

Talking Trash

*The corporate playbook
of false solutions to the plastic crisis*



The information in this document has been obtained from sources believed reliable and in good faith but any potential interpretation of this report as making an allegation against a specific company or companies named would be misleading and incorrect. The authors accept no liability whatsoever for any direct or consequential loss arising from the use of this document or its contents.

This report was written and researched by the Changing Markets Foundation in collaboration with independent researchers. Main authors (in alphabetical order): Alice Delemare Tangpuori, George Harding-Rolls, Nusa Urbancic and Ximena Purita Banegas Zallio.

We would like to thank all our contributors and reviewers.

Published in September 2020



www.changingmarkets.org
www.talking-trash.com

Designed by Pietro Bruni - toshi.ltd
Printed on recycled paper

Table of contents

Executive summary	11
1. Introduction	19
1.1. The problem with plastics	19
1.2. Blaming consumers and a crisis of accountability	21
1.3. A turning point for plastic pollution?	24
1.4. Co-opting a crisis	25
2. A flurry of voluntary initiatives	31
2.1. Individual company commitments	33
2.2. Individual company initiatives	38
2.3. Alliances and group initiatives	56
2.4. Voluntary initiatives: All talk and no action?	65
3. Tactics in the corporate playbook	69
3.1. Delay	70
3.2. Distract	71
3.3. Derail	74
3.4. Putting the tactics in play	75
4. Country case studies	81
4.1. About the research	82

4.2. US: The war against plastic legislation	83
4.3. The EU: Time's up for single-use plastic?	100
4.4. Austria: A plastic pollution lobby mobilising against DRS	105
4.5. Spain: A wolf in sheep's clothing	110
4.6. France: A missed opportunity	118
4.7. Scotland: Coca-Cola's U-turn	122
4.8. Czech Republic: The cleanest thing in the Czech waste business is the waste	123
4.9. China: Banking on biodegradables	128
4.10. Japan: Out of sight, out of mind	133
4.11. Kenya: A game of cat and mouse	136
4.12. Bolivia: The rights of plastics trump the rights of Mother Earth	139
4.13. Uruguay: Tax backlash	141
5. Conclusion and recommendations	145
5.1. Weak individual company commitments	146
5.2. Misguided group initiatives	146
5.3. History of broken promises	146
5.4. Corporate actions to stop legislation	147
5.5. Pushing responsibility for waste and recycling onto consumers	147
5.6. Exploiting the crisis	148
5.7. Recommendations	149
6. References	154

List of figures, tables and boxes

Figures

Figure 1.1	The exponential production of plastics
Figure 1.2	The fate of all plastics
Figure 1.3	Deposit return systems around the world
Figure 2.1	Going round in circles: Coca-Cola's trail of broken promises
Figure 3.1	The leaky circular economy of chemical recycling
Figure 4.1	US plastic-waste management, 1960-2017
Figure 4.2	Plastic bag bans and pre-emption laws in the US
Figure 4.3	Plastics by numbers
Figure 4.4	Ecoembes: The power of manipulation
Figure 4.5	'Not a single French plastic bottle ended up in the oceans.'
Figure 4.6	A leaked document showing Coca-Cola's intention to fight back against deposit systems in Europe
Figure 4.7	Bioplastic materials
Figure 4.8:	'It's not plastic, it's you.' (<i>No es el plástico, eres tú</i>)

Tables

Table 2.1	An overview of individual FMCG companies' voluntary commitments on plastic pollution
Table 4.1	Revolving doors between different industry initiatives
Table 4.2	Reported recycling rates of plastic containers in Spain

Boxes

Box 1.1	Deposit return systems explained
Box 2.1	Sticking-plaster solutions
Box 2.2	What does a good voluntary initiative look like?
Box 3.1	Chemical recycling and incineration
Box 4.1	Masters of distraction: Recyclable... or not?
Box 4.2	Green dot and producer responsibility
Box 4.3	An unusual opponent to DRS: The glass industry
Box 4.4	Refill and reuse
Box 4.5	Bioplastics: A false solution to plastic pollution?

List of abbreviations

ABA	American Beverage Association
ACC	American Chemistry Council
ADEME	Ecological Transition Agency in France
AFP	Agence France Presse
ALEC	American Legislative Exchange Council
APBA/ARPBA	American Progressive Bag Alliance, later renamed American Recyclable Plastic Bag Alliance
ARA	Altstoff Recycling Austria AG, Austrian Producer Responsibility Organisation
AUIP	Association of the Plastics Industry in Uruguay
CRE	Californians for Recycling and the Environment
CBIA	China Beverage Industry Association
CEO	Corporate Europe Observatory
CETA	Centre for Economic and Market Analysis
CET-CV	Confederation of Tourist Entrepreneurs of the Valencian Community
CHF	Swiss francs
CIEL	Centre for International Environmental Law
CITEO	French Producer Responsibility Organisation
CNI	National Chamber of Industry
Covid-19	Coronavirus disease 2019

CPA	Circular Plastics Alliance
CSR	Corporate Social Responsibility
DEFRA	Department for the Environment, Food and Rural Affairs
DRS	Deposit Return System
EC	European Commission
ECOEMBES	Ecoembalajes España, SA, Spanish Producer Responsibility Organisation
EFBW	European Federation of Bottled Waters
EKO-KOM	Producer Responsibility Organisation in Czech Republic
EMF	Ellen MacArthur Foundation
EPA	United States Environmental Protection Agency
EU	European Union
EuPC	European Plastics Converters
EUROPEN	European Organization for Packaging and Environment
EXPRA	Extended Producer Responsibility Alliance
FEVE	European Container Glass Federation
FMCGs	Fast-Moving Consumer Goods
FOI	Freedom of information
FPA	Flexible Packaging Association

GHG	Greenhouse gas
GPAP	Global Plastic Action Partnership
HBC	Coca-Cola Hellenic Bottling Company S.A.
HDPE	High-Density Polyethylene
IBWA	International Bottled Water Association
INCIEN	Institut Cirkulárny Ekonomiky
KAB	Keep America Beautiful
KAM	Kenya Association of Manufacturers
KMV	Karlovy Vary Mineral Water
KSB	Keep Scotland Beautiful
LCA	Life-cycle assessment
MoE	Ministry of Environment
MRF	Material Recovery Facility
P&G	Procter & Gamble
PET	Polyethylene terephthalate
PLASTICS	Plastics Industry Association
PPE	Personal protective equipment
PRE	Plastics Recyclers Europe
PRO	Producer Responsibility Organisation

PVC	Polyvinyl chloride
PVDC	Polyvinylidene chloride
PwC	PricewaterhouseCoopers
RECOVER	Act Realising the Economic Opportunities and Values of Expanding Recycling Act
RP	The Recycling Partnership
rPET	recycled PET
RVM	Reverse vending machine
SUP	EU Single-Use Plastics Directive
UNEP	UN Environment Programme
UNESDA	European Soft Drinks Industry
US	United States
WKÖ	Austrian Chamber of Commerce
WRAP	Waste and Resources Action Programme
WWF	World Wildlife Fund

Glossary of terms

Bioplastic: A broad term encompassing bio-based plastics (plastics made from biological feedstocks, such as plants or animals), biodegradable plastics and compostable plastics (designed to break down in the natural environment, industrial composters or home composters, depending on the material). Not all bio-based plastics are compostable or biodegradable, and not all compostable or biodegradable plastics are bio-based.

Chemical Recycling: Chemical recycling refers to several technologies that break down plastic using heat, pressure, depleted oxygen, chemical solvents or other catalysts. This is turned into the raw materials for new plastics or turned into fuel. The process is often referred to as chemical recycling or 'advanced recycling' regardless of if the end result is new plastics or fuel for burning.

Corporate Social Responsibility (CSR): Activities that incorporate both direct and indirect environmental and social concerns into a company's operations and planning.

Deposit Return/Refund System (DRS): A system whereby, when buying a product, consumers pay an additional small amount of money (a deposit), which is reimbursed at a collection point upon the return of the packaging or product.

Effective recycling: This is sometimes also called closed-loop recycling, where for example a plastic bottle can be recycled multiple times into a plastic bottle and not down-cycled into, for example fibres for the carpet and fashion industry. Some plastic polymers, such as PET and HDPE, can be mechanically recycled into new plastic products multiple times, if collected through clean waste streams.

Extended Producer Responsibility (EPR): an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle. An EPR policy is characterised by shifting responsibility to producer that is putting packaging or product on the market and the introduction of incentives to take environmental considerations of their products into account in the design phase.

Fast-Moving Consumer Goods (FMCGs): Products sold quickly and relatively cheaply, such as household goods, packaged foods, beverages, and beauty and personal-care products.

Green Dot: Green Dot™ is a protected trademark, registered and owned by Der Grüne Punkt Duales System Deutschland GmbH. The symbol is widely used on products and in the EU it means that the company has paid a licence fee for their packaging, as stipulated by EPR legislation.

Producer Responsibility Organisation (PRO): National organisations established through the EU's Extended Producer Responsibility legislation that collect licensing fees for packaging placed on the market and sub-license the Green Dot™ label to companies for their packaging.

Recyclate: Raw material sent to, and processed in, a waste-recycling plant or materials-recovery facility.



Executive summary

This report investigates industry tactics in the face of an unprecedented plastic pollution crisis and growing public pressure to address it. Based on research and investigations in over 15 countries across five continents, it reveals how - behind the veil of nice-sounding initiatives and commitments - the industry has obstructed and undermined proven legislative solutions for decades.

We have critically analysed voluntary commitments from the biggest plastic polluters, dissected the most prominent group initiatives (some of them championed by governments and NGOs) and revealed how companies across the plastic supply chain - from the oil industry to consumer brands and retailers - really act behind the scenes.

Our case studies show that not only have voluntary initiatives failed to contain the plastics crisis, but also that companies have used these initiatives as a tactic to delay and derail progressive legislation - all while distracting consumers and governments with empty promises and false solutions.

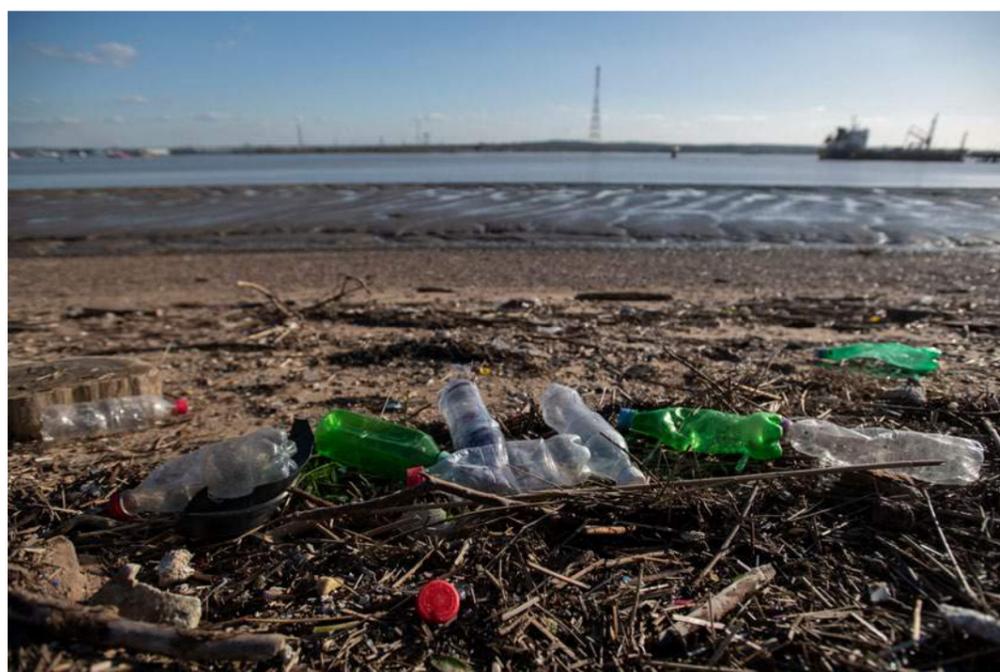
The plastic pollution crisis: blighting our ecosystems and our health

Rarely in the history of the environmental movement has an issue engendered such outrage, awareness and calls for change. Plastic-filled oceans and strangled sea creatures have become the poster children of the damage done to the natural world by our wasteful consumption - but, in truth, gyres of floating trash and washed-up whales bloated with plastic bags are only the most visible fallout of this pollution. Plastics are not just problematic when mismanaged at the end of life; virgin-plastic production is a major contributor to climate change, generating enough emissions - from the moment they leave the ground as fossil fuels, and throughout their entire life cycle - to use up 10-15% of our entire carbon budget by 2050 at current rates of growth. Processing, use and disposal of plastic also poses a toxic fallout with an array of consequences for human and planetary health - whether from harmful chemical additives or via microplastics ingested by humans, animals and plants with as-yet unknown health consequences.

As such, we now understand the plastics crisis to be a climate crisis, a biodiversity crisis, a public-health crisis and a crisis of accountability blended into one. Yet, regardless of the increased awareness, plastic production is skyrocketing - and is expected to double by 2030 - and, despite all the talk of clean-ups and recycling, plastics keeps ending up in our rivers and oceans. In the face of public ire, those deemed truly responsible for flooding the world with plastic pollution - fossil-fuel companies, consumer-goods companies, packaging producers and retailers - have rapidly coalesced to form a glut of individual or group initiatives aimed at tackling the problem. On the surface, they appear to be championing solutions to the crisis; but this report reveals that, behind the scenes, they are doing everything they can to protect their profits and continue flooding the world with cheap and easily disposable consumer products and packaging.

Co-opting the Covid-19 crisis to fight legislation

Despite years of industry attempts to distract, delay and derail legislation, at the beginning of 2020 it seems the tide had started to turn against plastic pollution, with governments from Europe to Africa introducing legislation to ban certain problematic single-use plastic products, implement deposit return systems (DRS) and oblige producers to take responsibility for their waste. This followed China's 2018 ban on plastic-waste imports, which



Plastic bottles littering a beach in southern England
Credit: David Mirzoeff

sent shockwaves throughout the waste-management industry globally. With the ever-growing realisation that plastic pollution is a global problem that requires global solutions, governments from around the world have also begun to call for a global agreement on plastic pollution. At the same time, more and more people across the world have been trying to reduce their plastic footprint, and the number of cities going zero waste has continued to increase.

Nevertheless, since the start of the Covid-19 pandemic, plastic producers have co-opted the public-health crisis and capitalised on people's fear to call for regulatory rollbacks on environmental legislation. While life-saving personal protective equipment (PPE) represents a small percentage of overall plastic output, Big Plastic has capitalised on the crisis to argue the case for single-use plastic - and against anything threatening their business. It has presented scientifically dubious studies to cast doubt over reusables, and pushed for the reversal of both deposit systems and bans on single-use plastic items.

This report shows this is far from one-off opportunism; rather, it follows Big Plastic's decades-old template of undermining and obfuscating meaningful action on plastic pollution. Numerous examples collected through our investigation show we cannot rely on corporations to do the right thing; even if they appear to be talking the talk, they are not walking the walk.

A flurry of voluntary initiatives

We analysed voluntary commitments from the 10 biggest plastic polluters - Coca-Cola, Colgate-Palmolive, Danone, Mars Incorporated, Mondelēz International, Nestlé, PepsiCo, Perfetti Van Melle, Procter & Gamble, and Unilever - on the basis of the two most recent Break Free From Plastic brand audits. We assessed their commitments based on their support for progressive legislation (for example, calling for mandatory collection of more than 90% plastic packaging); the ambition of their targets for plastic reduction; their commitments to reuse; their introduction of recycled content; and their transparency and accountability - including whether their commitments are applied across all markets in which they operate. We also analysed whether companies ensure their reduction of single-use plastics avoids regrettable substitution with other single-use materials, and whether their commitments to increase recycling and recycled content rely on false solutions, like chemical recycling.



Our analysis shows that companies have widely differing levels of commitment, ranging from near zero (Perfetti Van Melle and Mondelēz International) to more impressive-sounding commitments (Unilever, Danone and Coca-Cola). However, even the more ambitious commitments are not commensurate to the severity of the plastic pollution crisis. Most come with serious problems around transparency and accountability; companies

fail to report independently verified data, and consistently miss their own targets. Coca-Cola, for example, set itself a goal to start selling soft drinks in bottles made from 25% recycled polyethylene terephthalate (rPET) as far back as 1990 - but, three decades later, their bottles still only contain 10% rPET. Instead of implementing its pledges, Coca-Cola - the biggest plastic polluter of all - has left behind a 30-year trail of broken promises, ranging from missed targets on recycled content to failed commitments on recovery and the introduction of alternative materials. This starkly illustrates that, regardless of how ambitious voluntary commitments sound, most companies regard them as just paper promises, easily warped, reframed or ignored while conveniently generating favourable headlines. Many companies, like Mars and Mondelez International, also seem to be pinning their hopes on chemical ('advanced') recycling - a false solution with not only a history of failing expectations but also severe climate and toxicity consequences. Companies also rarely apply their policies and commitments consistently across all markets in which they operate; many still seem to have a few small (but heavily publicised) token projects in specific geographies, but lack joined-up global approach to reduce their overall plastic footprint.

Group initiatives do not fare much better. We analysed over 50 prominent national and international initiatives and found they mostly focus on products' recyclability and end-of-pipe solutions, such as clean-up initiatives and consumer education on recycling. These initiatives were sometimes established by companies themselves; for example, the Alliance to End Plastic Waste, to which members have committed \$1.5 billion. While this might sound like a significant amount of money, members of the Alliance invested \$186 billion into new petrochemi-

Credit: Les Stone



cal facilities between 2010 and 2017, and continue to invest considerable amounts into new plastic-production capacity. Others have been spearheaded by governments (such as the European Plastic Pact) or NGOs (such as the Ellen MacArthur Foundation's (EMF) New Plastics Economy Global Commitment). The barrier to entry into these initiatives is startlingly low; in some cases, even the most basic requirements - such as reporting a total plastic footprint or committing to meaningful targets - seem not to be required of signatories. While the New Plastics Economy is one of the most prominent and publicised recent initiatives, with over 450 organisations signing up to targets by 2025, their commitments not only don't go far enough but also fundamentally lack accountability. Although the EMF publishes annual progress reports, there is no apparent enforcement of consequences for failing to meet targets, and participants are not ranked by performance or called out for lack thereof, nullifying any potential accountability or stimulus to improve.

This proliferation of voluntary initiatives has brought the world no closer to reducing the amount of plastic in the oceans. At best, by lending credibility to the worst polluters without accountability or enforcement, group alliances are helping to construct a smokescreen of sustainability behind which plastic producers and consumer brands can continue to pump the world full of plastic unabated. At worst, these groups are complicit in actively delaying and undermining more transformative legislative action. In fact, our analysis found a shocking amount of overlap between corporate membership of the initiatives that claim to solve plastic pollution and trade associations and lobby groups that actively work to undermine ambitious legislation. With the existence of this well-connected united front, it is not surprising that none of the companies or group initiatives analysed are proactively calling for ambitious legislation on mandatory collection, reuse and effective recycling, which are all proven solutions to the plastic crisis. While companies operating in the European Union (EU) are now forced to comply with the EU Single-Use Plastic (SUP) Directive, our case studies show they are still working through a network of organisations and trade groups to weaken and delay its implementation.

Tactics to delay, distract and derail

Distracting from mandatory measures through well-publicised voluntary commitments is just one tactic in a corporate playbook of false solutions to the plastics crisis. We define these tactics as falling into three main categories: delay, distract and derail.

Industry delaying tactics include lobbying to delay unfavourable legislation, to protect the status quo for longer and to remain primed for future opportunities to influence or weaken legislation. Delaying can also be a subtler art of convincing legislators that mandatory measures are not necessary, via impressive-sounding voluntary commitments, withholding or misrepresenting data to mask the seriousness of the problem, calling for implementation delays or adding conditionality to legislation, giving corporations more time to either continue business as usual or seek other loopholes.

Delaying tactics go hand in hand with a campaign of distraction. For many years, this has pivoted on fundamentally skewing broader understandings of who is truly to blame for the plastics crisis. Protracted campaigns by spurious environmental organisations (like Keep America Beautiful) and consumer brands (like Coca-Cola) have kept the finger of blame pointed firmly at consumers - or 'litterbugs' - distracting from the true responsibility of plastic producers for the plastics pollution crisis. Other distraction tactics include fixating on sticking-plaster solutions, like beach clean-ups, or products made from marine plastic; promoting recycling without mandatory collection; claiming plastic products are more recyclable than they actually are; touting other single-use alternatives, such as bio-based, biodegradable or compostable plastics; pushing magical technological solutions, such as chemical recycling; funding studies engineered to support their point of view; and widely publicising their green credentials to consumers through well-funded media and advertising campaigns.

Finally, Big Plastic is constantly watching for chances to derail legislation before it sees the light of day. Many consumer brands and other companies in the plastics supply chain have direct lobbyists influencing governments around the world; their interests are also indirectly represented through numerous trade associations and other organisations established or funded to influence policy. In some cases, they even set up fake environmental groups, or fund existing groups as mouthpieces. Tactics identified include pushing pre-emptive laws to avoid future bans on plastic products, seeking exemptions to proposed laws for products argued to have better sustainability credentials, challenging the legality of implementation, weakening enforcement and even cynically misdirecting legislation by promoting measures that do not address the problem at source.

Putting the tactics into play

Spanning 15 countries and regions across five continents, and involving investigative journalists, researchers and experts across the world, our global investigation reveals how these tricks and tactics are used on the ground to prevent progressive legislation taking hold. This report is based on literature reviews, interviews, freedom of information (FOI) requests and on-the-ground investigations. The picture that emerges shows a well-organised network of organisations that lobby at every level, mobilising against even the smallest attempt to restrict or otherwise regulate plastic production. It also reveals the hypocrisy of large multinational corporations, like Coca-Cola, which recently proclaimed support for some legislation in the EU but still lobbies against it in Africa, China and the United States.

Key findings from the case studies

- In the **United States**, we reveal how the industry has successfully shifted the blame and responsibility for plastic pollution from the corporations to consumers and public authorities, all while promoting recycling as a convenient excuse to produce ever more plastic. We see how fake environmental groups and increasing numbers of new voluntary initiatives are used to distract from accountability, while legislation - such as plastic-bag bans and bottle bills - has been furiously fought against for years.
- In **Europe**, we investigated the industry's efforts at the EU level to weaken and delay the EU Plastics Strategy and the EU SUP Directive. We also zoomed into specific case studies in Europe, including Coca-Cola's tactics in attempting to nix deposit return systems (DRS) in **Scotland**; efforts by retailers, beverage producers and producer-responsibility organisations to undermine DRS in **Austria**, **Spain** and the **Czech Republic**; and a missed opportunity in **France**, where reuse targets were introduced without the systems to deliver them at scale.
- In **Asia**, we looked at **China** and **Japan**. The former shook the world of waste in 2018 by banning plastic-waste imports, and has an appetite for big policy moves. This is contrasted by low corporate action, with the only focus on clean-ups and an array of commitments to switch to biodegradable and compostable alternatives. In Japan, despite citizens' very high commitment to separate collection, there is little awareness that most waste is actually incinerated or exported. Beyond Japan's borders, the government is also pushing problematic incineration technologies and bio-based, biodegradable and compostable plastics as part of its foreign aid 'solutions'.

- Elsewhere, we investigated **Uruguay**, where we see more brazen industry lobbying, and **Bolivia**, where we witness the knee-jerk industry reaction to an ambitious plastics ban. Finally, in **Kenya**, we find a country slowly suffocating in plastic waste pushed by companies looking to grow in Africa. We see how Coca-Cola - despite its recent U-turn in support of DRS in Europe - is still up to its old tricks of fighting against DRS in Kenya.

No more time to waste

As NGOs and investigative journalists have dug deeper and exposed their tricks, big corporations - and the network of organisations they support - have become ever more sophisticated in their deception. They hide behind nice-sounding commitments and put seemingly significant resources towards solutions - but, as this report shows, much of this is smoke and mirrors. The vast majority of their commitments focus on recyclability and recycling, but they fight against proven solutions that would actually deliver these at scale. Many materials - not just plastic - can be recycled (and reused), and the industry could switch to those types of packaging, in combination with deposit systems that would enable consumers to return them. Instead of embracing these solutions, the industry has increased the quantity of cheap flexible and multi-layered plastics (such as wraps and pouches) that are impossible to recycle, and is now trying to push unproven and harmful chemical recycling as a 'solution'. When chemical recycling inevitably fails, the world will have lost several more decades of potential meaningful action on plastic pollution.

The findings of this report are, without a doubt, just the tip of the iceberg. However, they give an insight into how the industry operates - quickly mobilising to stop any attempt to regulate or restrict the use of plastics, vigorously lobbying against legislation, greenwashing via commitments that focus on end-of-pipe solutions, and shifting responsibility on consumers.

Our plastic-clogged oceans and rivers alone bear witness to the categorical failure of years of voluntary approaches, and show the urgent need to introduce robust legislation and mandatory mechanisms to draw back the tide of plastic pollution. Mandatory collection, in combination with recycled-content targets, is a proven method to reduce plastic pollution and virgin-plastic production and to incentivise product redesign. DRS, in particular, has a track record of achievement - and is a low-hanging-fruit opportunity to help set countries on a path of greater reuse and circularity. Until companies up their game, call for mandatory collection and producer responsibility, and stop delaying and derailing legislation and distracting from their true accountability for the plastics crisis, they are doing no more than talking trash.



