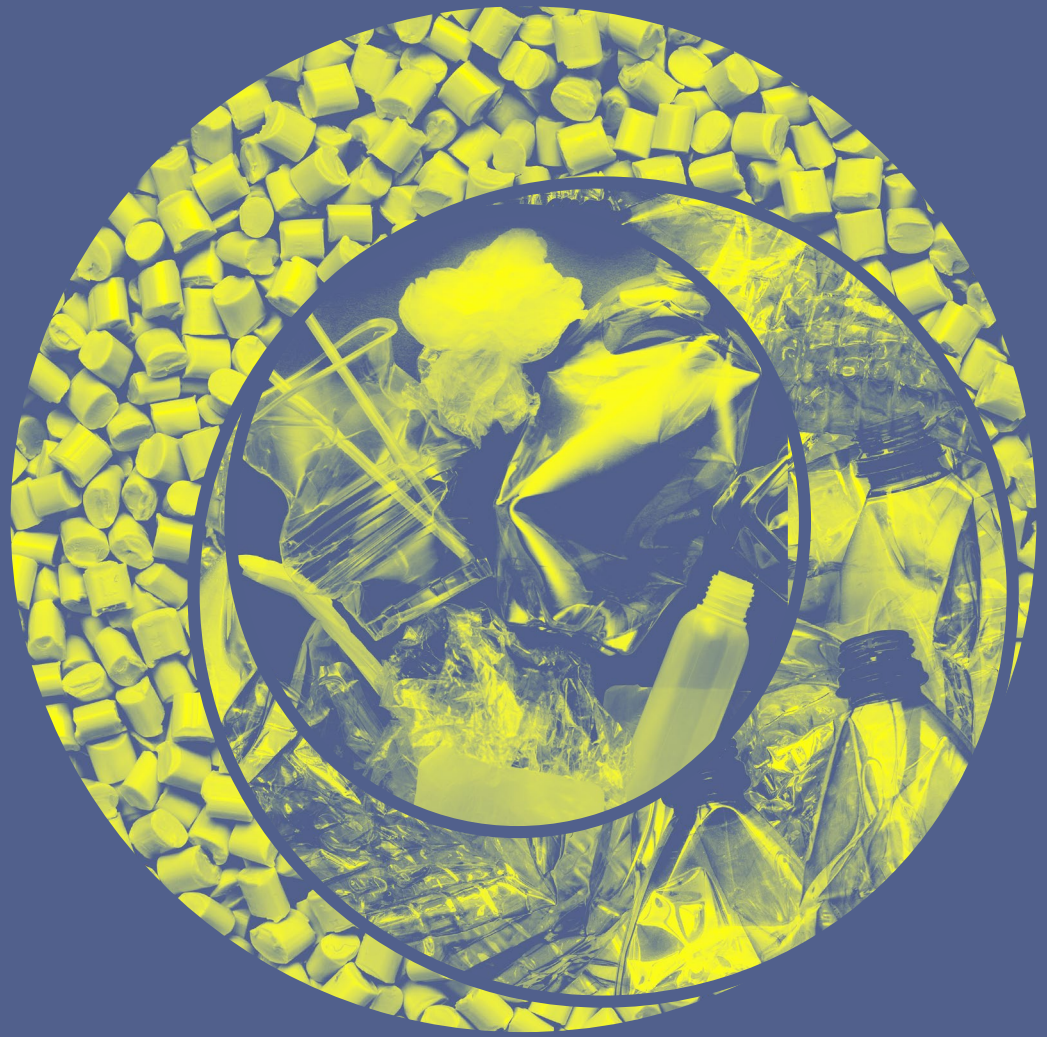
ELLEN MACARTHUR FOUNDATION
艾伦·麦克阿瑟基金会

Towards a circular economy for plastics in China:

Opportunities and recommendations



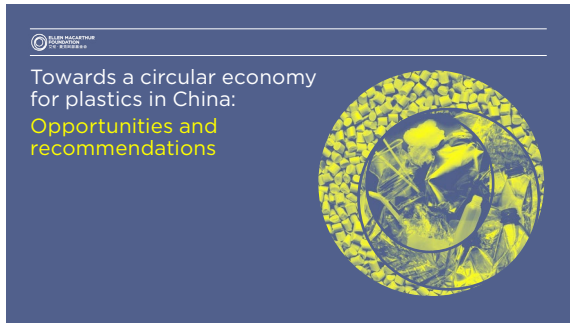
Preamble

Towards a circular economy for plastics in China report

Today, the circular economy for plastics is at a turning point. There is a widespread understanding and sense of urgency around the need to tackle the plastic problem at source. This is the time for China to activate circular solutions to drastically shift the way plastics are made and used in China and globally. This report intends to show how this can be done.

By taking China's plastic packaging industry as the entry point, the report highlights the path and opportunities of the circular economy transformation for plastics and identifies a set of specific actions. A series of recommendations are also provided for policymakers and businesses to enable the circular economy transition.

Drawing on the New Plastics Economy vision, and two previous reports *The New Plastics Economy: Rethinking the future of plastics* (2016) and *The New Plastics Economy – Catalysing action* (2017), this new report is the Ellen MacArthur Foundation's first China-focused study on plastic. Written in collaboration with Tsinghua University, it aims to inspire and empower a wide range of actors towards a circular economy for plastics in China.



