



**POSITION PAPER ON THE REDUCTION OF
SINGLE-USE PLASTIC DISPOSABLES IN SINGAPORE**

Introduction

Single-use plastic disposables, including plastic takeaway containers, cups, plates and bowls (usually made from expanded polystyrene or commonly known as styrofoam); plastic forks, spoons and knives; plastic straws and stirrers; plastic bags; and plastic beverage bottles, pose a serious environmental problem around the world because plastics do not break down easily in nature and could release some toxic chemicals under certain conditions. Several countries and cities such as South Korea, Taiwan, Penang, New York, San Francisco, France and the United Kingdom, have taken steps to reduce or phase out some of those plastic disposables.

We believe that it is time for Singapore to be more serious in reducing our consumption of single-use plastic disposables. There are benefits for Singapore in reducing plastic disposables, which include: reinforcing our image as a Clean and Green city and a Zero Waste Nation; contributing to our national target of 70% recycling rate by 2030; reducing the plastic litter that goes into our waterways; and reducing our carbon emissions from the incineration of plastics.

This position paper describes the current situation and problem, highlights the considerations and responses, and lists several recommendations to reduce plastic disposables. We urge the government and businesses in Singapore to consider these recommendations, and develop concrete plans and take bold actions to reduce the consumption of single-use plastic disposables.

Current Situation and Problem

In Singapore, the amount of [plastic waste generated in 2015](#) was 824,600 tonnes and only 7% was recycled. Plastic waste is also the most common type of waste disposed at the incineration plants in Singapore, followed by food waste and paper. Based on our experience from previous waste audits and visual estimates, about 30-70% of plastics waste disposed in Singapore are single-use plastic disposables such as plastic takeaway containers and cups, plastic utensils, plastic bags, and plastic bottles (refer to Figures 1 and 2 for samples of plastic waste from an office and a hawker centre).



Figure 1: Plastic waste collected from an office in Singapore



Figure 2: Waste (mostly plastic disposables) from a hawker centre in Singapore

Over the last 12 years from 2003 to 2015 (refer to Figure 3), the amount of plastic waste generated (disposed plus recycled) increased by 42% but the recycling rate remained low between 7-13%. In addition, the amount of plastic waste recycled was the lowest since 2004, which could be due to the drop in oil price resulting in low demand for recycled plastics.

Furthermore, in the [Singapore Green Plan 2012](#) published in 2002, the target recycling rate for plastics was set at 35% by 2012. The actual recycling rate was 10% in 2012 and dropped further to 7% in 2015. Overall, the state of plastics reduction and recycling in Singapore is not positive and has room for improvement.

