

A GUIDE TO INVESTOR ENGAGEMENT  
ON PLASTIC PACKAGING:

# PETROCHEMICALS



In collaboration with:



**ELLEN MACARTHUR  
FOUNDATION**

# THE SIX PRINCIPLES

## PREAMBLE TO THE PRINCIPLES

As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time). We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

- 1 We will incorporate ESG issues into investment analysis and decision-making processes.
- 2 We will be active owners and incorporate ESG issues into our ownership policies and practices.
- 3 We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- 4 We will promote acceptance and implementation of the Principles within the investment industry.
- 5 We will work together to enhance our effectiveness in implementing the Principles.
- 6 We will each report on our activities and progress towards implementing the Principles.



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The PRI will work to achieve this sustainable global financial system by encouraging adoption of the Principles and collaboration on their implementation; by fostering good governance, integrity and accountability; and by addressing obstacles to a sustainable financial system that lie within market practices, structures and regulation.

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## ACKNOWLEDGEMENTS

The PRI would like to thank the Plastics Investor Working Group and the Ellen MacArthur Foundation for their expertise and contributions to this guide.

The Ellen MacArthur Foundation, a UK-based charity, develops and promotes the idea of a circular economy in order to tackle some of the biggest challenges of our time, such as climate change, biodiversity loss, and pollution. We work with, and inspire, business, academia, policymakers, and institutions to mobilise systems solutions at scale, globally. In a circular economy, business models, products, and materials are designed to increase use and reuse, creating an economy in which nothing becomes waste and everything has value. Increasingly built on renewable materials, and underpinned by a shift to renewable energy, a circular economy is distributed, diverse, and inclusive.

For more information, visit: [ellenmacarthurfoundation.org](https://ellenmacarthurfoundation.org).

# HOW TO USE THIS GUIDE

This guide aims to equip investors with the information they need to constructively engage with companies in the plastic packaging value chain on the issue of plastic waste and pollution, focusing on the petrochemicals sector. It aims to support investors and other stakeholders to eliminate the production and use of problematic or unnecessary plastics in packaging; innovate to ensure that all remaining plastics are reusable, recyclable or compostable; and circulate materials to keep plastics in the economy and out of the environment.<sup>1</sup>

It includes:

- an overview of the sector's characteristics related to the use of plastic packaging, waste and pollution, including the business and investment risks and opportunities, and the issues relevant to investors engaging with petrochemical companies;
- practical guidance for investor engagement – based on the [common vision of a circular economy for plastics](#) as part of the Ellen MacArthur Foundation's [New Plastics Economy Global Commitment](#)<sup>2</sup>, including:
  - a set of questions focused on governance, risk management and reporting, performance and impact;
  - a table to help investors understand where a company falls on the spectrum of actions required to address plastic waste and pollution (beginner, intermediate or advanced), focused on the period between now and 2025;
- some best practice examples;
- a glossary of key terms.

## ABOUT THIS PROJECT



In 2019, the PRI published the [Plastics Landscape Series](#), consisting of three reports and an [online interactive data tool](#). These mapped out the plastics value chain, identified the risks and opportunities the plastics industry poses for investors, and outlined relevant legislation and policy in different geographies.

In 2020, the Plastics Investor Working Group<sup>3</sup>, with input from the Ellen MacArthur Foundation, initiated a follow-up project to develop guidance for investors engaging with companies in the plastics packaging value chain across four sectors: petrochemicals, manufacturing (of containers and packaging), fast-moving consumer goods and waste management.

While investors can also address plastic pollution using other stewardship strategies, such as shareholder resolutions, voting and policy engagement, these actions are beyond the scope of this project. The PRI may consider them in the future.

<sup>1</sup> For definitions of these terms and others used in this guide, see [Glossary](#).

<sup>2</sup> See [Appendix](#) for further detail on the Global Commitment, including its expectations for the petrochemicals sector.

<sup>3</sup> The PRI's Plastics Investor Working Group consists of 29 global investors representing US\$5.9 trillion in assets.

# THE CASE FOR INVESTOR ENGAGEMENT

It is important for investors to address plastic waste and pollution and support the building of a circular economy through their stewardship activities. Failing to do so impacts the environmental systems and ecosystem services (i.e. public goods) that support economic performance, investor returns and beneficiary interests more broadly.