Now is the time for China to accelerate a circular economy for plastics

- As the biggest manufacturer, user, and exporter of plastics in the world, China has a unique role to play in driving the transition to a circular global plastics economy
- A fundamental rethink of the way plastic is produced, used, and reused is required to solve plastic pollution
- A circular economy for plastic is essential for China to meet its plastic objectives, and support its carbon emission goals and broader environmental agenda

Challenges and opportunities for China to transition to a circular economy

- The foundation of a policy framework for the circular economy is already in place, but gaps remain
- The voluntary efforts of the plastics industry provide a useful starting point but are still siloed and focused on waste management practices
- There are great opportunities for upstream innovation to design out waste
- Successful examples in China and internationally provide inspiration

Action plan for China

- Policymakers and businesses can take action in three main areas: design, system and Infrastructure, and incentives
- Establish a cross-value chain dialogue to achieve a common vision and targets
- China can play an active and leading role in the development of an ambitious UN treaty on plastic pollution

Now is the time for China to accelerate a circular economy for plastics

As the biggest manufacturer, user, and exporter of plastics in the world, China has a unique role to play in driving the transition to a circular global plastics economy.

- In China, 60 million tonnes of plastic waste were generated in 2020, of which approximately 35% was landfilled, 37% incinerated, and only 26.7% (16 million tonnes) was recycled.
- China's packaging production has been growing since 2018 with an average annual growth rate of 8.7%, reaching 45 million tonnes in 2020.
- We take raw materials out of the ground, make products and packaging, and throw them away as waste. This linear plastics system causes environmental issues, affects the health and livelihoods of some of the poorest communities but also creates a significant economic value loss.
- Globally, the cost of negative externalities associated with plastic packaging escaping collection systems has been conservatively estimated by UNEP at USD 40 billion (~RMB 258 billion).
- Most efforts to tackle plastic pollution have focused on waste management and environmental clean-ups. These downstream efforts, including collection, sorting and recycling, are needed, and will require investment globally, but they cannot alone represent an effective response to the problem.

32%
of global plastic materials production

USD 64 billion
RMB 430 billion, China's total revenue for plastic packaging in 2020

45 million
tonnes of plastic is produced annually for China's packaging sector

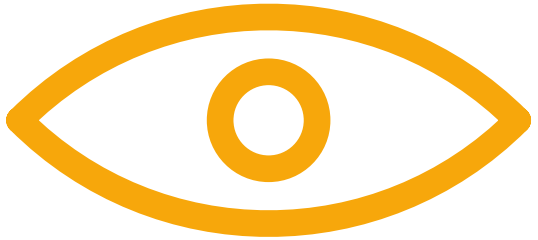
A fundamental rethink of the way plastic is produced, used, and reused is required to solve plastic pollution.

Over 1,000 businesses, governments, NGOs, and other actors across the world have united behind a common vision of a circular economy for plastics and committed to concrete 2025 targets.

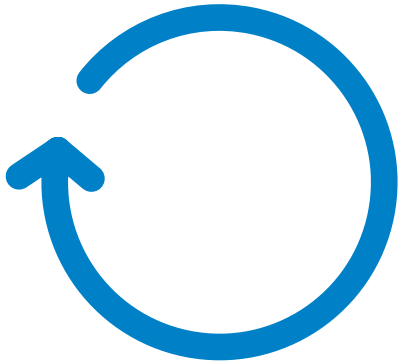
The circular economy for plastics offers a vision in which plastic never becomes waste. It presents a fundamental rethink of plastics and plastic packaging, envisioning a more effective system to achieve better economic and environmental outcomes.

The circular economy for plastics provides an actionable framework around 3 principles:

Eliminate problematic and unnecessary plastics



Innovate to ensure that all necessary plastics are reusable, recyclable, or compostable



Circulate all the plastic items we use to keep them in the economy and out of the environment

A circular economy for plastics is essential for China to meet its plastic objectives, and support its carbon emission goals and broader environmental agenda.

In line with the Chinese government targets for carbon neutrality by 2060 and the creation of a 'green, low-carbon society', the circular economy offers a systems solution framework that builds a resilient economy and delivers both long-term prosperity and addresses global challenges such as climate change, biodiversity loss, waste and pollution.

This transformation, which reaches far beyond incremental or end-of-pipe actions to simply improve waste management and better recycling, can help China achieve its vision of Ecological Civilisation.

Compared with a business-as-usual scenario, a comprehensive global circular economy approach has the potential to

reduce the annual volume of plastics entering our oceans by over
80%

reduce greenhouse gas emissions by
25%

generate savings of
USD 200 billion
per year

create
700,000
net additional jobs by 2040

Now is the time for China to accelerate a circular economy for plastics

- As the biggest manufacturer, user, and exporter of plastics in the world, China has a unique role to play in driving the transition to a circular global plastics economy
- A fundamental rethink of the way plastic is produced, used, and reused is required to solve plastic pollution
- A circular economy for plastic is essential for China to meet its plastic objectives, and support its carbon emission goals and broader environmental agenda

Challenges and opportunities for China to transition to a circular economy

- The foundation of a policy framework for the circular economy is already in place, but gaps remain
- The voluntary efforts of the plastics industry provide a useful starting point but are still siloed and focused on waste management practices
- There are great opportunities for upstream innovation to design out waste
- Successful examples in China and internationally provide inspiration

Action plan for China

- Policymakers and businesses can take action in three main areas: design, system and Infrastructure, and incentives
- Establish a cross-value chain dialogue to achieve a common vision and targets
- China can play an active and leading role in the development of an ambitious UN treaty on plastic pollution

Challenges and opportunities for China to transition to a circular economy

The foundation of a policy framework for the circular economy is already in place...

