

*Review on Waste Reduction and Recycling Amendment Bill 2017***Lightweight plastic shopping bag ban**

Plastic bags have been massively produced after the industrialization. It is convenient and useful for the customers to carry items after shopping. However, as more and more people aspire to have a convenient lifestyle, greater depletion of our natural resources occurs. Problems come along with the use of plastic bags. The production of conventional plastic bags uses non-renewable resources like crude oil or natural gas, which can lead to the concern of wasting the natural resources and emitting greenhouse gases. After the use of plastic bags, the majority of the plastic bags will be consigned to landfill or recycled. However, roughly 2 percent of them are littered and pollute our environment in both the micro and macro scales. In terms of micro scale, the degradation of plastic debris into small fragments or microplastics can easily get into the food chain, risking both animal and human health. At the macro scale, plastic bags are known to injure or kill marine life. Mammals, reptiles and birds are harmed by accidentally eating plastic or be entangled in it.

It is estimated that approximately 900 million plastic shopping bags are used in Queensland each year. Around 16 million of them will end up in the environment. This not only puts the marine environment under significant danger, and also compromises the natural beauty of the landscape and harms tourism. Actions have been taken by governments through out the world including jurisdictions in Asia, America, Africa and Europe and banning the sale of plastic bags is one of the main strategies. There are many successful cases for Queensland to look into and learn from them to effectively alleviate the problems caused by plastic litter.

Take South Australia as an example, South Australia is the first state to ban the lightweight single-use shopping bags in Australia. Starting from 2009, the retailers can not longer provide plastic bags made of polyethylene polymer less than 35 microns thick (heavier plastic bags, barrier bags, and compostable bags that comply with AS 4736 are not included in the ban). The overall result reported by the South Australia Government is successful, the percentage of litter stream consisting of plastic bags had declined by 45% from 2008-09 to 2011-12. This gives a promising provision for the 'Zero Waste' policy implemented by the Government. While Queensland Government following up with both international and national responses to the reduction of plastic pollution, several suggestions from case studies can be given to the proposed plastic bag ban.

Suggestions on the proposed plastic bag ban

The main challenge for the plastic bag ban is to provide alternatives to the customers. Some possible alternatives are bin liners, heavier plastic bags, non-woven polypropylene bags and paper bags. The first three alternatives are still made from plastic, especially the non-woven polypropylene bags which most people think are more eco-friendly. However the fact is that they are made of non-biodegradable plastic, meaning that it is even harder them to degrade if recycled.

Paper bags, on the other hand, may be recyclable and degradable, the production of them consume more resources and release a large amount of carbon-dioxide. The substantial increase in the sale of bin liners may also be expected after the ban. Therefore the shift from the lightweight single-use plastic bags to another may improve one environmental outcome, but may lead to

another environmental problem. The Queensland Government should clarify the environmental impacts of alternatives for lightweight single-use plastic bags to effectively reduce the overall plastic usage. Also, the extension of the ban to other plastic bags including heavy plastics may also be considered in the future.

In addition, evidences show that throughout the time, the consistency of customer behaviour in never forget to bring their own bags will decrease. This implies that the effectiveness of the policy will be hard to maintain. But an increase in the population that bring re-usable bags when shopping is highly possible. Educational and explanatory measures should be used consistently to encourage and remind the customers to change or keep their attitudes or behaviour for reducing the plastic pollution. These measures can focused on issues such as the appropriate way to reuse and recycle the plastic bags to tackle the problem of recycling contamination.

Microplastic products like microbeads should also be included in the ban in the future. Microplastic particles can absorb persistent pollutants from seawater, creating toxic concentrations greater than surrounding water. These particles can be eaten by marine life, then be served in our daily meals and cause potential human health impacts. Microbeads are found in the products like face soaps, body washes and toothpastes. They are hard to be captured by the filter in the households and can access the waterways via sewage. The toxicological risks brought by microplastic products should be recognized by the Government.

Container Refund Scheme

Container refund system has been proved to allow high collection rates of containers and improve the efficiency of bottle recycling. This may contribute to the decrease of negative environmental impacts caused by packaging systems. Countries that implemented mandatory container deposit policy, such as Germany, have significant return rates for one-way beverage packaging. In response to the introduction of container refund scheme in Queensland, several suggestions can be given to help to lower littering rates and improve recycling:

- Reusable containers are usually more expensive than non-reusable containers, which will influence customers' purchase decision. A tax-based system can be introduced to provide an incentive for the market to provide more reusable containers.
- Despite the high recycling rate at the beginning of the implementation of container refund policy, the rate has noticeably decreased throughout the time (especially for glass beverage containers). New instruments should be established and introduced to keep the recycling rate from falling.
- To ensure the alignment between New South Wales scheme and Queensland scheme, some types of drink containers (including plain milk containers and glass containers which have contained wine or pure spirits) are excluded. This, however, can be inefficient to achieve the overall objective of decreasing negative environmental impact caused by packaging littering. Therefore, the expansion of the eligible containers to all beverage that cause littering problem is necessary.