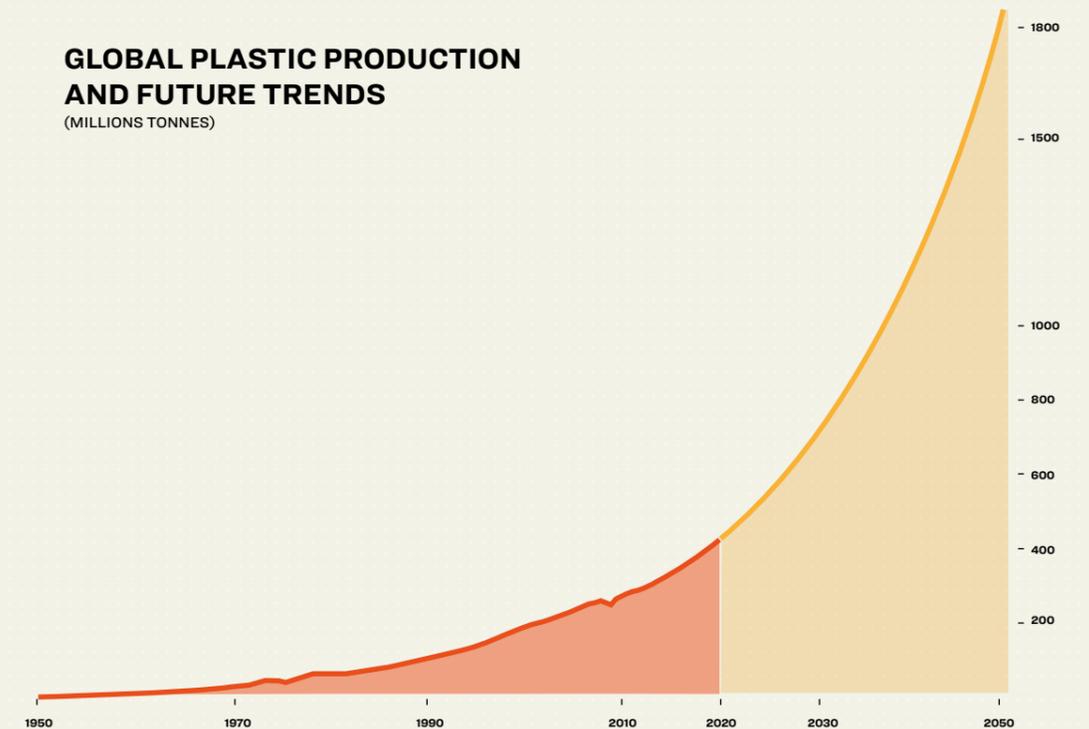
1. Introduction

1.1. The problem with plastics

The modern world has a plastic addiction. Since the 1950s, when plastic production took off, we have relied on this cheap, light, flexible, waterproof, unperishable material for an ever-increasing number of uses. From aeroplanes, electronics and insulation to medical equipment, furniture and ubiquitous packaging, plastic permeates every aspect of our lives. Production has skyrocketed - from just 2.3 million tonnes in 1950 to 162 million tonnes in 1993, which more than doubled to 448 million tonnes by 2015¹ - and half of all plastics ever made have been produced since 2005.²

Figure 1.1: The exponential production of plastics - Source: UN Grid-Arendal³

GLOBAL PLASTIC PRODUCTION AND FUTURE TRENDS (MILLIONS TONNES)



This sheer volume of plastic has overwhelmed the waste-management systems designed to contain it, pouring out into the natural world at a rate of 8 million tonnes a year, or one garbage truck per minute.⁴ Here, it saturates almost every surface of the planet – from the deepest abysses to the highest mountains and remotest islands – causing an unprecedented crisis for wildlife.⁵ What makes plastic ideal for convenience and durability makes it a nightmare for nature, and it has become infamous for choking, ensnaring and poisoning everything from plankton to porpoises. Images of dead whales stuffed with plastic bags, seals garrotted by netting, turtles' noses impaled by straws, albatross chicks starved from being fed plastic fragments, and seas swelling under layers of bottles and other plastic detritus are published daily. Just as insidious are the plastic particles we cannot see. Microplastics and plastic fibres smaller than 5mm slough off from polyester clothing, car tyres, fragmented packaging and even when we open plastic containers.⁶ These easily enter the food chain when ingested by plankton or insects,⁷ and even contaminating fruits and vegetables,⁸ working their way directly and indirectly into our lungs, stomach and bloodstream.⁹

The exact effects of microplastics in the human body are still unclear, but studies on animals suggest they leach harmful toxic chemicals and hormone disruptors, and can even cross the blood-brain barrier.^{10,11} Our rate of literal plastic consumption is alarming – it is estimated that we ingest a credit card's worth of plastic each week.¹² But it is not just in the food we eat, the water we drink and the air we breathe that plastics cause us harm. The consequences of mismanaged waste – including plastics – to human health have become a silent and toxic crisis, killing between 400,000 and 1 million people each year in low- and middle-income countries.¹³ Indeed, from extraction and production to use and disposal, the entire life cycle of plastic poses serious toxic risks to human health, contributing to cancer, neurotoxicity, reproductive issues, endocrine disruption and genetic problems on a global scale.¹⁴ Our mismanagement of plastics is also a major economic failure. The negative externalities associated with plastics tally up to a conservative estimate of \$40 billion annually – for example, through degrading the natural environment, hampering infrastructure or harming people's health¹⁵ – a cost predominately borne by low-income communities.

Packaging is the largest end-use market segment for plastics, accounting for just over 40% of total usage, most of which is single use.¹⁶ By throwing away 95% of packaging of material value after just one use, an estimated \$80–120 billion is being lost to the global economy on a yearly basis.¹⁷ Since plastic production took off in the 1950s, just 9% of all plastic has been recycled, while 12% has been incinerated and 79% has ended up in landfills or the natural environment.

The plastics crisis also has serious implications for climate change. More plastic means more fossil-fuel extraction, and each stage of the plastic life cycle is carbon intensive: plastic refining is one of the highest greenhouse-gas-producing industries and the fastest-growing manufacturing sector; waste management in the form of incineration – often euphemistically labelled 'waste-to-energy' or 'thermal recycling' – and backyard burning produces toxic emissions; unmanaged post-use plastic releases greenhouse gases as it degrades in the environment; and microplastics disrupt ecosystems that help to sequester carbon.¹⁸

Critically, as plastic production skyrockets and our attempts to manage plastic pollution continue to falter, associated emissions will reach alarmingly unsustainable levels. Emissions from just 2 of the 24 planned refineries starting production in the US total the equivalent of adding 800,000 cars to the roads.¹⁹ Unless production slows, emissions from plastics will add up to the equivalent of 295 new 500-megawatt coal-fired power plants built in the next 10 years, or 10–15% of our remaining carbon budget by 2050.²⁰

But production is not slowing – it's soaring. At current trajectories, plastic production will double in the next 10–15 years as the fossil-fuel industry seeks to open new revenue streams, relying on plastic to make up the diminishing long-term prospects of fossil-fuel consumption in energy and transport.²¹ We are at risk of heating the planet to uninhabitable levels by producing superfluous, disposable packaging that we simply do not need.

1.2. Blaming consumers and a crisis of accountability

Whereas awareness of the severity of plastic pollution has only recently entered the mainstream, this is not a new issue. In fact, the plastics industry has known about the growing ocean plastics problem since at least the 1950s – yet has continued to ramp up production, consistently branding plastic as safe, benign and key to a modern way of life.^{22,23}

In response to early backlash against plastic waste and the tabling of bans in several US states, the industry actively sought to promote recycling as a solution; a way to process increasing volumes of the plastic packaging it was putting on the market, rehabilitate the sinking reputation of the material, and – critically – pre-empt bans and regulatory action. Yet internal documents from the time show the industry had '*serious doubt that [recycling] can ever be made viable on an economic basis*','²⁴ with the majority of plastics not feasibly recyclable at scale. In spite of this, the industry and consumer-goods companies mounted vast advertising campaigns extolling the virtues of plastics and recycling. Wide-ranging public campaigns, such as Keep America Beautiful (KAB)'s 'Crying Indian' campaign (whose slogan was '*People start pollution. People can stop it.*') and the American Chemistry Council's Plastics Make it Possible campaign, branded consumers as '*litterbugs*' and sought to pin accountability solely on individual behaviour – a theme that continues to this day.²⁵ At this time, the industry also started to move against container-deposit systems, noting that every returnable container displaced from the market would mean the sale of 20 single-use containers.²⁶

'Crying Indian' campaign by Keep America Beautiful (KAB) with the slogan 'People start pollution. People can stop it'



Having successfully distracted the public and governments with the false promise of widespread recycling, plastic production began an exponential surge, roughly doubling every decade,²⁷ overtaking all corners of our lives and coming to define the convenience-is-king throwaway culture of the 21st century. Out of sight, mountains of plastic waste piled up in landfills, burned in incinerators or were shipped overseas for processing. For a 30-year period (1988–2018), material that couldn't be effectively recycled domestically – representing around 50% of the world's plastic waste – was shipped to China to be downcycled into plastic pellets for use in China's booming manufacturing sector.²⁸ This was no magic trick, however; dirty scrap plastic was causing a health and environmental hazard, and what couldn't be crudely recycled ended up in incinerators, landfill or the environment. China decisively severed itself from the global waste trade with its National Sword policy in 2018, rejecting all but the purest waste streams. But the waste trade didn't just disappear; it flowed into new countries, with Thailand seeing a 2000% jump in imports of US plastic waste in the first six months of 2018.^{29,30} Overwhelmed

Figure 1.2: The fate of all plastics



by the world's waste, and with vast amounts of it leaking into the natural world, one by one these countries have closed their doors, tightened restrictions or turned away shipments of contaminated waste.³¹

The waste trade has compounded growing domestic waste-management issues in middle- and low-income countries across the world. Looking to expand into new markets, consumer brands such as Unilever, Nestlé and Procter & Gamble have increasingly pushed single-use plastics on countries like India, the Philippines and Malaysia, offering products previously only sold in larger quantities in small, affordable sachet form. This revolutionised access to items like shampoo and detergent but saddled countries with a multilayer plastic-waste problem, which the same companies are still struggling to address effectively.

While continuing to offload responsibility for dealing with plastic waste onto consumers in all markets, Big Plastic points the finger of blame at Asian countries, in particular, where the majority of plastic enters river systems and the marine environment – even though the industry itself is responsible for overloading countries lacking developed waste-management system with unrecyclable bags, films, foils and sachets, 60% of which comes from just 10 companies.³² Meanwhile, across the world, hard-to-recycle or contaminated plastics are piling up – many of them diligently sorted and placed in the recycling bins by citizens, who are unaware that their recycling often ends up in faraway countries that lack the capacity to deal with this waste.³³

1.3. A turning point for plastic pollution?

The fight against plastic pollution has been mounting since seabirds were first discovered to be ingesting plastics in 1960.³⁴ Since then, and particularly in the past five years, our understanding of the breadth and gravity of the plastics crisis has spilled out into the mainstream, with a flurry of studies, documentaries and public campaigns. In the face of huge scrutiny, the plastics industry, consumer brands and retailers have found themselves in a repeat of the 1970s – back under the spotlight, facing bans, regulation and consumer outrage. Over 90% of European citizens believe protecting the environment and climate is important, with solid support for policy measures to tackle plastic pollution;³⁵ likewise, over 90% of respondents to our own surveys in California and Austria agreed that plastic producers should contribute to managing plastic waste.³⁶

Responding to unprecedented public awareness and pressure, in 2019 the European institutions adopted the EU Single-Use Plastics Directive (EU SUP Directive), a raft of measures to ban problematic items – like plastic straws and polystyrene cups – and to stimulate effective recycling, with mandatory inclusion of 30% recycled content in plastic bottles and 90% separate collection by 2029. Other countries have attempted to follow suit: China recently unveiled its plan to cut down single-use plastics, such as plastic bags, by 2022, which could threaten 4 million tonnes of plastic demand per year;³⁷ and, in the US, the ambitious Break Free from Plastic Pollution Act proposes holding plastic producers accountable for the plastic crisis, banning certain items, bringing in a nationwide deposit return system and introducing a moratorium on new plastic refineries.³⁸

In response, Big Plastic and the world's most-polluting consumer brands are once again drawing on a playbook of tactics and false solutions designed to delay, distract and derail change for as long as possible, protecting business as usual and actively devising strategies to avoid legislation that aims to reduce plastic pollution.³⁹ They are seeking to convince consumers and governments that, despite decades of churning out vast volumes of unrecyclable plastic trash, they can be relied on to fix it. They have been quick to voluntarily, and non-bindingly, pledge an end to plastic 'waste' – from totally ineffectual (but highly publicised) sponsored beach clean-ups to token products made from ocean plastic, renewed recycling campaigns, non-binding targets, chemical recycling and promoting 'greener' – but often pricier – products. However, these commitments often end up as no more than a trail of broken promises, as we will see in chapter 2. To take just a small example, from 2017–18, British supermarkets' plastic footprint increased from 886,000 to 903,000 tonnes, in spite of their widely publicised declarations to turn the tide on plastic.⁴⁰

1.4. Co-opting a crisis

Since the beginning of the Covid-19 pandemic, the world's governments, businesses and civil society have mobilised in an unparalleled response to protect public health and ensure vital services remain operational. With the fallout of shutting down much of the economy and stipulating social isolation and stay-at-home orders for 3.9 billion people, and the ensuing threat to livelihoods, governments have been swift to arrange financial aid and bailouts for businesses and individuals affected by the crisis.⁴¹

While many businesses, such as those in hospitality and other service sectors, have legitimately sought to lobby government for assistance, the oil, gas and petrochemical industry – including major plastics producers – stand out for their attempts to seek not only high levels of direct and indirect financial support but also a range of regulatory rollbacks, exemptions from worker-safety and environmental protection laws, and the criminalisation of protest.⁴² Much of this goes far beyond the scope of support that governments are offering, including letters from the European Plastics Converters (EuPC) to the European Commission (EC) requesting delaying the EU SUP Directive;⁴³ from industry association PLASTICS to the US Health and Human Services Secretary, soliciting an official declaration of support for single-use plastic products as 'the sanitary choice', despite the lack of scientific evidence to support that claim;⁴⁴ and from a coalition of plastic producers to the US Congress, asking for a \$1 billion bailout.⁴⁵

These are just a few examples of the plastics industry attempting to co-opt the crisis to portray itself as the guardian of public health during the Covid-19 pandemic. The petrochemical industry is holding up PPE – vital products in the fight against the virus – as a poster child, and using it to justify the expansion of new plastic-manufacturing facilities, despite the fact that PPE would represent just a fraction of such facilities' output, and that currently almost half of all plastics are used for disposable packaging.^{46,47} Additionally, a recent scientific consensus statement showed that over 12,000 chemicals hazardous to human health are present in single-use plastics,⁴⁸ including endocrine-disrupting chemicals – present in everyday plastic products – that weaken the immune system and the body's ability to defend itself from Covid-19.⁴⁹ In combination with the serious harm posed by the entire life cycle of plastic, and its exacerbation of climate change, this makes Big Plastic's determination to depict itself as vital to human health appear deliberately brazen. Oil, gas and petrochemical companies are banking on plastic production as a lifeline amid the declining profitability of fossil fuels;⁵⁰ they are desperate to ensure its future, and unbind it from regulatory shackles, wherever they can. The industry's rapid lobbying in response to Covid-19 shows its readiness to co-opt crises, manipulate harried politicians and exploit public fears to continue smothering the world with plastic.

Additionally, pandemic-related moves to pause or postpone the implementation of deposit return systems (DRS), such as pressure by supermarkets in the UK in July 2020,⁵¹ are being enacted to lessen the strain on businesses and municipalities during the crisis. As traditional opponents of bottle bills and deposit systems, many retailers are using this as an opportunity to paint such return systems as dirty and unhygienic to ensure any hiatus is made permanent, despite the utility of such systems in providing effective and clean streams of easily recyclable plastic.⁵²

Box 1.1: Deposit return systems explained

Deposit return systems (DRS) are a highly effective mechanism for collecting large volumes of empty containers in clean waste streams for use in high-quality recycling, or for setting up refill-or-reuse systems. Over 40 countries and states have implemented DRS, with many others in preliminary discussions, allowing hundreds of millions of people to return their bottles, cans and other containers and help reduce plastic pollution.⁵³

How it works

First, a retailer buys the product from a distributor, paying for the product plus a fully refundable deposit. This deposit is forwarded to a system administrator, usually a non-profit organisation composed of stakeholders from retail and industry, which is responsible for managing the system.

When a customer buys the product, they pay a small deposit (usually around 10c), in addition to the product price, as an incentive to return it later. The retailer also sends this deposit to the system administrator. When the customer returns their empty container to the retailer, their deposit is refunded over the counter or at a reverse vending machine (RVM). The original deposit paid by the retailer is refunded to them by the system administrator, plus a handling fee to the retailer to cover any costs incurred. The system administrator then arranges for the returned containers to be sent on to recyclers and turned into new material – or, in the case of refill systems, returned to a bottler to be reused.

The system is paid for by three channels: first, by unredeemed deposits; second, from the revenues of the sales of the recyclable materials; and third, by licensing fees paid by beverage producers as part of an extended producer-responsibility policy. DRS can be tailored for different contexts, including to optimise refill and reuse, for low-tech systems without the need for RVMs, or as decentralised systems operated by retailers.⁵⁴

Benefits

DRS is the most cost-effective and reliable way to achieve high collection rates of containers, with most systems reaching 90%+ return rates within a few years.⁵⁵ It also supplies clean waste streams of high-quality recyclables in comparison to kerbside collection, where items are mixed together, which leads to contamination. Clean recyclables from DRS can be easily and effectively recycled into new materials, reducing overall virgin plastic, aluminium and glass production, and improving closed-loop recycling. For European countries, having a reliable source of recycled material for use in new products helps producers hit their recycled-content targets – at least 25% in PET bottles by 2025 and 30% 'in all plastic bottles' by 2030, as stipulated in the EU SUP Directive. Beyond stimulating recycling markets, DRS has well-established benefits for the environment. By collecting out-of-home-consumed materials, studies in the US show that litter from drinks containers is reduced by 70–84%, as consumers are incentivised to return empty containers.⁵⁶

DRS also makes economic sense. It creates jobs by providing greater volumes of material for recycling, and studies across 32 municipalities worldwide show that the introduction of DRS creates large cost savings by reducing clean-up costs and the tonnage of material needing to be collected through kerbside programmes.⁵⁷ Finally, DRS appeals to the public; opinion polls in countries looking to introduce DRS, those with systems already in place and those looking to expand current systems show high levels of support, typically above 80%.⁵⁸

DRS is primarily used for drink containers in the beverage sector, but it could – and should – be expanded to other sectors, such as beauty and personal care, shipment and delivery, and other forms of packaging.⁵⁹ Finally, well-implemented DRS helps to underpin refill-and-reuse systems, and policy for introducing DRS should always include mechanisms to stimulate reuse.



| Return and Earn public outdoor RVM for recycling of empty cans, bottles or carton drink containers in New South Wales, Australia

| Credit: Shutterstock

Deposit return systems around the world

OVER 40 JURISDICTIONS AROUND THE WORLD HAVE IMPLEMENTED CONTAINER DEPOSIT LEGISLATION WITH SIGNIFICANT ENVIRONMENTAL BENEFITS, COST SAVINGS FOR TAX-PAYERS AND STRONG SUPPORT FROM THE PUBLIC.

THE EFFECTS OF DRS ON LITTER REDUCTION



BEVERAGE CONTAINER LITTER REDUCTION

TOTAL LITTER REDUCTION



JURISDICTIONS WITH DRS IN PLACE

- SWEDEN (1984)
- ICELAND (1989)
- FINLAND (1996)
- NORWAY (1999)
- DENMARK (2002)
- GERMANY (2003)
- THE NETHERLANDS (2005)
- ESTONIA (2005)
- CROATIA (2006)
- LITHUANIA (2010)
- ISRAEL
- MICRONESIA
- KIRIBATI
- PALAU
- CALIFORNIA
- CONNECTICUT
- HAWAII
- IOWA
- MAINE
- MASSACHUSETTS
- MICHIGAN
- NEW YORK
- OREGON
- VERMONT
- GUAM
- BRITISH COLOMBIA
- ALBERTA
- SASKATCHEWAN
- MANITOBA
- ONTARIO
- QUEBEC
- NEW BRUNSWICK
- NOVA SCOTIA
- PRINCE EDWARD ISLAND
- YUKON
- NORTHWEST TERRITORIES
- NEWFOUNDLAND
- LABRADOR
- QUEENSLAND
- NEW SOUTH WALES
- NORTHERN TERRITORY
- SOUTH AUSTRALIA

LEGISLATIVE ACTION OR POLITICAL DECISION TAKEN FOR IMPLEMENTATION

- SCOTLAND (2022)
- MALTA (2021)
- PORTUGAL (2022)
- LATVIA (2022)
- SLOVAKIA (2023)
- BELARUS (2022)
- ROMANIA (2022)
- TURKEY (2022)
- REST OF UK (2023)
- WESTERN AUSTRALIA (2020)
- TASMANIA (2022)
- VICTORIA (2023)

DRS UNDER DISCUSSION

- AUSTRIA
- SPAIN
- IRELAND
- FRANCE
- POLAND
- SERBIA
- CZECH REPUBLIC
- BELGIUM
- FIJI

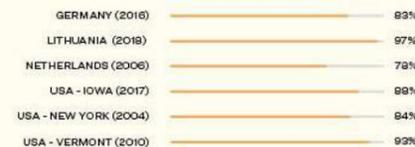


PUBLIC OPINION POLLS GENERALLY SHOW WIDE SUPPORT IN FAVOUR OF INTRODUCING DRS



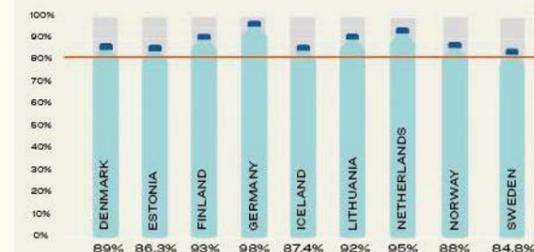
OF PEOPLE SUPPORT THE SYSTEM AND ARE IN FAVOUR OF EXPANDING IT

IN COUNTRIES WHERE DRS EXISTS



ESTIMATED SAVINGS TO MUNICIPALITIES PER YEAR

- SPAIN \$57-93M
- AUSTRIA €120M
- UNITED KINGDOM £35M
- NEW SOUTH WALES \$23-62M
- NEW ZEALAND \$26.7-\$40.1M



PLASTIC BOTTLE COLLECTION RATE IN 9 EUROPEAN COUNTRIES WITH DEPOSIT RETURN SYSTEMS 2017/2018



OF UK LITTER WAS THE RESULT OF DRINKS CONSUMPTION





2. A flurry of voluntary initiatives

In this chapter, we take a closer look at voluntary commitments from some of the top plastic polluters, and scrutinise the initiatives rolled out by industry-backed alliances. In the first part of the chapter, we assess individual company commitments against a number of criteria: support for progressive legislation, ambitious targets that go beyond legislation and whether commitments are applied consistently across all markets.

In the second part, we take a look at some of the most prominent group commitments, backed by the industry and, in some cases, supported by governments and NGOs. We assess their level of ambition and shortcomings, and analyse where they stand on addressing the plastic crisis.

Faced with increasing public awareness of - and consumer backlash against - plastic pollution, consumer-goods companies, retailers and plastic manufacturers have been quick to make a raft of voluntary and non-binding pledges to end plastic waste. Some targets are put forward by individual companies; for example, Coca-Cola's numerous commitments to increase the share of recycled content. Others are made through industry-endorsed alliances set up to tackle the issue; for example, members of the Alliance to End Plastic Waste have pledged to invest \$1.5 billion over the next five years to prevent plastic leaking into rivers, seas and oceans.⁶⁰

While voluntary initiatives in themselves are not inherently bad - and, indeed, play an important role in some contexts - it is vital to challenge weak and misguided initiatives that hinder rather than help. It is especially important to denounce initiatives that are false solutions, serving to distract consumers and governments while simultaneously boosting a company's reputation.



As this chapter will highlight, the majority of voluntary pledges and targets put forward by individual companies and industry alliances continue to place the onus on the consumer to recycle more, or to switch to 'greener' products. Companies make commitments to 100% recyclable plastic packaging, which look and sound impressive to consumers while failing to address the fact that 'recyclable' does not necessarily mean the product is, in practice, recycled - much of the plastic currently in the ocean is technically 'recyclable'. Since collection of packaging is a basic precursor to both recycling and reuse, companies cannot guarantee their packaging is recycled without any commitment to collecting it. Pushing messages of recyclability without mentioning mandatory collection and producer responsibility conveniently allows companies to continue with their business-as-usual approach to single-use plastics, rather than taking responsibility for the products they put on the market. At the same time, their plastic continues to end up in marine ecosystems and to pollute the environment.

Credit: Les Stone

Moreover, many of the voluntary initiatives put forward by industry fail to reduce plastic pollution at its source, instead focusing on end-of-pipe solutions, such as litter-picking or ocean clean-ups. Beyond their role in raising

awareness - and, in some cases, documenting which brands pollute the most - clean-up efforts are not an effective solution so long as a steady stream of new plastics keeps being produced and discarded; they are akin to mopping the floor, instead of turning off the tap, when the bath is overflowing.

Another problem with voluntary commitments is they are rarely applied across all the markets in which a company operates. For example, a recent Tearfund report shows that Unilever and Coca-Cola use a larger amount of plastic, per euro of sales, in low- and middle-income countries than their global average. Coca-Cola was especially highlighted as the worst polluter; although it is smaller than Unilever, Nestlé and PepsiCo (in terms of revenue), it uses more plastic than the other companies investigated.⁶¹

Finally, a lack of accountability and the non-binding nature of voluntary commitments mean pledges often end up as no more than a trail of broken promises. For example, as far back as 1990, Coca-Cola claimed it would sell soft drinks in bottles made from 25% rPET,⁶² but their bottles still include only 10% rPET.⁶³

2.1. Individual company commitments

2.1.1. Criteria for assessing companies

This section takes a closer look at the top plastic-polluting companies, according to the 2018 and 2019 Brand Audit reports published by Break Free From Plastic.^{64,65} The majority of companies appeared in the list of top ten plastic polluters in both the 2018 and 2019 audits; however, for the purposes of this report, we have chosen to look at Danone - a major producer of plastic packaging - which appeared fourth in the 2018 audit, instead of tobacco giant Philip Morris International, which came in ninth in the 2019 audit. Here, we take closer look at the voluntary commitments from each company, and provide an overview of what they claim to be doing on plastic pollution (see Table 2.1).

To assess the voluntary commitments made by each company, we focus on three main areas:

1. Support for progressive legislation;
2. Scale of ambition; and
3. Transparency and accountability.

The following three sections outline the criteria for each area in more detail.

2.1.2. Support for progressive legislation

High levels of separate collection, through mechanisms like DRS, are central to increasing levels of reuse and recycling for four reasons. First, by supporting the right mechanisms for collection, clean waste streams of recyclable materials are created, stimulating use of high-quality recycled content in companies' products. Second, refill and reuse can be built into such collection systems (see Box 4.4). Third, mandatory collection means companies will have to rethink the products they put on the market; for example, by making them out of easy-to-recycle materials or shifting to refillables. Finally, although decreasing the amount of plastic produced is critical for addressing climate change and plastic pollution, if plastic materials still end up in the environment at the end of their life, we would continue to face problems for the environment, human health and wildlife. This is why we focus on companies' responsibility to collect the plastic they put on the market to prevent it entering the environment.

Separate-collection legislation, in combination with recycled-content targets, is an important step in the right direction. Companies calling for, and supporting the implementation of, such legislation would show their

commitment to creating a circular economy and becoming part of a real solution for tackling plastic pollution. Therefore, to assess whether a company is committed to supporting progressive legislation, we look at whether the company calls for such legislation for different types of plastic packaging, and whether their support for such legislation is applied globally or only in specific geographies. In addition to separate collection and recycling, we also look at companies' commitment to reuse models, especially the scale of their commitment and whether they go beyond a few nice-sounding pilot projects.

2.1.3. Scale of ambition

We have focused on three criteria through which a company could show their ambition on tackling plastic pollution.

First, we looked at companies' targets, commitments and progress on reuse. The circular economy requires fundamentally rethinking business models - acknowledging that plastic pollution cannot be solved through more recycling alone, but rather by stopping waste being created in the first place, and making sure products can stay in use. Refillable beverage containers, for example, can be reused many times before needing to be recycled, keeping valuable resources in the production cycle for as long as possible. Refillable PET bottles can be reused up to 15 times, and refillable glass bottles as many as 25 times,⁶⁶ leading to greenhouse gas (GHG) savings and avoiding the environmental impacts associated with their production and end-of-life management.⁶⁷ Tellingly, despite the fundamental importance of reuse to the circular economy, the Ellen MacArthur Foundation's (EMF) New Plastics Economy Global Commitment Progress Report 2019 highlights that, while a third of signatories are testing and piloting reuse schemes, less than 3% of signatories' packaging is actually reusable today.⁶⁸

Second, we looked at whether companies are setting ambitious minimum recycled-content and collection targets for their plastic packaging. This drives demand for recycled plastic, and - although not the only solution - helps ensure material is maintained in a closed loop and not downcycled. Recycled-content commitments should also include intentions to phase out toxic chemicals in the design phase of their products and ensure mandatory traceability of harmful chemicals along the value chain. These targets, set by companies, have a positive knock-on effect for improving and increasing the collection rate of single-use plastics, and provide an important tool for both preventing plastic pollution and reducing virgin-plastic demand. Putting ambitious targets in place also complements calls to follow the EU's mandate of over 90% separate collection of beverage bottles, as companies would need the collection mechanisms in place to obtain large volumes of high-quality recyclable material.⁶⁹

Third, we looked at whether companies go beyond existing EU legislation (the most ambitious legislation currently in place) and set their own minimum recycled-content targets of at least 50% for bottles and at least 30% for other plastic packaging by 2030.⁷⁰ Although not studied in this report, several companies - including L'Occitane and Diageo - have already committed to targets for uptake of recycled plastics that surpass the target set by the EU SUP Directive.⁷¹ Ideally, a company's own ambitious voluntary recycled-content targets would occur in tandem with their calls for legislation, which would set minimum recycled content and collection obligations for plastic packaging in all geographies where a company's products are sold.

