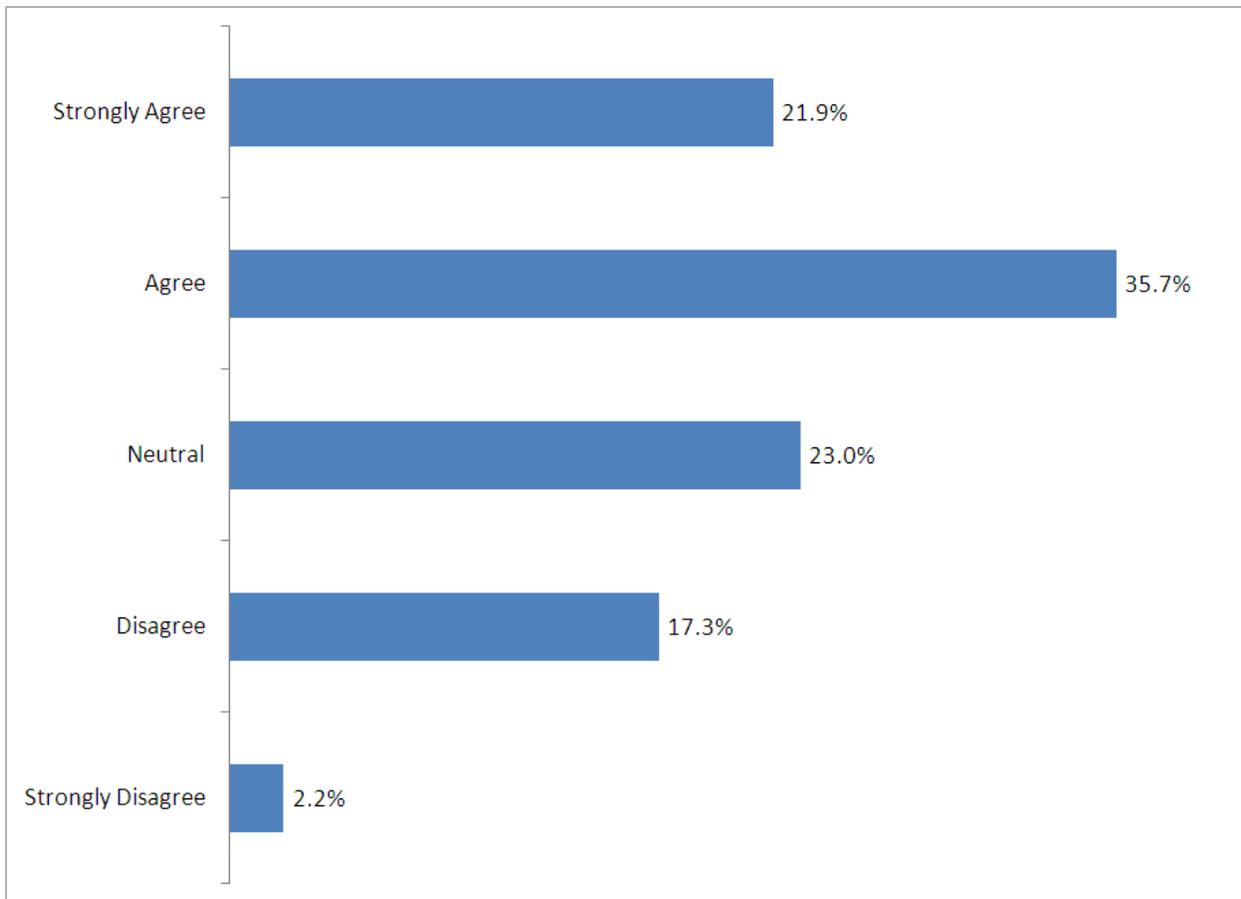
Figure 1: What is customer using to store purchased items after exit from supermarket?

Figure 1 shows that the majority of shoppers surveyed (about 85%) were taking and using plastic bags from the supermarkets for their purchased items. Only about 15% of shoppers were using their own reusable bags or trolleys without taking plastic bags. This result highlighted the need to encourage more shoppers to reduce the use of plastic bags and to use their own reusable bags.