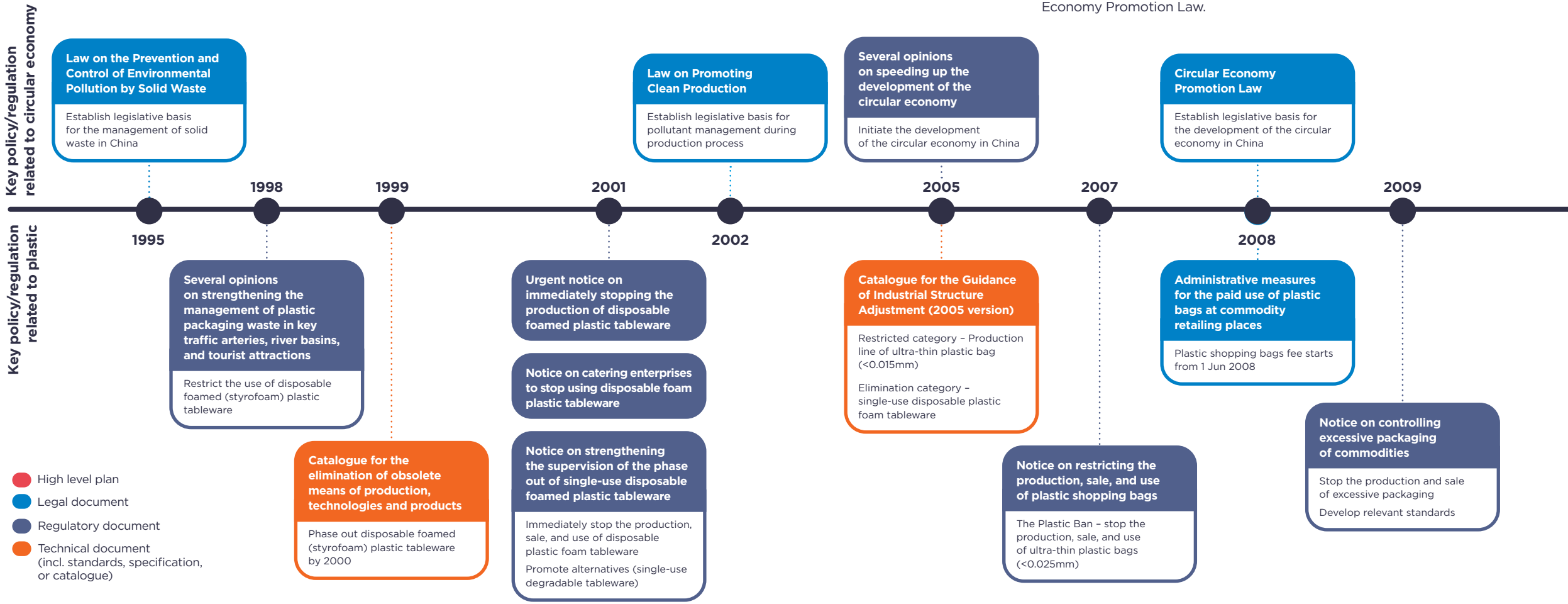
Since the 1990s, China has gradually developed a plastic pollution policy framework:

Stage 1. Targeted bans and the first Circular Economy Law

To curb the "white pollution", certain types of single-use items (styrofoam food containers and ultra-thin plastic shopping bags) are banned, marking the beginning of the fight against plastic pollution in China.

As early as 2005, the Chinese government launches circular economy demonstration projects, including a pilot project on plastic recycling.

The rollout of a 3R strategy is included in the 2008 first Circular Economy Promotion Law.



Stage 2. Plastic recycling system established with the development of the circular economy

After successive action plans in 2013 and 2015, the circular economy becomes a national development strategy.

With increased recycling capacity, China becomes the largest plastic waste importer, and processes one-quarter of global plastic waste.

In 2015, the vision of Ecological Civilisation and plan was developed.

2011

Opinions on establishing a complete and advanced recycling system for waste and used commodities

Develop recycling system to increase waste recycling rate

2012

National Environmental Protection '12th Five-Year' Plan

National Circular Economy Development '12th Five-Year' Plan

Reduction of the Total Emission of Major Pollutants '12th Five-Year' Plan

Law on Promoting Clean Production (Amendment)

Provisions on the administration of prevention and control of environmental pollution by processing and utilisation of waste plastics

Improve environmental requirements for waste plastic recycling industry

Encourage the development of centralised waste management and recycling facilities

2013

Circular Economy Development Strategy and Near-Term Action Plan

Focus on the increase of resource productivity (energy, water, land, minerals)

Notice on further restricting the production, sale, and use of plastic shopping bags

Cumulative reduction of plastic shopping bags usage in major retail outlets reached to 67 billion since 2007

2015

Opinions on accelerating the Ecological Civilisation Construction

Integrated Reform Plan for Promoting Ecological Progress

Propose an overall plan for the construction of Ecological Civilisation

Pollution prevention management regulations on waste plastics processing and utilisation

Specification for waste plastics utilisation industry (interim)

VAT reduction catalogue for resource utilisation of products and services

2016

Notice on plan for promoting the Extended Producer Responsibility System

Guiding opinions on building a Green Financial System

Propose the overall structure of green finance construction

Implementation Plan for Promoting Green Packaging for the Express Delivery Industry

Set direction of the development for plastic recycling industry (green, circular, coordinated, specialised, and clustered to produce high-value products)

