MALAYSIA'S ROADMAP TOWARDS ZERO SINGLE-USE PLASTICS 2018-2030

Towards a sustainable future

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ROADMAP TOWARDS ZERO SINGLE-USE PLASTICS 2018-2030

INTRODUCTION

Since the 1950s, the production of plastic has outpaced that of almost every other material due to its versatility and functionality. Most of these plastics are designed to be thrown away after being used only once (single-use) which results in single-use disposable plastics waste accumulation. Only nine per cent of the nine billion tonnes of plastic the world has ever produced has been recycled. Most ends up in landfills, dumps or in the open environment[1]. Single-use plastics[2] are plastics that are commonly used for plastic packaging, carry bags and include items intended to be used only once before they are thrown away.

Malaysia is a global player in the plastic industry with currently about 1,300 plastic manufacturers. As of 2016, our exports amounted to RM30 billion which saw a 2.26 million metric tonnes of resin utilised to produce plastics.

Environmental problems related to plastic waste have become a major problem in Malaysia where it has been ranked as 8th among the top ten countries with mismanaged plastic waste in the world. A study estimated that Malaysia had produced 0.94 million tons of mismanaged plastic wastes, of which 0.14 to 0.37 million tons may have been washed into the oceans[3].

Some studies have also highlighted the potential health effects of single-use plastics on human and animals. Besides that, the Asia Pacific Economic Cooperation (APEC) had estimated USD13 billion impact of marine plastic pollution to the Asia Pacific region[4].

More than 60 countries have introduced some measures to curb single-use plastics waste such as imposing bans and levies. Some countries have imposed direct ban on single-use plastics but according to a UNEP[1] report, the bans have not been effective to curtail plastic pollution. The report also highlights other countries have taken a phased approach and in some cases, complimented with economic instruments. For example, India is planning to phase-out single-use plastics by 2022. Taiwan and European Union plan to phase-out single-use plastics by 2030.

Plastic pollution is a global problem that needs to be addressed in a sustainable manner. Malaysia has always promoted sustainable development by balancing economic growth with environmental protection in line with the United Nation's Sustainable Development Goals. Malaysia plans to address single-use plastics by encouraging the plastic industry to transition to eco-friendly products. This will ensure the industry thrives by adapting green technologies while the environment is safeguarded. As such, this Roadmap is prepared to be used as a guide towards zero single-use plastics in Malaysia in a holistic manner.

1) UNEP (2018) SINGLE-USE PLASTICS: A Roadmap for Sustainability
2) Plastics in this document is referred to the conventional petroleum based plastic
3) Estimation of mismanaged plastic waste in Malaysia in 2010 (Jenna R. Jambeck et al. 2015)
4) APEC, 2009

THE VISION

"Towards zero single-use plastics for a cleaner and healthier environment in Malaysia by 2030"

The vision of this Roadmap is to take a phased, evidence-based and holistic approach by involving all stakeholders in jointly addressing single-use plastics pollution in Malaysia. This Roadmap is envisaged to deploy actions that can deflect the current trajectory to a more sustainable pathway towards a cleaner and healthier environment by 2030.

The Roadmap will be implemented from 2018 leading up to 2030 with an expectation that all relevant stakeholders will play their roles effectively to ensure the objectives of this roadmap are met.

THE PRINCIPLES

Shared Responsibility

The responsibility to eliminate single-use plastics waste from the natural environment has to be shared by all the stakeholders including the government, industries, civil society and the consumers.

Sustainable Development

This Roadmap will support the wider national agenda on sustainable development that includes the consideration of economic, technology, environment, development and social factors.

Precautionary Principle

Plastics, as reported have an impact on biodiversity, environment and human health and some of these impacts are still being studied. When an activity raises threats or harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