The questions and responses by the shoppers for the survey are shown in Figures 2 to 6.



*Figure 2: If there is a 10 cents charge for each plastic bag from the supermarket, I would reduce the number of plastic bags that I take.*



*Figure 3: If there is a 10 cents charge for each plastic bag from the supermarket, I would bring my own reusable bags.*

Figures 2 and 3 show that the majority of the shoppers surveyed strongly agree or agree that they would reduce the number of plastic bags that they take from the supermarkets (65%), or would bring their own reusable bags (58%), if there is a 10 cents charge for each plastic bag from the supermarkets. This is a positive indication of the willingness of majority of the shoppers to change if there is a plastic bag charge.

About 20-23% of shoppers indicated a neutral response, which means that there is still an opportunity to engage and encourage them to take less plastic bags or bring their reusable bags. To help this group of shoppers change, there is a need to have measures to increase education or to make it easier for them to use their own bags.

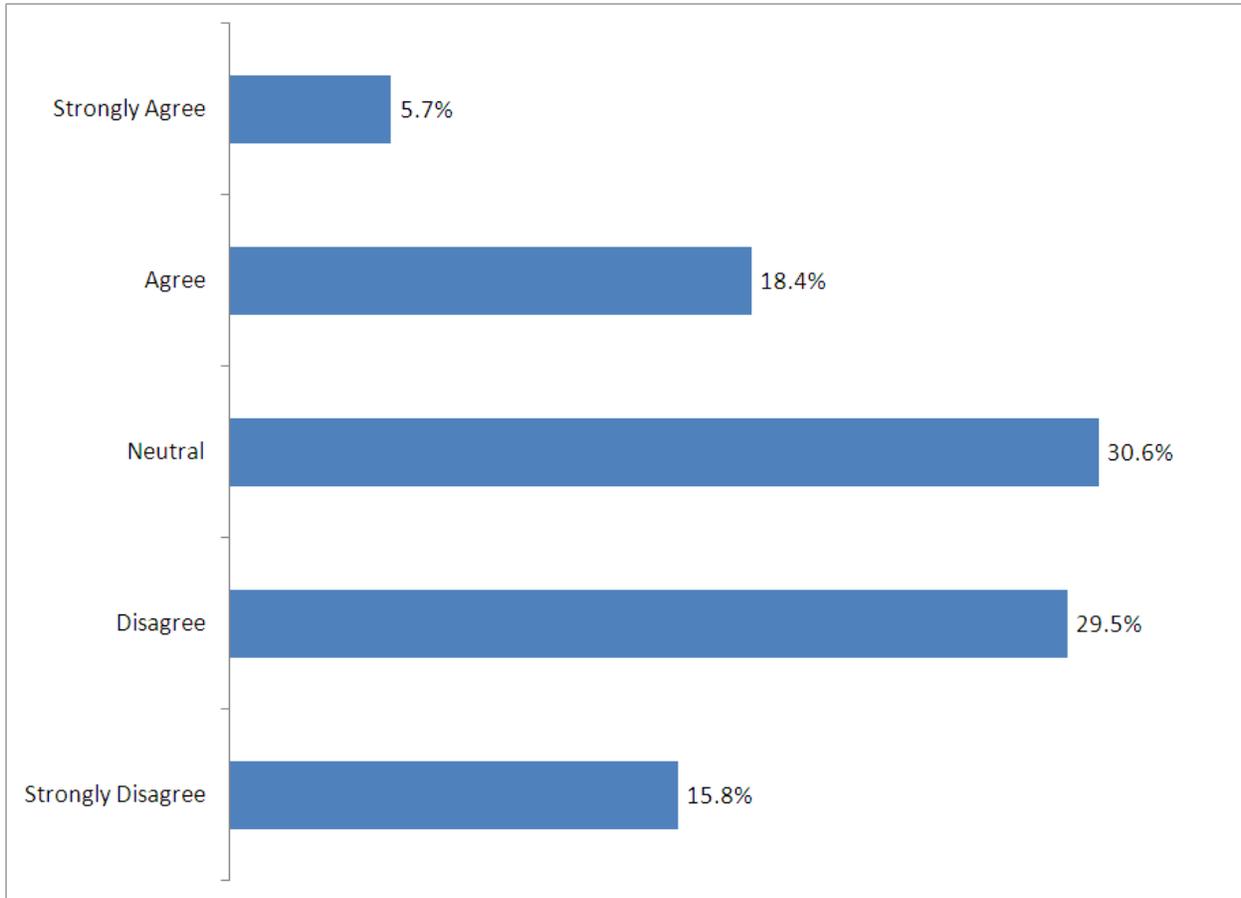
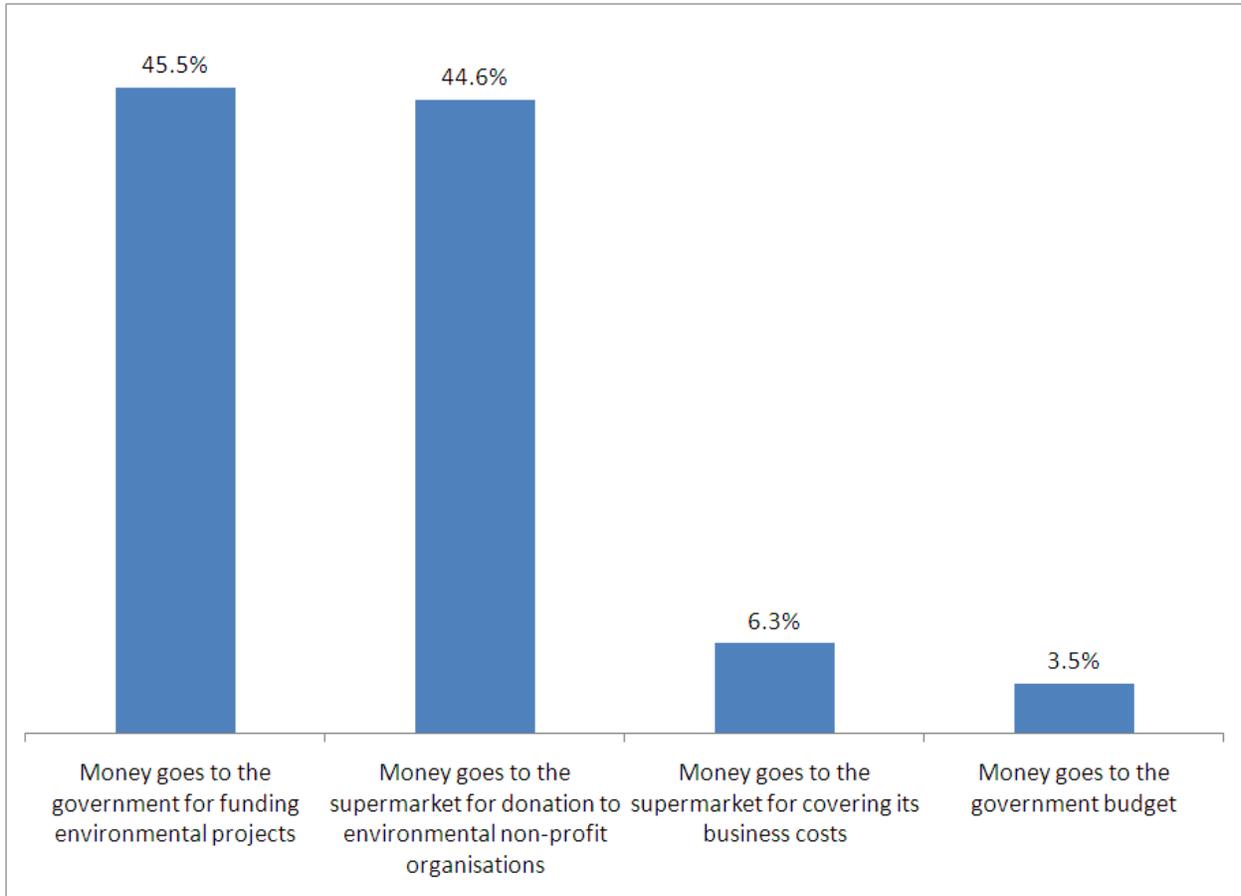


Figure 4: The 10 cents charge per plastic bag would add to my financial burden.