Finally, we looked for ambition and leadership on plastic pollution by assessing whether a company aims to reduce reliance on 'problematic' disposable plastic items,^a such as straws, cutlery, plates and cotton buds (to name a few) and problematic materials, such as PVC. This reduction in single-use plastics should avoid, where possible, substitution with other single-use materials - such as paper, wood or bamboo - as this perpetuates a throwaway culture, and is likely to have unintended environmental consequences. Instead, it should lead to redesign of a product, or replacement with reusable alternatives.⁷²

^a Problematic items are those that are either commonly littered and environmentally harmful; avoidable or unnecessary; unrecyclable; or where a viable reusable alternative exists.

2.1.4. Transparency and accountability

To assess transparency and accountability for commitments and progress on tackling plastic pollution, we looked at four indicators.

First, we looked at whether a company reports its plastic footprint - the total volume of plastic packaging used. As part of the EMF's drive for transparency, several major companies that have previously refused to publicly disclose such figures have now revealed how much plastic packaging they create. Nevertheless, 80% of companies signed up to the New Plastics Economy Global Commitment still refuse to disclose the total tonnage of their plastic production or usage, as of the latest Progress Report.⁷³

Coca-Cola plastic pollution |
Credit: David Mirzoeff |

Second, we looked at whether a company talks about its progress against achieving an absolute reduction in total number of single-use plastic-packaging units, which does not include lightweighting existing products. Al-



Overview of company commitments

Table 2.1: An overview of individual FMCG companies' voluntary commitments on plastic pollution

COMPANY	HQ	REVENUE	SUPPORT FOR PROGRESSIVE LEGISLATION	SCALE OF AMBITION	SCALE OF AMBITION	TRANSPARENCY AND ACCOUNTABILITY				
	COUNTRY	REVENUE (billion USD)	DO THEY CALL FOR OVER 90% MANDATORY SEPARATE COLLECTION OF PLASTIC PACKAGING GLOBALLY?	HAVE THEY MADE SIGNIFICANT PROGRESS ON SYSTEMS FOR REFILL AND REUSE?	DO THEY HAVE A MINIMUM RECYCLED-CONTENT TARGET OF AT LEAST 50% FOR BEVERAGE BOTTLES AND 30% FOR PLASTIC PACKAGING BY 2030?	ARE SINGLE-USE PLASTIC ITEMS REDUCED OR REPLACED WITH REUSABLE ALTERNATIVES (RATHER THAN REPLACED WITH SINGLE-USE PRODUCTS IN ANOTHER MATERIAL)?	DO THEY REPORT TOTAL VOLUME OF PLASTIC PACKAGING USED? (METRIC TONNES)	DO THEY OPENLY REPORT ON AN ABSOLUTE REDUCTION IN TOTAL NUMBER OF SINGLE-USE PLASTIC-PACKAGING UNITS?	DO THEY OPENLY REPORT PROGRESS ON THE TOTAL PERCENTAGE OF RECYCLED CONTENT IN THEIR PLASTIC PACKAGING?*	ARE COMMITMENTS APPLIED CONSISTENTLY ACROSS ALL MARKETS IN WHICH THE COMPANY OPERATES?
		37.27	ONLY IN WESTERN EUROPE. (AND QUALIFIED SUPPORT IN THE USA)	REUSE DELIVERY MODELS ALREADY EXIST FOR A SIGNIFICANT PROPORTION OF PRODUCTS OR PACKAGING; HOWEVER, THE COMPANY HAS BEEN DISMANTLING SUCH MODELS AROUND THE WORLD.	TARGET OF 50% RECYCLED MATERIAL IN ALL PRIMARY PACKAGING BY 2030.	PLANS TO ELIMINATE PLASTIC STRAWS BY 2025; BEING REPLACED WITH PAPER STRAWS BY COCA-COLA AUSTRALIA.	2.9 million		CURRENTLY USING 10% RECYCLED CONTENT IN ALL PLASTIC PACKAGING. HISTORIC LANGUAGE CHANGE AND GOALPOST SHIFTING ON TARGETS FOR RECYCLED CONTENT.	COMMITMENT TO SUPPORT DRS ONLY IN WESTERN EUROPE; ACTIVELY UNDERMINING DRS IN OTHER REGIONS.
		15.5		REUSE DELIVERY MODELS IN PLACE FOR A VERY SMALL PROPORTION OF PRODUCTS OR PACKAGING; TRIALLING LOOP.	TARGET OF 25% BY 2025 FOR ALL PLASTIC PACKAGING.	PLANS TO ELIMINATE SINGLE-USE PLASTIC BAGS BY 2025; NO DETAILS ON WHETHER BEING REPLACED WITH ANOTHER SINGLE-USE MATERIAL.	287,008		CURRENTLY 7% RECYCLED CONTENT IN ALL PLASTIC PACKAGING, BUT THIS FIGURE DIFFERS FROM THE 45% GIVEN IN THEIR WEBSITE COMMUNICATIONS.	
		29.1	PLEDGE TO HELP TO MEET OR GO BEYOND MANDATORY COLLECTION TARGETS, AS SET BY REGULATORS WORLDWIDE. (BUT DOES NOT CALL FOR REGULATIONS GLOBALLY).	REPORTS THAT HALF OF ITS WATER VOLUMES AND ONE-THIRD OF THE WHOLE BUSINESS IS IN REUSABLE PACKAGING BUT THE EXTENT OF ITS ACTUAL REUSE IS NOT CLEAR. REPORTS TO EMF 8.3% OF REUSABLE PACKAGING.	TARGET AVERAGE OF 25% BY 2025 FOR ALL PLASTIC PACKAGING. TARGET AVERAGE OF 50% BY 2025 FOR BEVERAGE BOTTLES.	PLANS TO ELIMINATE SINGLE-USE PLASTIC STRAWS AND CUTLERY BY 2025; NO DETAILS ON WHETHER BEING REPLACED WITH ANOTHER SINGLE-USE MATERIAL.	820,000	COMMITTED TO HALVING THE AMOUNT OF VIRGIN PLASTIC IN ITS WATER BRANDS.	CURRENTLY 6.4% RECYCLED CONTENT IN ALL PLASTIC PACKAGING, INCREASED FROM 5.3% IN 2017. REPORTS FIGURES FOR PAPER, GLASS, METAL AND PLASTIC TOGETHER IN THEIR OWN COMMUNICATIONS.	COMMITMENT TO SUPPORT 90% COLLECTION ONLY IN EUROPE.
		37		REUSE DELIVERY MODELS IN PLACE FOR A SMALL PROPORTION OF PRODUCTS OR PACKAGING; TRIALLING LOOP.	TARGET AVERAGE OF 30% BY 2025 FOR ALL PLASTIC PACKAGING.	PLANS TO ELIMINATE PLASTIC STRAWS BY 2020; APPEAR TO BE REPLACING SINGLE-USE PLASTIC WITH SINGLE-USE PAPER AND CARDBOARD.	184,000	COMMITTED TO REDUCING VIRGIN PLASTIC PACKAGING BY 25% BY 2025, BUT HEAVILY DEPENDENT ON CHEMICAL-RECYCLING TECHNOLOGY.	CURRENTLY 0% RECYCLED CONTENT IN PLASTIC PACKAGING; PROGRESS RELIES HEAVILY ON CHEMICAL RECYCLING.	
		25.9		VAGUE COMMITMENT "TO TAKE ACTION TO MOVE FROM SINGLE-USE TOWARDS REUSE MODELS WHERE RELEVANT".	5% BY WEIGHT (END DATE NOT GIVEN), PLUS SOME CONCERNING TRENDS OF USING CHEMICALLY RECYCLED CONTENT IN PACKAGING.	VAGUE COMMITMENT TO "TAKE ACTION TO ELIMINATE PROBLEMATIC OR UNNECESSARY PLASTIC PACKAGING BY 2025".	NOT DISCLOSED	TARGET TO ELIMINATE 65,000 TONES OF PACKAGING, BUT UNCLEAR HOW MUCH RELATES TO PLASTIC.		
		93.4	SUPPORTS MANDATORY EPR AND LOCAL DEPOSIT SYSTEMS, BUT COLLECTION ONLY MENTIONED EXPLICITLY IN RELATION TO MEMBERSHIP OF THE EUROPEAN FEDERATION OF BOTTLED WATERS.	REUSE DELIVERY MODELS IN PLACE FOR 20% OF WATER PRODUCTS AND A SMALL PROPORTION OF OTHER PRODUCTS OR PACKAGING (1%); TRIALLING LOOP AND HAS INVESTED 8 MILLION CHF IN REUSE TRIALS AND COMMITTED TO FURTHER ACCELERATE REFILL OPTIONS.	TARGET OF 15% BY 2025 FOR ALL PLASTIC PACKAGING; COMMITTED TO REDUCE VIRGIN PLASTIC BY ONE-THIRD BY 2025, AND TO INVEST 2 BILLION CHF TO BUY FOOD-GRADE rPET.	MOSTLY REPLACING SINGLE-USE PLASTIC PACKAGING WITH OTHER SINGLE-USE ALTERNATIVES. HOWEVER, IS PART OF LOOP AND HAS INVESTED 8 MILLION CHF IN REUSE TRIALS AND COMMITTED TO FURTHER ACCELERATE REFILL OPTIONS.	1.7 million	COMMITTED TO REDUCING VIRGIN PLASTIC BY ONE-THIRD BY 2025.	CURRENTLY 2% RECYCLED CONTENT IN ALL PLASTIC PACKAGING AND 5% RECYCLED CONTENT IN PET WATER BOTTLES. GREENPEACE IDENTIFIED FAILURE TO DISCLOSE COMPLETE INFORMATION.	DISCUSSION OF 90% COLLECTION ONLY AS PART OF EUROPEAN FEDERATION OF BOTTLED WATERS CONTINUES SINGLE-USE, NON-RECYCLABLE SACHETS IN EMERGING MARKETS.
		65		REUSE DELIVERY MODELS IN PLACE FOR SOME LINES OF PRODUCTS AND PACKAGING. ACQUISITION OF SODASTREAM. REPORTS 0% REUSABLE PACKAGING.	TARGET OF 25% BY 2025 FOR ALL PLASTIC PACKAGING.	PLANS TO ELIMINATE PLASTIC STRAWS BY 2025; NO DETAILS ON WHETHER BEING REPLACED WITH ANOTHER SINGLE-USE.	2.3 million	COMMITTED TO 35% ABSOLUTE REDUCTION IN VIRGIN PLASTIC ACROSS ITS PORTFOLIO BY 2025, BUT ONLY A 1% REDUCTION WAS MADE IN 2019.	CURRENTLY 4% RECYCLED CONTENT IN ALL PLASTIC PACKAGING, BUT HIGHLIGHT SELECTIVELY HIGHER RATES IN SPECIFIC GEOGRAPHIES IN THEIR OWN COMMUNICATIONS.	100% rPET BEING USED IN LIFE WATER BOTTLE IN THE USA BUT NOT ELSEWHERE.
		2.7					NOT DISCLOSED			
		66.9		ONLY MENTION PARTICIPATION IN TERRACYCLE'S LOOP PROJECT IN NEW YORK AND PARIS.	TARGET OF 8% BY 2025.	VAGUE COMMITMENT THAT ALTERNATIVE MATERIALS WILL ONLY BE USED "WHEN IT MAKES SENSE".	714,000 <small>(DISCLOSED TO AS YOU SOW; NOT ON ITS WEBSITE)</small>	COMMITTED TO REDUCE ITS VIRGIN PETROLEUM PLASTIC BY 50% BY 2030 (UNCLEAR METHODOLOGY, BUT SAYS THIS MEANS REDUCTION OF 300,000 TONNES OF VIRGIN PLASTIC).	NO OVERALL FIGURE GIVEN ON ITS WEBSITE, BUT 6.3% IN 2018/19 GIVEN TO AS YOU SOW; REPORTING PATCHY ACROSS DIFFERENT BRANDS AND GEOGRAPHIES.	DIFFERENT TARGETS AND TIME FRAMES FOR DIFFERENT BRANDS.
		60.1	COMMITTED TO "HELP COLLECT AND PROCESS MORE PLASTIC PACKAGING THAN [THEY] SELL" BY 2025, AND OFFERS QUALIFIED SUPPORT FOR WELL-DESIGNED DRS, BUT DOES NOT CALL FOR MANDATORY LEGISLATION.	REUSE DELIVERY MODELS IN PLACE FOR SOME LINES OF PRODUCTS OR PACKAGING TRIALLING LOOP AND ALGRAMO.	TARGET OF 25% BY 2025 FOR ALL PLASTIC PACKAGING.	DO NOT APPEAR TO BE INDISCRIMINATELY REPLACING SINGLE-USE PLASTIC WITH SINGLE-USE ALTERNATIVES.	700,000	NEW COMMITMENT MADE IN OCTOBER 2019 TO REDUCE VIRGIN PLASTIC PACKAGING BY 50% BY 2025, WITH 100,000 TONNES COMING FROM ABSOLUTE REDUCTION.	CURRENTLY LESS THAN 1% RECYCLED CONTENT IN PLASTIC PACKAGING. RECYCLED CONTENT DECREASED IN ABSOLUTE TERMS BETWEEN 2015 AND 2018.	TARGETS APPEAR TO BE APPLIED GLOBALLY, BUT CONTINUES SINGLE-USE, NON-RECYCLABLE SACHETS IN EMERGING MARKETS.

though lightweighting - for example where plastic packaging is redesigned to be thinner, thus using less plastic - can decrease overall plastic use, it does not affect how that item would behave if littered; nor does it improve its chances of being recycled or collected. As such, lightweighting can undermine the reusability and recyclability of products, and can also be used to distract from the need to scale refill-or-reuse models.

Third, we examined whether a company openly reports its progress on the total percentage of recycled content in its plastic packaging.

Finally, we looked at whether commitments were applied consistently across all markets in which the company operates. Companies need to ensure there is no contradiction between their actions on the issue of plastic pollution in one market as compared to another, and should be setting their own ambitious global standards to tackle plastic pollution across all geographies in which they operate.

Companies scored poorly in this part of our analysis if they failed to disclose their plastic footprint or their progress against targets; tried to confuse or spin figures on absolute reduction in plastic-packaging units or total percentage of recycled content (for example, by reporting figures from certain geographies, rather than total figures); or had historically changed the language and goalposts of their voluntary commitments in these areas.

2.2. Individual company initiatives

2.2.1. Coca-Cola

Coca-Cola produces by far the largest volume of plastic of any company globally - 2.9 million metric tonnes - and also, unsurprisingly, the most plastic waste.⁷⁴ In 2019, as a signatory of the EMF New Plastics Economy Global Commitment, Coca-Cola finally disclosed its plastics footprint: 200,000 bottles per minute, and around one-fifth of the world's PET-bottle output.⁷⁵ Coca-Cola also ranked top of the plastic-polluting companies in the Break Free From Plastic audits in 2018 and 2019; 12,000 Coca-Cola products were found in litter clean-ups in 37 countries.⁷⁶ A recent Tearfund report also found that Coca-Cola was the worst polluter it assessed, responsible



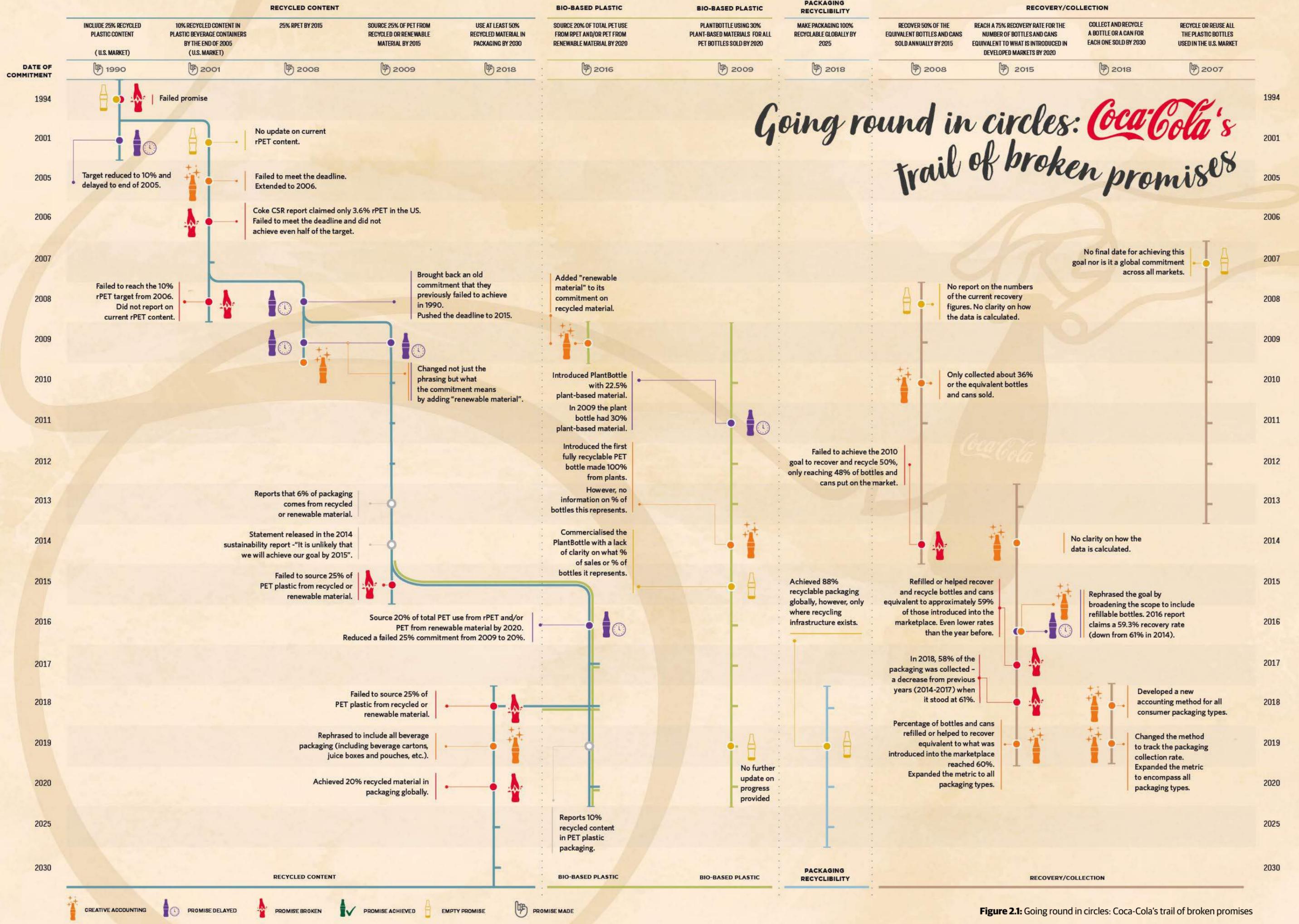
for 200,000 tonnes of plastic pollution per year - the equivalent of 33 football pitches every day, or 4.6 million tonnes of GHG emissions from burning, across the six countries investigated.⁷⁷

In Coca-Cola's 2018 Business and Sustainability Report, the company set the aim to collect the equivalent of 100% of their packaging sold by 2030.⁷⁸ However, it is unclear exactly how the company intends to achieve this collection target globally, and there is no mention of calling for legislation to mandate over 90% separate collection of plastic bottles. Although it seems Coca-Cola Western Europe and Coca-Cola European Partners have reluctantly committed to supporting 'well-designed deposit return systems across Western Europe, where a successful proven alternative does not already exist,⁷⁹ - and, recently, Coca-Cola USA said similar in the survey As You Sow⁸⁰ - this is not a coherent company policy, nor one that spans all markets, as will be demonstrated in Chapter 4.

Previously, Coca-Cola has perceived such legislation as a risk to its business, and has proactively lobbied against packaging regulation around the world. A leaked 2015 Coca-Cola strategy document revealed plans to 'fight back' against proposed regulation in Europe, and investigative research uncovered the company's extensive lobbying against the initial plans for a deposit return scheme (DRS) in Scotland (see section 4.7).⁸¹ Evidence also shows that Coca-Cola still actively opposes mandatory collection and DRS in some locations; for example, the US state of Georgia (as recently as 2019)⁸² and Kenya.⁸³

Coca-Cola plastic pollution in the environment
Credit: David Mirzoeff





Going round in circles: Coca-Cola's trail of broken promises

Figure 2.1: Going round in circles: Coca-Cola's trail of broken promises

Confusingly, Coca-Cola uses different language for reporting collection rates, stating that 60% of its packaging - including that made from plastic, aluminium and glass - was collected in 2019.⁸⁴ This figure has marginally increased compared to previous years (2015-17), when it stood at 59%.⁸⁵ However, Coca-Cola is not totally transparent about how this figure is calculated, nor how it breaks down into individual packaging types or by country.

Coca-Cola also commits to using at least 50% recycled material in its packaging by 2030.⁸⁶ Currently, the company reports that recycled content makes up 10% of its total plastic-packaging volume.^{87,88} However, Coca-Cola has had targets on minimum recycled content in bottles as far back as 1990, and, so far, has failed to meet them. In its 2008/9 Sustainability Review, the company's target for rPET in their bottles was 25% by 2015; no progress towards the goal was mentioned.⁸⁹ In its 2010/11 Sustainability Report, the company maintained its goal of 25% but redefined the target to 'recycled or renewable' content by 2015. The 2014/15 report claims Coca-Cola used 12.5% recycled or renewable content, but its 2016 Sustainability Report does not even mention the goal. Today, some of the company's brands are sold in bottles made with rPET, but it is unclear how Coca-Cola plans to achieve its new target of 50% recycled material across all its packaging by 2030 - or whether it simply intends to shift the goalposts again.

2.2.2. Colgate-Palmolive

Colgate-Palmolive has a plastic footprint of just over 287,000 metric tonnes from its business: producing household and personal-care products, food products, and health care and industrial supplies.⁹⁰ The Break Free From Plastic Audit 2019 identified the company as the eighth-biggest plastic polluter worldwide, and the second-biggest polluter in Africa.⁹¹

Colgate-Palmolive's commitments on tackling plastic pollution are relatively sparse. There is no discussion of collection of plastic packaging or calls to support legislation to mandate separate collection. Even the company's strategy for achieving its minimum recycled-content target appears to focus on 'procurement of more recycled content' without corresponding support for mandatory collection.⁹²

Colgate-Palmolive plastic pollution
Credit: Shutterstock



There is also very little detail about the company's development of reuse-and-refill systems, apart from mentioning it is participating in TerraCycle's Loop initiative with reusable packaging in the first half of 2020;⁹³ at present, however, this appears to be on a small and experimental scale, rather than a reuse-and-refill system for a significant proportion of Colgate-Palmolive products.⁹⁴

The company has a minimum recycled-content target of 25% in all its plastic packaging by 2025. It reports to the New Plastics Economy Global Commitment that its current use of recycled content is 7% of their total plastic packaging. However, the recycled content appears to vary according to the market, and overly focuses on a few brands: 'In Latin America, we increased recycled content in PET bottles to 50% (from 0% and 25%) in four types of bottles. Validating bottles with recycled content across the world and divisions, to include some brands up to 100%.⁹⁵ Misleadingly, Colgate-Palmolive states a higher figure - 'approximately 45% of our packaging materials by weight globally now come from recycled sources' - on its website, even though the figure is only 7% for plastic.⁹⁶

While Colgate-Palmolive says it has 'long been minimizing the volume and weight of [its] packaging',⁹⁷ there is no mention of an absolute reduction of single-use plastic in units. The company's focus on reduction is set firmly on lightweighting measures in a few brands and particular geographies. For example, it highlights reducing the weight of a Palmolive hand-soap bottle in Italy, the weight of the Suavitel bottle in Mexico and the weight of the cap on Colgate toothpaste in Poland - an unimpressive track record, considering its total tonnage of packaging.⁹⁸ The company is also keen to highlight projects that will 'transform [its] packaging portfolio' - such as introducing 'shrink sleeves with perforated tear tabs' and directing consumers to remove the sleeve at end-of-use to improve bottle recycling⁹⁹ - and the introduction of a recyclable high-density polyethylene (HDPE) toothpaste tube. However, the latter retails at six times the price of regular Colgate toothpaste, with roll-out of fully recyclable tubes across all brands only happening by 2025.¹⁰⁰ It is not clear whether these recyclable tubes contain recycled content themselves.

2.2.3. Danone

Danone is a French multinational; its product ranges cover infant nutrition, water, and dairy- and plant-based products, and its well-known brands include Activia, Alpro, Aptamil, Nutricia, Evian and Volvic.¹⁰¹ The company has declared its plastic footprint as 820,000 metric tonnes, and has published a breakdown of its packaging portfolio by material and packaging type.¹⁰² It said that, in 2017, 86% of its total packaging (and 77% of plastic packaging) was already reusable, recyclable or compostable.¹⁰³ The company was identified as the fourth-biggest global plastic polluter in the 2018 Break Free From Plastic Audit, but did not feature in the top ten in the 2019 audit.¹⁰⁴ Nevertheless, as a multinational, fast-moving consumer-goods (FMCG) company with a significant plastic footprint, we have chosen to include Danone in this analysis.

Danone appears to be one of very few companies that explicitly reference the need for effective collection systems and express support for DRS, which is commendable.¹⁰⁵ Danone also says it will help to meet - or go beyond - mandatory-collection targets, as set by regulators worldwide. To meet the EU's target of 90% collection for beverage bottles, the company outlines its support for 'the most effectively publicly organised schemes, including Extended Producer Responsibility and deposit return systems'.¹⁰⁶

Despite being more explicit than many other companies on the importance of strengthening systems for collection - and stating that, by 2025, its 'goal is to have initiated or supported collection and recycling initiatives in each of our top 20 markets'¹⁰⁷ - it is nevertheless disappointing that Danone neither call for over 90% mandatory separate collection of bottles in all geographies nor pledges to support DRS schemes globally, despite DRS being proven to be the most effective way to achieve such high rates of separate collection. It seems Danone is



Plastic litter including Danone products
Credit: Shutterstock

only willing to support such targets in regions where regulators have already made the first move. Therefore, we encourage the company to adopt a coherent global policy, calling for mandatory-collection legislation around the world.

When it comes to reduction, Danone committed only to halving the amount of virgin plastic used in its water brands, and it seems its plan to achieve this largely revolves around switching to rPET.¹⁰⁸ Danone reports that half of its water volumes and one-third of the whole business is sold in reusable packaging, while 8.3% of its total packaging is reusable.¹⁰⁹ It seems that part of the reference to volumes applies only to large water coolers,^{110,111} and it remains unclear whether this packaging is theoretically reusable or is actually being reused through alternative delivery models. As with 'recyclability', reusability targets can only be said to have been met when packaging is not only reusable by design but also part of a system through which it is able to be collected and reused in practice. The company outlines its goal of developing, by 2025, reuse and alternative delivery models that eliminate the need for single-use packaging;¹¹² so far, however, it seems to only be piloting new returnable-packaging models for Evian water, via TerraCycle's Loop initiative.¹¹³

Danone has set an average minimum recycled-content target of 25% for all plastic packaging, and an average of 50% recycled material for water and beverage bottles, by 2025. It reported having 14% rPET in water bottles in 2018, in countries where this is allowed. It also says Evian bottles will be made from 100% rPET by 2025, and that 100% rPET bottles will be introduced to its main markets by 2021, although it is unclear which brands this refers to.¹¹⁴ These targets seem to be more ambitious than those of their competitors; as such, it is confusing why the company is simultaneously investing in bio-based plastic without any clear sustainability criteria. The company currently reports having reached 6.4% recycled material in its total volume of plastic packaging; this has increased from 5.3% in 2017, which they attribute to the increase of rPET.¹¹⁵

The company reports plans to eliminate single-use plastic straws and cutlery by 2025,¹¹⁶ and highlights a pilot scheme assessing alternatives to plastic straws with its Indonesian brand, Aqua.¹¹⁷ However, there is very little detail about how the single-use-plastic items will be eliminated, or whether they will be replaced with another single-use material. Danone has also committed to phasing out all PVC and PVDC from packaging by 2021.

