Singapore International Chamber of Commerce

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SICC's Position Paper on Extended Producer Responsibility (EPR) for Packaging in Singapore

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1. Executive Summary

Singapore's waste management faces great challenges from a reduction in the availability of landfill space, to declining recycling practices. The Zero Waste Master Plan lays out Singapore's determination to tackle these challenges and sets a target to achieve a national recycling rate of 30% by 2030. The Resource Sustainability Act, which partially came into force on 1 January 2020, further elaborates obligations of entities in the food, electronic and packaging industries.

Similar measures are being discussed and implemented in other ASEAN countries, particularly to address issues resulting from ocean plastic waste. Among these efforts, Extended Producer Responsibility (EPR) is a tool governments have been looking into as one of the most sustainable and transparent means to ensure proper end-of-life treatment. Singapore International Chamber of Commerce (SICC) and its members believe that Singapore's EPR regulations should target solving the issues with collection and recycling infrastructure as a key outcome, as well as developing new technologies and eco-design of products and their packaging. We also call for better collaboration with other ASEAN countries in the area of EPR implementation, particularly around building a common regional framework and driving circular product design.

A Deposit-Return Scheme (DRS) is Singapore's first step under the packaging EPR regulation. While DRSs in general may be an effective means to achieve overall goals, they often come with challenges such as lack of infrastructure and facilities; governance of the fund and materials; and potential fraud. We believe that DRS needs to be complemented by proper collection and recycling infrastructure. It should be managed with full transparency and oversight by the National Environment Agency (NEA) and the Ministry of Sustainability and Environment (MSE), potentially even leveraging the National Trade Union Congress (NTUC) to act as the DRS executer to align with both the public and the private sectors. We also recommend a system to verify packaging from the Singapore market vs. the surrounding markets to prevent fraud as well as checks and balances to avoid a deficit in the DRS organization responsible for managing the materials and the fund. For materials not currently covered by DRS, and that have little value under the DRS, we suggest that the government explore other means such as EPR levy to ensure the fairness of regulation.

In short, we believe this is the perfect time for Singapore to embark on a new chapter of sustainability and drive it with key industries. We trust that the EPR regulation will be transparent, well governed and beneficial to the packaging industry value chain's future development and competitiveness in the ASEAN region and globally.

2. Our Positions (Key messages)

SICC comprises about 500 members from multinationals to SMEs in Singapore. We strongly support the government's effort to achieve zero waste and the target to recycle 30% of the waste by 2030. With regard to packaging waste and the Resource Sustainability Act 2019 which partially came into force recently:

- The Chamber believes that the overall Extended Producer Responsibility (**EPR**) framework for packaging, needs to target solving the issues with collection and recycling infrastructure in the near term, and to focus on technology and eco-design in the medium and longer term.
- We also feel strongly that Singapore needs to collaborate with other ASEAN countries to arrive at a common framework for EPR to drive circular product design.

- The deposit-return scheme (or DRS) is a good start. However, it will not work on its own. We recommend the DRS be supplemented with sorting and recycling infrastructure for other packaging and plastic wastes; and adopt advanced EPR policy such as eco-modulation in the future to disincentivize non-circular materials.
- Lastly, we also suggest that the DRS fund be managed by a not-for-profit organization that is fully transparent and accountable to the public and particularly to the NEA and MSE.

3. Introduction

3.1 Packaging waste management in Singapore

While Singapore's domestic waste generation has seen a decline in the second consecutive year, from 2 million tons in 2018 to 1.87 million tons in 2019, the overall recycling rate went down from 61% in 2018 to 59% in 2019. Further, the domestic waste recycling rate saw a sharp drop from 22% in 2018 to 17% in 2019[1].

In particular, major packaging materials such as paper and plastics recycling both saw sharp decline in quantity and recycling rate. According to NEA and other international sources, the decline is due to Singapore's high dependence on other countries for recycling and the uncertainties in export-import regulations of recyclables in ASEAN. This situation makes it more imperative for Singapore to explore a different pathway towards better resource use and waste management.

3.1.1 Zero Waste Master Plan

In the face of great challenges like having limited space for landfill and high dependency on other countries for recycling that Singapore embarked on the Zero Waste Master Plan (**ZWMP**). 2019 marked the beginning of a new pathway that this island nation is taking toward a more sustainable future. The ZWMP was announced in August 2019 with the ambition to reduce daily waste generation by 30% by 2030. Other targets include raising the recycling rate of domestic waste from 17% in 2019 to 30% in 2030; and increasing the recycling rate for non-domestic waste from the current 73% in 2019 to 80% in 2030—resulting in a 70% overall recycling rate by 2030. The master plan also aims to adopt a circular economy approach to create new jobs, encourage innovation and improve local capabilities.

