

1 Mr Speaker, Sir, on behalf of the Minister for the Environment and Water Resources, I beg to move, "That the Bill be now read a second time". Mr Speaker, Sir, before I begin, I would like to acknowledge the presence of 31 individuals from our 3P sectors, who are here in this house for the reading of this bill.

Zero Waste Masterplan

2 Just last week, my Ministry launched Singapore's inaugural Zero Waste Masterplan, a critical achievement in this Year Towards Zero Waste. This is a limited print edition of the Masterplan. In the spirit of Zero Waste, you can access the Masterplan at our website, towardszerowaste.sg. The Masterplan draws on ideas and contributions from a vast array of the population. It lays out our strategies and policies to close our resource loops via a circular economy approach and to achieve our vision of a Zero Waste Nation. The Resource Sustainability Bill will give effect to the policies and targets outlined in the Masterplan.

3 The Masterplan also marks an important milestone in Singapore's sustainable development journey over the last five decades. Back in the 70s, my family wrapped our household waste in newspapers. Food waste was manually collected in little buckets outside our homes and used as swill in our farms, and in return, we received some eggs. From time to time, we experienced the waft of interesting odours.

4 Today, things are very different. Waste disposal is clean and hygienic, and we make use of pneumatic technology to convey waste from our chutes to a collection point for subsequent disposal. "Clean and green" has become synonymous with Singapore. And we have also demonstrated that environmental protection can co-exist with economic growth. Indeed, we were ranked Asia's most sustainable city in the 2018 Sustainability Cities Index and second in the 2018 World Economic Forum's Global Competitiveness Index.

5 We have come a long way, but we must do more to ensure that the next generation continues to enjoy a liveable and sustainable home. Doing our part for the environment is even more critical now as we seek to address climate change. Someone has said that we should never argue about climate change – it always turns into a "heated debate", if you pardon the pun.

6 But climate change is no joking matter. As highlighted by PM in his recent National Day Rally Speech, climate change is undoubtedly a massive existential challenge confronting our next generation. To tackle climate change, we need a paradigm shift – from the 'take-make-throw' linear model to the circular economy where resources are used over and over again. Efficient waste disposal is necessary, but our goal must first and foremost be to reduce, reuse and recycle; in other words, zero waste. This is the core of the Resource Sustainability Bill.

Tackling the Challenges of Climate Change in a Resource and Carbon Constrained World

7 What we produce, consume, and throw away all have an impact on the climate. According to the Intergovernmental Panel on Climate Change (IPCC) Special Report released last year, current rates of human activity may lead to 1.5°C of global warming above pre-industrial levels by as early as 2030. We must therefore change our current patterns of production and consumption to reduce emissions and limit global warming. Our zero waste efforts will play a key role. They will help cut down on carbon intensive activities along the supply chain, and reduce the amount of heat-trapping emissions we put into the atmosphere.

8 We face a second challenge. Global economic growth is driving resource consumption at an unsustainable rate. Studies show that we are at the limits of Planet Earth's ability to fulfil our resource needs.

9 Take lithium, for instance, which is used in batteries for electric cars, laptops and smartphones. Demand for lithium has tripled in the last decade. Companies which rely on lithium to make batteries, along with cobalt and nickel, warn of impending shortages of such critical materials. The message is clear and ominous. If we do not change our habits, there will simply not be enough resources to sustain our way of life.

Achieving Climate, Economic and Resource Resilience through a Circular Economy Approach

10 Mr Speaker, it is to confront these challenges that my Ministry is working to build up a three-fold resilience for Singapore.

11 First, climate resilience. We must address the existential threats of climate change, especially rising sea

levels, and cope with rising temperatures and extreme rainfall patterns. We are building up our knowledge of climate science to guide our actions to protect Singapore. We are also stepping up efforts to reduce carbon emissions and mitigate climate change. Apart from how we transform our industry, transport and energy sectors to pursue sustainable production and consumption, our zero waste efforts are key.

12 Second, resource resilience. We must overcome global resource constraints, and ensure a safe and secure supply of critical resources such as water, food and other materials. Closing resource loops and turning waste into resource will reduce our vulnerability to global supply shocks. One way that this can be done is through urban mining. A research group from Tsinghua University in China has found that recovering resources like gold, copper and other metals from e-waste is 13 times cheaper than mining them. In the process we do not need to go back to nature to exploit and restore it. The World Economic Forum estimates that 50 million tonnes of e-waste, equivalent to 120,000 jumbo jets, are produced globally each year. Of this, only 20% is recycled. Imagine the potential in urban mining, as precious metals can be mined from e-waste, and energy from food waste. What more if NewSand can be “mined” from incineration bottom ash! We can then “save” Semakau and extend its useful life beyond 2035. Figuratively speaking, we can look at Semakau not as a landfill for trash but as a treasure island right in our very own backyard.