Participatory

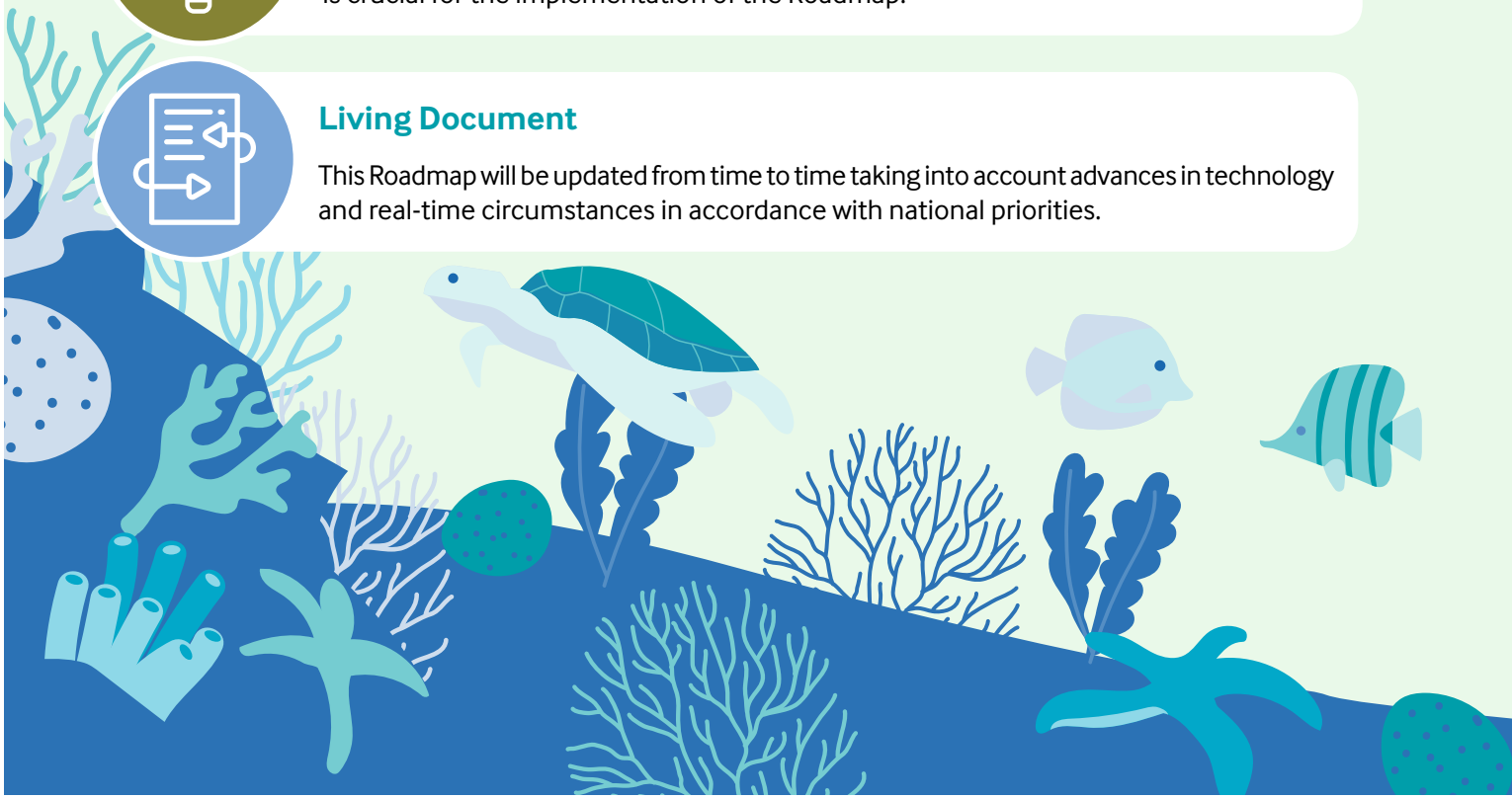
Planning and execution of the Roadmap will be carried out by engaging all the relevant stakeholders in an open and transparent manner.

Good Governance

Good governance with appropriate mechanisms including accountability and transparency is crucial for the implementation of the Roadmap.

Living Document

This Roadmap will be updated from time to time taking into account advances in technology and real-time circumstances in accordance with national priorities.



THE NEED FOR THIS ROADMAP

At present, there is no uniform approach in Malaysia to address single-use plastics. This Roadmap aims to provide a policy direction to all stakeholders including State Governments in taking a unified and collective approach. While Malaysia continues to strive to be a fully developed nation, the economic advances should be balanced with the environmental protection to ensure sustainability and societal wellbeing.

This Roadmap will provide opportunities for the local industries to embrace new eco-friendly alternatives that could facilitate penetration to a wider global market as the world move towards adapting products and processes that can address plastic pollution.

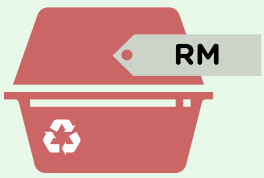
The effectiveness of this roadmap will require a structured and coordinated effort from all players in the plastic value-chain working in a concerted effort to address single-use plastics pollution.