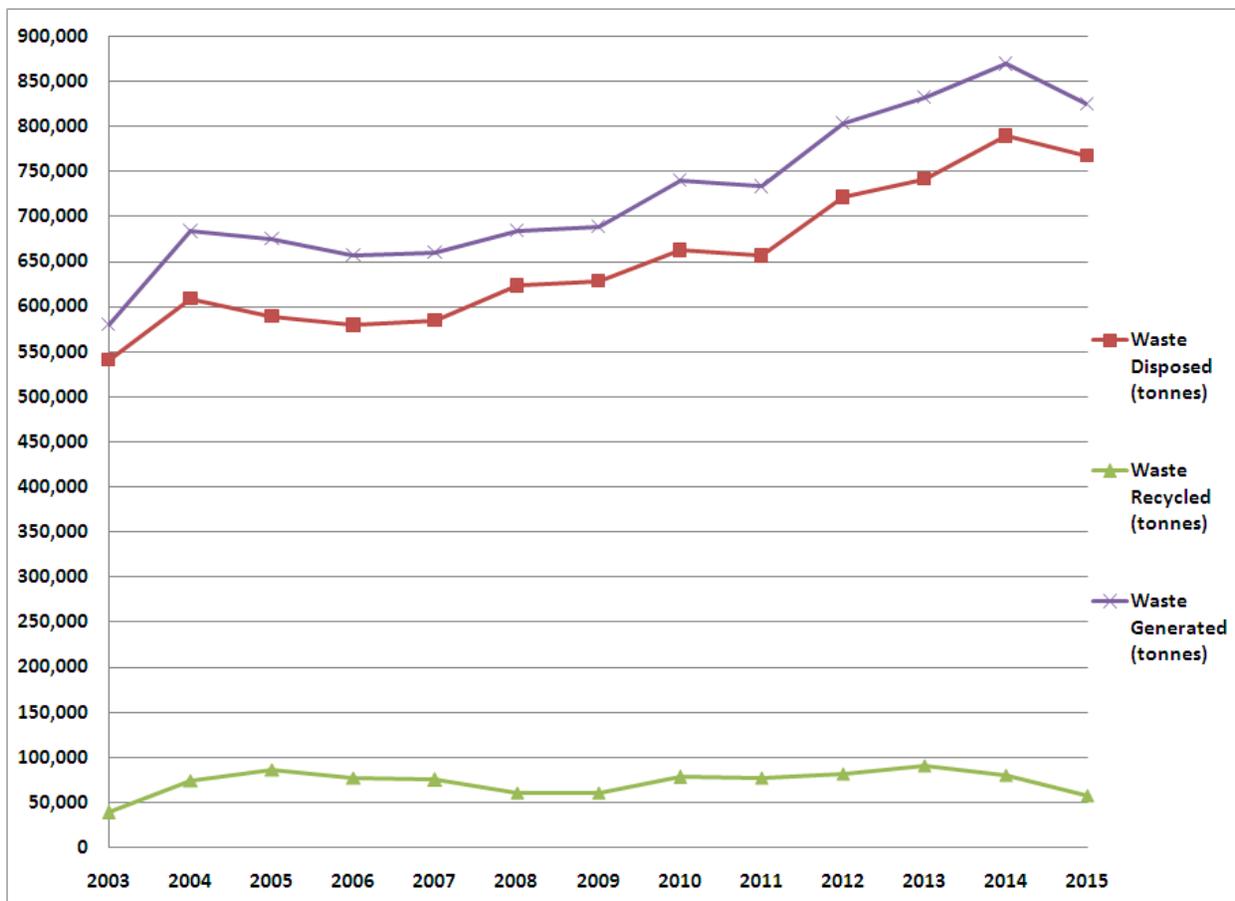


Figure 3: Plastic waste disposed, recycled and generated from 2003 to 2015 (based on numbers obtained from the National Environment Agency website and publications)

In the [Sustainable Singapore Blueprint 2015](#), Singapore's vision and commitment is to move towards a Zero Waste Nation and to increase our overall recycling rate to 70% by 2030. To reach our target recycling rate, there is a need to increase the amount of waste recycled and/or to reduce the amount disposed. With the persistent low recycling of plastics in Singapore, it is time to consider the reduction of plastics as another strategy for improving our recycling rate. We should follow the 3 Rs (Reduce, Reuse, Recycle) in order of priority and focus more on reduction and reuse, before recycling.

The reduction of plastic disposables also helps in reducing the amount of marine litter that affects wildlife, human health and the environment. A common problem with plastic disposables is that they are light and can end up in the waterways and sea as marine litter, and these non-biodegradable plastics could pose harm to marine lives through ingestion, while small plastic fragments could end up in our food chain.

During the [International Coastal Cleanup Singapore](#) from August to October 2014, volunteers combed the beaches and mangroves around Singapore, and collected a total of 14,580 kg of marine litter, including 19,034 plastic beverage bottles; 8,922 plastic straws and stirrers; 8,862 cups and plates (plastic and foam); 7,129 takeout containers (plastic and foam); 7,034 plastic bottle caps; 4,677 plastic grocery bags; and 2,118 plastic forks, knives and spoons. While most of the plastic marine litter could be coming from our neighbouring countries, some of the plastics are from litter around our waterways and beaches (refer to Figure 4 for a sample of plastic waste from a beach).



Figure 4: Marine litter (mostly plastics) found along the East Coast Park beach

Considerations and Responses

There are currently no regulations restricting the use of plastic disposables. Despite voluntary programmes such as the Singapore Packaging Agreement and Bring Your Own Bag, the results to reduce plastics waste have not been encouraging. It seems that the government's strategy to reduce single-use plastic disposables is based on "encouragement", which does not really constitute a strategy and is avoiding concrete policies and bold actions. As a result, most businesses are not active in addressing the use of plastic disposables.

There are several possible considerations that could lead to this inaction by the government and industry to tackle plastic disposables in Singapore. We list these seven considerations and provide our responses below:

Consideration 1

The reduction of plastic disposables could lead to increased costs for food and beverage (F&B) companies and customers due to higher costs of using alternatives to plastic disposables, such as paper or biodegradable plastics.

Response: The prices of alternatives are usually higher now as there is no economics of scale for the suppliers. As more companies use alternatives, the costs will come down eventually, but this requires policies to increase the demand for alternatives and bring down the price. Funding can also be provided to F&B companies to help them make the switch.