Figure 4 shows that about 45% of the shoppers do not think that the 10 cents charge would add to their financial burden (disagree or strongly disagree), which indicates that it is affordable to them, while about 24% of the shoppers think that it would add to their financial burden (strongly agree or agree).

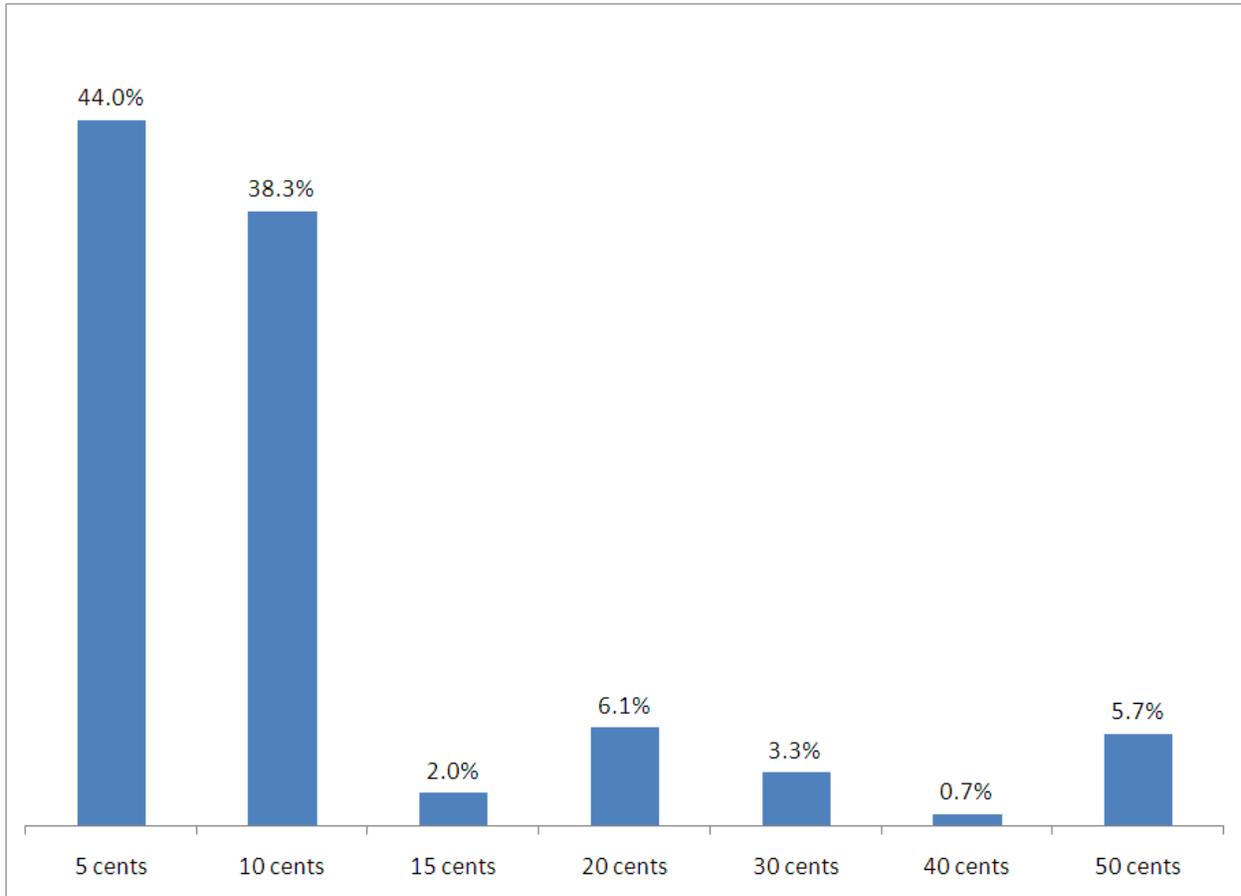
With about 30% of shoppers indicating a neutral response, it shows that some people are not sure how the plastic bag charge would impact them financially. There is an important need to educate and explain to this group of shoppers that the charge is still affordable to households, and also to convince the 24% of shoppers who think that it is unaffordable.