PROBLEM STATEMENT

The severity of plastic pollution in Malaysia

Low recycling rates of plastic waste

The absence of environmentally friendly, cost effective alternative



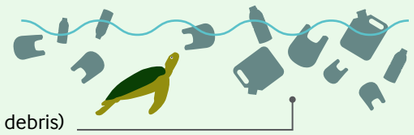
Absence of uniform policy framework

Solution:
Roadmap's Action Plan

ROADMAP TOWARDS ZERO SINGLE-USE PLASTICS 2018-2030

Towards a Sustainable Future

- Roadmap Towards Zero Single-Use Plastics launched
- Institutional/Secretariat set up
- Communication, Education and Public Awareness (CEPA) Plan
- Technical guidelines
- Revised ECO001
- Rapid testing kit (starch)
- Regional cooperation (marine debris)

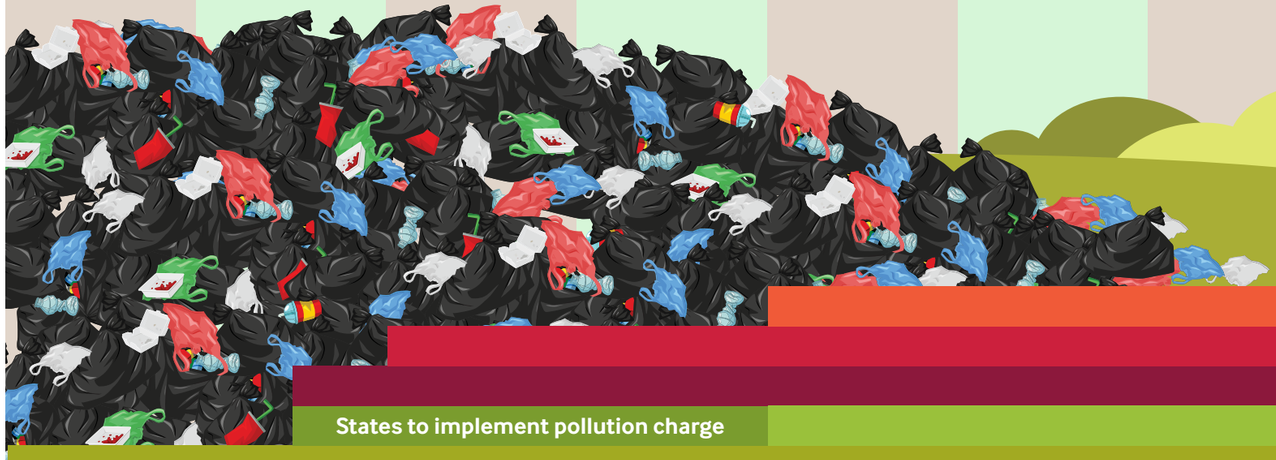


- Widespread uptake of bio bag nationwide to replace plastic bag
- Legal framework in place
- Federal pollution levy on plastic manufacturers
- Pollution charge to non-fixed premises
- Rapid testing kit (PHA)

- Scope extended to other single-use plastics

- Implementation Report

2018 | **2020** | **2022** | **2024** | **2026** | **2028** | **2030**



Other single-use plastics - ECO001

Federal pollution levy on plastic manufacturers

Circular Economy Roadmap for bottles and other single-use plastics

Incentives for eco-friendly alternatives

States to implement pollution charge

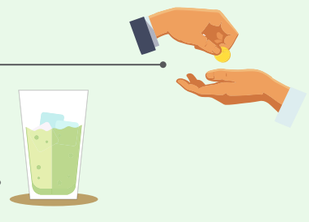
States continue to charge for bags

R&D on alternatives

Communication, Education and Public Awareness

2019 | **2021** | **2023** | **2025** | **2027** | **2029**

- Pollution charge on single-use plastic bags by states (fixed premises)
- Straw only on request
- Draft/Revise legal framework



- Mid term review
- Experiential learning at schools
- Communication, Education and Public Awareness review

- Regional Marine Debris Implementation Report

ACTION PLAN

PHASE 1
2018-2021

2018:

- Official launching of Roadmap towards Zero Single-Use Plastics in October 2018.
- Nationwide stakeholder engagement in drafting the CEPA program led by KPKT.
- KPKT to publish a guideline for Local Authority/PBT on the licensing requirement to implement the pollution charge collection.
- Workshop to be conducted for all PBTs regarding single-use plastics and the mechanism and implementation of pollution charge in cooperation with Penang State Government.
- To establish institutional framework and governance structure for the implementation of the Roadmap.
- To establish a dedicated secretariat to coordinate, monitoring and to facilitate the implementation of the Roadmap.
- SIRIM Berhad to lead the revision of ECO001 criteria document to include only biodegradable and compostable products and excluding photo and oxo-degradable. New ECO001 criteria document to be published.
- Technical guidelines on biodegradable and compostable products for State Governments.
- R&D funding on alternative eco-friendly products.