2.2.4. Mars Incorporated

Mars Incorporated is a privately owned US multinational company, well known for manufacturing confectionery such as Mars bars, Milky Way, M&M's, Snickers and Skittles. It also produces Uncle Ben's rice, Dolmio sauce, Pedigree pet food, Whiskas pet food, Wrigley's gum and more than 50 other global brands.¹¹⁸ Mars declared its plastics footprint as 184,000 metric tonnes,¹¹⁹ and was identified as the sixth-worst polluter, in the Break Free From Plastic 2019 Audit.¹²⁰

Mars mentions collection and sorting systems as crucial to ensuring its packaging is reusable and recyclable, and acknowledges the need for 'the recycling and regulatory environment to evolve in significant ways'.¹²¹ However, the company does not expand further with details of how they would like to see the regulatory environment evolve; nor does it allude to the companies' responsibilities to collect the plastic they place on the market, nor call for over 90% mandatory separate collection of plastics in all markets.

Mars talks about the opportunity to develop new business models for reuse, and has pledged to have at least 10 reuse programmes in markets by 2025, although the New Plastics Economy Global Progress Report states reuse delivery models are only in place for a small proportion of its products.¹²² Like several other multinational companies, Mars is keen to highlight its current partnership with TerraCycle's Loop initiative as its primary foray into developing reuse models; however, how this initiative will be scaled up remains to be seen.¹²³

Mars also committed to including 30% average recycled content across its portfolio of plastic packaging by 2025. While this is slightly further reaching than many other companies, the convenient use of the word 'average' indicates not every item of plastic packaging will contain at least 30% recycled content. The other concern here is that Mars currently says none of its plastic packaging contains recycled content, and plans to achieve its target entirely based on chemical recycling - a false solution (see Box 3.1). This suggests Mars is primed to roll back on its voluntary recycled-content target without a significant technological breakthrough in chemical recycling.

Mars commits to making 100% of its plastic packaging reusable, recyclable or compostable by 2025 - as do many other companies. However, it should be noted that it is starting from a current figure of 19%, and there-

Plastic pollution of a Mars Incorporated brand
Credit: Shutterstock



fore has a lot of ground to make up. As part of this, the company is conducting research into biodegradable and compostable packaging materials; but its approach is unclear, and the proposed applications for these materials are unknown.¹²⁴ Furthermore, Mars has missed these sustainability targets in the past; in 2007, it pledged to design its packaging to be 100% recyclable or 'recoverable' by 2015, but only managed to achieve 89% by the deadline.¹²⁵

The company also pledges to eliminate single-use plastic straws by 2020,¹²⁶ but appears to be replacing plastics with other single-use materials, such as paper. For example, in the UK in 2019, Mars replaced the plastic wrapper and carton in a Maltesers Truffles Treat pack with cardboard; in 2020, the company will 'test the use of more paper packaging materials where we can replace plastics with paper'.¹²⁷

Finally, although Mars has announced targets of a 25% reduction in virgin plastics used in its packaging by 2025 (versus today's tonnages), this does not appear to be in terms of absolute reduction of the total number of single-use plastic-packaging units. Meeting this target seems to be heavily dependent on immature - and questionable - chemical-recycling technology.¹²⁸

2.2.5. Mondelēz International

Mondelēz is one of the world's largest snack-food companies, with key brands including Belvita, Oreo, Ritz, TUC, Toblerone, Cadbury, Green & Black's, and Trident. It joined the New Plastics Economy Global Commitment in March 2020, but has not provided any details about its plastics footprint. Nevertheless, the company was the fourth-worst offender in the Break Free from Plastics 2019 Audit, and its non-recyclable pouches of Tang fruit drink were the most frequently collected type of waste packaging on beaches in the Philippines in 2017.¹²⁹

Mondelēz makes no mention of supporting legislative measures that would mandate separate collection of plastic packaging, and nowhere in its 2019 Impact Report does it mention recycled-content targets for plastic packaging,¹³⁰ although an article announcing its joining of the EMF New Plastics Economy Global Commitment points to a pitiful target of just 5% by weight.¹³¹

The company does talk about its target of eliminating 65,000 metric tonnes of packaging by 2020 (compared to a baseline in 2013), and reports it is on track, having already eliminated 64,850 metric tonnes.¹³² However,

without further information, it is difficult to know whether this reduction refers to an absolute value and would continue irrespective of a growth in sales. It's also notable that this reduction does not specifically refer to plastic, but rather packaging more generally - and, without further transparency on the company's plastic footprint, it's very difficult to tell how this figure relates to its overall plastic production. In short, too much context is being hidden for this figure to be anywhere near meaningful.

In October 2018, the company announced a new commitment to make all its packaging recyclable by 2025 and provide recycling information in markets around the world. Mondelēz claims this commitment is part of its 'strategy for a circular packaging economy' by 'making it easier for consumers to recycle'.¹³³ It also reported being on track to reach 100% recyclable packaging by 2025, with 90% 'recyclable or recycle-ready' in 2018.¹³⁴ However, as mentioned earlier in this chapter, this strategy completely fails to address the issue that 'recyclable' does not necessarily mean the product is, in practice, recycled. Since mandatory collection of packaging is a basic precursor to recycling or reuse, Mondelēz cannot possibly guarantee its packaging is recycled, without any commitment or detailed proposals for collecting the packaging it puts on the market. Concerningly, Mondelēz is looking to chemical recycling - which is, as mentioned, an unproven and environmentally dubious technology (see Box 3.1) - to meet recycled-content targets in its Philadelphia cream-cheese packaging.¹³⁵

As part of this commitment, the company claims to be supporting improvements of waste-management infrastructure and recycling rates; however, it is not clear exactly how. Mondelēz was also assessed very poorly for its stance on producer responsibility and packaging transparency, according to recent surveys by As You Sow.¹³⁶ Overall, Mondelēz has very weak commitments, with scant detail and a heavy emphasis on recyclability and chemical recycling.

2.2.6. Nestlé

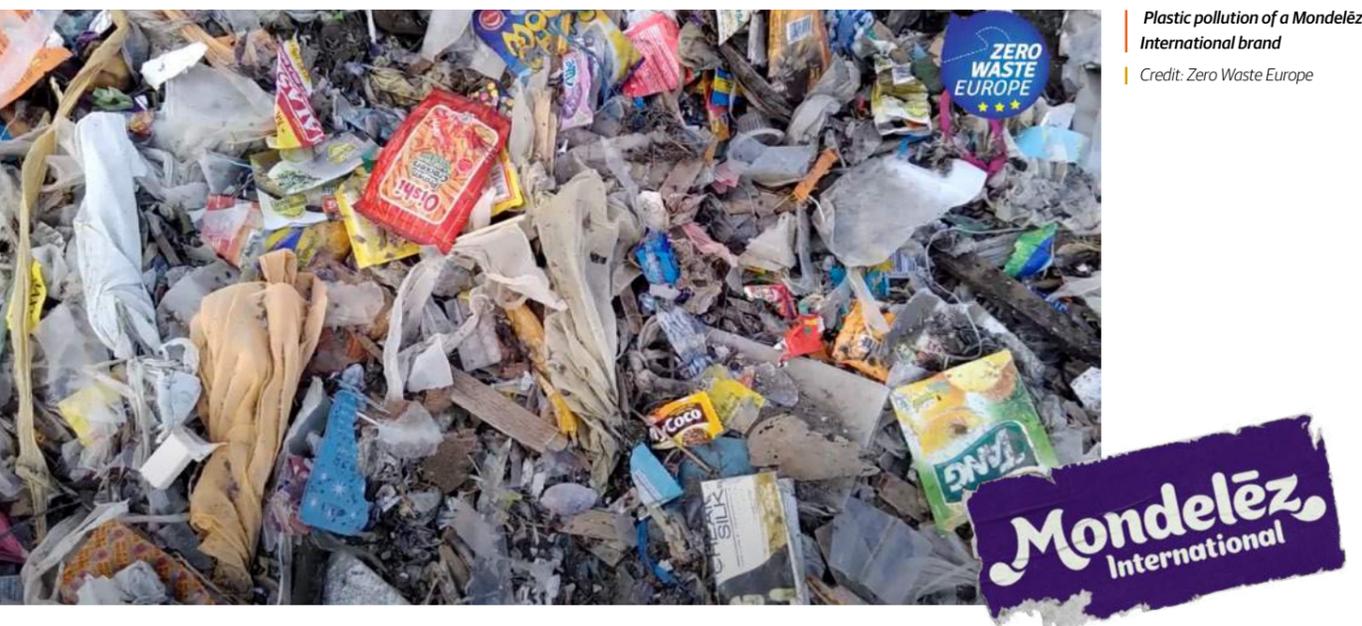
Nestlé has publicly disclosed its plastic footprint as 1.7 million metric tonnes per year,¹³⁷ although Greenpeace Switzerland recently criticised the company for failing to disclose complete, clear and comparable information on plastic reduction.¹³⁸ Nestlé was also the second-worst offender in the Break Free From Plastic Audit 2019.¹³⁹ Tearfund reports that Nestlé's plastic pollution footprint is 95,000 tonnes a year across just six countries - enough to cover 15 football pitches every day.

Plastic pollution of a Nestlé brand | Credit: Kate Ter Haar



In the company's 2019 Creating Shared Value progress report, product packaging and plastic are identified both as holding a significant degree of stakeholder interest and having a major impact on Nestlé's business success.¹⁴⁰ Nevertheless, although Nestlé supports mandatory EPR,¹⁴¹ it does not specifically call for global legislation to mandate over 90% separate collection of plastic bottles, and only mentions a collection target in relation to the company's membership of the European Federation of Bottled Waters (EFBW), which pledged in May 2018 to collect 90% of all PET bottles by 2025.¹⁴²

In 2008, Nestlé Waters NA voluntarily



Plastic pollution of a Mondelēz International brand | Credit: Zero Waste Europe

committed to doubling recycling targets for PET bottles to 60% by 2018. By that deadline, the rate was less than half the goal (28.9%), with an average rate of 29.6% over the past 10 years - a large shortfall in ambition, showing almost no progress over the course of the commitment. Nestlé claimed to have set a high target to encourage other industry players to follow suit, but that this call to action was never taken up. Since then, the company's focus has shifted to increasing recycled content, even though high collection and recycling rates are one of the main stimuli for making recycled content competitive.¹⁴³

According to the 2019 New Plastics Economy Global Commitment report, Nestlé has a global target to use 15% of recycled material in its packaging by 2025. The company takes care to highlight specific brands of beverage bottles in which rPET is used in higher percentages across different markets; overall, however, Nestlé reports that recycled content makes up a lowly 2% of its total plastic-packaging volume, and 5% recycled content in PET water bottles.¹⁴⁴ Nestlé recently committed to reducing virgin plastic by one-third by 2025, and to invest 2 billion Swiss francs (CHF) to buy food-grade recycled plastics and accelerate innovative sustainable-packaging solutions, such as refill options.¹⁴⁵

Although Nestlé has, to date, invested 8 million CHF in reuse models - such as for Purina pet foods, and as a member of TerraCycle's Loop¹⁴⁶ - this has only been in high-income countries. The company also reports that, globally, 20% of its water products are sold in refillable and returnable formats, and that it has made dispensers for Nescafé and Milo available in over 20 countries across Asia, Latin America, Africa and the Middle East¹⁴⁷ - but this translates into just 1% of its packaging being reusable, and 64% recyclable. Meanwhile, the company continues to sell its products in single-use and non-recyclable sachets, predominantly in emerging markets, where waste facilities are unable to cope.¹⁴⁸ Although it states an ambition to create a 'one tonne in, one tonne out' principle for countries with high leakages of plastic into the environment, thus far, this is a paper promise with no specificity or timeline.¹⁴⁹

Furthermore, Nestlé appears to be heavily focusing on substituting single-use plastic items with other single-use materials. For example, Nestlé began phasing out plastic straws in February 2019, but appears to be achieving this by switching to other single-use materials, such as paper.¹⁵⁰ The company rolled out paper-based packaging globally for Nesquik in the first quarter of 2019, switched from plastic to paper for its Yes! and Smarties packaging later in 2019, and plans to introduce paper-based pouches for Milo in 2020.¹⁵¹

In 2019, Nestlé also set up the Institute of Packaging Sciences to 'pioneer environmentally friendly packaging materials',¹⁵² and committed to relatively quick phase-out of problematic non-recyclable materials such as PVC. Nestlé states it is researching marine-biodegradable and compostable polymers, which are also recyclable, for use in water bottles in areas where recycling infrastructure does not yet exist. The company has partnered with Danimer Scientific to develop such a bottle, sold under the brand name Nodax.¹⁵³ It is unclear why the company is focusing its efforts on this - rather than on increasing collection and recycling infrastructure - to reach its commitment, as capture rates for bottles of over 90% are frequently achieved in countries with successful DRS.

2.2.7. PepsiCo

PepsiCo is the third-largest FMCG company (by revenue),¹⁵⁴ and the third-worst offender in the Break Free From Plastic 2019 Audit, with 3,362 pieces of plastic found in 28 countries.¹⁵⁵ It has disclosed a plastic footprint of 2.3 million metric tonnes per year, closely following Coca-Cola.¹⁵⁶ Tearfund reports that PepsiCo is responsible for 137,000 tonnes of plastic waste per year across just six countries - equivalent to 22 football pitches every day.

In its 2018 Sustainability Report, the company says it is its 'business imperative to help build a circular future for packaging and a world where plastics need never become waste'.¹⁵⁷ Yet nowhere does PepsiCo mention the need to take responsibility for collecting the plastics they put onto the market, and neither do they call for legislation to mandate over 90% separate collection of plastic bottles. The nearest PepsiCo comes to mentioning collection of beverage bottles is a partnership initiative in India, where RVMs and other collection points are uti-



Plastic pollution of a PepsiCo brand
Credit: Shutterstock

lised across Delhi to enable the collection and recycling of PET bottles.¹⁵⁸ However, unless PepsiCo takes steps to bring collection initiatives to scale - through support for global legislation for 90%+ separate collection, and by acknowledging that mandatory DRS are the only proven and effective way to achieve a high rate of collection - this voluntary initiative might be a good PR move, but does little more than pay lip service to the importance of collection. Additionally, PepsiCo still remains opposed or neutral to deposit systems, having previously been a strong opponent of bottle bills in the US, and opposed to government-mandated EPR and policy mechanisms, such as additional fees on single-use plastics.¹⁵⁹

In a voluntary commitment in 2010, PepsiCo set itself the goal of increasing the US beverage-container recycling rate to 50% by 2018. With failure in sight in 2017, the organisation was encouraged by shareholder advocacy non-profit, As You Sow, to acknowledge the shortfall and propose a new plan. The resultant report avoided explicitly taking responsibility for the failure, and replaced its ambition with a goal to 'work to increase recycling rates'. However, in early 2018, it became apparent that this plan largely comprised of a \$10 million donation to the Recycling Partnership (RP) (see section 4.2.5).¹⁶⁰

PepsiCo has a target to increase recycled content to 25% by 2025 in all its plastic packaging, and to 50% rPET content in the EU by 2030. On its website, the company highlights its progress and claims that 9% rPET is used across its company-owned beverage portfolio in the US, and 21% in company-owned beverage operations in Western Europe.¹⁶¹ At first, this may seem like a high rate compared to other companies; however, this reporting has been carefully selected to hide the pitifully low level of recycled content used overall. According to PepsiCo's 2019 Sustainability Report, recycled content currently makes up just 4% of its total plastic packaging, barely increasing from 3% in 2018.¹⁶²

In 2019, the company announced that, as a step towards meeting its recycled-content target, the LIFEWTR brand in the US would be made from 100% rPET. This is wildly unambitious, given how many plastic beverage bottles the company produces, and given that making plastic bottles from 100% recycled content is not only technologically feasible but has also been rolled out by a number of companies over the past few years. Blaming 'insufficient supply of recycled material' is not good enough, and does not stand up to scrutiny, when effective systems already exist to collect and process clean streams of rPET for use in beverage bottles.¹⁶³

PepsiCo committed to a 20% absolute reduction in virgin plastic across its beverage portfolio by 2025 (compared to a 2018 baseline), which was subsequently increased to 35% in 2019.¹⁶⁴ This will be driven by recycled content, new reuse-and-refill delivery models, and replacing virgin plastic with alternative materials. However, only a 1% reduction was made in 2019.¹⁶⁵ Part of this was its acquisition of SodaStream in 2018; PepsiCo announced it would expand the business and could lead to the avoidance of 67 million plastic bottles by 2025, as well as the exploration of refill-and-reuse pilots on college and corporate campuses.¹⁶⁶ However, it appears PepsiCo is also looking to meet its recycled-content commitments through chemical-recycling technology, as suggested by its investment into Loop Industries (a separate company from TerraCycle's Loop initiative), thus relying on unproven false solutions rather than supporting mandatory collection and mechanical recycling.¹⁶⁷

PepsiCo has committed to 100% of its packaging being recyclable, compostable or biodegradable by 2025. To achieve this, the company is testing industrially compostable snack packaging, and claims to be investigating the feasibility of a film that is 'fully biodegradable regardless of how it is disposed of'.¹⁶⁸ However, creating a material that will both be suitable as a packaging material and biodegrade in a reasonable timeframe in any environment is a challenging goal - and one with potentially unknown environmental implications. PepsiCo has indicated it will look to compostable plastics to resolve issues around its 15% of products in multi-laminated flexible packaging, a material that is practically impossible to recycle. However, relying on compostable packaging while access to industrial composting is limited in many markets means many of these products will still end up in landfill.¹⁶⁹

Credit: Les Stone



Plastic packaging of a Perfetti Van Melle brand

Credit: Shutterstock

2.2.8. Perfetti Van Melle

Perfetti Van Melle is a privately owned confectionary and gum manufacturer with products in over 150 countries. Key brands include Chupa Chups, Fruitella and Mentos.¹⁷⁰ The company was named one of the top ten global plastic polluters in both the 2018 and 2019 Break Free From Plastic audits.¹⁷¹

Perfetti Van Melle was one of the worst companies we assessed in terms of transparency. Only one of its global CSR report is available (from 2016); despite promising to publish its next report in 2018, we did not discover anything more recent. Perhaps unsurprisingly, then, Perfetti Van Melle does not report its plastic footprint. The company also gives extremely little detail on any other aspect of plastic packaging, which would be prudent for any company named one of the biggest global plastic polluters two years in a row.

There is no mention of collection of plastic packaging, zero reference to developing reuse models, no word on minimum recycled-content targets, and otherwise generally vague and non-specific wider commitments with scant detail.¹⁷² For example, the company says it aims to 'develop more fit-for-purpose packaging solutions' and 'optimise the weight and volume' of its packaging, but without providing any targets or plans for how they will achieve this. This leads to the conclusion that Perfetti Van Melle does not take the issue of plastic pollution seriously at all; indeed, it seems to be off their radar as a critical sustainability issue.

The only vaguely relevant number provided in the company's 2016 global CSR report relates to the weight reduction of bottles, which resulted in 80,000kg less plastic being used on a yearly basis from mid-2017. Lightweighting is not an ambitious activity, compared to an absolute reduction in the total number of single-use plastic-packaging units, and 80,000kg seems a small amount for such a big plastic polluter. While Perfetti Van Melle has committed to investing in alternative technology research, to date, there is no publicly available information on any specific technology the company is investing in, and absolutely no evidence that it is moving towards better alternatives.¹⁷³

2.2.9. Procter & Gamble

Procter & Gamble (P&G) is a huge, multinational consumer-goods corporation, listed by EMF as the second largest FMCG in the world (by revenue).¹⁷⁴ Its household brands include haircare (Aussie, Pantene, Herbal Essences, Head & Shoulders); grooming (Braun, Gillette, Venus); sanitary products (Always, Tampax); laundry detergents (Ariel, Bold, Daz, Lenor); and baby care (Pampers).¹⁷⁵ The Break Free From Plastic Audit lists P&G in the top ten global plastic polluters in both 2018 and 2019.¹⁷⁶



P&G is not a signatory of the *New Plastics Economy Global Commitment*, and does not publicly disclose its plastic footprint in company's communication materials. The company's sustainability goals for 2030 include reducing its global use of virgin plastic in packaging by 50%. If it manages to do so, it will avoid using 300,000 tonnes of plastic.¹⁷⁷ According to the company's response to As You Sow, its plastics footprint was 714,000 tonnes in 2018/19; their commitment to 300,000 tonnes of plastic reduction therefore translates to just 42%. As You Sow also reports that P&G made a commitment to 100% recyclable packaging after engaging with them, but P&G's commitment is for 2030 - five years later than many other FMCGs. Edie reports that, currently, '86% of its product packaging is either recyclable or that programmes are in place to create the ability to recycle it'.¹⁷⁸

P&G has made no commitments regarding collection, and neither calls for legislation in this area nor mentions support for DRS. It highlights different targets on its US environmental sustainability webpage¹⁷⁹ than on its UK equivalent.¹⁸⁰ At the time of writing, there was no reference to the development of reuse-and-refill delivery

Dirty recyclables of a Procter & Gamble brand
Credit: Les Stone

Head & Shoulders bottle made out of recycled beach plastic

Plastic packaging of Procter & Gamble brands
Credit: Les Stone

models for P&G products on their UK site,¹⁸¹ on its US site, however, the company highlights its 2019 participation in test programmes with TerraCycle's Loop project in New York and Paris,¹⁸² in which its brands Pantene, Gillette and Venus were included.¹⁸³

When it comes to reduction of virgin-plastic use, P&G states alternative materials will only be used 'when it makes sense', and that lightweighting, increasing recycled content and moving towards more concentrated products will take priority.¹⁸⁴ However, this does not appear to involve an absolute reduction in the total number of single-use plastic-packaging units. It is also unclear what instances the company will consider using alternative materials in, and which types of materials. In another document on the company's brand criteria for 2030, it states it will achieve 'a meaningful increase in responsibly-sourced bio-based, or recycled or more resource efficient materials',¹⁸⁵ however, this commitment is nebulous because it does not include an actual target, time-frame or more detail on what 'responsibly-sourced' means.

When it comes to minimum recycled content, P&G talks about 'continuously innovating with recycled plastic',¹⁸⁶ and, according to As You Sow, has a recycled-content target of 8% for 2025.¹⁸⁷ This is a very modest increase - from 6.3% in 2018. As part of the European Circular Economy Stakeholder Platform, P&G has pledged to increase recycled resin usage for PE and PET packaging in Europe by an additional 25 kilotonnes by 2025.¹⁸⁸ Rather than their modest overall rate, however, the company prefers to report its recycled content for individual brands. For example, in February 2020, P&G announced that Ariel liquid detergent bottles in Europe would reach 50% recycled content by the end of the year,¹⁸⁹ while the content of recycled material in Mr. Proper and Viakal surface cleaners would increase from 20% to 70% by 2020.¹⁹⁰ However, the company's reporting on these varied targets - in different geographies and for different brands - is patchy, and it is difficult to ascertain how they are measuring progress, or what is happening with products sold in other markets. Rather than robust reporting, the company seems to be interested in marketing its commitments. For example, P&G created a headline-grabbing pilot project to manufacture a Head & Shoulders bottle, partly produced from ocean plastic that was collected by volunteers in a clean-up in France, in partnership with TerraCycle. They made an attractive video, *Recycling the Unrecyclable*,¹⁹¹ in which they talked about changing all its bottles in Europe to recycled plastic by 2018 (more than half a billion bottles, containing 25% recycled plastic). The video ended with the CEO of TerraCycle saying: 'this project with Head & Shoulders is the most significant solution to marine plastic that we have ever seen in the world, but it's just the beginning'.

This makes it sound like P&G was planning to replace 25% of all plastic in its European Head & Shoulders bottles with recycled marine plastic, which would have been a significant goal to achieve in just one year. A story



Gillette and TerraCycle 'recycling' advertisement



published later on the Head & Shoulders website shows that the project in France resulted in 150,000 recyclable shampoo bottles made from plastic pollution, and that the company then took this project to 10 other countries, resulting in around 1 million bottles from 6 tonnes of plastic collected on the beaches.¹⁹² Although P&G says it has increased the percentage of recycled plastic to 25% in Head & Shoulders, Pantene and Aussie shampoo brands in Europe,¹⁹³ it does not say what happened to its commitment to change all its bottles in Europe to recycled plastic - and it is unclear whether the bottle is fully made of ocean plastic or mixed with virgin material, as implied in the video. The company made a similar headline-grabbing commitment with Fairy washing-up liquid, which was supposed to contain 10% ocean plastic by 2018.¹⁹⁴ P&G was one of the few FMCGs founding members of the Alliance to End Plastic Waste (see section 2.3.1), which mostly focuses on end-of-pipe solutions; its CEO is now the Chairman of the Alliance.¹⁹⁵

P&G also has a history of changing the goalposts on its voluntary commitments. For example, in 2010, the company made a specific commitment to replace 25% of its petroleum-based materials with sustainably sourced renewable materials by 2020; however, the company did not report progress towards the target. Additionally, in its 2015 sustainability report, the wording of the commitment was changed to a much less stringent one: 'create technologies by 2020 to substitute top petroleum-derived raw materials with renewable materials as cost and scale permit'.¹⁹⁶ In 2018, P&G claimed it had achieved this goal, but there has been no further mention of the original pledge.¹⁹⁷

2.2.10. Unilever



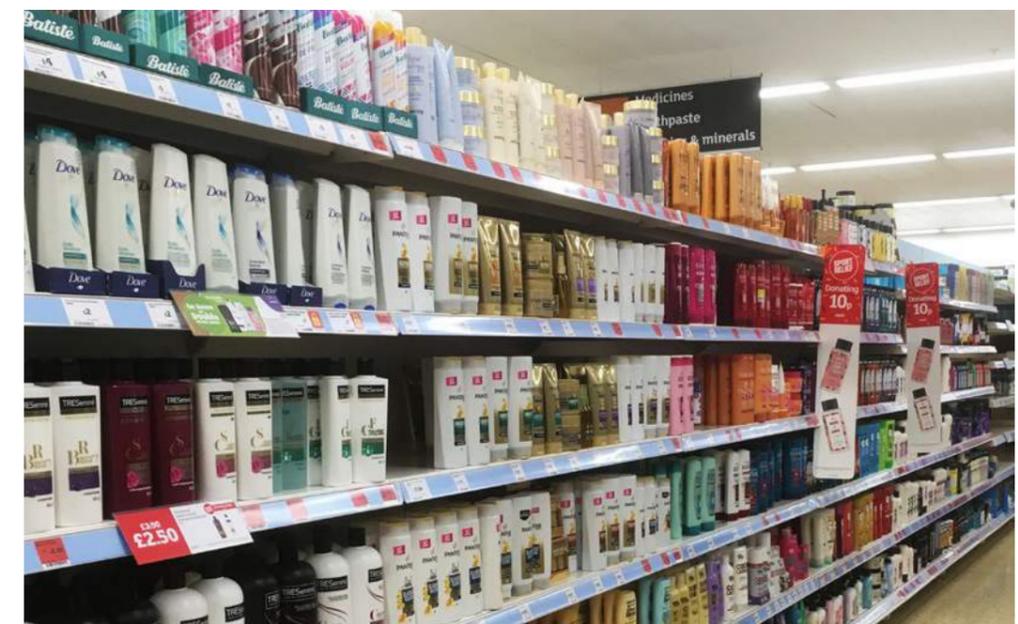
Littered items including Unilever brands
Credit: Shutterstock

Unilever is the fifth biggest FMCG company (by revenue), with sales in over 190 countries reaching 2.5 billion consumers each day.¹⁹⁸ The company produces 700,000 metric tonnes of plastic per year, as reported to the New Plastics Economy Global Commitment.¹⁹⁹ It has over 400 brands in its portfolio; key brands include Dove, Ben & Jerry's, Lipton, Cif and Omo. Unilever was the fifth-worst offender in the Break Free From Plastic 2019 Audit.²⁰⁰ In Tearfund's report, Unilever was responsible for 70,000 tonnes of plastic waste per year across just six countries - more than 11 football pitches every day.