Packaging is one of the largest applications of plastic and drivers of plastic waste: it accounts for 45% of all plastic resin produced<sup>4</sup> and for around 60% of post-consumer plastic waste in Europe alone.<sup>5</sup>

The transition to a circular economy for plastics – where plastic production is decoupled from fossil fuel use and all plastic packaging is reused, recycled or composted – will require significant changes across a range of industries, including the entire plastic packaging value chain. Some of these changes are already happening – driven by increased societal awareness of the environmental and social impacts of plastic pollution, regulation, voluntary action by companies and consumer demand.

When analysing the plastics value chain, investors need to understand that they and the companies in which they invest are exposed to a range of risks<sup>6</sup>, including:



### Climate-related risks

Projections suggest that emissions from plastic could account for 10% – 13% of the Earth's remaining carbon budget by 2050 if plastic production and use grow as currently planned.<sup>7</sup>



### Wider environmental risks

Mismanaged plastic waste contributes to waterway and ocean pollution, which clogs urban infrastructure and degrades natural systems, such as the ocean. The cost of such externalities to society, when considered alongside the greenhouse gas emissions of plastic packaging production, are conservatively estimated to amount to US\$40 billion annually.<sup>8</sup>



### Policy and regulatory risks

Many developed and developing countries are regulating – or in some cases banning – certain plastics. Companies that rely on plastics could also face higher taxation, extended producer responsibility fees and increased raw material costs.



### Reputational risks

Companies that are heavily reliant on plastics face growing scrutiny and potentially significant reputational damage, as consumers become increasingly aware of the impacts of plastic pollution. Packaging has been the target of several campaigns against plastic.<sup>9</sup>



### Human health risks

Microplastics, which have been detected in bottled water and the tissue of fish and other marine life<sup>10</sup>, may have negative health impacts when ingested by humans. These are not yet fully understood but if they are determined in the future, may lead to heightened societal concern and health-related restrictions on plastic use.

4 Geyer, R, Jambeck, JR & Law, KL, Science Advances 3(7) e1700782 (2017) [Production, use, and fate of all plastics ever made](#)

5 European Commission (2018) [Communication from The Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A European Strategy for Plastics in a Circular Economy](#)

6 A range of research exists regarding the risks of plastics including: Federated Hermes (2020) [Investor Expectations for Global Plastics Challenges](#); Ellen MacArthur Foundation (2016) [The New Plastics Economy Rethinking the Future of Plastics](#); Ellen MacArthur Foundation (2017) [The New Plastics Economy: Catalysing Action](#); Ellen MacArthur Foundation (2020) [Financing the Circular Economy: Capturing the Opportunity](#); Pew Charitable Trusts and SystemIQ (2020), [Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution](#).

7 The carbon budget refers to the total amount of carbon emissions that can be emitted for temperatures to remain at or below a specified limit i.e. the 1.5-degree limit outlined in the Paris Agreement. See CIEL (2019) [Plastic & Climate: The Hidden Costs of a Plastic Planet](#) for more detail.

8 Ellen MacArthur Foundation (2016) [The New Plastics Economy Rethinking the Future of Plastics](#)

9 PRI (2019) [The plastics landscape: Risks and opportunities along the value chain](#)

10 Pew Charitable Trusts and SystemIQ (2020), [Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution](#).

The [Ellen MacArthur Foundation](#) estimates that with most plastic packaging used only once, 95% of its value (worth US\$80 billion – US\$120 billion annually) is lost to the economy.

Addressing these issues and transitioning to a circular economy for plastics creates opportunities along the value chain to reduce the impact of plastic packaging and meet consumer needs through innovation. For example, developing new:

- materials and packaging designs (e.g. edible coating replacing packaging or eliminating tear-offs);
- business models (e.g. re-use through at-home refills); and
- recycling technologies to improve collection, sorting and recycling infrastructure systems (e.g. advanced mechanical recycling facilities).

Addressing plastic pollution can also contribute to meeting the Sustainable Development Goals.

## PLASTIC AND THE SUSTAINABLE DEVELOPMENT GOALS

Taking action to address plastic pollution and support the building of a circular economy will make a major contribution to achieving the Sustainable Development Goals. For example, such actions could support:



### SDG 12.5

Substantially reducing waste generation through prevention, reduction, recycling and reuse by 2030.



### SDG 14.1

Preventing and significantly reducing marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution, by 2025.