2019:

- 'No straw by default' practice where straw is given by request with no charge. Will be implemented in fixed premises (See page 14 of the Roadmap).
- Local government authorities nationwide to utilise compostable garbage bag for garden waste collection.
- Customers encouraged to bring their own food container or the food business operator at fixed premises (as per page 14) will sell food containers that complies ECO001 and ECO009 to replace polystyrene and plastic food packaging.
- States will impose a pollution charge at a minimum of RM0.20 for plastic bags. Nationwide implementation by end of 2021.
  - ✓ Each state will decide the implementation time (from 2019 till 2021);
  - ✓ Applicable to fixed premises as per page 14; and
  - ✓ Plastic bags will be sold as SKU product with barcode.

  Note: The above is the minimum standard notwithstanding the right of States to take action that is more protective for addressing plastic pollution.
- Expand Bionexus equivalent status and other incentives to ECO001 resin manufacturers and ECO009 product manufacturers.
- Rapid testing kit for ECO001 compliant material (starch-base) introduced.
- Review existing laws/develop legal framework on single-use plastics.
- Develop a regional marine debris project for external funding such as Global Environment Fund (GEF) to be implemented in Phase II.
- A comprehensive CEPA program developed and deployed by KPKT.

PHASE 1
2018-2021

2020:

- A Circular Economy Roadmap (CER) for plastics including bottles launched by 2020 to be implemented in Phase II.

2021:

- Technical workshop in developing capacity of all stakeholders in implementing CER.

PHASE 2
2022-2025

2022:

- Widespread uptake of bio bag nationwide replacing plastic bags and sold as SKU item.
- 'No straw by default' practice continues and extended to non-fixed premises. SKU ECO001 straw (bio straw) will be introduced including straws for packet drinks.
- Expansion scope of biodegradable and compostable products:
  - ✓ Food packaging;
  - ✓ Plastic film;
  - ✓ Cutleries;
  - ✓ Food container;
  - ✓ Cotton buds;
  - ✓ Polybags and plant pots; and
  - ✓ Slow release fertilizers.
- Implementation of CER for plastics including bottles and other single-use product.
- Implementation of minimum pollution charge on plastic bags continues and extended to non-fixed premises by 2025.
- The Federal Government will impose a pollution levy to manufacturers of plastic bags.
- The pollution levy collected will be managed in a transparent manner. The fund will be used for redressing plastic pollution, research and development (R&D) on eco-friendly alternatives, incentives to manufacturers and CEPA activities.
- R&D funding on alternative eco-friendly products.
- Rapid testing kit for ECO001 compliant material (PHA and other products) developed.
- Introduction of legal framework on single-use plastics.
- Implementation of a regional marine debris project.

ACTION PLAN

PHASE 2
2022-2025

2023:

- A mid-term review of this Roadmap will be conducted and a report will be published.
- Experiential learning integrated into the education system.
- Review CEPA's implementation by KPKT.