Unilever has identified plastic packaging as a 'principle risk for [its] business',²⁰¹ and has committed to 'help collect and process more plastic packaging than [it] sell[s]' by 2025. The company states this commitment will require it to collect and process around 600,000 tonnes of plastic annually by 2025, and that this will be deliv-

ered through 'investment and partnerships which improve waste management infrastructure' in many of the countries in which it operates.²⁰² Although it doesn't openly call for mandatory-collection legislation and DRS, Unilever offers qualified support, saying DRS should be 'well thought through' and avoid 'putting consumers off' with high deposit fees.²⁰³ Interestingly, Unilever has highlighted the Lipton 'festival bottle', which is made from 100% recycled plastic and collected using a deposit system in the Benelux region.²⁰⁴ If Unilever believes this is a good idea, the company should actively support it as a solution - by backing mandatory collection globally and helping implement DRS on a larger scale.

Unilever is exploring several types of reuse models, although current pilot projects appear to be on a small scale and cover only a small proportion of products and packaging; for example, a small-scale pilot with three retailers in São Paulo, Brazil, to trial refillable Omo liquid detergent; and through Algramo in Chile, which is piloting a reuse-and-refill system using electric tricycles to deliver to people's homes.²⁰⁵ Cif refill stations for shampoo and



Unilever products in a supermarket
Credit: Les Stone

laundry detergent are being rolled out in shops, universities and mobile vending stations in South East Asia, and - like other companies - Unilever has signed up to TerraCycle's Loop platform.²⁰⁶

As part of the New Plastics Economy, Unilever has pledged to use at least 25% recycled content in its plastic packaging by 2025. Similarly to other FMCG companies, Unilever says 'the biggest challenge is the limited availability of high-quality recycled waste materials, particularly in developing and emerging markets'²⁰⁷ - without supporting legislation for mandatory collection, which would help to achieve a clean stream of recycled plastic. Despite the commitment, Unilever is lagging in its progress towards achieving the target. In 2018, recycled plastic represented less than 1% of the total amount of plastic resin it bought.²⁰⁸ The amount of post-consumer recycled content incorporated into Unilever's rigid plastic packaging actually decreased by 1%, in absolute terms, between 2015 and 2018 - from 4,900 tonnes to 4,845 tonnes.²⁰⁹ In 2019, recycled-content inclusion was reported at 5% of rigid plastic packaging: 35,000 tonnes. This appears to represent a laudable increase; however, it is unclear from the company's reporting whether the figure is for all plastic packaging or just rigid plastic.²¹⁰

Unilever has set a pioneering target to reduce its use of virgin plastic by 50% by 2025. The company has explicitly highlighted that it plans to do this by reducing its overall use of plastic packaging, with around a third coming from absolute reductions - more than 100,000 tonnes by 2025, through reuse, refill and packaging-free solutions. The remaining reduction will be achieved through increasing the use of recycled content.

Unilever does not appear to be indiscriminately replacing single-use plastic with single-use alternatives, and, where the company is exploring alternative materials (such as aluminium, glass and paper), it appears to be aware of potential unintended consequences and environmental impacts. The company seems to be looking at different packaging formats and models of consumption first.²¹¹ Unilever has also produced a position statement on bio-based plastics, stating it will switch to bio-based alternatives if they show an equivalent or better life-cycle impact compared to fossil-based plastics, do not lead to competition for land that could be used for food crops and do not have a negative impact on traditional recycling infrastructure.²¹² However, its Simple brand of face wipes do not appear to have biodegradability certifications, and the advice on the product is to send them to industrial composting – but acceptance of these types of products by composting plants is not widespread, and not all markets where the products are sold have access to such facilities. Unilever’s commitments relating to bio-based, biodegradable and compostable plastics are relatively vague, but its approach is stronger and more sensible than other companies.

A persistent problem for Unilever is its multi-laminate plastic sachets, which represent 19% of its products.²¹³ These are practically impossible to recycle conventionally, and have created a massive pollution problem in South East Asia. The company seems to be relying on its newly developed Creasolv® technology at a plant in Indonesia – which appears to be a type of chemical recycling – but is experiencing obstacles due to the high volumes of sachets needing to be collected, as well as remaining technical issues. Finally, Unilever is not transparent about questions of toxicity relating to chemical recycling.²¹⁴

2.3. Alliances and group initiatives

Pledges and voluntary commitments to end plastic pollution are put forward by not only individual companies but also a wide range of industry-endorsed alliances, many of which have been specifically set up to tackle the issue of plastic waste. This section outlines some of the most prominent industry-backed alliances currently promoting their initiatives as the latest solution.

2.3.1. Alliance to End Plastic Waste



The Alliance to End Plastic Waste is an industry-led global alliance that launched in January 2019. To date, 47 companies have joined the Alliance, predominantly oil and gas companies, chemical and plastic manufacturers, consumer-goods companies, retailers and waste-management companies. Its members have pledged to invest \$1.5 billion over the next five years to tackle the plastic pollution problem.²¹⁵ Even the name of the group is designed to suggest plastic is only a problem when it has become waste, rather than acknowledging the problems across its life cycle.

The Alliance’s strategy has four main components. First, it focuses on developing infrastructure, which appears to be centred on building the capacity of waste-management systems in low- and middle-income countries. Second, the Alliance aims to support technology that advances ‘innovation for recycling and reuse’. The third strand focuses on educating consumers about the impact of plastic waste and how it can be collected. Finally, it emphasises cleaning up existing plastic waste in the environment.²¹⁶

Examples of projects that fit underneath each of these strands can be found on the Alliance website. In terms of developing infrastructure, it focuses not on getting companies themselves to take responsibility for collecting over 90% of the plastics they put on the market, but rather on building capacity for waste-management systems in low- and middle-income countries in South East Asia. Project STOP, which supports three cities in Indonesia

to develop waste-management systems, is the Alliance’s main example of its work under this strand. The project was originally set up in 2017 by two companies – plastics producer Borealis and consultancy SYSTEMIQ – but the Alliance only recently adopted and funded it as one of its flagship projects.²¹⁷ The Alliance also claims to be exploring collaboration with partners to scale up waste-infrastructure systems in India, the Philippines and Vietnam.²¹⁸

More recently, the Alliance partnered with African Parks to ‘support a number of sustainable solutions such as education and improving waste management systems to reduce plastic leakage, and engagement activities such as beach clean-ups’.²¹⁹ This announcement acknowledges the scourge of plastic on natural ecosystems, without mentioning that members of the Alliance produce many of these items. The focus on parks and reserves also conveniently helps to clean up the problem in areas frequented by tourists, without addressing the severe harm posed to communities from toxic dumps of growing plastic waste choking cities across the continent.

Although the pledge of \$1.5 billion may seem a significant amount, this investment pales in comparison to the annual revenue of many members of the Alliance, including oil and gas giants Shell, ExxonMobil and Total, and huge consumer-goods companies PepsiCo and P&G. In fact, over a quarter of the industry members that are part of the Alliance generate an annual turnover exceeding \$45 billion, while Shell alone has a turnover of more than \$360 billion.²²⁰

The cumulative fund of \$1.5 billion earmarked for Alliance projects is not only small fry for these billion-dollar companies but also, crucially, dwarfed by their substantial and continued investment in new plastics production. Members of the Alliance also invested \$186 billion into new petrochemical facilities between 2010 and 2017, largely driven by increasing plastic production.²²¹ The investment does not stop there. Recent updates from the American Chemistry Council (ACC) show that, in the US alone, more than \$202 billion has been earmarked for investment in 340 new projects consisting of new facilities, expansions and factory restarts, with experts projecting the plastics industry will have added 28 million tonnes of plastic production within this decade.²²² The ACC says that 19% of total investment (~ \$37.5 billion) is plastic resins and expectations are that U.S. exports of plastic to Asia will rise more than fivefold by 2020, with China as the primary destination.²²³ This investment is expected to drive a 40% increase in global plastic production over the next decade.^{224,225}

Besides the obvious inconsistency of Alliance members pledging to tackle plastic waste while simultaneously investing billions to scale up global plastic production, its activities do not seek to meaningfully tackle the plastic problem at its source, instead primarily focusing on end-of-pipe measures by trying to stop plastic waste entering the ocean.

There are clear parallels between the Alliance to End Plastic Waste and KAB, a notorious not-for-profit organisation set up by the industry in 1953 to raise public awareness about littering and to promote recycling.²²⁶ Both organisations have corporate members that are also major plastic polluters, with some companies involved in both organisations; for example, PepsiCo, Dow and many members of the ACC and Plastics Industry Association (PLASTICS).^{227,228} Both organisations lead with the message that plastic pollution is the responsibility of individual consumers, rather than the manufacturers and companies that keep producing it. Naturally, it suits the industry – oil and gas companies, chemical and plastic manufacturers, consumer-goods companies, retailers – to focus the debate around plastic waste on litter, caused by individuals and to be dealt with by local authorities, rather than on those who have systematically pushed ever more plastic products for decades.²²⁹

Like KAB, the Alliance is just a rebranded effort to keep blaming the consumer for plastic pollution, this time in emerging and developing economies, primarily in South East Asia. The Alliance points to a 2015 *Stemming the Tide* report by the Ocean Conservancy and McKinsey Centre for Business and the Environment as its justification for focusing on South East Asia.²³⁰ This report states that China, Indonesia, the Philippines, Vietnam and Thailand accounted for up to 60% of plastic waste in the oceans due to an ‘exploding demand for consumer

products' - products that top plastic polluters have heavily marketed to these countries.²³¹ Tellingly, the steering committee for this report included Coca-Cola, Dow Chemicals and the ACC.²³² The report was also criticised for using incomplete data, being designed to the inevitable expansion of global plastic production, and focusing on discredited waste-management techniques like incineration - rather than taking a regulatory approach to implementing mandatory collection and phase out problematic plastic products and packaging.²³³

2.3.2. Trash Free Seas Alliance



The Trash Free Seas Alliance, an initiative of the Ocean Conservancy, 'unites industry, science and conservation leaders who share a common goal for a healthy ocean free of trash'.²³⁴ Members include FMCG companies like Coca-Cola, Danone, Nestlé Waters, PepsiCo and P&G, as well as big plastic companies and packaging producers like Dow, Amcor and Hi-Cone.

As the author of the controversial *Stemming the Tide* report, Ocean Conservancy's recommendations focus on improving waste management in the countries it has identified as leaking high levels of waste plastic into the environment - and, while it mentions improving collection, it does not identify the mechanisms through which this should be achieved. Over 200 environmental organisations co-signed a letter criticising the report for its advocacy of incineration and other discredited waste-management methods.²³⁵ An additional, technical critique called out the report's face-value acceptance of industry trends, which project a massive increase in plastic use as inevitable - even beneficial - without calling for redesign or reduction.²³⁶

Tellingly, the organisation's International Coastal Cleanup initiative, which provides a large amount of data from beach cleans around the world on types and volumes of litter collected, fails to implicate a single brand in connection with the 97 million items of trash collected by over a million people in 2019. The only mention of corporates pertains to those that sponsor the initiative.²³⁷ Without being forthright about that information, consumer brands are not held accountable for their role in the plastic pollution crisis.

The Alliance's goal is to 'create pragmatic, real-world collaboration focused on reducing the amount of plastic waste leaking into the ocean annually by 50% by 2025', which is to be achieved through a shared philosophy, including a focus 'on solutions with the largest impact on mitigating ocean plastic waste over the shortest amount of time'.²³⁸ Interestingly, its website makes no mention of DRS as a proven way to achieve this, despite studies showing it achieves a high reduction rate of marine litter.²³⁹ As we will see in Chapter 4, this alliance is also pushing for weak and questionable legislation, with a significant emphasis on incineration, in the US.

2.3.3. Global Plastic Action Partnership



The Global Plastic Action Partnership (GPAP) is a public-private initiative founded in 2018 by the Canadian government (through Environment and Climate Change Canada) and the UK government (through the Department for the Environment, Food and Rural Affairs (DEFRA)). Corporate partners include Coca-Cola, PepsiCo, Japanese consumer-goods company Suntory, Nestlé and plastics producer Dow Chemicals. The initiative is hosted by the World Economic Forum.²⁴⁰

The UK government initially committed £2.4 million to GPAP - a contribution that, in March 2019, International Development Secretary Penny Mordaunt said would be doubled to £6 million.²⁴¹ The Canadian government has committed \$6 million.²⁴² It is unclear how much member companies have invested.

GPAP describes itself as a 'multistakeholder platform dedicated to translating commitments to reduce plastic pollution and waste into concrete action.' Its stated goal is 'to drive the transition towards a circular plastics economy while helping to restore our natural systems and creating growth opportunities'.²⁴³ However, as of 2020, only one

of the partnership's three government agreements for pilot projects - Indonesia - has reported any detail. The action plan to reduce plastic waste in Indonesia focuses heavily on recycling without stipulating DRS for collection and - despite endorsement of the report from senior Indonesian government officials - shies away from any mandatory measures, even suggesting removal of problematic single-use items be achieved through 'voluntary industry action'.²⁴⁴



2.3.4. Ellen MacArthur Foundation's New Plastics Economy Global Commitment

The EMF, founded in 2009, is a UK registered charity that aims to 'inspire a generation to re-think, re-design and build a positive future through the framework of a circular economy'.²⁴⁵ In 2017, EMF launched the report *The New Plastics Economy: Rethinking the Future of Plastics* at the World Economic Forum in Davos. In October 2018, the New Plastics Economy Global Commitment was launched in collaboration with the UN Environment Programme (UNEP). More than 450 organisations signing up to 2025 targets related to addressing plastic waste at its source, including on eliminating certain plastics; ensuring all single-use plastics are recyclable, compostable or biodegradable; and including a percentage of recycled plastic content in packaging. Core partners of the New Plastics Economy initiative are major packaging, plastics and FMCG companies, such as Amcor, Borealis, Coca-Cola, Danone, L'Oreal, Mars, Nestlé, PepsiCo, Unilever, Veolia and Walmart.²⁴⁶

Although the executive director of UNEP hailed the initiative as 'the most ambitious set of targets we have seen yet in the fight to beat plastics pollution',²⁴⁷ this seems to be wishful thinking; there are critical shortcomings in the project, and its long-term impact remains questionable. It is worth noting that, prior to the Global Commitment, more than a decade of similar commitments had already passed, with many resulting in failures due to a lack of accountability.

In 2019, the first *Global Commitment Progress Report* was launched, 'providing an unprecedented level of transparency on how these signatories are reshaping the plastics system'.²⁴⁸ Yet the foreword to the report suggests the main advance has been companies openly listing targets and establishing quantitative baselines on plastics use.²⁴⁹ Furthermore, the signatories comprise over 200 businesses across all stages of the plastic-packaging value chain - but this still represents just 20% of all plastic packaging used globally, and some large multinationals (such as P&G) have not signed up.²⁵⁰ Many of the targets also align to what the companies may have been doing anyway, as part of their CSR efforts, in response to either the significant increase in public concern about marine plastic pollution or legislation such as the EU SUP Directive.

The New Plastics Economy initiative succeeded in getting 35 companies to finally disclose their total plastic footprint. It also has some other good elements, like inviting signatories to look at other problematic single-use items they produce and asking them to introduce the need to clean the circular-economy loop, phase out toxics at source and increase traceability. However, calling this disclosure 'unprecedented transparency' is somewhat far-fetched, considering this represents only 20% of signatories.²⁵¹ The picture also remains a long way from complete; the companies are not compelled to publish all the data they share with the EMF, nor is the data independently verified.²⁵²

Two key shortcomings of the New Plastics Economy are that companies' voluntary commitments do not go far enough, and that they fundamentally lack accountability because there is no enforcement of consequences for companies failing to meet the targets. Companies are reluctant to make pledges regarding the collection and recovery of plastics, and notably few have made commitments to an absolute reduction in the volume of virgin plastic being produced and used.²⁵³ The EMF appears to allow companies to sidestep their responsibility in this way, rather than pushing them to adopt comprehensive strategies for reducing single-use plastics. More concerningly - although supportive of the three companies that have set targets to reduce reliance on virgin

plastic, and praises Unilever, Mars and PepsiCo for their voluntary commitments in this regard - the EMF seems unconcerned by the methods proposed to achieve these targets. For example, there are no questions raised about Mars's strategy, which is heavily reliant on chemical recycling (as opposed to mechanical recycling), and it seems to allow chemical recycling to be considered as part of the circular economy.²⁵⁴

When it comes to targets for reuse, the *New Plastics Economy Progress Report* shows that, while one-third of companies signed up to the initiative are piloting reuse systems, less than 3% of signatories' packaging is actually reusable today.²⁵⁵ This is inadequate; it is widely acknowledged that the plastic pollution crisis cannot be solved through more recycling, but rather requires a rethinking of business models to make reuse widespread. Furthermore, most companies that report being involved in systems for reuse highlight their partnership with TerraCycle's Loop project, but this is currently only available through certain retailers in the US and Paris, with further expansion planned in 2020.²⁵⁶ The pilot was also never designed to be larger than around 5,000 households per region, recognising that reverse logistics systems can have large carbon footprints when scaled up.²⁵⁷ While Loop is a step in the right direction, there are additional questions around the affordability of such a system, and whether it is just an experiment in reuse for rich people rather than a revolutionary new way of consuming. Ironically, many of the companies calling for more businesses like Loop are the same ones that systematically dismantled localised reuse-distribution models, with the advent of the sachet economy, in countries like India and the Philippines.

The EMF is apparently well aware that the world cannot recycle its way out of the plastic problem. Sander De-fruyt, project leader for the New Plastics Economy, said in a recent interview that solving the plastic-waste problem was '*not about keeping today's system and increasing the recycling rate. It's about fundamentally changing the system.*'²⁵⁸ He also recognises that project members have shown '*an enormous lack of progress*' on pioneering essential models for reuse.²⁵⁹ So far, however, the EMF does not appear to have a strategy to publicly hold individual members of the New Plastics Economy to account for a lack of ambition or transparency - it is, in essence, all carrot and no stick. Meanwhile, signatories blatantly use their participation in the programme for greenwashing purposes, and to boast to consumers and decision-makers about their (non-binding) commitment to a circular economy. Participants are, crucially, neither ranked by performance nor called out for lack thereof, nullifying any potential accountability or stimulus to improve.

Most FMCG companies involved in the New Plastics Economy have set specific targets to include variable percentages of post-consumer recycled content in their plastic packaging. With a couple of exceptions, they mostly aim to achieve 25% recycled content by 2025 - the goal set by the EMF.²⁶⁰ Currently all companies are a long way off achieving these recycled-content targets. The top performer, Coca-Cola, only managed to achieve 10% recycled content in its plastic packaging last year; this is out of nearly 3 million tonnes of plastic - nearly all made from virgin plastic - used each year. At the bottom of the pile is Nestlé, with 2% recycled content out of 1.7 million tonnes of plastic packaging; Unilever is at less than 1%; and Mars is at 0%.²⁶¹

Companies highlight that a big challenge to meeting recycled-content targets is the limited availability of high-quality recycled-waste materials.²⁶² Instead of supporting legislation for mandatory collection and DRS that would help gain high-quality recycled plastic, however, most companies are focusing their efforts on partnerships with firms that are either developing chemical-recycling processes or investing in other problematic, immature technologies. Neither is the EMF calling for legislation or encouraging its signatories to align with the call for DRS and producer responsibility. Even worse, the EMF has publicly endorsed a report (the RP's *Bridge to Circularity*)²⁶³ that is critical of deposit laws and EPR - despite the fact that these two policies have a proven track record of reaching higher recycling rates, as well as bringing companies higher-quality recycled materials to meet their recycled-content targets. This report was written to increase understanding of how brands can achieve their *global commitments* in the US, but instead of solutions that work, its recommendations stay firmly in the sphere of weak voluntary actions - consumer educations, piloting apps, and artificial intelligence in trucks and homes to monitor progress and material quality.

The overall problem with voluntary commitments and targets is that they are meaningless unless there is an effective way to enforce companies to comply with them. As we will see in the next chapter, the industry uses voluntary pledges as a tactic to successfully prevent effective regulation, only for the voluntary commitments to get broken further down the line. If major plastic-polluting companies wish to support initiatives like the New Plastics Economy, they must also call for and support ambitious legislation globally; for example, by supporting mandatory separate collection of plastic packaging at rates of 90% or above. This would also require cutting ties with alliances and industry groups that aim to weaken such regulations. Such actions would send a clear signal that companies are taking responsibility, and are committed to being part of a real solution to the plastic-waste crisis.



Part of the EMF New Plastics Economy, the Plastics Pact is a network of initiatives at a national or regional level that bring together governments, businesses and citizens to implement solutions towards a circular economy for plastics. The network includes the UK Plastic Pact, Dutch Plastic Pact, French Plastic Pact and European Plastic Pact - which we will focus on here - as well as a growing list of other regional pacts, such as those in Chile and South Africa.²⁶⁴

2.3.5.1. The UK Plastics Pact and Waste and Resources Action Programme (WRAP)

The UK's Plastic Pact was launched in April 2018 by WRAP, the local UK coordinating organisation. It aims to achieve the following targets by 2025:²⁶⁵

- 100% of plastic packaging will be reusable, recyclable or compostable;
- 70% of plastic packaging will be effectively recycled or composted;
- average recycled content of 30% across all plastic packaging; and
- actions taken to eliminate problematic or unnecessary single-use packaging items through redesign, innovation or alternative (reuse) delivery models.

It is perhaps not surprising that WRAP is leading the UK Plastics Pact, since it has a history of initiating corporate voluntary initiatives on aspects of waste management. In 2010, DEFRA and WRAP commissioned a study evaluating waste 'voluntary agreements' from environmental consultants, Eunomia. While the report was expected to praise some voluntary agreements, it was also anticipated to raise concerns and suggest improvements.²⁶⁶ The report was due to be published alongside the UK Government's Waste Review that same year. The Waste Review was published in June 2011, and heavily promoted the ongoing approach of DEFRA and WRAP; that is, working to reduce plastic waste through voluntary schemes, as part of a wider government agenda of deregulation for businesses.²⁶⁷ DEFRA minister, Lord Henley, said: '*This government believes that businesses ... should be encouraged to do the right thing, rather than be tied down or penalised with excessive rules and regulations ... We see responsibility deals [i.e. voluntary schemes] as an important part of the drive towards a zero-waste economy.*'²⁶⁸

The Eunomia report, however, was never published. DEFRA said the report helped inform the review, although '*the government made clear in the coalition agreement that it will promote voluntary rather than regulatory approaches whenever possible to avoid unnecessary bureaucracy and enable people to make better choices for themselves.*'²⁶⁹

Although the content of the report was never published, an ENDS article highlighted that, of over 20 voluntary agreements signed between government and industry between 2001 and 2010, some have been outright failures and others – though signed with much fanfare – are not quite the panacea promised.²⁷⁰ The number of voluntary initiatives also tends to show an increase whenever new legislation is on the horizon. Indeed, the 2018 Plastics Pact came at a time when the UK government was considering requiring supermarkets to pay more towards collection and recycling of the waste they produce.²⁷¹ According to *The Guardian*, UK supermarkets pay less for plastic-waste collection and recycling than any other country in Europe, leaving taxpayers to cover 90% of the cost.²⁷²

While promoters of the pact promised great ambition from its 127 signatories, a progress report from WRAP in 2019 (one year into the initiative) only provided updates on 45 of those companies – just 1 in 3. Of that small selection, only 1 in 5 had taken action on all 4 targets, and 16% had failed to move on even 1 target.²⁷³ Responding to criticism, WRAP commented that it wanted to showcase the achievements of the signatories' activities. However, by launching a pact designed to push businesses forwards in their plastic-related targets – but not simultaneously calling out those whose motivation seems more focused on the free PR of joining the movement than on committing to progress – the pact undermines its ability to separate the leaders from the laggards, and highlights the structural flaws in voluntary initiatives with no assurance of enforcement.

2.3.5.2. Dutch Plastics Pact



The Dutch Plastics Pact was established in February 2019 with 96 signatories. In a compliance report a year later, the Ministry of Infrastructure and Water Management overseeing the scheme noted that, of the 67 parties able to deliver data, 'as yet 40% have done so'. In addition, 'very little information regarding the reuse and sorting of plastic has been sent in. Similarly, little information has been received about the quantities of hazardous substances ... in plastic.'²⁷⁴ Although some companies had 'practical reasons' for not having submitted data, the 60% non-compliance rate raises questions about the extent to which companies have genuinely bought into the Pact, rather than seeing it as merely a CSR exercise.

The Dutch Plastics Pact is a further example of governments being convinced that voluntary commitments not only work but are also on a par with legislation and mandatory measures. It also illustrates a trap such initiatives fall into – lowering the barrier to entry without accountability to even report data and progress towards the pact's objectives.

2.3.5.3. European Plastics Pact



The European Plastics Pact was launched on 6 March 2020 and is open to all European Economic Area countries (including the UK). The initiative is led by the French, Dutch and Danish governments, in consultation with more than 80 organisations across Europe, with support from WRAP. Its 2025 targets include:

- Make all plastic packaging and single-use plastic products reusable where possible, and in all cases recyclable;
- Reduce the need for virgin-plastic products and packaging by at least 20%;
- Increase the collection, sorting and recycling capacity of all plastics used in packaging and single-use products in participating countries by at least 25%; and
- Boost the use of recycled plastics as much as possible, with an average of at least 30% recycled plastics across single-use plastic products and packaging.

Although the primary aim remains 'to close the loop and significantly increase recycling of plastics', the European Plastics Pact is considered more ambitious than other national pacts due to its overall plastic-reduction objectives.

However, the lack of civil society involvement was a concern, with NGOs only being engaged on the surface, leading major plastics campaign groups – such as Break Free From Plastic – to decline to sign the pact. Break Free From Plastic also emphasised that the initiative remains voluntary and cannot replace strong regulatory measures.²⁷⁵

Although the pact aims to bring together actors from across the supply chain, virgin plastics producers are largely missing from the signatories, which is likely to hinder significant accomplishment. The EuPC (the plastics-manufacturing association) refused to join, noting it was already engaged in other initiatives, and the absence of major fossil-fuel companies (such as the Dutch company Shell) led Dutch NGO, the Plastic Soup Foundation, to state: 'as long as companies like Shell are allowed to flood the world with new plastic unhindered and as long as mandatory measures are lacking, the European Plastic Pact, despite its good intentions, is nothing more than a sham.'²⁷⁶

Plastic waste at a processing plant in the United Kingdom

Credit: David Mirzoeff



Box 2.1: Sticking-plaster solutions

Alongside the aforementioned major initiatives, we uncovered a glut of sticking-plaster solutions that do very little to tackle the issue of plastic pollution. Many are well-intentioned – if misguided – attempts to mop up the problem without turning off the tap, but industry co-option can steer these efforts into dangerous greenwashing territory.

Sea the Future

#NOPLASTICWASTE

Andrew Forrest, an Australian mining billionaire, has launched an initiative called Sea the Future that proposes manufacturers pay a voluntary financial contribution for producing plastic made from fossil fuels.²⁷⁷ The idea is that this will make new fossil-fuel-based plastics more expensive to produce, and therefore promote reuse of the plastic that already exists. Targeted at 100 major plastic-resin producers for petrochemical companies, the voluntary contribution would start at \$200 per tonne and increase to \$5,000 per tonne for the most difficult-to-recycle plastics.²⁷⁸

The main criticism of this idea is: Why would any company pay a voluntary financial contribution – or ‘tax’ – when they don’t have to? Tellingly, no companies appear to have signed up to date.²⁷⁹

NaturALL Bottle Alliance



Nestlé, Danone and PepsiCo are all part of the NaturALL Bottle Alliance, an initiative working to make a 100% bio-based, recyclable beverage bottle from sustainable materials.²⁸⁰ The launch of the Alliance was received with much self-congratulation and media coverage; however, it has neither committed to any timeframes (binding or otherwise) nor reported on its progress since 2018.²⁸¹

Not only is bio-based plastic not the solution to the plastics crisis (see Box 4.5) but it may also create other environmental problems, notably by requiring land to grow feedstock, leading to pressure on natural ecosystems. Selling a bottle deemed ‘eco-friendly’ does, however, allow these brands to continue pushing single-use plastic, under the aegis that it’s somehow inherently better for the environment because it is produced from ‘renewable’ plant materials.