# WHAT SHOULD INVESTORS KNOW BEFORE ENGAGING?

The petrochemicals sector is concerned with the production and trade of petrochemicals, which are used in products such as plastics, fertilisers, clothing, medical equipment, detergents, tyres and many others.<sup>11</sup> A major component of petrochemical demand is the production of plastic polymers.

Although they can be made from other sources, most plastics (97% – 99%) are derived from fossil fuels – accounting for 6% of global oil and gas consumption, a proportion that is expected to increase significantly if we continue to use virgin plastics to meet future demand.<sup>12</sup>

Globally, plastics production is dominated by large chemical and oil and gas companies, including Dow Chemical Company; LyondellBasell; Exxon Mobil; SABIC; INEOS; BASF; ENI; LG Chem; Chevron Phillips Chemical; and Lanxess. These companies polymerise monomers to create plastics.

With rising demand for alternatives to fossil fuel-based virgin plastic<sup>13</sup>, some petrochemical companies have boosted their research and development in bio-based and recycled plastic feedstocks, as well as chemical recycling, which involves breaking plastics down into a form that allows them to be used as feedstock for new virgin-quality polymers.

Further information regarding the risks faced specifically by the petrochemicals sector and the different relevant plastic packaging types are highlighted in the PRI report, [The Plastics Landscape: Risks and Opportunities Along the Value Chain](#) (see pages 8-11).

## PRACTICAL CONSIDERATIONS

When engaging with petrochemical companies, there are several practical considerations that investors need to keep in mind. These are not necessarily limiting factors but can present challenges for the sector – for action on plastics to be effective, it needs to be taken across a range of areas; namely across an organisation's own products, in the value chain and with wider stakeholders<sup>14</sup>:

- **The business model:** The linear business model for most companies in the sector depends on selling increased volumes of their virgin plastic product. Furthermore, plastics are an increasingly important revenue stream that oil and gas companies are likely to try and increase.
- **Mechanical and chemical recycling:** Plastic waste can be recycled through mechanical<sup>15</sup> and chemical<sup>16</sup> methods. Mechanical recycling is commercially viable and benefits circularity, as it keeps plastic and its embedded energy relatively intact. Chemical recycling is complementary, converting plastics that are uneconomical or unsuitable for mechanical recycling into useful feedstocks, while creating virgin-like quality plastics. However, chemical recycling technologies are not yet widely commercialised and certain processes are energy intensive<sup>17</sup>, raising concerns about the carbon footprint of materials recycled this way. To be effective and contribute to a circular economy for plastics, these methods need to be scaled up – this may be more successful if the industries involved (petrochemical and waste management) collaborate.
- **Plastic conversion to fuel:** the conversion of plastics to fuel is not considered part of a circular economy.<sup>18</sup> This practice results in materials being burned, rather than being kept in the economy. As such, it perpetuates a linear model, rather than creating a circular one. Conversely, chemical and mechanical recycling – if set up well – can close material loops and be considered part of a circular economy.

11 IEA (2018) [The future of petrochemicals](#)

12 Ellen MacArthur Foundation (2016) [The New Plastics Economy Rethinking the Future of Plastics](#)

13 See [Glossary](#) for definitions.

14 Global dependency on plastics so pervasive that bold, concerted and large-scale actions on upstream and downstream solutions are needed – see Pew Charitable Trusts and SystemIQ (2020) [Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution](#).

15 Mechanical recycling turns plastics into new (secondary) raw materials without significantly changing their basic chemical structure.

16 Chemical recycling processes, such as pyrolysis and gasification, break plastics down into simpler hydrocarbons that can act as feedstocks to the petrochemical sector.

17 CE100 Whitepaper (2019) [Enabling a circular economy through a mass balance approach](#)

18 The Technical Expert Group on Sustainable Finance has not included waste-to-energy as an economic activity that can substantially contribute to climate change mitigation or adaptation in the EU Taxonomy. See pg. 209 of TEG (2020) [Taxonomy Report: Technical Annex](#) for more detail.