3.1.2 Resource Sustainability Act

To lend legislative support to the Zero Waste Master Plan, the Resource Sustainability Bill was passed in parliament in September 2019. In order to achieve the 30% recycling rate of domestic waste, three waste streams are initially targeted: food waste, electronic and electric waste, and packaging waste.

The overall approaches for the three waste streams are:

- **Packaging waste:** Mandatory reporting of packaging data and development of 3R plans by producers of packaged products, as well as retailers such as supermarkets. Obligate companies to start collecting the data from January 2021 for submission to NEA in March 2022. A Deposit Refund Scheme (DRS) for beverage containers will

[1] https://www.nea.gov.sg/our-services/waste-management/waste-statistics-and-overall-recycling

also be implemented by 2022 as the first phase of an EPR framework for packaging waste management.

- **Electrical and electronic waste, or e-waste** will also come under an EPR framework in 2021. Producers have begun collecting data on the amount of regulated electronic and electrical products supplied in Singapore and will report the data to NEA from 2021. An appointed Producer Responsibility Scheme (PRS) operator will manage the e-waste EPR, establish its collection and e-waste treatment network, and organise public outreach programmes. The e-waste EPR framework will finance and drive local e-waste recycling capabilities.
- **Food waste**: From 2024, owners and occupiers of commercial and industrial premises that generate large amounts of food waste will have to segregate their food waste for treatment. Owners and occupiers of the affected premises can opt to treat food waste on-site or send it to an off-site facility for treatment. NEA will be conducting an on-site pilot trial for treating source-separated food waste from a food centre to achieve higher resource and/or energy recovery.

  There is also the **3R Fund**, a co-funding scheme to encourage organisations to reduce waste disposal through the implementation of waste minimisation and recycling projects.

  Additionally, Singapore has set aside $45 million for the Closing the Waste Loop R&D Initiative. Under this initiative, $12.5 million has been allocated to set up SCARCE, a research centre that focuses on recycling e-waste. [2]

  In addition, Singapore is developing local recycling capabilities to treat and recycle e-waste and packaging waste.

3.2 EPR policies in ASEAN

In recent years, ASEAN Member States have commenced efforts both at the regional and national levels to identify tools and interventions to address the growing issue of plastics in the marine environment. These interventions include Circular Economy policies and instruments including EPR (Indonesia, Vietnam, Myanmar, Thailand etc.), plastics restrictions (Malaysia, Cambodia) and container deposit systems (Indonesia, Philippines). Most recently, the ASEAN Framework of Action on Marine Debris was developed to act on the recommendations from the ASEAN Conference on Reducing Marine Debris in ASEAN Region in Phuket in November 2017.[3] On 5 March 2019, the ASEAN Member States announced the Framework of Action on Marine Debris[4] in Bangkok, Thailand. The Framework comprises four priority areas namely:

i. Policy Support and Planning;
ii. Research, Innovation, and Capacity Building;
iii. Public Awareness, Education, and Outreach;
iv. Private Sector Engagement.

[2] https://www.nea.gov.sg/docs/default-source/media-files/news-releases-docs/annex-f---factsheet-on-funding-schemes.pdf
[3] https://asean.org/storage/2019/06/3.-ASEAN-Framework-of-Action-on-Marine-Debris-FINAL.pdf
[4] CE in Asia report https://www.asiaglobalinstitute.hku.hk/storage/app/media/pdf/Circular-economy_tnv3.pdf

ASEAN will need collective effort to address waste issues effectively. Singapore is now taking a significant step forward to demonstrate the implementation of some key policy instruments. These instruments will be more effectively when applied regionally under a unified strategy.

4. Our understanding of EPR schemes for packaging

4.1 Extended Producer Responsibility

EPR obligations are a means of ensuring producers take responsibilities at and after the end-of-life of their products, including funding the end-of-life management of these products. Around the world, EPR systems and the requirements on companies are typically mandated by law (although they can also be negotiated or voluntary), seeking to internalise the otherwise external costs of waste collection and management. With regard to packaging waste, EPR systems are financed mostly by brand owners or importers because they have the greatest control over product design and marketing and have the greatest ability to reduce product or packaging waste.

EPR is often regarded as the most sustainable and transparent way of ensuring producers of products that reach the consumer contribute to the effectiveness and the financing of waste management systems. While significant differences exist between existing EPR schemes in different jurisdictions and many contributors have issues with the performance of those systems and allocation of funds, EPR is often the preferred option as the alternatives (e.g. taxes or other levies) may not necessarily be allocated to the end-of-life management they are supposed to fund.