13 Third, economic resilience. For Singapore companies to continue to thrive in the future economy, they must adapt to the growing constraints on carbon and other resources. Globally, a number of businesses are already taking the lead to adopt a more circular supply chain. This could entail using recycled materials as raw materials, extending the life-cycle of products or recovering resources from products at the end of life. Unilever has introduced post-consumer recycled waste materials into products such as dishwashing liquid bottles, with some of their brands using 100% recycled PET packaging. Similarly, automobile companies like General Motors and BMW are working with renewable-energy storage suppliers to create an aftermarket for end-of-life batteries for electric and hybrid vehicles.

14 These new business models will open new economic opportunities and create good jobs for Singaporeans. Preliminary studies have estimated that if Singapore recovers and reuses materials from e-waste, we can reap a net benefit of \$40 million. This includes indirect benefits such as helping our companies export overseas and creating jobs.

15 Singapore must adopt a circular economy approach to build these 3 resiliencies and sustain future growth. We must make every effort to close our resource loops and reuse our resources for as long as possible. This is not new to us. We have done so for water, and even for waste streams such as construction and demolition waste. This is the approach we must also take for other resources.

16 Mr Speaker, it is in this spirit that we move this Bill.

Closing Resource Loops: Beginning with Our Three Key Waste Streams

17 Mr Speaker, the Resource Sustainability Bill will, for the first time, put in place a systems-level approach that mandates key responsibilities to enable re-use and recycling nation-wide. This will complement and support the voluntary efforts of our people and private sectors.

18 The Bill will bring our regulatory framework upstream. It will send economic signals to producers such as manufacturers and importers to take into account the cost of environmental externalities. It also encourages innovation and the redesigning of products that require less materials, last longer and are more easily recycled. The regulatory framework will also fund the recovery and aggregation of useful materials such as metals from e-waste, which makes recycling more viable.

19 We will target the three priority waste streams of electrical and electronic waste, or e-waste, packaging waste including plastics, and food waste. Let me explain why we are focusing on these waste streams.

20 E-waste generation is growing exponentially with rising affluence. Singapore generates about 60,000 tonnes of e-waste annually, yet very little is recycled. This translates to each person throwing away the equivalent of six mobile phones every month. Such waste may contain heavy metals and other hazardous substances, and improper disposal may lead to the contamination of our environment and harm public health. Precious metals like gold are also being thrown away. We will introduce the Extended Producer Responsibility or EPR approach to e-waste by 2021, to ensure the proper handling and extraction of resources from e-waste. This will mandate producers of covered electrical and electronic equipment (EEE) to be responsible for the collection and proper treatment of their e-waste. All producers of covered EEE will need to register with NEA. Producers which exceed the prescribed threshold will need to join the Producer

Responsibility Scheme (PRS) and finance the collection and recycling of e-waste. In return, the PRS operator will be responsible for meeting e-waste collection targets set by NEA.

21 To minimise the regulatory impact on smaller players, we have set thresholds to exempt smaller producers, which supply about 10% of the consumer products that are put-to-market in Singapore by weight, from joining the PRS. This means that producers of 90% of the consumer products put-to-market in Singapore will be subject to the EPR framework. We will monitor the implementation of the EPR framework, and ensure that these thresholds remain relevant.

22 The next priority waste stream is packaging waste, including plastics. We generate large amounts of this - around a third of the total domestic waste disposed of in Singapore. Almost all of this packaging material is incinerated. This ensures that the environmental impacts are managed effectively, and our packaging, including plastics do not end up in the sea, mangling creatures such as cute baby dugongs in Thailand. However, we ought to do more to reduce and recycle packaging. External forces are also changing the economics of the recycling industry. China's ban on the import of plastic waste has shifted the trade patterns of plastic recyclables. As a result, our plastics recycling rate, which hovered around 10%, dropped to 4% in 2018. We cannot continue with business as usual. We can and must do more to better manage packaging, including plastics.

23 As a start, next year, we will implement mandatory reporting of packaging data and plans to reduce, reuse or recycle packaging, including plastics. The requirements will apply, for a start, to companies with an annual turnover above \$10 million. This will cover approximately 4,500 medium and large enterprises in Singapore who put packaging on the market. Micro and small enterprises will be exempted. This reporting will focus management attention on the packaging that companies are placing on the market and spur reduction efforts that will save them costs. This will lay the ground for an EPR framework for packaging waste, which will be put in place no later than 2025, if not earlier.

24 Third, food waste is a major waste stream with high generation tonnage and low recycling rates. In 2018, we generated 763,000 tonnes of food waste. Of this, only 17% was recycled. From 2024, we will make it mandatory for the owners and occupiers of commercial and industrial premises which generate large amounts of food waste, to segregate their food waste for treatment.