The Ocean Clean-Up



Founded by young Dutch entrepreneur Boyan Slat, this project builds ‘interceptors’ – machines sitting in the mouths of rivers or dragged through the oceans to collect floating plastic waste. Much of the waste is returned to local collection systems, but a small amount is turned into novelty marine-plastic items. Although the project recognises that clean-up alone will not solve the crisis, its industry partners and supporters include Danone, petrochemical giant SABIC and industrial plastics manufacturer Agru – all of which are heavily invested in plastic production and likely to be using the project for greenwashing purposes.²⁸²

In addition to the project itself being highly flawed (the majority of ocean plastics below the surface are already fragmented), its positioning is also problematic; through popular platforms like TED and significant social media advertising, it has been portrayed as the solution to plastic pollution, siphoning away not only public attention from viable solutions and calls for regulation but also large amounts of funding.²⁸³

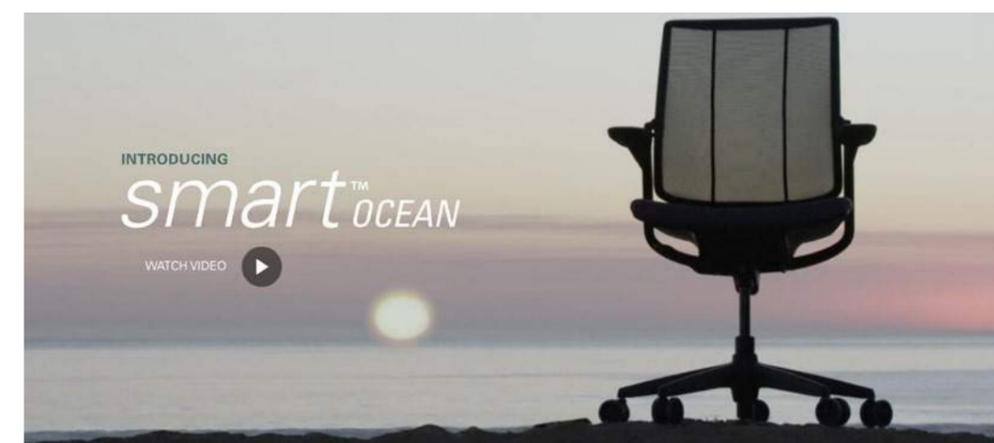
NextWave



With participating companies including Dell, General Motors, HP, Interface, IKEA, Bureo, Herman Miller, Humanscale, Trek Bicycles, General Motors and Solgaard, NextWave claims to be ‘turning off the tap on plastic pollution by creating the first global network of ocean-bound plastics supply chains’. This will supposedly be achieved by creating a range of products made from marine plastics, including an HP laptop with 5% ocean plastic, HP ink cartridges, IKEA polyester fabric from fishing nets, Humanscale’s ‘ergonomic desk chair’, a Bureo skateboard and Interface carpet tiles. While these products may help raise awareness of how much recyclable material ends up in the ocean, making new plastic products out of ocean plastic will not even approach turning off the tap on the plastics crisis, and does very little to stop the flow of plastics into the environment in the first place.²⁸⁴

2.4. Voluntary initiatives: All talk and no action?

We have seen how voluntary efforts from major plastic polluters consistently fail to meet the levels of ambition required to tackle the problem at source. Few companies call for mandatory collection of packaging globally, while progress on reuse and refill is very limited. Recycled-content targets are heading in the right direction, but creative accounting (using averages and low baselines) and communication of commitments or achievements specific only to some brands shows there is much work to be done. As we have seen, some companies regard these commitments as just paper promises anyway – easily warped, reframed or conveniently ignored – while their marketing departments always aim to generate positive press headlines on the latest progressive-sounding commitment. Likewise, consistent plastic policy across markets is missing from most FMCG commitments, with many only begrudgingly meeting requirements in regions where regulation is in place (such as the EU) while using larger amounts of plastic in their products sold in low- and middle-income countries.



Smart Ocean Chair
made of ocean plastic
sold at \$1099

Ultimately, voluntary industry initiatives are not the answer to the plastic-waste crisis. False solutions – such as replacing single-use plastics with other single-use materials, or promoting bio-based or compostable plastics – may cause unintended consequences and scale up other environmental problems. Often, companies appear to be looking for magical technical fixes instead of focusing on the solutions that have already been proven to work effectively, such as DRS for collection, because these solutions would require companies to fully step up their responsibility – and stump up the cost – to be part of a lasting answer.

Similarly, the raft of voluntary group initiatives that has sprung up in response to unprecedented awareness of the plastics crisis risks distracting attention from the efforts that will create real change, focusing instead on end-of-pipe solutions, unambitious targets and weak incentives. At best, by lending credibility to the worst polluters without accountability or enforcement, group alliances are helping to construct a smokescreen of sustainability, behind which plastic producers and consumer brands can continue to pump the world full of plastic unabated. At worst, these groups are being used to actively delay and undermine more transformative legislative action, which would compel plastic producers to collect what they put on the market, reduce plastic production in absolute terms, and introduce effective recycling and reuse systems, leading real transformation towards circular economy.

The barrier to entry seems startlingly low; in some cases, even the most basic requirements, such as reporting total plastic footprint, don’t seem to be required of the major FMCGs – and, once a corporation is in, there is little to no external accountability. If the initiatives do not actively work to heighten ambition and separate the lead-

ers from the laggards, the incentives are reduced to their lowest common denominator: greenwashing talking shops, paying flimsy lip service to change with no intention of breaking from business as usual.

Consumer-goods companies, retailers and plastic manufacturers promote their voluntary initiatives and 'new' solutions to appear to be doing their part to address the plastics crisis. Yet, at the same time that companies' public marketing and communications convey a 'green halo' to consumers, their actions behind the scenes often tell a very different story. As we will see in the next chapter, when we look closer at industry responses to ambitious, meaningful and binding legislation – such as mandatory collection of plastics, bans on single-use plastics or eco-design measures – we see repeated examples of the very same companies and industry-backed trade associations attacking, undermining and delaying legislation that would achieve significant change.

Box 2.2: What does a good voluntary initiative look like?

While there is limited use for voluntary initiatives, if an initiative wishes to be transformational, here are some essential guidelines on how to achieve this:

- Adequately hold members accountable for their voluntary commitments, ensuring transparency of reporting on individual company baselines and progress, with independently verified data.
- Enforce the voluntary commitments and keep criteria for participation robust and ambitious, including by ranking companies on their performance.
- Ensure the level of ambition stays high by regularly updating targets and sharing best practices with members.
- Ensure member companies apply the same ambitious policies across all markets in which they operate.
- Ensure plastic is not replaced by other single-use materials, such as paper or compostable plastic.
- Question companies' reliance on unproven or false technologies – such as chemical recycling – when setting their targets.
- Call for progressive legislation to reduce plastic pollution, including mandatory collection, such as DRS, around the world.
- If any company is found to be lobbying against progressive legislation or proposals, revoke that company's membership. In addition, do not allow companies to be members of industry associations that lobby against legislation to address plastic pollution.



Plastic pollution on the banks of a river |
Credit: Pxfuel |



DELAY DISTRACT DERAIL

3. Tactics in the corporate playbook

From oil, gas and petrochemical giants, for whom lobbying against plastic regulation allows them to keep pumping fossil fuels from the ground, to supermarkets undermining approaches that would ask them to play their part in curtailing the plastic waste they help distribute, our investigations have revealed a wide variety of tactics employed by actors across the plastics supply chain to resist change and keep conducting business as usual. While most of the companies no longer deny the existence of plastic pollution, they use a variety of tactics to prevent legislation and push responsibility elsewhere.

In Chapter 4, we will see how this approach plays out in country case studies, painting a picture of the global industry pushback against even the smallest challenge to their wasteful linear business model. In this chapter, we delineate three main categories of industry tactics: **delay, distract and derail**. With these three tactics, those with a vested interest in the status quo have dodged, baffled and disarmed all but the most determined of legislators for decades, and sown confusion among consumers and governments alike.



3.1. Delay

Delaying tactics are most obvious in the world of corporate lobbying, and are a first port of call when legislation is proposed. As noted by the Corporate Europe Observatory (CEO), *'for corporate lobbyists, success is not always about blocking a measure; securing delays can protect profits for longer and can also open-up further lobbying opportunities to keep influencing and weakening the final outcome into the future.'*²⁸⁵ Delaying is also a subtler tactic; it can be achieved by a company outwardly committing to change without it being enforceable or binding. This allows industry to ask governments to wait and see if what they are aiming to achieve through legislation can instead be achieved voluntarily. Examples of these delaying tactics include the following.

3.1.1. Voluntary commitments

While voluntary commitments sound great on paper and in media coverage, the industry often uses them to delay legislation by giving policymakers the impression they are committed to moving in the right direction without legislative interventions. Governments may prefer voluntary commitments for ideological reasons, as they are concerned that too much 'red tape' would stifle innovation and put too much burden on the private sector; for example, the British and Dutch governments were keen to sign 'responsibility deals' with industry instead of more regulations.²⁸⁶ Several voluntary commitments were also put in place at the EU level, such as the Circular Plastics Alliance (CPA) launched by the EC. Research shows that voluntary agreements multiply when there is a threat of regulation - and, often, this is the industry's strategy for delaying mandatory measures.²⁸⁷ Sometimes companies also contribute what sounds like a significant amount of money to the commitment, but this generally pales in comparison to their annual revenues from plastic products. Many voluntary commitments are also either low on ambition or full of promises that end up being broken or postponed, as shown by the previous chapter's analysis of Coca-Cola's trail of broken promises.

3.1.2. Withholding or manipulating data

Decisions for greater action on plastics often rest on whether the current systems in place are performing well enough. Assessment of this relies on official collection and recycling data, often reported by the industry or industry association. For example, Spain's PRO Ecoembes, provides data that is opaque and unable to be audited, but that creates an illusion of such high rates of collection and recycling that no further actions are necessary. In Japan, the recycling rate is reported to be as high as 80-85%, but the actual rate is closer to 23%, and is artificially inflated by the inclusion of waste exporting, chemical recycling and incineration.²⁸⁸ Even the plastic footprint of individual corporations is something companies have only recently started to report, and some of them - like Mondelēz International - still haven't published their data.

3.1.3. Pushing back dates on legislation

If the first battle to stop legislation coming to light has been lost, lobbyists will look for opportunities to delay the implementation of such legislation. For example, in the EU SUP, the 90% separate-collection target for beverage bottles was proposed for 2025; but the industry lobbied against it, and it was postponed until 2029. Even after laws are adopted, the industry uses every opportunity to try to delay. For example, a letter from the EU Plastics Converters (a trade association) to the EU Commission called for the SUP Directive to be delayed indefinitely, citing the role of plastics in the Covid-19 public-health crisis (although the SUP Directive does not restrict PPE) and hitting back against the term 'single-use'.²⁸⁹

3.1.4. Weakening implementation

As is especially the case with the transposition of the EU SUP Directive into member-state law, there are many opportunities to weaken legislation between it being passed and it being implemented. For example, our research uncovered battles in many EU countries regarding how to reach a 90% separate-collection target for plastic bottles, with industry groups fighting against the introduction of DRS - the only proven method to achieve this collection rate. Our case studies for France, Spain, the Czech Republic and Austria show how industry groups lobby in alliances - between retailers, beverage producers and seemingly independent recycling organisations - against such legislation.

3.1.5. Adding conditionality to action being taken

Those fighting against mandatory measures, such as DRS, will also try to delay the process by attaching conditionality to the introduction of the legislation to buy them more time. In France, after pushback from municipalities and recyclers against DRS, the Anti-Waste Law stipulated it can only be brought in after a further study (implemented by Environmental Agency ADEME) three years down the line, which needs to investigate whether EU targets can be reached in any other way. This approach won DRS opponents several more years of business as usual.



3.2. Distract

While attempting to delay action through both behind-the-scenes lobbying and weak voluntary initiatives, consumer brands and plastic producers will also try to distract by showing off their efforts to be part of the solution - often through significant spending on public relations and advertising. Distraction tactics encompass any activity designed to make customers think real change is happening while allowing consumer brands, supermarkets and the petrochemical industry to continue flooding the world with cheap, disposable plastic for as long as they can. Distraction tactics include the following.

3.2.1. Blaming the consumer

'Ploggers' collecting plastic litter | Since the 1950s, Big Plastic has deliberately focused on blaming consumers and 'litterbugs' for the problem of plastic waste, while evading their responsibility for the crisis. The most famous example is KAB, whose tagline
Credit: Shutterstock |



is: *'People start pollution, people can stop it'*. Blaming consumers is a theme that continues to this day; for example, Coca-Cola's adverts (*'Don't buy Coca-Cola if you don't help us recycle'*),²⁹⁰ a senior executive at Davos declaring the company won't move away from plastic because consumers still want it,²⁹¹ and the plastics industry in Uruguay using slogans declaring: *'It's not plastic, it's you'*.

3.2.2. End-of-pipe solutions

While ocean and beach clean-ups may help raise awareness and look good on paper, they will not solve the plastic crisis if companies continue to produce ever more plastic. High-profile clean-up activities include The Interceptor by The Ocean Clean-Up, a beach clean-up with 500 volunteers conducted by Master Kong, one of China's top plastic-litter producers; and 'plogging', a craze started in Sweden and promoted by KAB, whereby joggers pick up plastic as they run.²⁹²

Equally, making products out of collected marine plastic will raise awareness but won't tackle the root cause of the problem. Examples include P&G's Fairy and Head & Shoulders bottles, made of marine plastic;²⁹³ Adidas's Parley ocean-trash trainers;²⁹⁴ and Coca-Cola's 25% marine-plastic beverage bottle.²⁹⁵ Tetra Pak has a CSR 'Green Roof' project in Thailand, demonstrating how *'used beverage cartons have been transformed into corrugated roofing sheets for emergency housing'*. According to one producer in Vietnam, making these corrugated roofing tiles from Tetra Pak is twice as expensive as making them from normal roof tiles.²⁹⁶

3.2.3. Recycling illusions

Many plastic products are labelled with a misleading symbol: either chasing arrows or the Green Dot. These symbols confuse consumers, creating an illusion that a product or its packaging can be recycled, which is not



P&G's Fairy and Head & Shoulders bottles, made of marine plastic

Adidas's Parley ocean-trash trainers

Coca-Cola's 25% marine-plastic beverage bottle

true for many of them. Additionally, there is no standard practice for recycling symbols, and brands can use them indiscriminately to mean anything.²⁹⁷ In the US, chasing arrows are also accompanied with numbers 1-7, suggesting recyclability, when the actual recycling rates for most of the packaging from numbers 3-7 are close to zero.

3.2.4. Promoting recyclability or compostability

A particular problem arises when a material is *theoretically* recyclable but, in practice, not able to be recycled or composted at scale. This is an important theme as companies move towards voluntary targets to make 100% of their products recyclable, reusable or compostable. An example is Starbucks in the US touting its new polypropylene lids and claiming to be *'raising the water line for what's acceptable and inspiring our peers to follow suit'*, when the market and recycling rates for that material are negligible.²⁹⁸

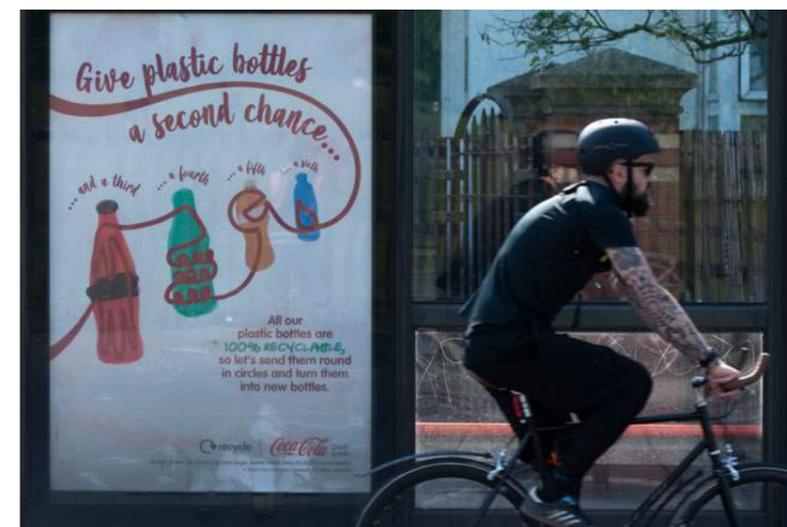
3.2.5. Switching to other single-use alternatives

While the replacement of some single-use plastics with alternative materials is important, companies use small switches from plastic to another material to show how committed they are to ending plastic waste. For example, Tetra Pak proudly highlights its participation in the EMF's Global Commitment, yet the sum total of the packaging giant's action has been the development of paper straws to meet demand by 2025, and a modest investment in recycling.²⁹⁹ Bio-based, biodegradable and compostable plastics are another red herring (see Box 4.5); while these materials have some niche applications, they are not the silver bullet they are made out to be. In countries like Japan and China, replacement of conventional plastics with biodegradable alternatives is being pursued as a quick-fix solution, but new so-called 'bioplastic' products confuse and distract consumers and decision-makers from the deeper need to reduce plastic output and push for new systems and models.

3.2.6. Pushing technological fixes

Perceived quick fixes like chemical and thermal recycling are pushed - by the petrochemical industry, in particular, but also by companies such as Mars - as a silver-bullet solution. These technologies are not only problematic (see Box 3.1) but also distract from the urgency to transition to a truly circular economy; one in which reuse, refill and effective mechanical recycling are widespread.

3.2.7. Marketing greenwash



As plastics and sustainability have crept up the agenda of concerns for consumers, brands have leapt at the opportunity to differentiate their brand or product as better for the environment. In the case of major plastic polluters, this often manifests as eye-watering sums of money spent on advertising placements announcing, with great fanfare, their progress on plastic waste. Examples include Coca-Cola's 'Round in circles' campaign, which tried to redefine single-use plastic to exclude recycled bottles, and P&G's Head and Shoulders advert for bottles made from ocean plastic.³⁰⁰

3.2.8. Study wars

In countries in which DRS is being fought over, we see a particular tactic: In response to a cost-benefit analysis study that favours the implementation of DRS, opponents

Coca-Cola's 'Round in circles' campaign in the United Kingdom

Credit: David Mirzoeff

commission their own studies to muddy the waters. Many of these studies seek to undermine the credibility of the original study (as seen in a study war between CETA and INCEIN in the Czech Republic), and some use very questionable methodologies (such as a study, commissioned by Ecoembes in Spain, which based its attack on the feasibility of DRS for retailers on rental prices for luxury real estate to exaggerate its findings).³⁰¹ In many cases, it is enough for a company to simply say it has commissioned a study in order to boost the credibility of their arguments. Sometimes, the industry will not even publicly publish the studies it uses in lobby meetings with policymakers.

3.2.9. Fake environmental groups

The industry tries to distract by funding or setting up its own spurious environmental organisations that promote its agenda. For example, in the EU, representatives of the packaging industry also set up the Clean Europe Network, which promoted clean-ups and opposed the introduction of DRS in several countries. In the US, the



industry set up several groups - from KAB to the RP and the Sustainable Packaging Coalition. All these organisations have more or less the same member companies; their main focus has been to distract consumers by shifting the responsibility for recycling and waste management away from corporations and towards consumers and municipalities. One of the latest organisations established by the industry is Californians for Recycling and the Environment (CRE), which was founded by the plastic-bag manufacturer Novolex and led by two Novolex staff members.

3.2.10. Avoiding questions around toxicity and life-cycle harm

Big Plastic is tellingly silent on issues related to human health and plastics, such as toxicity, upstream pollution and the health fallout for frontline communities at all stages of the plastic life cycle. Distraction tactics that seek to rehabilitate the reputation of single-use plastics belie the serious harm inherent to plastic use, for which few companies have an answer.



3.3. Derail

While delaying and distracting, the industry simultaneously scans for opportunities to derail the possibility of introduction of stricter or unfavourable legislation, or to undermine existing regulations. Many companies in the plastic supply chain have full-time representatives lobbying decision-makers at every level, often both directly and through numerous different trade associations, via consultancies, think tanks and other outlets. As the Covid-19 pandemic has demonstrated, Big Plastic, in particular, is always primed and ready to co-opt a crisis to its advantage, and uses any opportunity to undermine environmental or restrictive plastic legislation. Tactics to derail include the following.

3.3.1. Direct lobbying

Many consumer-goods companies and plastics producers have multiple full-time-equivalent staff lobbying various national and state governments. For example, in the EU in 2018 - when the SUP Directive was under consideration - The Coca-Cola Company and Coca-Cola European Partners spent a combined total of €1.2 million on lobbying,³⁰² while PepsiCo spent €500,000-599,999,³⁰³ Nestlé spent €400,000-499,999³⁰⁴ and Tetra Pak spent €300,000-399,000.³⁰⁵ Much of this lobbying involves securing meetings with officials; Greenpeace's investigation into Coca-Cola's attempts to derail DRS in Scotland showed how the company met with senior UK government officials on multiple occasions to try to nix plans for DRS.³⁰⁶

3.3.2. Indirect lobbying

Many FMCGs have high brand equity; that is, the value derived from their brand name. This can mean they are reluctant to be seen to lobby against legislation and to have their brand tarnished directly. Instead, they conduct lobbying by proxy via trade associations (which represent industry interests) and other seemingly independent groups (like producer-responsibility organisations). This was particularly prevalent in our investigations in Austria, Spain and the Czech Republic, where many major supermarkets and consumer brands put pressure on governments through the Green Dot organisation, organisations in which they exert undue influence, such as Altstoff Recycling Austria AG (ARA), Ecoembes and EKO-KOM. Since many of these organisations are associated with recycling, they can be perceived as having higher credibility and independence when they speak about these issues.

Pre-emption laws

Attempts to push through legislation that makes it illegal to ban certain plastic products, such as plastic bans, are known as 'pre-emption laws'. In the US, the lobbying group American Progressive Bag Alliance has been very effective following this tactic; to date, fourteen states have pre-emption laws in place, while only eight have banned plastic bags.³⁰⁷

3.3.3. Exemptions

In the face of sweeping legislation, plastic producers and other packaging producers push to have their products exempt from legislation, or find other loopholes - often on dubious grounds. In the EU, for example, producers of single-use plastic cutlery have tried to claim such cutlery is reusable (because it can be washed), and have pushed to exempt bio-based plastics - as well as biodegradable and compostable plastics - from legislation on single-use plastic.³⁰⁸

3.3.4. Legal challenges

Where legislation cannot be prevented, companies may go down the route of legal challenges to its implementation. For example, in April 2019, the Regional Council of Puglia introduced local regulations banning non-compostable food-and-drinks packaging in state-controlled maritime areas and beaches. The Italian Association for the Soft Drinks Industry and Italian Federation of Mineral Water Producers challenged the regulation at the Regional Administrative Tribunal. In July 2019, the tribunal found in their favour, suspending the regulation. The Regional Council then appealed against the ruling to the Council State Tribunal, which found in its favour, reinstating the regulation banning plastic use.³⁰⁹

3.3.5. Misdirecting legislation

Industry can also cynically misdirect legislative efforts by supporting legislative solutions that fit their agenda and that seem to address the issue, on the surface, but don't go far enough. Examples include the RECOVER Act (which would help shore up recycling in the Covid-19 economic recovery -but would also ringfence money for incineration, and does not include measurable targets for combating single-use plastic) and Save our Seas 2.0 (which focuses heavily on clean-ups but circumvents industry responsibility for overproduction of plastics).

3.3.6. Co-opting a crisis

Primed to push its agenda at any opportunity, Big Plastic jumped at the opportunity the global Covid-19 pandemic presented to seek to roll back unfavourable regulation. Capitalising on sanitation fears, the industry spread skewed information about the harm of reusable bags in an attempt to derail plastic-bag bans in the US. In Europe, retailers used Covid-19 to call for a delay to the implementation of DRS in the UK, and the plastics industry use it to justify a call to delay implementation of the EU SUP Directive.



3.4. Putting the tactics in play

This is a non-exhaustive list of the industry tactics our investigations have uncovered to date. Such tactics have played out in many countries and regions around the world. Our research aims to diffuse the smokescreen concealing these tactics, and to call out the hypocrisy at work. The next chapter pieces together case studies from across the world, demonstrating how different actors engage a toolkit of tactics to fight against accountability and systemic action on plastic pollution.

THE AVOIDING LEGISLATIVE ACTION INDUSTRY PLAYBOOK



DELAY



DISTRACT



DERAIL

1 DENY THERE IS A PROBLEM



2 SHIFT THE BLAME



3 DISTRACT WITH VOLUNTARY COMMITMENTS



4 PROMOTE A SOLUTION



5 SET UP "INDEPENDENT" ORGANISATIONS



PUBLIC PRESSURE RESULTS IN LEGISLATION

6 FUND "INDEPENDENT" STUDIES TO INFLUENCE LEGISLATIVE PROPOSALS



7 DELAY LEGISLATION BY LOBBYING



8 WEAKEN IMPLEMENTATION FURTHER



9 USE A GOOD CRISIS



Box 3.1: Chemical recycling and incineration

Chemical recycling

As the physical and economic barriers to effective recycling for mixed plastics have persisted – and facing increasing pressure to act on plastic pollution – the industry has begun to vigorously promote ‘chemical recycling’, or ‘advanced recycling’, as a catch-all solution.

Behind the innocuous-sounding name lies a range of processes and technologies – such as pyrolysis and gasification – to convert waste plastic into new plastic or fuel, by dissolving plastic with chemicals or using heat to break it down into monomers, naphtha, fuels or other by-products.³¹⁰ In theory, these new materials can go through a process of ‘re-polymerisation’ to create new plastic products, but this technology is still uneconomical and technically challenging.³¹¹ The reality for the majority of plastics undergoing chemical recycling is plastics-to-fuel, whereby the liquid and gas products from the process are turned into fuel, such as diesel or kerosene, and then burned just like any other fossil fuels.

The problems with chemical recycling vastly outweigh any perceived benefits. First, while the industry has been keen to highlight chemical recycling as a game-changing solution, its small scale and the level of investment show it is just another distracting sideshow the industry is using to divert attention away from anything that would slow production, hold the industry accountable for pollution, or prevent it from selling as much plastic (like its fixation – and for the same reasons – on recycling in the 1970s).³¹² It is an immature industry that, according to sector specialists the Bureau of International Recyclers, is still 10 years away from viability – too long to be useful in addressing plastic waste and climate change.³¹³ There is a long history of technical failure in chemical-recycling projects, and Unilever’s Creasolv® chemical-recycling project still struggles to produce a viable solution for chemically recycling multi-laminate sachets, after years of development.