- **Environmental impacts:** Decoupling plastic production from (finite) fossil-based resources requires reducing the need for virgin plastics through elimination, reuse, and use of recycled plastic content. It may also be supported by transitioning to bio-based plastics, but this presents challenges, such as making new bio-based polymers compatible with existing recycling infrastructure. It also creates land use and food/feed competition concerns. The impact of producing renewable feedstock depends on where the crop is grown, the types of crop or waste product used, and the manufacturing location and process. Bio-based plastics may produce lower greenhouse gases than oil-based plastics, but a responsible sourcing approach must be taken.<sup>19</sup>
- **Vertical integration and collaboration:** The above considerations point to the interdependencies and potential for partnerships between the waste management and petrochemicals sectors to create a circular value chain for plastics. They also point to the central role that fast-moving consumer goods and container and packaging companies might play through, for example, creating demand for recycled products or providing incentives needed to build waste management collection, sorting and recycling infrastructure.<sup>20</sup>

## A CIRCULAR ECONOMY FOR PLASTICS

A circular economy<sup>21</sup> – by design – eliminates waste and pollution, keeps products and materials in use, and regenerates natural systems, providing a solution to plastic pollution. The Ellen MacArthur Foundation's [New Plastics Economy](#) offers an example of a circular economy for plastics that investors can support through their engagement activities (see Box 1).

### BOX 1

#### VISION OF A CIRCULAR ECONOMY FOR PLASTICS

In the Ellen MacArthur Foundation's [New Plastics Economy](#) plastic never becomes waste, presenting a solution to plastic pollution which could have profound economic, environmental, and societal benefits. Six characteristics define a circular economy for plastic packaging:

1. Elimination of problematic or unnecessary plastic packaging through redesign, innovation, and new delivery models is a priority
2. Reuse models are applied where relevant, reducing the need for single-use packaging
3. All plastic packaging is 100% reusable, recyclable, or compostable
4. All plastic packaging is reused, recycled, or composted in practice
5. The use of plastic is fully decoupled from the consumption of finite resources
6. All plastic packaging is free of hazardous chemicals, and the health, safety, and rights of all people involved are respected (in all parts of the plastics system)

More than 1000 organisations are united behind this vision through the [New Plastics Economy Global Commitment](#) and the network of Plastics Pacts (see [Appendix](#) for more detail). Global Commitment signatories include companies, such as major brands and retailers, that represent more than 20% of global plastic packaging volumes; 20 governments; 27 financial institutions with a combined US\$4 trillion in assets under management; as well as several international organisations such as the World Economic Forum (WEF), WWF (formerly World Wildlife Fund), United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN).

<sup>19</sup> PRI (2019) [The plastics landscape: Risks and opportunities along the plastics value chain](#)

<sup>20</sup> For further details refer to the investor engagement guidance on the FMCG, containers and packaging and waste management sectors included in this series.

<sup>21</sup> Ellen MacArthur Foundation (2021), [What is a Circular Economy?](#)



# WHAT SHOULD INVESTORS DO?

The following tables are designed to help investors constructively engage with petrochemical companies in the plastic packaging value chain on the issue of plastic packaging waste and pollution, including the questions they can ask; the actions they can encourage companies to undertake<sup>22</sup>; and the outcomes they should expect.

These are based on extensive research, input from the Plastics Investor Working Group and the Ellen MacArthur Foundation, as well as the New Plastics Economy Global Commitment (see [Appendix](#)). They are designed **to target the actions that companies should take between now and 2025** to effectively address the issue of plastic waste and pollution and support the building of a circular economy.

## WHAT QUESTIONS TO ASK

The following initial and follow-on questions are designed to help investors have an impactful dialogue with petrochemical companies.

**Table 1: Investor questions<sup>23</sup>**

	EXPECTATION	INITIAL QUESTIONS	FOLLOW-ON QUESTIONS (IF NEEDED)
<b>GOVERNANCE</b>	<b>Commitment</b>	Have you made a formal commitment to significantly increase your proportion of recycled plastics production by 2025?	If not, do you intend to?
	<b>Risk assessment and management</b>	<p>How much plastic/virgin plastic do you produce annually?</p> <p>Have you assessed the risks presented by plastics to your business, including:</p> <ul style="list-style-type: none"> <li>■ existing and future regulation<sup>24</sup></li> <li>■ reputational issues</li> <li>■ climate change</li> <li>■ wider environmental pollution (ocean and waterway)</li> </ul> <p>Have you assessed the opportunities associated with product and business model innovation for your business?</p>	<p>What risks and opportunities have you identified and how significant are these for your business?</p> <p>How are you actively monitoring the development of policy and regulation, and its associated risks and opportunities for your business?</p> <p>Which of your plastic product groups have the greatest potential to be replaced by recycled materials?</p> <p>What actions will you take as a result of this assessment?</p>
	<b>Objectives, targets and action plans</b>	Have you set time-bound targets to increase the proportion of recycled plastic used in production?	<p>What are you doing to deliver these?</p> <p>How are you performing against them? What challenges have you encountered in meeting them?</p> <p>What resources (financial and otherwise) have you allocated to implement these actions and deliver these targets – e.g. proportion of R&amp;D and capex?</p> <p>Who oversees your plastic-related commitments, objectives and targets strategically? Who oversees their day-to-day delivery?</p> <p>If you have not set targets yet, do you intend to?</p>
	<b>Reporting</b>	<p>Do you report on your production of plastics?</p> <p>What information do you report?</p>	<p>What measures (metrics) do you use to track and assess your performance?</p> <p>How will your reporting evolve in the future?</p>