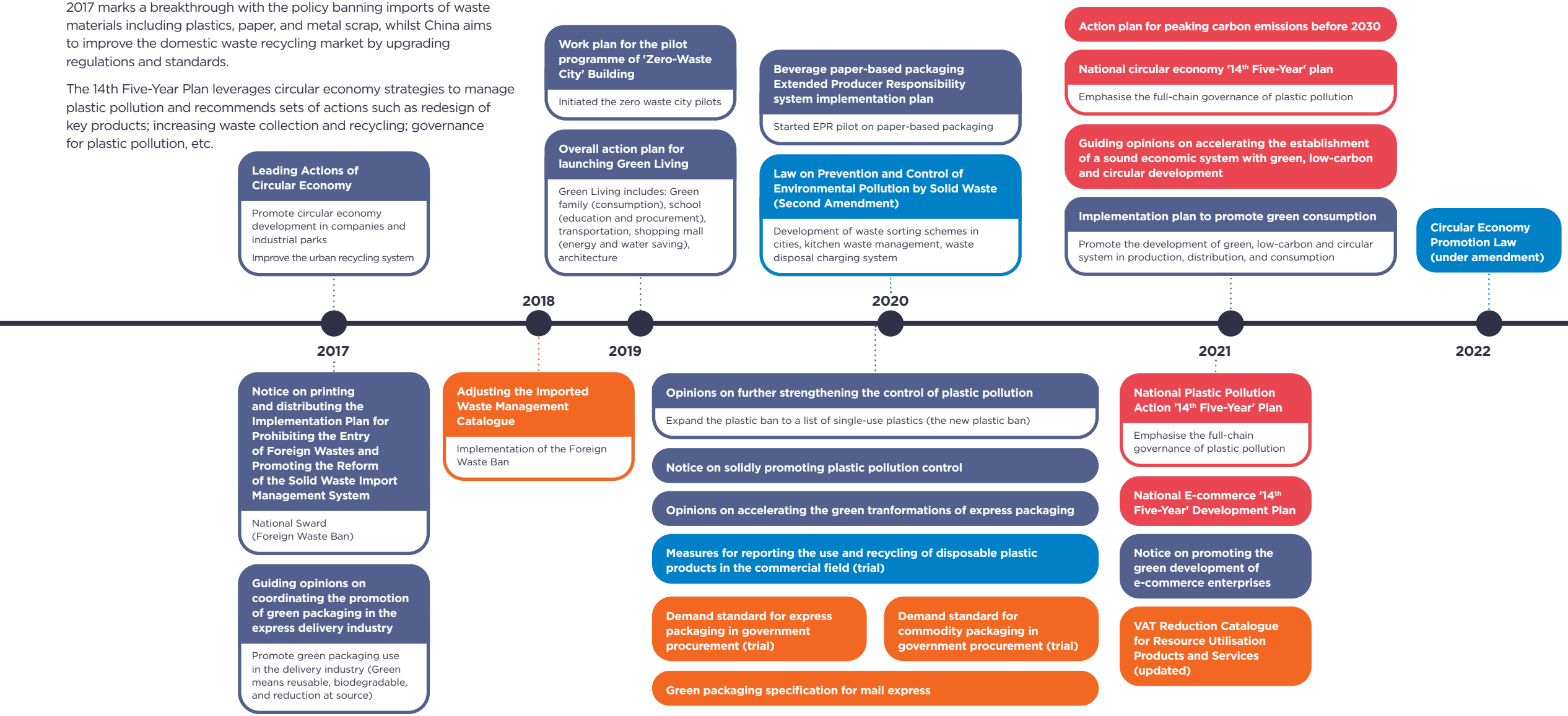
Guiding opinions on accelerating the development of renewable resource industry

Improve the efficiency of resource utilisation in the field of express packaging, reduce packaging consumption, and environmental pollution

Stage 3. From a foreign waste ban to a more integrated approach

2017 marks a breakthrough with the policy banning imports of waste materials including plastics, paper, and metal scrap, whilst China aims to improve the domestic waste recycling market by upgrading regulations and standards.

The 14th Five-Year Plan leverages circular economy strategies to manage plastic pollution and recommends sets of actions such as redesign of key products; increasing waste collection and recycling; governance for plastic pollution, etc.



...but gaps remain

By now, a strong interaction between plastic pollution management policy and the circular economy development plan has been established, which provides an opportunity to advance a more comprehensive policy framework for plastic in China. **However, currently, gaps in the policy agenda still remain:**

- Policies and standards for the packaging value chain are currently mostly voluntary (e.g. design-for-recycling guidelines), siloed or overlapping with each other. Coordination and harmonisation efforts can be made under the current discussion on "eco-design". Common standards must be harmonised and adopted.
- EPR scheme for all packaging, as a key mechanism for financing the collection, sorting and recycling of packaging, can be explored, given that it is a proven way to make the economics of packaging recycling work.
- Circular development for the plastic packaging industry is not fully integrated within current policy initiatives, such as Zero-Waste Cities initiatives and waste sorting schemes.
- To date, to avoid plastics waste and pollution, and meet China's objectives, the focus has been mainly on end-of-pipe waste management and only limited solutions to avoid waste from being generated in the first place have been adopted.

China's objectives to control plastic pollution (from the 14th FYP)

1
Reduce single-use plastic production and consumption at source

2
Improve plastic waste collection and recycling

3
Establish the whole chain management system of plastic pollution

4
Reduce plastic waste leakage

The voluntary efforts of the plastics industry provide a useful starting point but are still siloed and focused on waste management practices.