*Figure 5: Which option would you prefer the money collected from the charging of plastic bags to be used for?*

Figure 5 shows that majority of the shoppers (90%) would prefer the proceeds from the plastic bag charge to be used for an environmental cause, whether it is through the government to fund environmental projects (46%) or through the supermarket to donate to environmental NGOs (45%).

This result could indicate that most people understand that the purpose of the plastic bag charge is to benefit the environment, and thus the money collected should be aligned to the environmental cause.



*Figure 6: If there is a charge on plastic bags, what do you feel is a reasonable amount?*

Figure 6 shows that the majority of the shoppers (82%) feel that a reasonable amount for the plastic bag charge should be 5 or 10 cents. This amount is similar to the plastic bag charge in some countries and is acceptable to most people.

## **Recommendation on Plastic Bag Charge Scheme**

We recommend the following plastic bag charge scheme based on our survey results and also taking into consideration common public feedback on the financial costs and the need for reusing plastic bags for bagging waste.

Our recommendation is that the government implement the mandatory plastic bag charge scheme for single-use plastic bags in 2 phases – the first phase covers major supermarkets, chain stores and retailers (above a certain employee size, revenue or floor space), and the second phase covers the smaller retailers, hawkers and SMEs.

Since the larger supermarkets and retailers are usually those that give out more plastic bags to shoppers, we should start with them first. The results of the plastic bag reduction in phase 1 would decide whether there is a need to extend the charge to the smaller retailers in phase 2. This would also allow the smaller retailers more time to prepare for the implementation of the charge when it becomes necessary.

The amount of the plastic bag charge can be fixed at 10 cents for big plastic bags (above a certain size) and 5 cents for small plastic bags (below a certain size). The retailer should charge the customer for the plastic bags at the time of the sale and should not offer any discounts that directly offset the plastic bag charge.

The government can decide whether the proceeds collected by the retailers should be donated directly to environmental NGOs or returned back to the government for funding environmental projects.

The plastic bags under the scheme should include:

- Carrier bags (all sizes)
- Flat-top bags (thin film bags without handles)
- Biodegradable, compostable or oxo-degradable bags

There could be exemptions for these plastic bags for hygiene and safety reasons (no need to pay charge):

- Bags used for carrying food without packaging
- Bags used for carrying frozen or chilled food
- Bags used for carrying food in non-airtight or unsealed packaging
- Bags used for carrying prescription medicines

Before the actual introduction of the plastic bag charge, there should be public and industry consultations for the scheme. If the decision is to go ahead to implement the plastic bag charge, sufficient and sustained education and engagement campaigns are required to allow the public to understand the need for the charge and be clear on how it works.

## Questions and Answers

We address three commonly asked questions from the public and propose some answers below.

### ***Question 1: Why should I pay for free plastic bags given by the supermarkets and retailers?***

We have to accept that plastic bags will not be given for free because there are environmental costs to “free” bags.

The problem of excessive usage and wastage of plastic bags in Singapore contributes to the wasting of non-renewable oil resources, generation of carbon dioxide emissions from incineration, littering of bags which could become breeding grounds for mosquitoes, and posing harm to the marine lives when the bags ends up in the sea.

We should not let our children and future generations pay for these environmental costs so that we can enjoy our “free” plastic bags.

### ***Question 2: How would the plastic bag charge affect households financially?***

The plastic bag charge is affordable for most households, while help could be provided for the low-income households.