<sup>22</sup> Collaboration with other stakeholders in the value chain, including at regional and national levels, is also important as it can better enable companies to deliver their commitments. While the investor questions and table on assessing company performance do not focus on collaboration in detail, one example of an initiative encouraging collaboration can be found in [Appendix](#).

<sup>23</sup> Definitions are provided in the [Glossary](#)

<sup>24</sup> For further information see PRI (2019) [The Plastics Landscape: regulations, policies and influencers](#)

	EXPECTATION	INITIAL QUESTIONS	FOLLOW-ON QUESTIONS (IF NEEDED)
OUTCOMES	<b>Increase the use of recycled plastics</b>	What proportion of your current plastic production is from post-consumer recycled sources?	How will you increase this?
	<b>Increase recycling and/or composting rates for plastics</b>	How will you increase the proportion of plastics that are recycled or composted in practice?	What actions are you taking (e.g. through collaboration, providing financial support, engaging with policy makers on regulatory frameworks <sup>25</sup> ) to support efforts to improve global recycling and composting rates?

<sup>25</sup> For example, the Plastic Waste Coalition of Action from The Consumer Goods Forum (CGF), which has committed to developing Extended Producer Responsibility frameworks to support the improvement and development of waste management systems around the world and to pilot new programmes to increase recycling rates. See CGF (2020) [World's Leading Brands and Retailers Join Forces to Tackle Plastic Waste Challenge Through Packaging and Policy Commitments](#) for more detail.



## HOW TO ASSESS PERFORMANCE

The table below is designed to help investors understand where a company falls on the spectrum of actions required to address plastic waste and pollution and support the building of a circular economy by 2025, based on the following categories:

- **Beginner:** These companies acknowledge plastics as an important issue and have started to take some initial actions to understand the relevance of plastics to their business and build their organisational capacity to address plastic pollution.
- **Intermediate:** These companies, in addition to undertaking the actions outlined in the beginner category, have started to systematise their approach to plastics by setting ambitious objectives and targets; delivering against those targets and providing comprehensive, credible reporting on their ambitions and performance; and have signed up to the [New Plastics Economy Global Commitment](#) (see [Appendix](#) for more detail) – or made similar commitments.
- **Advanced:** These companies, in addition to undertaking the actions outlined in the previous categories, have made significant progress against their commitments and can provide clear evidence of taking innovative action or contributing to wider systemic change.

**Table 2: Assessing company performance**

	EXPECTATION	BEGINNER	INTERMEDIATE	ADVANCED
GOVERNANCE	<b>Commitment</b>	<p>The company acknowledges plastics as an important business and stakeholder issue.</p> <p>The company has committed to collaborate with others to increase recycling and composting rates for plastics.</p>	<p>The company has made the following specific commitment (as part of its business strategy or as a signatory to the Global Commitment or other initiatives) to:</p> <ul style="list-style-type: none"> <li>■ significantly increase its proportion of recycled plastics production by 2025.</li> </ul>	<p>The company has an action plan that explains how it will achieve its commitments through internal actions and collaboration within the value chain and society (e.g. informing/supporting relevant regulation, collaborating with suppliers and downstream companies, engaging customers).</p>
	<b>Risk assessment and management</b>	<p>The company has assessed the risks presented by plastics to its business including those related to:</p> <ul style="list-style-type: none"> <li>■ existing and future regulation</li> <li>■ reputational issues</li> <li>■ climate change</li> <li>■ wider environmental pollution (ocean and waterway)</li> </ul> <p>The company has assessed the opportunities associated with product and business model innovation.</p>	<p>The company has an action plan to mitigate the identified risks.</p> <p>The company has a process to actively monitor emerging policy and regulation in relation to plastics and update its risk assessments accordingly.</p> <p>The company's action plan includes product and business model innovation (e.g. supporting the development of new plastics recycling technologies).</p>	<p>The company's action plan to mitigate the identified risks also addresses wider value chain issues beyond its own operations – e.g. through programmes of work with governments to develop waste collection and recycling infrastructure, especially when this creates the supply chain for its own recycled plastics production.</p> <p>The company can provide clear evidence of effective risk management and that it is seizing opportunities to improve its business by reducing its fossil-based virgin plastic use and using more recycled plastics in its feedstocks.</p> <p>The company has assessed the lifecycle of its plastic products and uses this to inform its decisions.</p>