1 The current plastic system is linear and not fully monitored, which requires further coordination and integration.

Volume of plastic polymers being recycled in 2021

2 There are efforts downstream, but much more is needed.

- Plastic recycling has covered a variety of types, amounting to 19 million tonnes in total in 2021, but it is not clear how much is post-consumer waste. (see the figure on the left)
- Although recycled PET amounts to 4.8 million tonnes, 78% is used for the fibre industry, and close-loop recycling (i.e. bottle-to-bottle) is very limited.
- The plastic recycling industry involves 0.9 million workers, with a majority (nearly 80%) being self-employed or small businesses (referred to as the informal sector).

3 More importantly, the transition to a circular plastics economy requires prioritisation of upstream efforts.

There are great opportunities for upstream innovation to design out waste.

To unlock the full opportunity, it is necessary to move beyond focusing on incremental packaging improvements. Design is the fundamental starting point to achieving the circular economy vision, and a key step to eliminating plastic waste at source. Packaging redesign goes beyond the appearance and function of the packaging itself, and instead includes the design of the product, business model, and distribution system.

ELIMINATION Packaging is eliminated while the user experience is maintained or enhanced.

- Direct elimination
- Innovative elimination

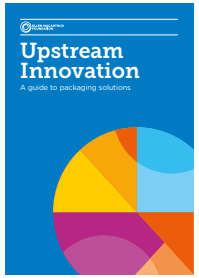
REUSE Packaging is reused, rather than discarded after one use, creating value for both users and businesses.

- Refill at home
- Return from home
- Return on the go
- Refill on the go
- Business to business

MATERIAL CIRCULATION Packaging is designed so that the materials it is made from can be recycled or composted.

- Plastics recycling
- Plastics composting
- Substitution to a non-plastic material

Successful examples in China and internationally provide inspiration.



To understand how to apply the upstream innovation mindset to achieve the three key circular economy innovation strategies: **elimination**, **reuse**, and **material circulation**, find here more than 110 innovation case studies and references. This database shows what good looks like in practice.

In China, local brands set ambitious circular economy targets for plastic packaging:

Nongfu and Mengniu for example have pledged to achieve 100% reusable, recyclable or compostable packaging by 2025.

Other businesses are exploring circular business models such as:

ELIMINATION

- 65% of e-commerce delivery has eliminated additional packaging by 2020.

REUSE MODELS

For the Chinese express delivery industry,

- the take-up rate of reusable **B2B** bags is over 90%.
- A target "to increase the use of **B2C** reusable delivery packaging to 10 million by 2025" was set in the 14th Five Year Plan.

MATERIAL CIRCULATION

- Production capacity for **closed-loop recycling** (i.e. bottle-to-bottle) is growing, with four companies having their production lines in China approved by the U.S. Food & Drug Administration (FDA) to produce food-contact packaging material (at an annual capacity of nearly 300,000 tonnes) – **Veolia Huafei, Incom, Guolong, Ceville**
- Use **post-consumer recycled plastic** in packaging – **Mengniu**

Now is the time for China to accelerate a circular economy for plastics

- As the biggest manufacturer, user, and exporter of plastics in the world, China has a unique role to play in driving the transition to a circular global plastics economy
- A fundamental rethink of the way plastic is produced, used, and reused is required to solve plastic pollution
- A circular economy for plastic is essential for China to meet its plastic objectives, and support its carbon emission goals and broader environmental agenda

Challenges and opportunities for China to transition to a circular economy

- The foundation of a policy framework for the circular economy is already in place, but gaps remain
- The voluntary efforts of the plastics industry provide a useful starting point but are still siloed and focused on waste management practices
- There are great opportunities for upstream innovation to design out waste
- Successful examples in China and internationally provide inspiration

Action plan for China

- Policymakers and businesses can take action in three main areas: design, system and Infrastructure, and incentives
- Establish a cross-value chain dialogue to achieve a common vision and targets
- China can play an active and leading role in the development of an ambitious UN treaty on plastic pollution

Action plan for China

5 Key objectives

The government and businesses need to develop comprehensive and ambitious circular economy strategies and action plans, aiming to:

- **Eliminate** unnecessary or problematic packaging
- Significantly **increase** the use of **reusable packaging**
- Ensure all packaging is **recyclable and recycled** in practice
- Increase the use of **recycled content**, to decouple plastic use from fossil resource consumption
- **Carefully assess** the use of **compostable** packaging where relevant

And actions can happen in

3 Priority areas

Policymakers and businesses can take action in three main areas:

1 Design

2 Systems and infrastructure

3 Incentives

1 Activating mechanism

Establish a cross-value chain dialogue to achieve the above objectives.

1 Enabling condition

A legally binding UN Plastic Treaty on plastic pollution that:

- Focus on ways to stop the plastic pollution at source, beyond clean ups.
- Set global standards.
- Support all countries to play their part.

Policymakers and businesses can take action in three main areas:	**1 Design** Designing out waste by rethinking the packaging, the product, and the business model in order to eliminate unnecessary or problematic plastics and ensure all plastic packaging is reusable, recyclable, or compostable.	**2 Systems and infrastructure** Collecting, sorting, and cleaning to enable reuse of packaging and recycling of packaging materials in practice and at scale.	**3 Incentives** Promoting the uptake of circular packaging solutions, new delivery models, and recycled material input.
Policy priorities:	**1 Establish mandatory design requirements**	**2 Lead the creation of necessary systems and infrastructure**	**3 Develop regulatory and financial incentives**
Business priorities:	**1 Develop design guidance**	**2 Work across the value chain to build systems and infrastructure**	**3 Develop incentives for customers**
Activating mechanism could:	**Break the silo, bridge communications, enhance collaborations, lead to concerted actions**		
Enabling condition could:	**Deliver industry-scale change and end plastic pollution**		