Assuming residents bag their waste and throw it into the chute once every day and with the occasional disposal, each household would need about 10 bags a week or 520 bags a year. If a typical household takes 520 bags a year from the supermarkets and reuse them for bagging waste, and if there is a 10 cents charge on each plastic bag, it would cost a household \$52 a year.

Table 5 shows the average monthly household income in 2015 for different types of housing.<sup>6</sup> The annual cost of the plastic bags (\$52) as a percentage of annual household income ranges from 0.06-0.35%, which means that paying for the plastic bags would incur a cost which is still affordable to most households.

---

<sup>6</sup> Key Household Income Trends, 2015, Department of Statistics Singapore

Type of Housing	Average Monthly Household Income	Average Annual Household Income	Annual Cost of Plastic Bags as a Percentage of Annual Household Income (%)
HDB 1- and 2-Room Flats	\$1,224	\$14,688	0.35
HDB 3-Room Flats	\$2,512	\$30,144	0.17
HDB 4-Room Flats	\$2,718	\$32,616	0.16
HDB 5-Room and Executive Flats	\$3,367	\$40,404	0.13
Condominiums and Other Apartments	\$7,356	\$88,272	0.06
Landed Properties	\$5,888	\$70,656	0.07

*Table 5: Average monthly and annual household income in 2015 for different types of housing, and the cost of plastic bags as a percentage of household income*

To further minimise the costs of plastic bags that the lower income households would incur for using bags to bag waste, the private sector could help to subsidise the costs of the plastic bags for households in HDB 1- and 2-room flats.

In addition, free reusable bags could be given to the households in HDB 1- and 2-room flats so that they can use them for shopping. The reusable bags could be donated from the public (unused and washed) or from the private sector (excess bags from events).

***Question 3: What happens if I don't have plastic bags from supermarkets for bagging waste?***

We estimated earlier that each household would need about 10 bags a week for bagging waste, and showed that paying \$52 a year for taking plastic bags from the supermarkets is still affordable.

Actually, households might take less than 10 bags a week from the supermarkets and pay for them because some plastic bags can be exempted from the plastic bag charge, such as bags used for carrying food without packaging, frozen or chilled food, and food in non-airtight or unsealed packaging. Households would still be able to use those free plastic bags for bagging waste as well.

In addition, with the efforts of the NEA to educate residents on reducing food waste, the number of plastic bags used to bag food and wet waste before throwing it into the chute could be further reduced over time.

What you can do is to use your own reusable bags often, and use the plastic bags that are exempted from the charge to bag your waste at home. If you run out of plastic bags for bagging waste, take just enough plastic bags at the supermarkets and pay for them.

## **Conclusion**

The problem of excessive usage and wastage of plastic bags in Singapore is often brought up in public discussions and at environmental events to highlight what Singaporeans can do better in our environmental efforts. Over the past 10 years, voluntary campaigns by the government has built awareness on plastic bags but seen limited success in reduction of the bags.

It is time to go a step further and introduce a policy that works. The success of mandatory plastic bag charge schemes in the local context at IKEA Singapore and NUS, and in other countries, are evidence of what has worked.

We urge the government to consider our recommendation to introduce a mandatory plastic bag charge scheme in Singapore to reduce the excessive usage and wastage of single-use plastic bags and to encourage people to bring their own reusable bags.

## About Zero Waste SG



Zero Waste SG is a not-for-profit and non-governmental organisation dedicated to help Singapore eliminate the concept of waste, and accelerate the shift towards zero waste and the circular economy.

We aim to promote education and engagement on the 3Rs (Reduce, Reuse and Recycle) among individuals and households; increase waste minimisation and recycling among businesses and organisations; and reduce specific waste such as plastics and food waste.

For more information about our organisation or this Recommendation Paper, please visit <http://www.zerowastesg.com/> or contact us at [editor@zerowastesg.com](mailto:editor@zerowastesg.com).

Published on 12 September 2016.

Copyright © Zero Waste SG Limited. All Rights Reserved.