Second, it is far worse for the environment than effective mechanical recycling or other proven solutions to curb plastic pollution. The energy inputs required at each stage, and their associated GHG emissions, make it very inefficient with limited circularity – despite how Big Plastic touts it as a pillar of the circular economy.³¹⁴

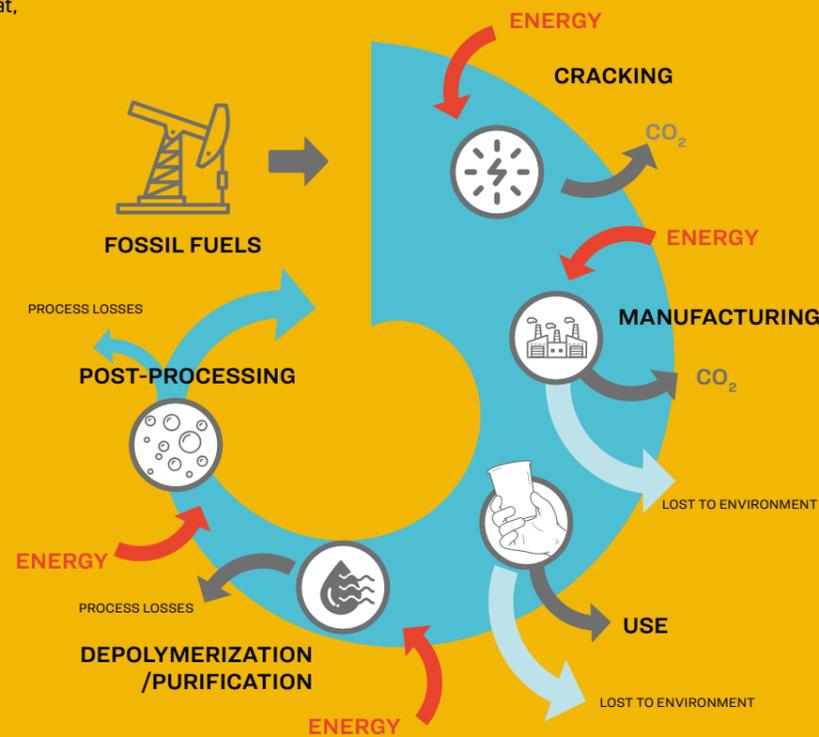
Third, there are great uncertainties around how safe chemical recycling is.³¹⁵ Gasification emits harmful toxic chemicals and carcinogens, and the emissions, liquid efflu-

ent and solid waste from chemical-recycling plants could harm human health and ecosystems – and contribute to climate change.^{316,317}

Finally, the majority of chemical-recycling plants are producing not new plastics but plastics-to-fuel. When these fuels are burned, all the carbon originally extracted as fossil fuels is released back into the atmosphere as GHG emissions, contributing to climate change. Far from being part of the circular economy (as touted by the industry), plastics-to-fuel should be considered worse than landfill – and on par with incineration.³¹⁸ The focus should be on prevention of plastic waste, where possible, as well as scaling reuse and effective recycling. Concerningly, there has been a push in the US and EU to greenwash chemical recycling, either to weaken environmental regulation by classifying them as manufacturing, rather than waste-disposal, facilities (as pushed by the ACC)³¹⁹ or to allow plastic-derived fuels to be considered as akin to renewable energy.³²⁰

Figure 3.1: The leaky circular economy of chemical recycling

Source: Gaia (2020)³²¹



Thermal recycling, energy recovery and waste-to-energy

These euphemistic terms all mean one thing – incineration. Incineration is at the very bottom of the waste hierarchy; it involves burning plastic simply to get rid of it, and generating energy as a by-product. Incineration turns one form of pollution (plastic waste) into other forms of pollution (such as toxic ash, emissions and wastewater).³²²

Burning plastic waste varies in its technology, from the open burning and backyard fires prevalent in countries with emerging and developing economies, to modern, architecturally distinctive ‘waste-to-energy’ plants such as the CopenHill plant in Denmark, featuring a ski slope and hiking trails,³²³ the Spittelau facility in Vienna,³²⁴ or the colourful and quirky Maishima incinerator in Osaka,³²⁵ deceptively sold as innovative solutions to the plastics crisis. Emissions from incineration include many heavy metals, acid gases, particulates and dioxins all highly harmful to human

health, as it reduces the amount of virgin plastic (and therefore fossil fuels) that needs to be produced.^{330,331}

Many countries lauded for their supposed ‘recycling’ achievements, such as Denmark and Sweden, have invested heavily in incineration – to the extent that they import waste (including recyclable materials) to feed their incinerators.³³² As a result of the mounting problem of plastic waste, the incineration industry is aggressively expanding into new markets – particularly in Asia, where the industry predicts a 7% compound annual-growth rate.³³³ Incineration plants work best with steady streams of material to burn; once they are built, this creates a perverse incentive against effective policies to reduce plastic waste through bans, reuse or recycling.



‘Waste-to-energy’ plant, CopenHill in Denmark, featuring a ski slope and hiking trails

Credit: istock



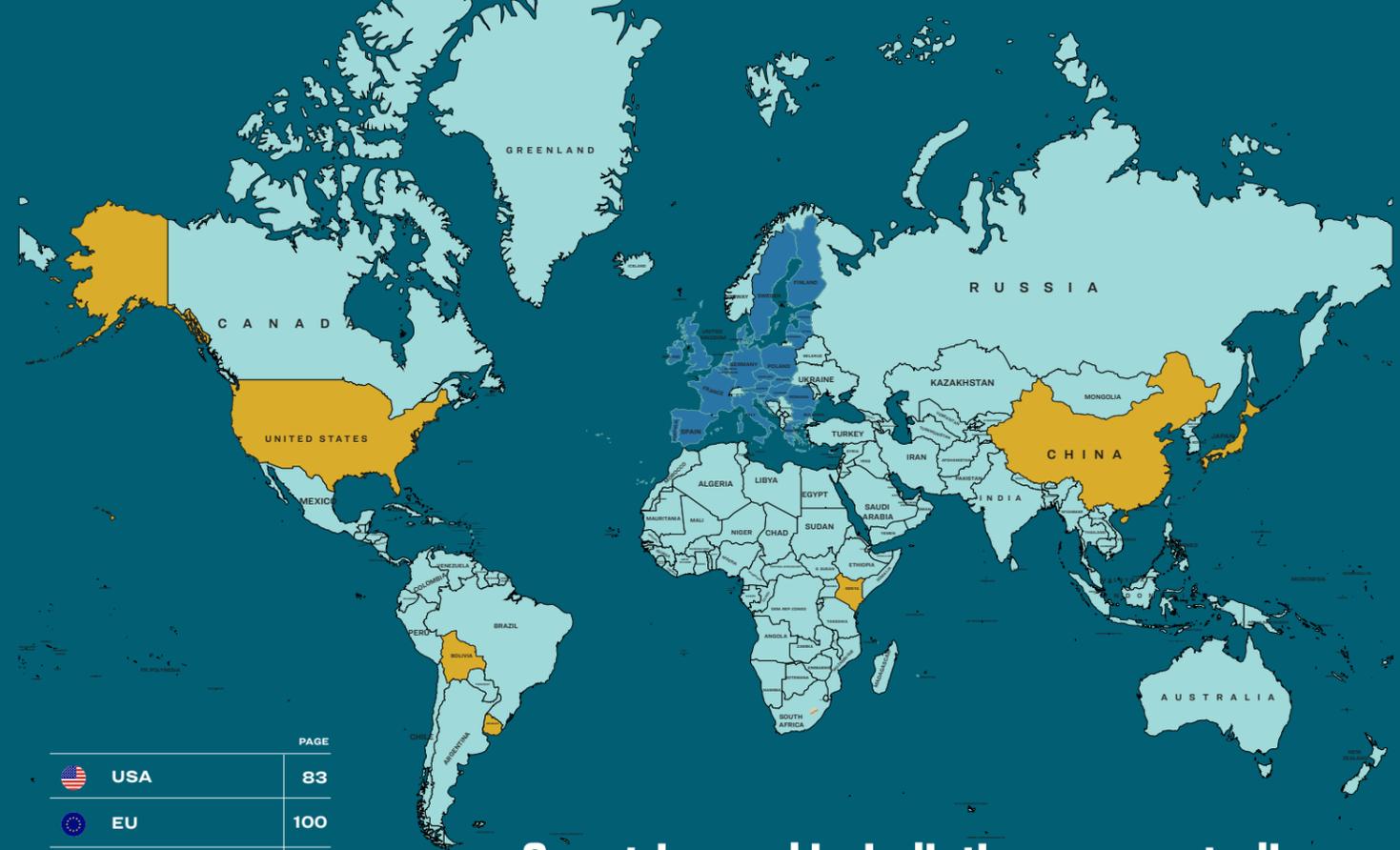
Inside an incinerator in Sweden

Credit: Will Rose

health, and contributing to various cancers, birth defects, lung and respiratory disease, stroke and cardiovascular disease – to name but a few.³²⁶ Even at the high-tech end, which claim greater emissions and pollution controls, a large body of evidence demonstrates significant short- and long-term effects to workers, communities and ecosystems and the unavoidable disposal problem of large quantities of toxic fly ash, sludge and effluent.³²⁷

Burning plastic is also terrible for the climate; even when energy recovery is accounted for, 1 tonne of plastic produces 1.4 tonnes of CO2 equivalents.³²⁸ The ‘waste-to-energy’ euphemism also belies the fact that electricity generated through waste-to-energy has significantly higher climate effects than conventional power plants, such as those fuelled by gas.³²⁹ Additionally, effective recycling saves more energy than waste-to-energy

Waste incineration is a true sticking-plaster solution – a short-term, end-of-pipe response that does not address the problem systemically. For this reason, oil and gas companies are particularly interested in pushing waste-to-energy or chemical-recycling technology, which allow them to continue producing endless torrents of disposable, hard-to-recycle plastic – and distract governments and citizens from the vital need to reduce plastic production. With the contribution of toxic chemicals from incineration and waste burning to respiratory and cardiovascular issues,³³⁴ and strong correlation between air pollution and increased likelihood of death from Covid-19,³³⁵ we are currently witnessing how burning our waste is not only a poor use of resources but also undermines public health by creating toxic environments.



Countries and jurisdictions case studies

	PAGE
USA	83
EU	100
CHINA	128
JAPAN	133
KENYA	136
BOLIVIA	139
URUGUAY	141

WORLD

AUSTRIA	105
SPAIN	110
FRANCE	118
SCOTLAND	122
CZECH REPUBLIC	123

EUROPE



4. Country case studies

This chapter investigates industry lobbying around proposed or adopted legislation to address plastic pollution, and investigates how corporate tactics to distract, delay and derail legislation have played out in recent years across the world. First, we investigate whether the tide is turning in the US, where the industry has been extremely successful at both preventing any meaningful legislation and shifting the blame on to consumers.

Then, we focus on the recently adopted EU SUP Directive and the industry's lobbying in reaction to it, first at the EU level and now at the national level in different member states. We subsequently look into how the industry is working to delay and weaken the introduction of DRS in Austria, Spain, France, Scotland and Czech Republic. Finally, we investigate how the plastics industry influences policies in China, Japan, Kenya, Bolivia and Uruguay, each of which reveals a range of on-the-ground different tactics in the corporate playbook.

4.1. About the research

As we have seen, companies in the plastics supply chain have published voluntary commitments and become members of a number of group initiatives intended to address plastic pollution. Although the public may perceive these commitments as reassurances that corporations are taking plastic pollution seriously, we have exposed serious shortcomings in the voluntary approach. One of the big problems is that these commitments are not benign; indeed, they are often used to delay or undermine legislation. As Table 4.1 shows, companies are not only members of nice-sounding initiatives but also run, and actively participate in, trade associations and other groups established to defend corporate interests from regulation that could restrict plastic, or make corporations responsible for managing the waste they create, financially or otherwise.

For this reason, we looked beyond these paper promises and investigated how plastic polluters act when policymakers pursue legislation to rein in the plastic crisis. Spanning 15 countries across 5 continents, and involving investigative journalists, researchers and experts across the world, this global investigation took place between December 2019 and July 2020. The research ranged from literature reviews and interviews with experts, journalists, NGOs, industry sources and policymakers to FOI requests and on-the-ground research. At times, we also used professional photographers to document the scale of our addiction to plastic - and the scourge of its aftermath.

While a significant focus of our research was the implementation of mandatory-collection legislation, including the introduction of DRS, we also touched on other measures to reduce plastic pollution - from plastic-bag bans to circular-economy and waste-management proposals. We also looked at the actions of other active industry players in the countries investigated, from big retailers to national beverage industries, FMCG companies, the glass industry, Green Dot organisations and recyclers. The picture that emerges confirms our hypothesis: The industry is actively delaying and derailing ambitious action on plastic pollution in its fight to maintain business as usual for as long as possible.

A landfill in California
Credit: Les Stone



PLASTIC WASTE MANAGEMENT: 1960-2017

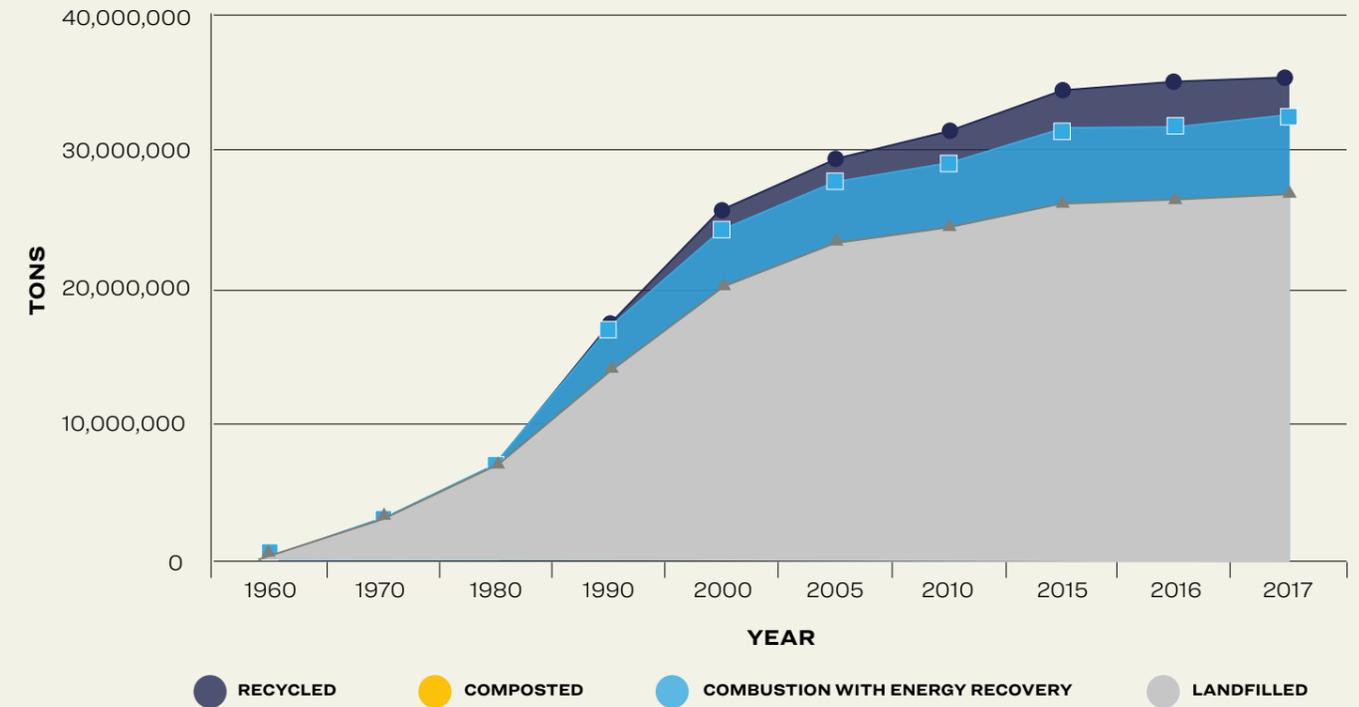


Figure 4.1: US plastic-waste management, 1960-2017 - Source: United States Environmental Protection Agency³³⁶



4.2. US: The war against plastic legislation

The US is facing a huge plastic pollution crisis, which was entirely predictable. Over the last few decades, the plastics industry has massively increased the supply of single-use plastics, with consumer-goods companies more than willing to package their beverages, cereals, snacks, cosmetics and other products using these cheap materials. At the same time, the industry has continuously promoted recycling as the solution to dealing with all this extra waste, funding efforts through seemingly pro-environment non-profits to lay the blame and responsibility for 'litter' on consumers and municipalities. This focus on recycling has acted a smokescreen, behind which the industry has opposed mandatory legislation - from bottle bills to plastic-bag bans.

4.2.1. A global leader in garbage

The US generates three times more garbage than the global average, and recycles far less of it than other high-income countries.³³⁷ It represents just 4% of the world's population but produces 12% of global municipal solid waste - 773kg per capita - of which 106.2kg (234lb) is plastic waste.³³⁸ In comparison, China and India make up more than 36% of the world's population and generate 27% of its waste.³³⁹

Nearly 1 million workers are employed in the US plastic supply chain, which is a sector worth over \$400 billion annually, according to industry data.³⁴⁰ According to the US Environmental Protection Agency (EPA), in 2017 the US produced over 35 million tonnes of plastic, yet fewer than 3 million tonnes were recycled.³⁴¹ As Figure 4.1 shows, plastic production has grown exponentially since the 1960s, less than 10% of which has been recycled; most of it has ended up in landfills or incinerated. Plastic bottles are recycled at a much higher rate in the 10 states that have bottle bills, but the US average rate has hovered between 28% and 31% over the last decade.³⁴²

For years, cities and waste-management authorities were able to put a band aid on the situation by exporting cheap – often contaminated – plastics to China. This all changed in 2018, when China implemented the National Sword policy, dramatically limiting the flow of plastics and other materials into the country.³⁴³ Other countries – such as Malaysia,³⁴⁴ the Philippines³⁴⁵ and Thailand³⁴⁶ – have followed suit, closing their borders to imported plastic waste. Coupled with low prices for nearly all recyclables, it is no surprise that recycling centres across the country are closing, kerbside recycling is being abandoned and more plastic is ending up in landfills and the environment. The fall in oil prices following the Covid-19 lockdowns further exacerbated this crisis, as the fall in price of virgin plastic makes it difficult for recycled materials to compete without supportive legislation.³⁴⁷

4.2.2. Derailing legislation

Legislation and regulation threaten to fundamentally change our business model. We can't continue to fight back just at the reactive stage when things are emotionally charged. We have to take the offensive.

– William Carteaux, former president of the Society of the Plastics Industry³⁴⁸

The US plastics industry has been extremely successful in delaying, undermining and pre-empting any attempt to introduce progressive legislation. Over the past decade, several states and local governments have passed bans on commonly wasted, unrecyclable, single-use plastics, such as plastic bags and polystyrene foam;³⁴⁹ however, the industry always vigorously attacked these efforts, which have, in many cases, even been rolled back at the state level. Industry groups associated with plastic producers mounted concerted efforts to block bans or other types of legislation, pre-empt the ability of local governments to pass them and delay their implementation.³⁵⁰ If they did pass, producers challenged them in the courts or through industry-funded voter referendums, and launched accompanying – heavily funded – disinformation campaigns. The Covid-19 health crisis has been the latest opportunity seized by the plastics industry to roll back some of the legislation, notably plastic-bag bans.³⁵¹

4.2.3. History of opposition

The plastics industry in the US is extremely powerful, and has been fighting legislation for over 70 years. Initially, the industry denied the problem, but this started changing due to environmental awareness; as the problem of marine pollution became undeniable, the industry changed tactics. According to Sharon Lerner's exposé for The Intercept, *[the] trick has been to publicly embrace its opponents' concern for the environment while fighting attempts at regulation behind the scenes*.³⁵² She writes that this 'strategy dates back to at least 1969, when an editorial in Modern Plastics magazine warned about the impending waste crisis'.³⁵³ That year, a conference on packaging waste was organised at the University of California at Davis, which showed the plastics industry was aware of the general plastic-waste issue – and, according to the Centre for International Environmental Law (CIEL), *'recognised the ways in which they contributed to the problem and the viability of different solutions'*.³⁵⁴

The industry turned to two key tactics: pushing the blame onto the public for littering, and promoting recycling as the solution. The 'Crying Indian' ad by Keep America Beautiful (KAB) came out in 1971, and had a profound impact on the American public and its perception of litter as their own individual responsibility. Although KAB was set up by packaging and beverage companies, they never publicised their involvement, and viewers were led to believe a neutral organisation created this ad.³⁵⁵

The solution presented for continuing to use plastics was recycling, and, in the mid-1970s, the industry started urging municipalities to run taxpayer-funded recycling programmes.³⁵⁶ At the same time, as a means to prevent

legislation – such as bans on different types of plastic or bottle bills – it spent millions of dollars on massive advertising and public relations campaigns, promoting recycling and extolling the virtues of plastic.³⁵⁷ A Frontline PBS investigation uncovered the industry's internal documents from the 1970s, which show they knew recycling plastic on a large scale was unlikely to ever be economically viable – but it was a great strategy to prevent legislation and improve the image of plastic.³⁵⁸ When legislation was proposed, the industry vigorously lobbied against it and used all kinds of legal and political tools to stop undesirable laws, as we will see in the following case studies.

4.2.4. Case study: Opposing bottle bills

As far back as 1969, at the first national conference on packaging waste, an industry insider explained the profit-driven trend away from deposit-type bottles: 'each deposit-type bottle displaced from the market means the sale of 20 one-way containers'.³⁵⁹ It is therefore no surprise that giant drinks companies (like Coca-Cola and PepsiCo) and their associations (like the American Beverage Association (ABA) and International Bottled Water Association (IBWA)) have been fierce opponents of bottle bills. Opposition also came from grocery and manufacturers' associations, waste haulers, and the wine and beer industries.

4.2.4.1. Beverage industry and bottle bills

Oregon was the first state to successfully pass a bottle-deposit law in 1971, and Vermont was the second in 1973; most of the other states with bottle bills passed their laws in the 1980s.³⁶⁰ Since 1987, however, only one state – Hawaii – has successfully passed a bottle bill, due to very strong opposition from beverage companies, grocery manufacturers and many of the non-profit groups they control. According to the Container Recycling Institute, opponents have spent huge sums of money *'to defeat ballot initiatives over the past twenty years, with industry opponents outspending proponents by as much as 30:1'*.³⁶¹ In 2019, such measures have been proposed in at least eight states, but nearly all have been rejected or failed to gain traction.³⁶²

Although the ABA and Coca-Cola, which have opposed bottle bills in the past, say they are no longer opposed – if they 'do not harm the comprehensive curbside recycling systems that consumers prefer'³⁶³ – a recent example from Georgia still casts doubts over where they stand. *The New York Times* reported that, in 2019, the Coca-Cola Foundation was making a \$4 million investment in Atlanta to showcase its World Without Waste campaign, which centred on increasing collection rates of bottles and cans.³⁶⁴ The idea was that the RP – an industry group whose members include Coca-Cola, PepsiCo and many other FMCGs – would pay city workers to comb through residential recycling bins for recyclable items. When participants at the meeting proposed a bottle bill as a proven way to increase recycling rates, Coca-Cola made its opposition to deposits clear, calling bottle bills inconvenient and costly.³⁶⁵

The ABA website promotes its commitment to recycling through its Every Bottle Back project, which Coca-Cola, PepsiCo and Keurig Dr Pepper launched in October 2019, in conjunction with WWF, the RP and Closed Loop Partners.³⁶⁶ The launch press release talked about *'directing the equivalent of \$400 million to The Recycling Partnership and Closed Loop Partners through a new \$100 million industry fund that will be matched three-to-one by other grants and investors'*, which *'will be used to improve sorting, processing and collection in areas with the biggest infrastructure gaps to help increase the amount of recycled plastic available to be remade into beverage bottles'*.³⁶⁷ The initiative boasted it would capture an additional 80 million pounds of PET bottles per year by reaching 9 million homes in the US. According to calculations by journalist Steve Toloken, this would have likely resulted in only a very small boost in the US PET-bottle recycling rate – from 29.2% to about 30.5%, based on the industry report that estimated total PET-bottle resin sales to be 5.91 billion pounds in 2017.³⁶⁸ Interestingly, there is no mention of bottle bills, which have proven high collection rates of clean PET that can easily be recycled back into new bottles.

Recycling rates in the 10 states with bottle bills are 2-3 times higher than in the 40 states without them. In addition, the quality of material is better (due to cleaner waste streams),³⁶⁹ which means rPET is more easily recycled back into bottles. This makes opposition to bottle bills by beverage companies, which have made significant voluntary commitments to increase recovery and recycled-content rates, increasingly untenable. Recently, some companies - including Coca-Cola and Nestlé Water NA - told an As You Sow survey they were in favour of deposit systems operated by producers, or by a consortium of stakeholders. PepsiCo and Keurig Dr Pepper were still opposed or neutral to all types of deposit systems. However, As You Sow cautions that 'brand endorsements of producer responsibility laws must be taken with a measure of caution', as they have, in the past, expressed principled support and then opposed concrete legislation due to disagreement with specific provisions of a bill.³⁷⁰ Still, our research shows none of the companies are publicly calling for enactment of bottle bills.

4.2.4.2. Opposing reform of existing bills

In addition to undermining proposals for new bottle bills, the industry has opposed modernisation of existing bills. For example, New York State proposed an update to its bill in 2009, which IBWA delayed using legal action.³⁷¹ Repeated efforts to reform the Californian bottle bill have been unsuccessful due to strong industry opposition. The redemption rates of consumers in California have fallen to 66%, and will continue to decline due to the closure of recycling centres, which makes it difficult for citizens to return their used containers.³⁷² The bill is in desperate need of an update, but the most recent attempt failed in early 2020. This bill, led by Senator Bob Wieckowski (D-Fremont), proposed reforming California's Beverage Container Recycling Program by shifting the system from one managed by CalRecycle (the state recycling authority) to an EPR system managed by the industry itself. The bill proposal included a four-year period in which beverage companies and distributors would be in charge of designing a new system.³⁷³

Among the main opponents of reform are waste haulers - companies in charge of picking up kerbside recycling, which currently benefit from a proportion of deposits from kerbside collection, even though this waste is often highly contaminated and non-recyclable. California is the only state that allows waste haulers to redeem consumer deposits; according to Consumer Watchdog, in 2017, waste haulers received over \$170 million in payments from CalRecycle for bottles and cans that ended up in kerbside recycling (around 12% of beverage containers),³⁷⁴ while recycling centres - where consumers bring their containers - received \$155 million for handling 88% of containers.³⁷⁵ Waste haulers also got paid \$13 million for scrap, and some (but not all) of these companies also run landfills and materials-recovery facilities. Waste Management (the largest waste hauler in California) was a key opponent of the bill, as was the Institute of Scrap Recycling Industries (which represents the recycling industry).³⁷⁶

The alcohol industry is opposed to efforts to expand the scope of the Californian programme to include wine, liquor and beer. In particular, the wine industry - led by the Wine Institute, which represents around 1,000 wineries - played a key role in the bill's defeat. According to Consumer Watchdog, the Wine Institute, along with large wineries like Southern Glazer's Wine & Spirit and EJ Gallo, donated roughly \$1.3 million to individual lawmakers between 2017 and 2019 to continue to be exempt from the bottle-deposit programme.³⁷⁷ In a local news piece, a Wine Institute representative said: '[Our] long standing, established opposition to being placed in a redemption program is mainly based on the fact that we don't believe people are likely to redeem heavy glass bottles'.³⁷⁸ However, a March 2020 YouGov opinion poll, commissioned by the Changing Markets Foundation, showed that 68% of Californians are in favour of extending the deposit system to include wine and liquor containers.³⁷⁹



| A recycling plant worker in California

| Credit: Les Stone



| Plastic bag litter in nature |

| Credit: pikist.com |

4.2.5. Case study: Delaying and undermining plastic-bag bans

Eight of the 50 US states - California, Connecticut, Delaware, Maine, New York, Oregon, Vermont and Washington State - have banned single-use plastic bags. Fourteen other states have pre-emptive laws, which prohibit the government from regulating containers (such as plastic bags, and, in some cases, bottles and foam foodware), while in six states there is threat of pre-emption, and in Florida there is an ongoing lawsuit to establish whether pre-emption is in place.³⁸⁰

In 2007, San Francisco became the first city to pass a ban on plastic shopping bags. Other cities and counties soon followed, passing their own bans. Seen as a direct threat to plastic-bag manufacturers, the industry has fought bans at every level ever since.

4.2.5.1. Lobbying against the bag bans

Leading the charge against bag bans is the American Progressive Bag Alliance (APBA), which represents the plastic-bag industry, and the ACC, which represents large petrochemical companies like ExxonMobil, Dow, LyondellBasell and SABIC. The ACC originally set up the APBA, which recently changed its name to the American Recyclable Plastic Bag Alliance. According to CIEL, during California's 2007-08 legislative session the ACC led a \$5.7 million campaign against plastic-bag bans. The group then spent over \$1.5 million to overturn a bag tax in Seattle in 2009, and over \$2 million when the California legislature was considering a state-wide ban in 2010.³⁸¹

Where laws have passed, the industry has challenged them through referendums. In 2014, California implemented a state-wide plastic-bag ban by passing SB 270, which banned the sale of most single-use plastic bags. The plastic-bag industry wasted no time fighting back; the APBA spent more than \$6 million gathering signatures and promoting a ballot initiative, Proposition 67, aiming to prohibit the state from enforcing the ban.³⁸²

The APBA failed in California, where voters voted in favour of upholding the bag ban, but it has succeeded in most states. Its latest win was New Jersey, which failed to pass a bill that would ban most retail store bags, foam food containers, some plastic utensils and plastic straws; media reports said the APBA, and plastic-bag manufacturers like Novolex, played a key role in its defeat.³⁸³ In addition to pushing for a delay in enacting the legislation, the industry wanted thicker-film plastic bags to be considered reusable, and thus not subject to the ban.