Eliminate unnecessary or problematic packaging

	1 Design	2 Systems and infrastructure	3 Incentives
Key initial priorities for **policymakers**:	1 Develop mandatory design requirements/ standards for packaging. 2 Develop elimination catalogue (commonly identified problematic packaging materials) with a phase-out plan.	1 Establish Extended Producer Responsibility (EPR) schemes for all packaging, as the implementation of EPR is likely to drive the companies to take action. 2 Hold e-commerce companies and food delivery platforms accountable for their crucial role in the transition to a circular economy for plastic packaging.	1 Establish policy instruments, such as landfill tax, incineration gate fees to further reduce waste and incentivise the elimination of unnecessary or problematic packaging.
Key initial priorities for **businesses**:	1 Embed a packaging assessment in all product development processes to assess the necessity of packaging usage. 2 Develop a phase-out plan for commonly identified problematic packaging materials. 3 Innovate towards 100% reusable, recyclable, or compostable packaging.	1 Support EPR policy and projects. 2 Develop and share evidence on the environmental considerations of packaging choices. 3 Communicate and explain the changes to staff and customers to ensure buy-in.	1 Charge for single-use packaging

Significantly increase the use of reusable packaging

	1 Design	2 Systems and infrastructure	3 Incentives
Key initial priorities for **policymakers**:	1 Develop reusable packaging targets and standards to increase the proportion of reusable packaging. 2 Improve the health and safety standards for reusable/refill appliances with an implementation plan.	1 Establish Extended Producer Responsibility (EPR) schemes for all packaging, as EPR can be an incentive to drive companies towards reuse. 2 Promote harmonisation of shared infrastructure to facilitate/enable scaling of reuse models. 3 Facilitate cross-value chain collaborations to enhance reuse models development (incl. collecting, sorting, and cleaning systems). 4 Ensure e-commerce companies play a leading coordination role to increase reuse in the e-commerce sector.	1 Introduce fiscal incentives and subsidies (e.g., VAT deduction or expanding the scope of tax preferential to the reusable businesses) to encourage the development of reusable packaging and related business models. 2 Eco-modulation of EPR fees to incentivise design for reuse and recycling. 3 Encourage the integration of reusable model in the national "green consumption" promotion.
Key initial priorities for **businesses**:	1 Develop a clear reuse strategy with tangible ambitions and clear implementation plans. 2 Standardise containers to enhance reuse efficiency. 3 Review packaging ranges and portfolios to identify opportunities for reuse.	1 Start pilot reuse projects and proactively work towards addressing the barriers to taking pilots to scale. 2 Actively engage with supply chain to test the design of reusable packaging, products, and delivery systems, and set up reuse delivery and distribution models. 3 Share learnings from reuse pilots.	1 With bulk sale options, encourage and accept customers' own reusable containers. 2 Set up discount or rewards scheme for reuse and recycling. 3 Test deposit and return schemes with retailer involvement to incentivise packaging collection.

Ensure all packaging is recyclable and recycled in practice

	1 Design	2 Systems and infrastructure	3 Incentives
Key initial priorities for **policymakers**:	1 Develop harmonised standards to support packaging recyclability assessment.	1 Develop harmonised labels for recyclability to facilitate effective collection and recycling for plastic packaging. 2 Establish Extended Producer Responsibility (EPR) schemes for all packaging, as EPR drives the market towards better design and recycling. 3 Develop an inclusive waste management system to gradually incorporate the informal sector. 4 Improve the information management of waste collection and recycling. 5 Raise social awareness to enhance public perception of recycling and use of high-quality recycled materials.	1 Introduce fiscal incentives and subsidies (e.g., VAT deduction or expanding the scope of tax preferential to the recycling businesses) to encourage the development of recycling system and material innovations. 2 Establish policy instruments, such as landfill tax, incineration gate fees to further reduce waste and incentivise recycling. 3 Eco-modulation of EPR fees to incentivise design for reuse and recycling.
Key initial priorities for **businesses**:	1 Innovate towards 100% reusable, recyclable, or compostable packaging. 2 Follow local or international design-for-recycling guidelines for packaging design.	1 Support EPR policy and projects. 2 Actively engage with supply chain to convey the recyclability requirements. 3 Use clear and harmonised labels to indicate recyclables.	1 Set up discount or reward schemes for reuse and recycling. 2 Test deposit and return schemes with retailer involvement to incentivise packaging collection.

Increase the use of recycled content

	1 Design	2 Systems and infrastructure	3 Incentives
Key initial priorities for **policymakers**:	1 Develop mandatory design requirements for packaging to require the use of recycled content.	1 Develop a legal framework to allow the use of recycled content in packaging. 2 Improve the information management of waste collection and recycling. 3 Raise social awareness to enhance public perception of recycling and use of high-quality recycled materials.	1 Develop public procurement requirements to increase the use of recycled materials. 2 Set mandatory requirements of minimal levels of recycled content in packaging to increase the use of recycled materials.
Key initial priorities for **businesses**:	1 Set recycled content target. 2 Improve packaging design to enhance the economics and quality of recycled material. 3 Review packaging ranges and portfolios to identify opportunities to improve the use of recycled content.	1 Communicate and explain the changes to staff and customers to enhance public perception of recycling and use of high-quality recycled materials. 2 Innovate towards more efficient recycling technology.	