In jurisdictions where EPR schemes have been implemented for some time, five key trends can be observed that may also shed some light on Singapore's EPR implementation. These trends include:

i. **Eco-modulation of EPR fees to reward or penalise specific product characteristics:** A bonus / malus system reduces or increases the EPR fee for a specific product according to, for example, its recyclability, recycled content, or consumer information given on the label. Other forms of modulation of EPR could be based on the presence of hazardous substances or ultimate end-of-life route (e.g. an incineration / litter fee).

ii. **New purposes for EPR fees:** having mostly been used to finance collection, waste management, sorting and recycling so far, EPR fees have more recently been agreed (in the EU Single Use Plastics Directive) to cover consumer education programmes and litter clean-up. In order to enable circularity in some product lines, the fund can also be used to develop and/or scale up technologies. It is important to note that the payment of fees under modified EPR systems could be seen as a first step towards the admission (or attribution) of legal liability in the remediation environmental contamination caused by plastics. In fact, some political actors have already suggested that EPR systems could be levied on any products leaking to the environment to force industry to finance remediation, e.g. on microplastics or pellets, textiles pharmaceuticals or tires.

iii. **A general trend to increase EPR fees:** At present, EPR fees differ by jurisdiction, and is largely paid by brand owners, with some slight national divergences where raw material producers and other value chain

members also contribute. EU waste legislation, for example, now requires EPR systems to cover the full and true cost of waste management for the products they cover. In the first roughly five years of an EPR program, the fees increase sharply over that time, and gradually ease as infrastructure investments come online, with spikes in fees as additional investments are identified.

iv. **Who contributes to EPR systems:** it has been generally accepted that those placing a final product on the market are the main contributors to EPR systems. However, suggestions are often made that all levels of the value chain should contribute to spread the costs more evenly. In Brazil, for example, the waste management law establishes reverse logistics and shared responsibility. Based on the regulation, the packaging industry developed a sectorial agreement to support reverse logistics of their products, signed by several trade associations. Currently, there is debate whether producers of raw materials should also have responsibility in the reverse logistics for packaging.

v. **The principle of "full net cost recovery":** means that EPR fees must be designed in a way that they finance all operations that become necessary from the waste handling process. This had not been the case before. In some jurisdictions, EPR fees must also be used to finance household/consumer awareness and information campaigns.

4.2 Weaknesses of the EPR policy

While EPR is a good and important policy tool to facilitate the waste management of the products covered, it is not a silver bullet. Some of the weaknesses in the implementation of EPR need to be addressed as the policy is implemented.

First of all, an effective EPR should be built upon transparent and accurate information. Without adequate data, such as waste characterization, recycling capacity, or market economics, an EPR may not be able to fix the problem. The lack of information could also lead to the failure to accurately determine the costs which should be applied to producers to support recycling targets. This could cause problems before the EPR policy even begins to reap benefits.

Secondly, one expectation on EPR is to drive packaging eco-design. However, current experiences in EU countries show limited influence of EPR in motivating packaging producers to redesign[5]. It could therefore be much more challenging for small countries with limited market size. However, such challenged may be overcome if several neighboring countries form an alliance to implement the same EPR scheme. This would require the countries to have a harmonized definition and scope for EPR, which can be difficult, though not impossible to achieve.

Thirdly, inadequate control/monitoring mechanisms and the lack of compliance and poor enforcement sometimes render the policy ineffective. Hence the monitoring and enforcement mechanism needs to be carefully thought out and designed into the overall policy.

4.3 Deposit-Return Scheme (DRS) in the Singapore context

A Deposit Return Scheme (DRS) typically combines a fee (deposit) on product consumption with a rebate when the product or its packaging is returned for

[5] Kleoniki Pouikli. Concretising the role of extended producer responsibility in European Union waste law and policy through the lens of the circular economy. ERA Forum (2020) 20:491–508.

recycling or appropriate disposal. Usually, retailers pay distributors a deposit for each can or bottle purchased; the retailers then turn around and collect those deposits from consumers who purchase beverages. When a consumer returns a container for recycling, the retailer refunds the deposit to the consumer and recoups that money from the distributor, often with a small handling fee included. If the consumer chooses not to return the container, then the consumer loses the deposit. Collection points are typically located in retail outlets for convenience (often to the vendor or into automated reverse vending machines, RVMs) or centralised locations where containers can be deposited in bulk.

There are a few key aspects of DRS that need to be considered when developing the DRS system.