25 We will also require owners and occupiers of new buildings which are expected to be large food waste generators, to treat food waste on-site. In preparation for this, we will require developers of new buildings which are expected to be large food waste generators, to make provisions for on-site treatment of food waste, in development plans submitted from 2021. These new requirements will ensure that food waste from large food waste generators is diverted for treatment or converted into useful products, such as compost and animal feed, instead of being incinerated. This will also reduce odour and pest nuisances at the premises, and reduce the contamination of recyclables by food waste, allowing for greater resource recovery.

26 We will complement the regulatory frameworks with other measures. These include educational campaigns, co-creation efforts with the community and grants to support ground-up initiatives. For example, NEA launched the "Say YES to Waste Less" campaign in June as part of the Year Towards Zero Waste movement to reduce the excessive consumption of disposables and packaging and encourage the use of reusables. NEA has also launched the 'Towards Zero Waste Grant' to support individuals, interest groups, non-governmental organisations, grassroots organisations and corporations to initiate or scale up waste reduction and recycling initiatives. A vibrant Zero Waste ecosystem will encourage our citizens to reduce, reuse and recycle. Our regulatory measures will be key in incentivising producers to play an active role in building this Zero Waste ecosystem with us.

Key Features of the Bill

27 Mr Speaker sir, let me now highlight the main elements of the Resource Sustainability Bill.

28 Part 3 of the Bill establishes the EPR framework for e-waste. Clause 8 requires producers as defined in the Bill to register with NEA in order to supply regulated products, and Clause 12 requires larger producers above a threshold to join a Producer Responsibility Scheme (PRS) before they can supply regulated consumer products. For producers of regulated non-consumer products, Clause 13 requires them to collect any of such products upon request by customers at no charge.

29 Clause 14 requires retailers to offer a 1-for-1 collection of an unwanted product at no charge when retailers deliver a product of the same type to a customer. Clause 15 requires large retailers to provide in-

store collection of e-waste. Retailers are important stakeholders in this EPR framework for e-waste, and are often the interface with consumers.

30 To ensure that e-waste is properly managed and disposed of, Clauses 16 and 17 lay out restrictions on the collection and disposal of e-waste to ensure proper treatment.

31 The next part of the Bill, Part 4, establishes the mandatory reporting framework for packaging, including plastics. Clause 20 requires producers of specified packaging that fulfil the threshold criteria to report on the packaging they introduce onto the Singapore market. They will also be required to submit plans to NEA to reduce, reuse or recycle packaging under clause 21. As mentioned earlier, the threshold criteria will, for a start, be set at an annual turnover of above \$10 million.

32 Part 5 establishes the mandatory segregation of food waste for treatment for buildings which are large generators of food waste. Clause 25 requires occupiers of a prescribed building to segregate their food waste and dispose of it in a facility provided by the building manager, who will be obligated to provide such facilities under clause 26. Clause 27 requires the building managers of prescribed buildings to also ensure the treatment of all food waste.

33 Part 6 covers the requirements on operators of the PRS. They are fundamental in any EPR framework as they establish the network for public collection of the regulated waste, and ensure that the waste collected is properly treated and recycled. Clause 28 will require operators of the PRS to be licensed. Clauses 30 to 32 empower NEA to determine the conditions of the licence and to take necessary actions to ensure effective operation of the PRS. As NEA will be providing the licensee with certain information submitted by obligated producers for the purpose of the EPR, clause 36 makes it an offence for the licensee or former licensees to disclose any confidential information received from NEA. This will ensure the confidentiality of data to safeguard the interests of producers.

34 Part 7 contains the provisions necessary for the enforcement of the Bill. Clauses 37 to 40 empower authorised officers to request for information and documents from any person, and enter any non-residential premises to investigate or monitor compliance with the provisions of the Bill. Clause 41 penalises anyone who hinders an authorised officer in the performance of his or her duty.

35 Part 8 contains miscellaneous provisions necessary for the administration of the Bill. As a large part of the regulations is dependent on information furnished by the obligated persons, clause 42 makes the provision of any false or misleading information an offence. To safeguard information, clause 43 prohibits NEA from disclosing any confidential information or document except in accordance with the clause.

36 The penalties laid out in the Bill are in line with other similar legislation, such as the Energy Conservation Act and the Environmental Public Health Act.

Conclusion

37 Mr Speaker, it is clear that business as usual in the way we produce and consume is not sustainable. The impacts of climate change and the carbon and resource constraints we face respect no geographical or national boundaries. The Resource Sustainability Bill is an integral part of our strategy to close resource loops through a circular economy approach to mitigate and adapt to climate change. Not only will it contribute to environmental sustainability, it will also help to build up the three resiliences – climate, economic and resource. Only by doing so can we create a sustainable Singapore of tomorrow and secure our collective future for our children.

38 Mr Speaker, I beg to move.