Consideration 2

There might be higher costs, lack of infrastructure and space, or shortage of manpower for using and washing reusable plates, cups and utensils.

Response: This is a real problem that requires stakeholders to work together to address the manpower, infrastructure and logistics issues, and study whether having centralised washing systems or vendors would lower the costs.

Consideration 3

Companies and consumers are not sure whether alternatives are really green and it is difficult to verify false claims.

Response: There is currently no local data on the environmental impacts of plastic disposables and other alternatives such as paper, biodegradable plastics or using reusable items (with washing), and no local research conducted on the biodegradability or compostability of alternatives. Therefore, companies and consumers are not able to assess which option is better for the environment. There is a need to study the environmental impacts of various options available in the market (see Figure 5 for a sample of various options), and advise the public accordingly.



Figure 5: Various plastic disposables and alternatives available in the market

Consideration 4

There is no difference between using plastic disposables or alternatives as both are still sent to the incineration plants for burning. Plastic disposables are safely burned at our incineration plants with proper air pollution control, and heat recovered is used to generate energy.

Response: Plastics are made from oil, a non-renewable resource, and contribute to carbon emissions when burned. Alternatives such as paper and biodegradable plastics are made from plants or their by-products, which is a renewable resource if harvested sustainably, and might have a lower carbon footprint. In addition, there is the possibility of mixing the biodegradable alternatives with food waste for recycling into biogas or fertilisers, but this requires more research on the biodegradability of the material and the type of microorganisms.

Consideration 5

Plastics are needed in the incineration plants to provide enough calorific value to sustain the incineration process without adding fuel.

Response: There is a need to look into other ways to sustain the incineration process and prepare for a future where there are less plastics in the waste disposed.

Consideration 6

Plastic grocery bags are required by residents for bagging waste before disposal.

Response: Most residents reuse their plastic grocery bags for bagging waste but they also tend to have excessive bags at home. So the key message for plastic bags is to reduce the excessive consumption (giving and taking) of plastic bags from grocery stores. In addition, there is a need to reduce the consumption of smaller plastic bags as they cannot be reused for bagging waste and are usually disposed.

Consideration 7

Local companies in the plastics and petrochemical industry would be affected by the reduction in plastic disposables.

Response: Some policies can help to reduce the financial impacts on the plastics manufacturers and suppliers and petrochemical companies in the short term, such as setting a longer duration to phase out certain plastic disposables or providing incentives for developing alternatives. But in the long run, the plastics and petrochemical industry have to accept and adapt to it, just like what businesses in other industries do. In addition, companies in the plastics and petrochemical industry have to understand their corporate social responsibility and not promote greater wastage of non-renewable resources.

Recommendations

Based on the considerations and responses highlighted earlier, we have come up with a list of six recommendations. We call for our government and businesses to consider these recommendations, and develop concrete plans and take bold actions to reduce the consumption of single-use plastic disposables in Singapore.

1. Provide information and guidelines to help companies and consumers make the right choice

The government can provide more information and guidelines on the greener alternatives to plastic disposables, including comparison of environmental impacts and costs in the local context.

The Sustainable Manufacturing Centre (SMC) is the relevant research organisation under the Singapore Institute of Manufacturing Technology (SIMTech) with the expertise to conduct Life Cycle Assessment (LCA) of products and materials. The LCA study considers the environmental impacts of a product or material, including energy and water usage and carbon footprint, across its entire life cycle. Most LCA studies conducted for plastic disposables and alternatives are from other countries and might not be suitable for Singapore's context.

The government can work with SMC and suppliers to conduct LCA studies for various plastic disposables and alternative materials; compare the impacts of disposing plastic disposables or alternatives versus washing reusable containers (plastic or ceramic); and conduct research on the biodegradability or compostability of alternative materials (under marine and terrestrial conditions). The government can make the information public together with comparison on costs, and use the information to develop policies and guidelines on greener alternatives, so that companies and consumers can use them to make the right choice during purchasing.

Other useful information for consumers include locations on where to purchase alternatives; list of retailers or F&B outlets that are providing discounts for using reusable items; locations of water refill stations for the public to refill their own reusable water bottles; and standardised definitions of terms used on alternative materials such as "biodegradable", "compostable" or "recyclable".

2. Set up a committee to tackle plastic disposables holistically

The Singapore Packaging Agreement (SPA) is a joint initiative by the government, industry and NGO sectors to reduce packaging waste, including plastic packaging. The government can consider expanding the role and framework of the current SPA to include plastic disposables such as plastic takeaway containers, cups, plates and bowls; forks, spoons and knives; plastic straws and stirrers; and plastic bags. Plastic beverage bottles are considered as packaging and are already included under the existing SPA.