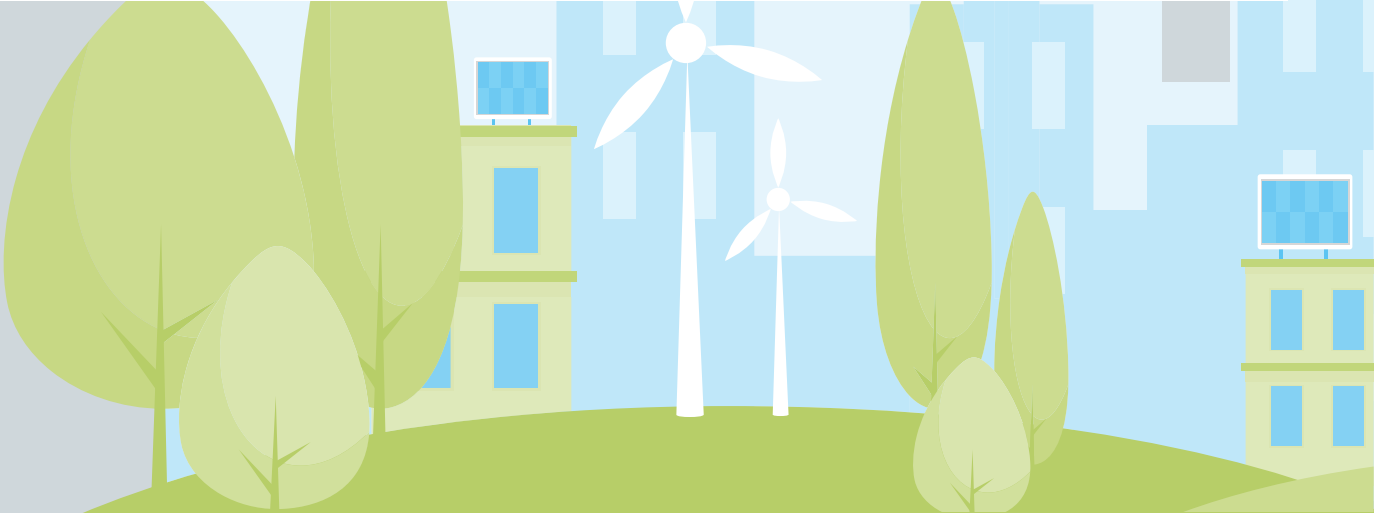
PHASE 3
2026-2030

2026 – 2030:

- Substantial increase in the volume of production of local biodegradable and compostable alternative products for local consumption.
- Expansion scope of biodegradable and compostable products:
  - ✓ Single-use medical devices (e.g. catheter);
  - ✓ Diapers & feminine hygiene product; and
  - ✓ Other single-use plastics that cannot enter the circular economy.
- R&D funding on alternative eco-friendly products.
- Rapid testing kit for ECO001 compliant products deployed.
- CEPA program continues.

2030:

- An implementation report of the Roadmap will be published.



CHALLENGES BEFORE US

Lack of Awareness

The problem of plastic waste in Malaysia is driven by the habit of littering and unsustainable consumption habits. The implementation of this Roadmap will be complemented by an effective and target-based CEPA program.

Low Recycling Rate

The recycling industry in Malaysia focuses on materials that can be easily collected and has high value. Due to this factor, only waste materials like transparent PET bottles are being recycled in mass volume. Other waste materials (i.e. food packaging, polystyrene products and straws) that do not have recycling value are almost never recycled due to lack of technology or business viability. Besides that, the local recyclers are challenged to ensure the sustainability and quality of raw materials.

Biodegradability and Cost of Current Alternative to Plastics

The current biodegradable alternatives are higher in price than plastics. This factor does not encourage businesses to embrace alternative products. This is further augmented with arguments and challenges on the biodegradability of alternatives. In this regard, the approach taken by this Roadmap to introduce bio bags in Phase II is to provide time for evidence-based studies and R&D on alternative products.

Enforcement

This Roadmap needs the cooperation of all stakeholders for its successful implementation. Nevertheless there may be situations where certain parties default the action calls of this Roadmap. Given the ubiquitous nature of single-use plastics and its huge usage, enforcement especially at local levels would pose some challenges. This can be mitigated through citizen action which will be nurtured by the CEPA program that will be deployed under this Roadmap.

Integrated Waste Management

This Roadmap would need to be complimented by an integrated waste management approach such as organic waste composting facilities to ensure proper end-of-life treatment of some biodegradable alternatives. This integrated approach could act as a catalyst for waste to wealth interventions by creating downstream industries such as fertiliser, energy, and the animal feed industry.

IMPLEMENTATION FRAMEWORK

Role and Responsibilities for Implementation

Federal Government

The Federal Government, via MESTECC, will lead the implementation of this Roadmap by undertaking the necessary coordination among stakeholders, establishing appropriate platforms, facilitating resource mobilisation, monitoring and review of this Roadmap. This function will primarily be driven by a joint ministerial committee co-chaired by Minister of MESTECC and KPKT.

State Governments

The State Governments will play a major role in implementing this Roadmap. In line with the prevailing laws and policies of each State Government, this Roadmap will harmonise implementation across Malaysia with regards to single-use plastics pollution. State Governments would need to establish coordinating platform headed by the State Secretary to mobilise implementation at state level.