4.3.1 Typical cost components

These include the set-up costs (capital expenditure) and the handling fee. The deposit amount passed on to the consumer, in theory, cycles through the system and as such is not a net cost. The handling fee can be linked to the operational expenditure of the DRS and should ideally cover:

- Manpower
- Transportation
- Auditing costs
- Service fees to the organization running the DRS system

4.3.2 Types of packaging covered:

DRS systems in operation globally are known to target beverage containers typically made of plastic, glass and cans. For instance, in the Netherlands, PET containers are the only ones targeted while in Norway the system accepts both plastic (PET, HDPE) and metal (Cans). HDPE milk bottles have typically not been accepted primarily on account of hygiene reasons. Multilayer packaging is also largely not covered due to the low value of the material.

4.3.3 Ownership of Materials:

An important consideration is the ownership of the material revenue. To the extent that the material collected is of high value and can be sold into a recycling operation as higher quality single stream feedstock, the ownership of this value is entrusted with the entity held accountable for the recycling of the collected materials. This could rest with the retailer/ vendor (as is done in Germany to incentivise collection) or centrally held (as is done in Norway) to ensure access to local recycling.

4.3.4 Necessary Conditions:

The success of different DRS policies is premised on the following:

- **Enabling Policy Framework -** A national regulation requiring the collection of beverage containers is often the underlying policy framework. As is done in the EU, special emphasis on single-use plastics and the mandating of a high collection rate for container packaging supports the case for DRS.[6]

- **Labelling and Fraud Protection** - An indication of the DRS scheme and the amount of deposit must be made clear to the consumer in order to ensure the return of the container. In some jurisdictions in Europe, additional markings are required to ensure against fraud. Success has been seen in Germany and Denmark which are known to have the highest level of security markings and also the highest level of deposits.[7]
- **Nature of take-back infrastructure** - Returning the beverage containers back to a centralised depot may impose an inconvenience on the consumer whereas returning the containers to the vendor is more convenient but may require higher handling fees to be paid to the vendor/ administrator for collection. Alternatively, reverse vending machines may be utilized to collect the containers from consumers/vendors but such installations will come at a substantial cost. Further, there would need a critical mass density of collection spots and ease of transportation from the collection spots in order to spark some success in the DRS system.
- **Governance:** Strong governance of the DRS scheme includes the setting of deposit targets, labelling requirements, managing the financial flows, communication campaigns, logistics and monitoring return rates.

4.4 DRS limitations and challenges

Within the Singapore context, and given the imminent DRS system as considered under the recent EPR Scheme these are some of the opportunities and challenges:

Singapore Context	Challenges	Opportunities
Currently sorting and material recovery infrastructure is still under construction	A DRS system, by diverting away higher value packaging, may have an impact on the business case for a comprehensive sorting recovery facility	The DRS system should work in collaboration with the future Tuas Nexus facility. Some of the DRS funding may go into additional sorting, washing and recycling activities at the new facility.
Little recycling capacity currently	In the shorter term the absence of a local recycling industry will imply reliance on exports and potentially higher costs.	A DRS system will allow for the extraction of packaging in cleaner, less contaminated ways, retaining their value and making recycling an attractive industry.

Singapore Context	Challenges	Opportunities
Market comprises local manufacture and Imports	There is a small likelihood that waste from other markets could be brought into Singapore requiring higher vigilance/ and prevention measures like adding markings etc.	A DRS system will allow for all packaging entering Singapore to be collected and recovered regardless of whether it is manufactured locally or imported.
3R Behaviour is only now slowly gaining momentum	In the absence of strong monetary incentives, businesses and the government may need to invest more in behaviour change to ensure that the system works.	The DRS system will improve awareness as seen with the F&N and NEA collaboration on the Reverse Vending Machines across Singapore.

5 Recommendations

Singapore International Chamber of Commerce would like to propose the following recommendations in 3 main areas:

- EPR objectives
- DRS infrastructure, governance and follow-up
- Materials outside current DRS scope

5.1 EPR objectives

Singapore's EPR journey has just begun. Based on global trends and EPR limitations observed from other countries' experiences, we suggest that Singapore's EPR to focus on specific purposes that make more sense in the Singapore context.

i. To drive recycling in order to reduce end-of-pipe treatment, EPR needs to fund recycling technologies and innovation to create high value recycling industry. This is important for Singapore to reduce the total quantity of waste incinerated and subsequently sent to the landfill. This also reduces Singapore's reliance on other countries for recycling in the long-term, hence contributing to Singapore's economic growth.

ii. To have an impact on product design that would have broader implications. This requires Singapore to actively collaborate with other ASEAN countries to create a regional EPR system that would incentivise the private sector to invest in eco-design.