Carefully assess the use of compostable packaging where relevant

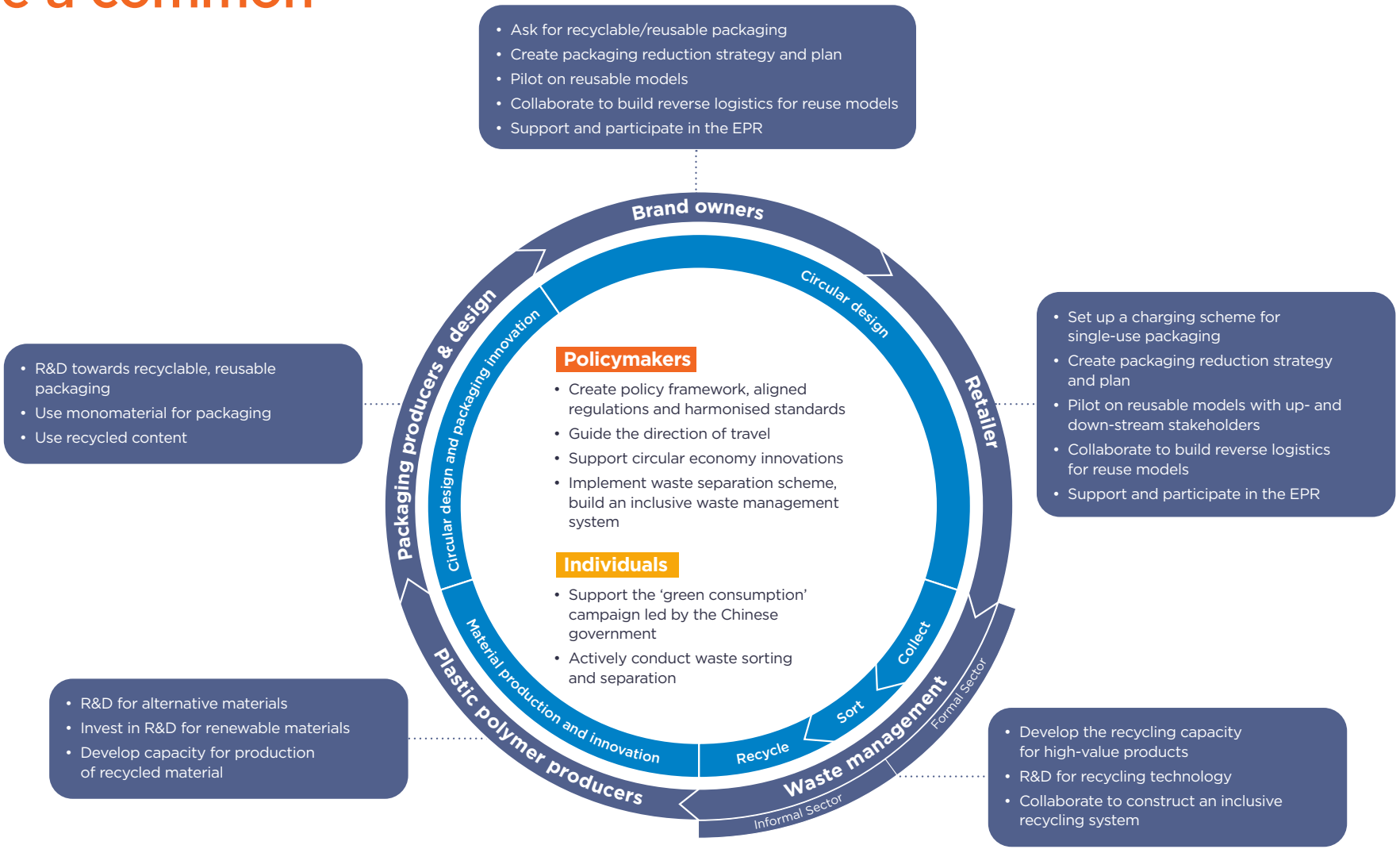
	1 Design	2 Systems and infrastructure
Key initial priorities for **policymakers**:		1 Develop harmonised labels for compostability to facilitate effective collection. 2 Assess China's composting infrastructure and regional variability, and match these findings with existing compostability standards and certifications. 3 Enhance the collection system and composting infrastructure. 4 Provide guidance on when and where to use compostable packaging.
Key initial priorities for **businesses**:	1 Cautiously evaluate the use of biodegradable and compostable plastics and develop guidance/criteria.	1 Work with composting facilities to ensure all composting materials put on the market are collected and composted.

Establish a cross-value chain dialogue to achieve a common vision and targets.

To enable a shift in economic models requires the engagement of a diverse mix of private, public, and civil society organisations, including stakeholders from across the value chain.

It is important to start establishing strong partnerships and cooperation, working in an inclusive and collaborative process especially ensuring strong representation of the informal sectors, to harness expertise and break down traditionally siloed areas within and outside of government and industry, and facilitate the necessary policy coherence and alignment to catalyse concerted actions at all levels.

Illustration of how stakeholder collaboration can activate Chinese vision and beyond



China can play an active and leading role in the development of an ambitious UN treaty on plastic pollution.

In March 2022, at the United Nations Environment Assembly, nearly 200 countries agreed to start negotiations on a legally binding agreement to take action on plastic pollution. This landmark decision to put in place a treaty that set rules for the production, use, and disposal of plastics globally will be looking at all major levers to tackle plastic pollution, including product design alongside recycling. Building a common vision and harmonised standards that strengthen coordination and a shared approach to address plastic pollution, the treaty is a key milestone towards a circular economy for plastics. As the biggest manufacturer, user, and exporter of plastics in the world, China can play a unique role in driving this agenda forward and raise global ambition.

In parallel, through bilateral and multilateral cooperation initiatives, such as the China-EU Memorandum of Understanding on Circular Economy Cooperation, the China–US Joint Declaration on Enhancing Climate Action in the 2020s, and the World Trade Organization (WTO) mechanism, China can help drive a global transition to a circular economy for plastics.