		EXPECTATION	BEGINNER	INTERMEDIATE	ADVANCED
GOVERNANCE CONTINUED	<b>Objectives, targets and action plans</b>		The company has set qualitative targets (e.g. to take specific actions to increase the proportion of recycled plastic that it uses in its plastic production).	<p>Explicit board-level or senior management responsibility has been assigned to oversee the company's plastics-related objectives and targets and their delivery.</p> <p>The company's targets are aligned with the <a href="#">Global Commitment</a>.</p>	The company has made significant progress towards achieving its existing targets and has set more ambitious ones e.g. increasing the revenue share coming from recycled plastic production and sales.
	<b>Reporting</b>		The company provides some information on how it is increasing the proportion of recycled plastic used in its plastic production, and some data on its plastic production.	<p>The company reports annually on its:</p> <ul style="list-style-type: none"> <li>■ plastics production (total weight, including by plastic type);</li> <li>■ total weight of recycled plastics produced;</li> <li>■ non-fossil fuel and recycled feedstock expenditures compared to its oil and gas feedstock;</li> <li>■ plastics-related risks and opportunities and how it manages these;</li> <li>■ progress against its commitments, objectives and targets.</li> </ul> <p>The company provides analysis of the actions taken, the outcomes achieved (e.g. regarding its use of recycled plastic), and any barriers/ challenges encountered in meeting its targets</p>	<p>The company provides a comprehensive estimate of its plastics production, including:</p> <ul style="list-style-type: none"> <li>■ total weight of recycled and virgin plastics produced/sold by region;</li> <li>■ how its plastics are used (by sector, application).</li> </ul> <p>The company reports on the proportion of its capex and R&amp;D budgets that are allocated to the delivery of its plastics-related targets.</p> <p>The company encourages its customers to report on their plastics usage and associated environmental impacts.</p> <p>The company reports on how its plastics efforts relate to other issues such as climate change, water, and the SDGs. It can explain how it has assessed and resolved potential tensions between these, and how it has identified and seized potential opportunities.</p> <p>The company has identified the stakeholders it needs to work with to deliver its commitments, objectives and targets, and describes its engagements with these.</p>

		EXPECTATION	BEGINNER	INTERMEDIATE	ADVANCED
<b>OUTCOMES</b>	<b>Increase the use of recycled plastics</b>		The company is participating in pilots to test and develop new recycling technologies.	<p>Recycled materials account for at least 3% of the company's plastic production by weight (increasing to 8% – 12% by 2025)</p> <p>The company has a comprehensive plan to increase the proportion of recycled materials used in its plastics production.</p>	<p>Recycled materials account for 8% – 12% of the company's plastic packaging by weight in 2025, and the company is on target to achieve this goal.</p> <p>The company is investing in partnerships with chemical and mechanical recycling companies and is developing its supply chain to increase the proportion of recycled materials that it uses.</p>
	<b>Increase recycling and/or composting rates for plastics</b>		The company acknowledges the importance of ensuring that plastic packaging is reused, recycled or composted in practice.	The company can provide examples of working with governments and other actors in some of its countries of operation to ensure that plastic packaging is recycled or composted in practice.	<p>The company has comprehensive programmes to work with governments and other actors to develop and support the plastics recycling industry in its major countries of operation.</p> <p>The company actively participates in industry initiatives and partnerships.</p> <p>The company is actively exploring new business models (e.g. leasing) so it can move away from linear throughput models.</p> <p>The company supports regulatory frameworks that facilitate plastic packaging reuse or recycling, such as Deposit Refund Systems, Extend Producer Responsibility or single-use plastics bans. Its lobbying activities are aligned to this agenda.</p>

# EXAMPLES OF BEST PRACTICE

The following examples<sup>26</sup> demonstrate how companies in the petrochemicals sector have started addressing plastic waste and pollution.