5.2 DRS infrastructure and governance

We suggest Singapore to further investigate and elaborate on 3 key aspects of the DRS to be deployed in 3 years.

5.2.1 Infrastructure

As DRS only focuses on diverting high value recyclables, we believe a more comprehensive infrastructure is required to fulfil the sorting and recycling of the remaining packaging waste.

It is also crucial to quickly develop the recycling infrastructure for the materials collected to avoid exporting high value materials to other countries for higher value-add processes.

5.2.2 Governance

i. **Materials:** Once materials are collected through DRS channels, the ownership of material shall be held by a credible party to ensure transparency and accountability. The party holding the ownership will need to engage in trading and ensuring best possible use of materials collected.

ii. **Fund management:** The funds collected through DRS require transparent and effective distribution. The organization/entity engaged in managing the DRS fund shall disclose full accounts particularly with regard to deposits not returned to customers. We also suggest that the organization/entity handling the DRS fund be set up as a not-for-profit organization. One possible solution is to set up a government-linked DRS organisation, potentially led and managed by NTUC, in collaboration with NEA, MSE and the private sector, making it a true public-private partnership program.

iii. **Anti-fraud:** Due to the proximity between Singapore and Malaysia, fraud is possible for people commuting between the two countries to take advantage of the DRS in Singapore, if similar program is not available in Malaysia. This may result in a deficit in the DRS organization and may result in Singapore recycling other country's waste. We suggest a verification system be set up to reduce the chance for fraud. A careful study may be needed to determine the price point of the deposit and possible scale of fraud and outcome of the fraud, given Singapore on its own may not have the scale needed for certain recycling activities. In the long-run, there may need to be a collaborative program between Singapore and Malaysia to implement a unified DRS system to avoid fraud and allow economy of scale.

5.3 Materials outside current DRS scope

Other packaging materials including paper, glass, metal and multilayer composites may not be covered under DRS. For materials that already have a viable means of recovery, we suggest to maintain the current approach (i.e., that used for paper, metal). Other materials may require different approaches such as EPR levy to cover the full cost of waste management. Such approaches need to be developed with the industry players and the other stakeholders to incorporate their needs and address their concerns. We believe that more advanced EPR tools such as eco-modulation could be helpful to disincentivise harmful and non-recyclable packaging materials. Further studies on specific packaging material based approaches shall be carried out after the initial DRS implementation is under way.

Team members:

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	Han Zhang is the Sustainability Director for Dow Packaging & Specialty Plastics Asia Pacific. Han is responsible for driving Dow's 2025 Sustainability Goals and developing strategies to grow business value. Han leads key programs addressing critical business sustainability issues such as marine debris, recycling and driving a circular economy, together with various value chain partners and industry associations throughout Asia. Prior to joining Dow, Zhang held various positions at ConocoPhillips and ExxonMobil. Zhang earned his doctorate degree in the School of Natural Resources and the Environment from the University of Michigan in 2009. He received his bachelor's and master's degrees in Thermal Engineering from Tsinghua University.
	Sumangali Krishnan is the Chief Business Officer at GA Circular (GA) and has developed and led various research, policy and on-ground projects aimed at developing a Circular Economy framework for plastics and packaging in Asia. Pursuant to a career in corporate law, Sumangali is now actively engaged in exploring research-based solutions to guide policy, behaviour change, and industry-led interventions in South East Asia. Sumangali has a J.D. in Law and a Masters in Economics and has lived and worked in the United States prior to moving to Singapore.

	Marc Allen is a chemical engineer and the technical director/founder of engeco, a Singapore based consultancy focussing on climate change advisory and climate strategy development. He has been a member of SICC and a contributor to the Circular Economy Interest Group for some years. He is also the co-chair of Singapore's National Mirror Committee working on ISO Technical Committee 323 – developing international standards and guidance covering the transition to the circular economy.
	Meryl Koh is a Director of Drew & Napier LLC's Dispute Resolution and Intellectual Property (IP) departments. She is a rising civil, commercial and IP litigator, having earned considerable praise from prestigious legal publications, e.g. Asia Pacific Legal 500. Her disputes practice includes litigation, arbitration, defamation, shareholder, and employment law disputes. Meryl's IP practice focuses on complex litigation and infringement matters and domain name disputes. She has penned several legal guides, precedents and manuals, having been recognised as a thought leader in dispute resolution and IP. Meryl is passionate about sustainability and believes that taking personal responsibility is the first and foremost driver for change.