Manufacturers/Suppliers/Business Operators

To comply with the Roadmap in a participatory manner and encourage proactive measures in the implementation of the Roadmap, manufacturers/suppliers/business operators will provide technical and business inputs to the various platforms established by the government.

NGOs

To facilitate the implementation of this Roadmap, NGOs are encourage to conduct and coordinate training, research, environmental education, awareness, capacity building and publications to assist in particular grassroots actions.

General Public

For the success of this Roadmap, the Rakyat need to take proactive measures to reduce and eventually stop using single-use plastics. The Government and other stakeholders will conduct CEPA which the Rakyat could participate and support the implementation of this Roadmap. This Roadmap relies heavily on the power of consumers and builds upon the premise that each individual has the capacity to make positive change by adopting a wise use approach to their consumption patterns.

Governance mechanisms

Joint Ministerial Committee

- The Joint Ministerial Meeting, co-chaired by the Minister of MESTECC and Minister of KPKT. This meeting will be the primary coordinating platform for the Roadmap. The role of this meeting will include:

  - providing overall direction for the implementation of the Roadmap;
  - ensuring that all actions needed for this Roadmap are implemented in a timely and effective manner;
  - monitoring the progress towards achieving the goals and targets;
  - facilitate the implementation of actions at the state, district and local government level;
  - provide an avenue for inter-agency planning among related state agencies on the Roadmap; and
  - identify means to strengthen the cooperation between the Federal and State Government relating to the Roadmap.

- The membership of the committee are as follows:

  - Minister of MESTECC;
  - Minister of KPKT;
  - Environment and Local Government Exco of each states;
  - Secretary General or representative from relevant federal and state agencies; and
  - other members on invitation basis.

Joint Steering Committee

- The Joint Steering Committee Meeting shall be co-chaired by the Secretary General of MESTECC and KPKT. The role of this meeting will include:

  - soliciting and reviewing inputs from various institutions, committees and forums to assess the effectiveness of Roadmap implementation;
  - ensuring that resources needed for the Roadmap are mobilised in a timely manner;
  - resolving Roadmap and programme conflicts, if any; and
  - to mobilise ad-hoc taskforce for specific issues to facilitate implementations.

- The membership of this committee are as follows:

  - Secretary General of MESTECC;
  - Secretary General of KPKT;
  - State Secretary of each state;
  - representative from relevant federal and state agencies; and
  - other members by invitation on a case-by-case basis.

Technical Committee

- Technical committee/s may be established as the case may be to address specific technical issue.

Permanent Secretariat

- To coordinate, monitor and facilitate the implementation of the Roadmap, a permanent secretariat will be established at MESTECC.

ABBREVIATIONS AND EXPLANATIONS

Bio bag	Carrier bag that meets ECO001 criteria
CEPA	Communication, Education and Public Awareness
CER	Circular Economy Roadmap
ECO001	Eco-Labelling Criteria - Biodegradable and Compostable Plastic Packaging Materials
ECO009	Eco-labelling criteria - Biomass based products for food-contact applications.
Fixed premises	Refers to hypermarkets, supermarkets, departmental stores, convenient stores, fast food restaurants, petrol station convenient stores, chain stores and pharmacies
KPKT	Ministry of Housing and Local Government
KWP	Ministry of Territories
MESTECC	Ministry of Energy, Science, Technology, Environment and Climate Change
NGOs	Non-Governmental Organisations
PBT	Pihak Berkuasa Tempatan
PHA	Polyhydroxyalkanoates
SKU	Stock keeping unit

ACKNOWLEDGEMENT

This Roadmap Towards Zero Single-Use Plastics was developed through the active and dedicated participation of various stakeholders. The Stakeholders represented the NGOs, academia, industry, retailers, GLCs, CLGs, federal agencies and state governments. The public was also engaged in a dedicated town hall session conducted on 24th of September 2018, where valuable inputs were obtained to shape this document.

The Ministry of Energy, Science, Technology, Environment and Climate Change would like to thank all organisations and individuals who came forward to assist with the development of this Roadmap that supports local actions in line with the UN Sustainable Development Goals.

The success of this roadmap will need all of us, all stakeholders, every Malaysian to be part of this journey towards a sustainable future.

MINISTRY OF ENERGY, SCIENCE, TECHNOLOGY, ENVIRONMENT & CLIMATE CHANGE (MESTECC)

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