## MECHANICAL RECYCLING

- **Indorama Ventures** set a target to increase its share of recycled plastics production to more than 12% by 2025 and committed to investing US\$1.5 billion to support the expansion of its recycling business. In 2019, it increased its post-consumer recycling production capacity by 128,000 tonnes to 330,000 tonnes through organic projects and acquisitions, including in the Americas, South East Asia, and Europe.
- In 2019, **Borealis** launched several plastic grades under its Borcycle™ brand, which uses an evolving recycling technology to transform polyolefin-based waste streams into value-adding versatile polyolefin materials.
- In 2017, **LyondellBasell** and **SUEZ** (a resource management company) became partners in Quality Circular Polymers, a mechanical plastics recycling company in the Netherlands, in order to increase their production of high quality circular polymers.

## CHEMICAL RECYCLING<sup>27</sup>

- In 2018, chemical producer **BASF's** ChemCycling project used pyrolysis oil, derived from plastic waste supplied by European waste management company Remondis, as production feedstock. The pilot projects involved customers from various industries including electronics and packaging film producers.
- In the same year, **SABIC**, a producer of commodity and high-performance plastics, signed a memorandum of understanding with **Plastic Energy**, a chemical plastics recycler, for the supply of recycled feedstock to support its European petrochemical operations. The collaboration is piloting using these to produce certified polymers that will be supplied to the project's partners – Unilever, Tupperware Brands, Vinventions and Walki Group.
- In November 2019, the US entity of oil and gas company **Shell** announced it had successfully used pyrolysis to produce high-end chemicals from plastic waste at its Louisiana plant, using a liquid feedstock produced by Atlanta company **Nexus Fuels**.
- In December 2019, energy company **Total**, Recycling Technologies, Nestlé and Mars started conducting a feasibility study on deploying a pyrolysis-based feedstock recycling plant in France, facilitated by CITEO. The study examined the technical and economic feasibility of recycling complex plastic waste, such as small, flexible and multi-layered food-grade packaging.

## INCREASING THE PROPORTION OF RENEWABLE CONTENT FROM RESPONSIBLY MANAGED SOURCES

- **Novamont** has developed a lab process to extract sugars from different sources of cellulose, including water treatment plants and used wasted diapers, as part of its commitment to finding sustainable sources of sugar and vegetable oil to use as raw materials for its monomers.

<sup>26</sup> These examples are taken from [The Global Commitment 2020 Progress report](#) and the [associated organisational reports](#) unless referenced otherwise.

<sup>27</sup> See PRI (2019) [The Plastics Landscape: Risks and Opportunities Along the Value Chain](#)

# APPENDIX

## THE NEW PLASTICS ECONOMY GLOBAL COMMITMENT

The [New Plastics Economy Global Commitment](#), established by the Ellen MacArthur Foundation in collaboration with the United Nations Environmental Programme (UNEP), unites businesses, governments, and other organisations behind a common vision and set of targets, to address plastic waste and pollution at its source.

### WHAT IS EXPECTED OF THE PETROCHEMICALS SECTOR?

Petrochemical signatories of the Global Commitment are expected to:

- endorse its [Common Vision](#);
- make the following individual commitments:
  - set an ambitious 2025 target to increase the use of recycled plastics;
  - report annually and publicly on progress made towards meeting these commitments.
- commit to collaborate towards increasing reuse/recycling/composting rates for plastic.

The progress of petrochemical signatories against their targets is tracked annually by the Ellen MacArthur Foundation and published on its [Global Commitment Progress Report website](#). These progress reports aim to drive transparency and consistency in data sharing on plastics across a range of businesses and governments. Individual [organisation reports are also available](#).

## THE PLASTICS PACT

Delivering on a circular economy for plastics will require unprecedented levels of collaboration – at global, national and regional levels – to ensure solutions are tailored to local contexts.

[The Plastics Pact](#) – a network of initiatives that bring together national and regional stakeholders – is an example of such collaboration. Each Plastics Pact is led by a local organisation and unites governments, businesses and citizens behind the [New Plastics Economy](#), with a concrete set of ambitious local targets.

Plastics Pacts have been established in Africa, Europe, North & South America and Oceania, in countries including Australia, Chile, France, the Netherlands, South Africa, the UK, and the United States.



# GLOSSARY

The following definitions are derived from the Ellen MacArthur Foundation's [2020 New Plastics Economy Global Commitment: Commitments, Vision and Definitions](#).