The current 14th Five Year Plan presents the foundations for a comprehensive transition to a circular economy for plastics that supports China's carbon emission goals and broader environmental agenda. International cooperation efforts can support this ambition further and position China as a leading actor to deliver industry-scale change and end plastic pollution.

The time to act is now....

Acknowledgements

This work has been developed in collaboration with Tsinghua University, with a panel consisting of 20+ relevant experts, organisations, and members of the New Plastics Economy initiative (which includes many of the leading producers of packaged goods, and many of the largest retailers and packaging producers).

We are deeply grateful to all collaborators and contributors for the time and expertise they have dedicated to this project.

The recommendations presented in this work solely reflect the views of the project team. The team's views have been formed on the basis of existing literature, expert interviews, workshops with the expert panel, and in-house analysis.

We are grateful for the support and guidance of our Advisory Panel members

Fang Xi, Deputy Director, Market Supervision Office, State Post Bureau Development Research Center

Lin Ling, China National Institute of Standardization

Meng Xiaoyan, Associate Researcher, the Institutes of Science and Development, Chinese Academy of Sciences

Man Juan, Director, China Petroleum and Chemical Industry Federation

Wang Li, Vice President, China Packaging Federation

Wang Xuejun, Professor, Department of Environmental Sciences, Peking University

Wang Yi, Professor and Deputy Director-General, the Institutes of Science and Development, Chinese Academy of Sciences; Deputy of the National People's Congress of China

Wang Yonggang, Secretary General, China National Resources Recycling Association

Yao Xin, Associate Dean, Research Institute for Environmental Innovation (Suzhou) Tsinghua University

Zhao Kai, Executive Vice President, China Association of Circular Economy

Zhang Deyuan, Vice Department Director, Research Office, Institute of Economic System and Management of National Development and Reform Commission

Zhu Li, Deputy Director, Environmental Protection Office, State Post Bureau Development Research Center

L'Oreal, Nestlé, Unilever, Veolia

Knowledge Partner

TSINGHUA UNIVERSITY

Core Project Team

Ellen MacArthur Foundation

Yisong Guan, Chief Representative of Beijing Office

Dr. Molly Zhongnan Jia, Project Manager

Dr. Xiaoting Chen, Programme Manager

Arnold Wang, Senior Advisor

Lei Chen, Research Analyst

Tsinghua University

Prof. Jinhui Li, School of Environment

Guijuan Shan, Associate research fellow

Xianlai Zeng, Associate research fellow

Lili Liu, Research fellow

Ju Liang, Research assistant

Zhen Liang, Research assistant

Further Contributors

Ellen MacArthur Foundation

Lena Gravis, Editorial, Senior Expert

Sander Defruyt, Plastics Initiative Lead

Dilyana Mihaylova and Sonja Wegge, Plastics Initiative Programme Managers

Ian Banks, Editorial Lead

Claire Murphy, Editor

Ambrogio Miserocchi, Senior Policy Officer

Production

Ellen MacArthur Foundation

James Wrightson, Creative Design Lead

Matt Barber, Graphic Designer

Ziwei Yang, Communications Manager China

Vigil Yu, Freelance

Joanna Blant, Proofreader

Disclaimer

This publication has been produced by the Ellen MacArthur Foundation (the "Foundation"). Although the Foundation has exercised care and diligence in preparing this publication, and used information it believes to be reliable, the Foundation makes no representations and gives no warranties, assurances or undertakings (express or implied) in connection with it or any of its content (as to its accuracy, completeness, quality, fitness for any purpose, compliance with law or otherwise). The Foundation does not monitor or moderate any external websites or resources linked or referred to in this publication. This publication does not purport to be comprehensive and none of its contents shall be construed as advice of any kind. Any reliance on it is at the reader's own discretion and risk.

© Ellen MacArthur Foundation, 2022

About the Ellen MacArthur Foundation

The Ellen MacArthur Foundation is an international charity that develops and promotes the circular economy in order to tackle some of the biggest challenges of our time, such as climate change, biodiversity loss, waste, and pollution. We work with our network of private and public sector decision-makers, as well as academia, to build capacity, explore collaborative opportunities, and design and develop circular economy initiatives and solutions. Increasingly based on renewable energy, a circular economy is driven by design to eliminate waste, circulate products and materials, and regenerate nature, to create resilience and prosperity for business, the environment, and society.

Further information: www.ellenmacarthurfoundation.org | @circulareconomy
Further information: Our Network | network@ellenmacarthurfoundation.org

About the Ellen MacArthur Foundation (UK) Beijing Representative Office

The Ellen MacArthur Foundation (UK) Beijing Representative Office has obtained official registration as an international NGO in China.

Since 2018, the Foundation has started working collaboratively with partners in China, recognising the rising momentum in the country towards transitioning to a circular economy, supported by policy and industry initiatives. With the guidance of the Ministry of Ecology and Environment of China, the Foundation obtained official registration in 2022, which enables the Foundation to scale up its operations, better collaborate with local stakeholders, and more effectively work towards our mission to accelerate the global transition to a circular economy and mobilise system solutions at scale.

Further information: wechat account EMF_China

ELLEN MACARTHUR FOUNDATION
艾伦·麦克阿瑟基金会

© COPYRIGHT 2022
ELLEN MACARTHUR FOUNDATION

www.ellenmacarthurfoundation.org

Charity Registration No.: 1130306
OSCR Registration No.: SC043120
Company No.: 6897785