Since some of the SPA signatories such as F&B companies are currently using plastic disposables, it is appropriate for them to also consider reducing their use of plastic disposables when they develop plans to reduce packaging waste under the SPA.

Alternatively, the government could set up a similar committee involving different stakeholders to address plastic disposables across various industry sectors and consider the problems and solutions holistically.

3. Develop specific plans and targets to reduce or phase out certain plastic disposables over time

The government and relevant businesses can work together to develop specific plans and regulations, and adopt mandatory targets and timelines for various business types to reduce or phase out certain plastic disposables over time.

To reduce the use of plastic disposables, there could be a restriction on the quantity of plastic disposables used or prohibition on giving away free plastic disposables for selected business types. The government can also consider phasing out certain plastic disposables over a specified period of time, e.g. 12 years from 2018 to 2030 (or about 8% reduction each year). This would allow companies time to adjust to the new regulations and switch to more green alternatives, while also allowing the price of alternatives to drop further due to increased demand over time.

The government is currently studying mandatory requirements for more sustainable packaging waste management over a long term, and conducting industry consultations under the SPA. This is a good time to include plastic disposables in the discussions, and explore Extended Producer Responsibility and deposit-refund schemes for both plastic packaging and disposables, such as plastic beverage bottles.

The government and educational institutions should take the lead in reducing or stopping the use of plastic disposables, especially single-use plastic cups, plates, utensils and bottled water at government events and buffets. This could be one of the targets set under the government's Public Sector Taking the Lead in Environmental Sustainability (PSTLES) initiative. In addition, as a large purchaser of goods, the public sector could purchase more green alternatives and help to reduce their price.

4. Implement a structured incentive scheme to help consumers switch to using reusables

The government can work with retailers and F&B companies to implement a structured incentive scheme for consumers who bring their own reusables such as reusable containers, bottles, cups or bags, instead of using the single-use plastic disposables provided by the retailers and F&B companies.

The incentive scheme should involve major retailers and F&B companies, and be valid islandwide so that it is convenient for consumers. The scheme can allow consumers who bring their own reusables to get instant cash discounts or accumulate reward points to redeem for discounts and prizes.

5. Address challenges and funding needs for companies to switch to alternatives or reusables

The government and F&B companies should work together to address the challenges faced by businesses such as manpower, space, infrastructure and logistics requirements and costs for using and washing reusable plates, bowls, cups and utensils, and also the costs of switching from disposable plastics to other alternative materials.

Funding schemes could be made available to the F&B companies if necessary. In addition, the funding could be extended to plastic manufacturers and suppliers to help them develop alternatives.

6. Conduct research on mixing alternatives with food waste for recycling into biogas or fertilisers

During the switch from plastic disposables to alternative materials such as paper and biodegradable plastics, it is important to consider how to avoid the burning of alternatives and to reduce their carbon emissions. A circular economy approach would be to study the possibility of mixing the biodegradable alternatives with food waste for recycling into biogas or fertilisers. This requires more research on the biodegradability of the material and the type of microorganisms.

If this is possible, it would reduce the manpower and logistics of sorting food waste from plates, cups and utensils (made from biodegradable material) since all of the waste can be mixed and sent for recycling into biogas or fertilisers.

Conclusion

Due to the increased global environmental concerns on plastic disposables and marine litter, and the persistent low recycling rate of plastic waste in Singapore, we believe that it is time for Singapore to place greater priority in developing concrete plans and taking bold actions to reduce our consumption of single-use plastic disposables.

We recognise the potential challenges and costs faced by the government and businesses in changing existing policies and business operations, as a result of adopting our recommendations. However, there are benefits for Singapore in reducing plastic disposables, and more importantly, we have to be responsible to our future generations in conserving non-renewable resources and reducing carbon emissions, so that they can continue to live in a sustainable world.

We will make this Position Paper public to get more feedback and suggestions, and hope that the wider public discussion would lead to more bottom-up efforts from individuals, businesses and organisations to help the government in co-creating and implementing the recommendations and other actions. We look forward to working closely with the government and businesses to create a more collaborative and sustainable Singapore, and become a truly Zero Waste Nation.

Support the Position Paper at <http://www.zerowastesg.com/plasticdisposables/>

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 the Position Paper, please visit <http://www.zerowastesg.com/> or contact us at editor@zerowastesg.com.

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