## Biodegradability

A property that is needed – among others – to make packaging compostable. The term does not indicate whether a plastic package can in practice be collected and composted following a managed process (e.g. how quickly and under what conditions it can biodegrade).

## Compostable packaging

Packaging/packaging components that comply with relevant international compostability standards and whose post-consumer collection, sorting, and composting are proven to work in practice and at scale, defined as a 30% composting rate achieved across multiple regions, collectively representing at least 400 million inhabitants.

## Hazardous chemicals

Chemicals that show intrinsically hazardous properties: persistent, bio-accumulative and toxic; very persistent and very bio-accumulative; carcinogenic, mutagenic, and toxic for reproduction; endocrine disruptors; or equivalent concern.

## Post-consumer recycled content

The proportion, by mass, of post-consumer recycled material in a product or packaging. Post-consumer material is generated by households or commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain, but excludes pre-consumer material (e.g. production scrap, post-industrial material).

## Problematic and unnecessary plastic packaging

Problematic or unnecessary plastic packaging or its components:

- is not reusable, recyclable or compostable;
- contains, or its manufacturing requires, hazardous chemicals that pose a significant risk to human health or the environment (applying the precautionary principle);
- can be avoided (or replaced by a reuse model) while maintaining utility;
- hinders or disrupts the recyclability or compostability of other items;
- has a high likelihood of being littered or ending up in the natural environment.

For example, the UK Plastics Pact has identified eight problematic plastic products to be eliminated: disposable cutlery; polystyrene packaging; cotton buds with plastic stems; stirrers; straws; oxo-degradables that break down to create microplastics; PVC packaging, disposable plates and bowls.<sup>28</sup>

## Recyclable packaging

Packaging or its components are recyclable if their successful post-consumer collection, sorting, and recycling is proven to work in practice (rather than technically) and at scale, defined as a 30% post-consumer recycling rate achieved across multiple regions, collectively representing at least 400 million inhabitants.

## Renewable material

Material composed of biomass from a living source that can be continually replenished. When claims of renewability are made for virgin materials, those materials shall come from sources that are replenished at a rate equal to or greater than the rate of depletion.

## Reusable packaging

Packaging that can be refilled or used for the same purpose for which it was conceived, for a minimum number of times, in a reuse system. Such a system should be able to prove a significant actual reuse rate, or average number of use-cycles of a package, in normal conditions.

## Reuse system

Established arrangements (organisational, technical or financial) that ensure the possibility of reuse, in a closed-loop, open-loop or hybrid system.

## Single-use packaging

Packaging that is designed to be used once before disposal.

## Virgin plastic

Plastics that have not been previously used or subjected to processing other than for their original production, i.e. not produced from post- or pre-consumer recycled material.

<sup>28</sup> <https://www.wrap.org.uk/content/eliminating-problem-plastics>

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## The Principles for Responsible Investment (PRI)

The PRI works with its international network of signatories to put the six Principles for Responsible Investment into practice. Its goals are to understand the investment implications of environmental, social and governance (ESG) issues and to support signatories in integrating these issues into investment and ownership decisions. The PRI acts in the long-term interests of its signatories, of the financial markets and economies in which they operate and ultimately of the environment and society as a whole.

The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The Principles were developed by investors, for investors. In implementing them, signatories contribute to developing a more sustainable global financial system.

More information: [www.unpri.org](http://www.unpri.org)



## The PRI is an investor initiative in partnership with **UNEP Finance Initiative** and the **UN Global Compact**.

### United Nations Environment Programme Finance Initiative (UNEP FI)

UNEP FI is a unique partnership between the United Nations Environment Programme (UNEP) and the global financial sector. UNEP FI works closely with over 200 financial institutions that are signatories to the UNEP FI Statement on Sustainable Development, and a range of partner organisations, to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

More information: [www.unepfi.org](http://www.unepfi.org)



### United Nations Global Compact

The United Nations Global Compact is a call to companies everywhere to align their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of UN goals and issues embodied in the Sustainable Development Goals. The UN Global Compact is a leadership platform for the development, implementation and disclosure of responsible corporate practices. Launched in 2000, it is the largest corporate sustainability initiative in the world, with more than 8,800 companies and 4,000 non-business signatories based in over 160 countries, and more than 80 Local Networks.

More information: [www.unglobalcompact.org](http://www.unglobalcompact.org)