Where the industry did not manage to stop the bans, it tried to delay and weaken legislation. When New York City tried to pass a 10-cent bag fee in 2014, the APBA funded a local grassroots group, the Black Leadership Action Coalition, which opposed the legislation by arguing it would have a disproportionate impact on lower-income communities.³⁸⁴ The legislation was delayed for two years – and, when it finally passed in 2016, the fee was reduced to five cents. The New York City bag fee was pre-empted by the New York State legislature, which passed a state-wide bag ban in 2019. The enforcement of the ban, which went into effect in March 2020, was delayed due to an industry lawsuit;³⁸⁵ however, as part of its general misinformation campaign, the industry is framing this delay as being due to Covid-19.

4.2.5.2. Pre-emptive legislation to stop bans

Besides undermining any ongoing legislative efforts to ban plastic bags, the industry has also proactively introduced its own state-level legislation that pre-empts the introduction of local-level bag bans. According to Jennie Romer, an expert on bag laws, the plastics industry discovered it has more power at the state level, and has worked via The American Legislative Exchange Council (ALEC) to develop a model bill specific to banning local regulation of containers.³⁸⁶ According to Greenpeace, ALEC is a one-stop shop for elected officials pursuing corporate agendas on many different issues, and has deep ties with Koch Industries and Koch-controlled non-profits.³⁸⁷ In the past eight years, the ACC (a member of ALEC, along with PLASTICS) has helped pass pre-emption bills, based on ALEC's model, in 13 states.^{388,389} This model has proven effective because plastic-bag bans have their roots in grassroots activism.³⁹⁰ State legislators in Arizona, Indiana, Iowa, Michigan, Mississippi, Missouri and Wisconsin have pre-empted plastic regulation on all manner of containers (including Styrofoam™), as well as plastic bags, and much of the pre-emption legislation is worded identically.

Elsewhere, the Florida Retail Federation – which represents huge retailers, such as Walmart – convinced Republicans in government to include a pre-emption to local bag laws as part of a wide-ranging energy bill in 2008, which environmentalists otherwise welcomed as part of a response to climate change.³⁹¹ In Texas, the small border town of Laredo passed a plastic-bag ban in 2014, but had to reverse its decision following the Texas Supreme Court ruling the ban to be illegal – it violated a 1993 law that prevented cities or counties from banning containers or packaging.³⁹² The lawsuit was brought by the Laredo Merchant Association – but it was supported by the APBA and ACC, and funded by Novolex.³⁹³

4.2.5.3. Using the Covid-19 health crisis to reverse the bans

The plastics industry's most recent attempt to reverse the bans happened during the Covid-19 pandemic. Towards the start of the pandemic, two prominent studies found that coronaviruses can survive the longest on plastic, among other surfaces.³⁹⁴ Despite the original studies not testing reusable bags, soon after, several media outlets began to warn about the potential of reusable grocery bags in spreading the virus, conflating the Covid-19 study with older studies into the transmission of some types of bacteria via reusable bags.³⁹⁵ Crucially, these studies were industry sponsored; the ACC and Novolex paid for them.³⁹⁶

Throughout February and March 2020, a flurry of articles appeared in major media outlets – including the *New York Post* and *Wall Street Journal* – decrying plastic-bag bans and claims around unsanitary reusable bags.³⁹⁷ Most of these articles cited the original op-ed – written by John Tierney of the Manhattan Institute, which is funded by Exxon Mobil and Koch Brothers – which claims (without citations) the virus survives on reusable bags for nine days.³⁹⁸ According to Greenpeace, the media campaign appears to have been strategically targeted at states where plastic regulation was recently enacted or planned – including Maine, Maryland, New Hampshire, New York and Washington State – as well as at the municipal level in Albuquerque and Denver.³⁹⁹

US states that have plastic bag bans or pre-emption laws:

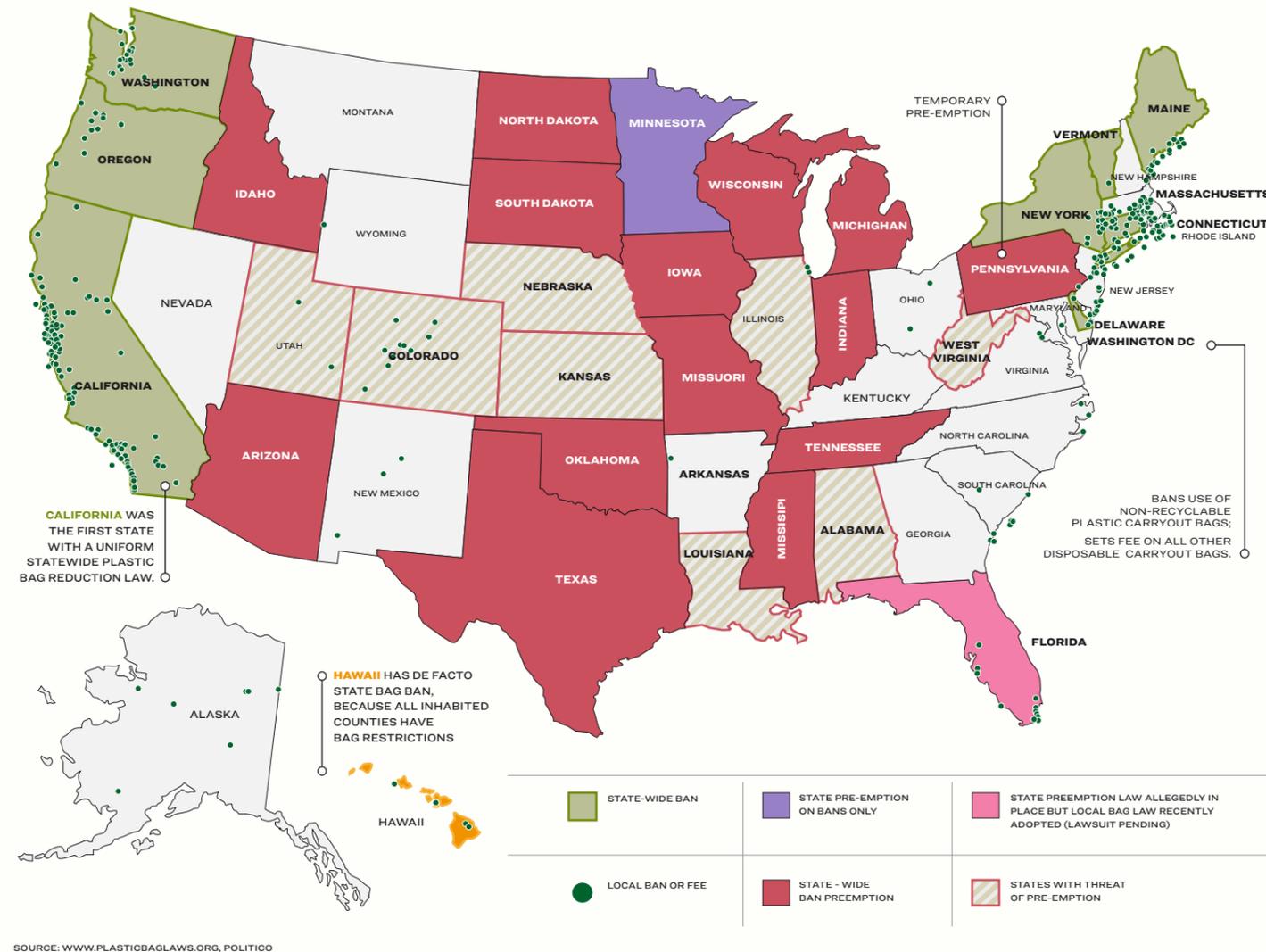


Figure 4.2: Plastic bag bans and pre-emption laws in the US⁴⁰⁰

At the same time as capitalising on pandemic fear, the industry was doubling down on efforts behind the scenes by lobbying legislators directly. In the midst of the media campaign in March, the Plastic Industry Association wrote to the US Health Secretary, Alex Azar, denouncing reusable bags and urging him to 'make a public statement on the health and safety benefits seen in single-use plastics'⁴⁰¹ – revealing that, all along, the industry's goal was not public health but pushing plastics. By capitalising on public fears and skewing scientific facts, the industry achieved reversals of bans on single-use plastic. Several states – Colorado, Illinois, Maryland, Massachusetts, and New Hampshire – have either stopped enforcing their bans or have banned reusables, while several cities (including San Francisco) and retailers also prohibited customers from bringing in reusable bags or cups.⁴⁰²

4.2.6. Pre-empting legislation at the national level

Despite the growing waste crisis, little legislation has been proposed at the national level in the US. This changed recently with the introduction of three bills in Congress that aim to address plastic pollution. Two of

them are weak, industry-backed bills, while a stronger third bill has already been heavily attacked by industry groups. This points to a growing trend in federal attention to recycling; action from either federal agencies or Congress is growing increasingly appealing to some in the industry, who are feeling the squeeze from the closure of waste-export markets and falling prices of virgin materials. In addition to these proposals, the EPA drew up plans to establish national recycling goals in 2020 - but these targets are entirely voluntary, like the agency's existing goal of reducing food waste by 50% by 2030.⁴⁰³

4.2.6.1. HR 5115: Realising the Economic Opportunities and Values of Expanding Recycling (RECOVER) Act

This bill has broad support from industry groups - PLASTICS, the ACC, the Association of Plastic Recyclers, the National Waste & Recycling Association, the Solid Waste Management Association of North America and the Sustainable Packaging Coalition all support it. Brands such as PepsiCo and Unilever have also expressed support.⁴⁰⁴

The bill would allocate \$500 million in matching federal funds, aimed at improving various aspects of collection and processing infrastructure, and would establish a recycling infrastructure programme within the EPA, but part of the funds would have to be ringfenced to support incineration. It would require the EPA to submit a progress report to Congress no later than two years after implementation.⁴⁰⁵ Otherwise, the bill neither includes any measurable targets nor addresses the key problem - growing production of single-use plastic.

In April 2020, during the Covid-19 pandemic, the industry wrote a letter to the House Speaker, Nancy Pelosi, asking her to include the RECOVER Act in the next pandemic stimulus bill.⁴⁰⁶ The industry group signatories - which increased their request for public funding to \$1 billion - claimed this 'immediate investment would start to reverse the current trend of landfilling valuable materials'.

4.2.6.2. S. 1982: Save Our Seas 2.0

As with the RECOVER Act, Save Our Seas 2.0 enjoys the support of the ACC, PLASTICS and other associations, like the Grocery Manufacturer Association and the Ocean Conservancy.⁴⁰⁷ It would earmark funds for clean-up efforts and processing technologies meant to reduce the amount of plastic that ends up in waterways. In a letter of opposition, Break Free From Plastic argued: *'the bill ultimately approaches the issue as one of waste management, not overproduction of plastic, and risks further entrenching the systems that produce plastic rather than dislodging them'*.⁴⁰⁸

Senator Tom Udall of New Mexico proposed several amendments that would strengthen this bill: adding a national container-deposit requirement, prohibiting certain types of single-use plastic, and preventing the bill from supporting chemical recycling and waste-to-energy.⁴⁰⁹ These amendments were not voted on. The bill passed the Senate unanimously in January 2020, and is currently in the House Subcommittee on Conservation and Forestry.

4.2.6.3. Break Free from Plastic Pollution Act of 2020

On 10 February 2020, Senator Udall and Rep. Alan Lowenthal of California introduced legislation that would create a national EPR programme and a 10-cent container-deposit system for plastics, while also banning certain plastic bags, disposable foodware and straws. The bill also has minimum recycled-content standards for plastic beverage bottles: 25% by 2025, 30% by 2030, 50% by 2035 and 80% by 2040. Requirements for other covered products would be set by the EPA administrator, in coordination with other stakeholders. EPR is also a strong component of the legislation, which *'aims to shift the large and growing financial burden of cleaning up plastic pollution from state and local governments to the companies that manufacture and sell the products'*.⁴¹⁰

Senator Udall notes the Act tackles the issue from a new angle, and that past approaches have *'been mostly supplied by industry, who would rather see taxpayers and the government resolve the issue'*. Rep. Lowenthal said: *'Save Our Seas 2.0 Act is a good step, but it doesn't deal with the source of the problem, and it doesn't put the responsibility on the producers for the financial resources needed for the design and the management of cleaning it up'*.⁴¹¹

Thus far, no Republicans have come out in support of the bill; nor has the White House released any statement with regards to it. Rep. Lowenthal said opposition from the plastics industry is expected, but that he also believes there is bipartisan support in Congress for addressing plastic pollution. Agence France Presse (AFP) reported that the bill *'has little chance of passage in the Senate where a Republican majority opposes curbs on an industry that generates about \$400 billion in sales and maintains almost a million manufacturing jobs'*. Udall told AFP that, while his bill was unlikely to become law soon, it was intended as a model, *'so that when we have an administration and a Senate that's more receptive, that we can get something done'*.⁴¹²

Prior to its introduction, the ACC pushed Save our Seas 2.0 in its official response to the bill, and said banning certain plastics *'would have the unintended consequences of increasing greenhouse gas emissions and other environmental impacts'*. Upon introduction, the ACC released a press release that stated *'suggestions, such as a moratorium on new plastic facilities, would limit domestic manufacturing growth, jobs, tax revenues for local communities, and other benefits'*, and argued the bill *'would lead to increased environmental impacts'*. It also highlighted its existing work, including the Alliance to End Plastic Waste, as an adequate solution.⁴¹³ PLASTICS has also come out against the bill.

4.2.7. Distracting: Blaming the consumer for littering and making them responsible for recycling

End users of packaged goods - citizens - are integral to sustainable material management. Without their participation the material loop cannot be properly closed.

- How2Recycle website (Green and Blue)⁴¹⁴

No doubt about it, legislation [restricting plastics] is the single most important reason why we are looking at recycling.

- Wayne Pearson, Executive Director of the Plastics Recycling Foundation⁴¹⁵

The industry has turned to recycling as a convenient way to distract environmentalists and government authorities, offering what seemed to be a solution to the growing waste crisis.

Early on, it founded separate institutions that were in charge of such initiatives - such as the Plastics Recycling Foundation, an initiative that 45 companies (such as Coca-Cola and PepsiCo) formed in the mid-1980s;⁴¹⁶ and the Council for Solid Waste Solution, to promote recycling programmes and infrastructure while also pushing for incineration - as a form of recycling.⁴¹⁷ Currently, the main industry-funded organisations with similar agendas - to co-ordinate recycling, and the private funding that supports it, while simultaneously supporting communicating to citizens that this is the solution - are the RP, Closed Loop Partners and the Sustainable Packaging Coalition. In addition, the How2Recycle® programme - an initiative to standardise recycling information through labels informing consumers what types of packaging can be recycled - is continuing with its corporate communication to consumers about the recyclability of different products and importance of recycling.

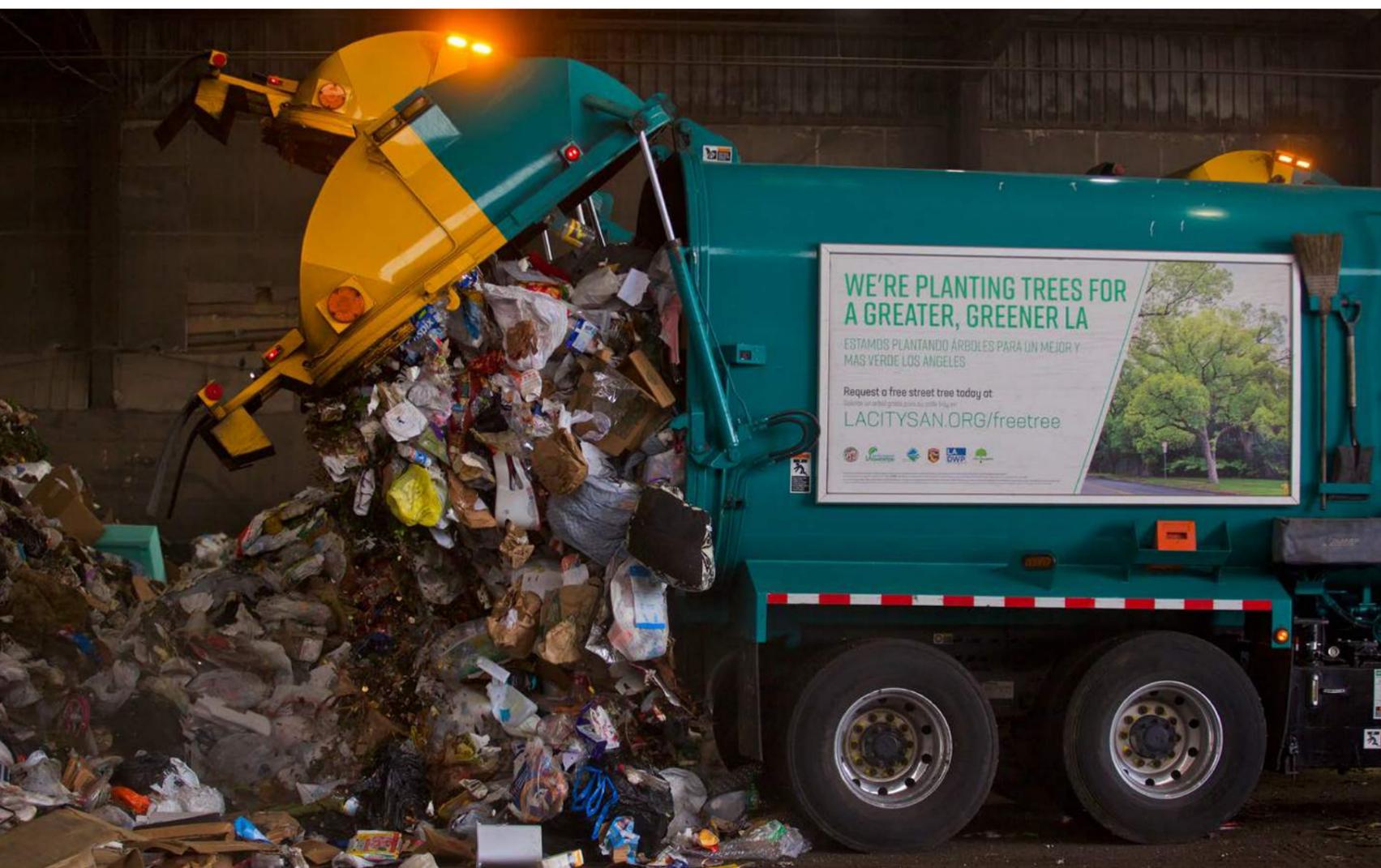
However, a significant amount of evidence, including internal industry documents, points to the fact that the industry knew recycling was a limited solution from the start. The evidence against recycling ranged from the warning that there is no market for recycled plastics to the fact that recycling is not feasible for most multi-material or multi-laminate packages. These facts are still true, but this did not stop the industry coming out with new recycling pledges and initiatives, while at the same time pushing most of responsibility onto consumers and municipal authorities. Early industry documents also show the industry did not feel responsible for plastic pollution in the ocean, concluding that most marine debris (with the exception of resin pellets) is *'the result of activity by individuals beyond the 'control' of the plastics industry'*.⁴¹⁸ To deal with this problem, the industry largely focused on *'public education encouraging the proper disposal of plastics and other materials as the most effective way to reduce harm to the marine environment'*.⁴¹⁹

4.2.7.1. A network of organisations, set up by brands to promote recycling - without legislation

Keep America Beautiful (KAB) was founded in 1953 by the packaging and beverage industry. Its focus has been to push the responsibility for waste, litter and recycling away from the companies producing single-use packaging and onto consumers and municipalities. As we have seen, this well-funded organisation initiated a massive media campaign against individuals' littering, rather than exposing corporate responsibility for producing this litter in the first place.⁴²⁰ According to Mother Jones, within its first few years, KAB had state-wide anti-litter campaigns either planned or running in 32 states, which shifted the entire debate about America's garbage problem. The focus on regulating production - like the introduction of bottle bills or refillable containers - disappeared, and there was no new legislation on packaging. Instead, the 'litterbug' became the real villain, and individual behaviour was to be regulated by fines and jail time for people who carelessly tossed out litter.⁴²¹

'We're planting trees for a greater, greener LA'

Credit: Les Stone



These industry cover groups also constantly invent new tricks. As not everything can be 'recycled', the KAB - in partnership with Dow and the Flexible Packaging Association (FPA) - developed a new feel-good alternative to keep using the single-use plastic: 'The Hefty EnergyBag'.⁴²² This was aimed at diverting non-recycled plastics into a separate consumer waste stream and converting this into energy in two cities: Omaha and Nebraska.⁴²³ But the inconvenient truth of the energy bag is that, far from being recycled, it is simply burned.

Almost 80 years later, KAB's relationship with the industry remains cosy - its director is also the Chief Financial Officer of Dow, another board member is from PepsiCo, and other corporate members and supporters include Coca-Cola, DART, Mars, and Nestlé.⁴²⁴ While KAB remains influential, and continues to push its message of consumer responsibility, it now has a sister organisation: The Recycling Partnership (RP). RP describes itself as a 'force for improving recycling'. While acknowledging a problem with recycling in its current form, its focus is not on reducing production of single-use plastic but using technological innovation and investment to scale up the recycling infrastructure. RP's membership includes several companies cited as key sources of ocean plastic pollution: PepsiCo, Colgate-Palmolive, Nestlé, P&G and DART. RP also has close ties to several industry groups representing plastic producers (such as the IBWA), and has board members from the ACC and ABA - key groups in preventing legislative action on plastic across the country.

RP's recent report, *The Bridge to Circularity* - published to support the implementation of pledges made by companies as part of the *EMF New Plastics Economy Global Commitment* - claims *'massive national and industry-wide efforts'* will be needed to create a more circular economy for plastics in the US.⁴²⁵ The report estimates that, to reach a 25% recycled-content target for PET bottles, brands need an *'additional 1.1 billion pounds of r-PET resin to be recycled and used in bottle-grade r-PET—a three-times increase over the current amount available'*, which translates into the need for a 27% growth in the US PET recycling rate. Although the report recognises that states with bottle bills have collection rates between 60-90% (as opposed to other states, where PET capture can be as low as 10-15%), it fails to recommend this as a way forward.⁴²⁶ It says that: *'there is a lack of industry alignment on deposit expansion among the Global Commitment signatories that are most aggressively seeking access to more material'*, and that the *'expansions of current deposit laws have largely not succeeded and are counterbalanced by political action to eliminate such laws'*.⁴²⁷ Such opposition, again, puts a big question mark over how genuine the efforts of these organisations are, and points to this being just the latest form of greenwash.

Another recent organisation established by brands is Closed Loop Partners, which was created in 2014 as a \$100 million fund for improvements in kerbside recycling infrastructure, following Walmart's original stakeholder-convening initiative.⁴²⁸ The fund became an investment firm, raising \$700 million in capital to support improvements in recycling. It is supported by Coca-Cola, Colgate-Palmolive, Johnson & Johnson, Keurig Dr Pepper, McDonald's, Nestlé, Nestlé Waters NA, P&G, PepsiCo, Starbucks, Unilever, Walmart, Wendy's and Yum! Brands.⁴²⁹ A recent Closed Loop Partners report called for increased investment in chemical recycling, which could unlock *'potential revenue opportunities of \$120 billion'*, as, in their view, demand for recycled materials outpaces supply.⁴³⁰ The answer to why Closed Loop Partners do not promote proven methods for obtaining higher amount of recyclates, like bottle bills, probably lies in its corporate supporters.

According to As You Sow, the cumulative funding of RP and Closed Loop Partners represents only about 7% of what is needed to fix the US recycling system.⁴³¹ Our own analysis shows that many corporations supporting these 'partnership approaches' are in fact lobbying - both openly and behind the scenes - against legislation that would increase recycling and oblige them to invest in infrastructure, whether through producer-responsibility legislation or through expansion or improvement of existing bottle bills.

Box 4.1: Masters of distraction: Recyclable... or not?

In response to growing public concerns about plastic pollution, many corporations are making high-profile public commitments to make all their products recyclable, reusable or compostable. According to The Intercept, the How2Recycle programme – an initiative by Sustainable Packaging Coalition and NGO GreenBlue – makes some plastic products seem far easier to recycle than they actually are.⁴³² The number of brands and retailers in the initiative grew by 45% in 2018, while the number of products carrying the How2Recycle label was growing at the rate of 80 new products daily at the time.⁴³³

The Intercept reported that the How2Recycle label is now affixed to several products that are all but impossible for many consumers to recycle, including cups, plates, and containers made from plastics #3 to #7, all of which have recycling rates close to zero.⁴³⁴ Asked about the 'guilt-free' pouch, Kelly Cramer, director of How2Recycle at GreenBlue, responded that the product was not 'appropriately qualified' for the label, and said that the organisation would 'reach out to this company immediately to rectify'.⁴³⁵ Although How2Recycle provides 'not recyclable' as well as 'recyclable' labels, it is the member companies' choice whether to apply them.⁴³⁶ In addition, many labels state that consumers must 'check locally' whether packaging can be recycled, which, according to As You Sow, limits the 'value of the label ... requiring consumers to do additional research to determine if a specific packaging is recycled in their community'.⁴³⁷

How2Recycle is not the first attempt to promote different types of plastic as recyclable. The widely used chasing-arrows symbol, and a numbering system identifying different types of plastic resin, was created by the Society of the Plastics Industry in 1988. According to a Frontline PBS investigation, the plastics industry went around individual states and quietly passed legislation requiring this label to be added to containers.⁴³⁸ This – in combination with the word 'recyclable', which is also printed on the containers – created the impression that all those types of plastic are actually *being* recycled, despite recyclers being unable to sell or recycle these materials.⁴³⁹



A recent Greenpeace report investigated the legitimacy of recyclable claims through a comprehensive survey of US collection, sorting and post-consumer plastic-reprocessing facilities.⁴⁴⁰ It concluded that only PET #1 and HDPE #2 bottles and jugs, with acceptable shrink sleeves and labels, can be claimed as recyclable in the US, and are recycled at a rate of 18.2% and 9.4% respectively. The many other types of consumer plastic products and packaging are neither recyclable nor legitimately recycled – and, by labelling them as such, companies are exposed to legal, reputational and financial liability risks. For example, plastic wrappers and pouches only have one Material Recovery Facility (MRF) pilot programme that recycles them.⁴⁴¹ On the other hand, the ACC created the Wrap Recycling Action Program (not to be confused with the UK's WRAP) to raise 'public awareness to make plastic film – including wraps, bags, and flexible packaging – a commonly recycled material'.⁴⁴² Plastic bags are only accepted at 4% of all MRFs, despite the WRAP's goal to increase recycling to 2 billion pounds by 2020. WRAP prides itself that over 70 million Americans have been exposed to its messaging since 2014,⁴⁴³ and supports the How2Recycle label, informing consumers to recycle these types of packaging via store drop-offs, or to 'check locally'.⁴⁴⁴ Stores only downcycle these materials, and the industry is misleading the consumer about the ability to recycle wraps and similar materials.

Greenpeace recommends that companies have credible in-house expertise on the local recyclability of their products, and verify the accuracy of labels themselves.⁴⁴⁵ In addition, they should make direct investments in collection, sorting and proven mechanical reprocessing of the specific type of plastic product.⁴⁴⁶ According to Greenpeace, companies that make unsubstantiated recyclable claims could be liable for misrepresentation.

It will be interesting to observe whether companies' liability for these claims will be tested in the US courts. The Earth Island Institute recently launched a lawsuit against the biggest plastic polluters – including Coca-Cola, PepsiCo and Nestlé – for their contribution to the plastic pollution crisis, claiming the key aspects of these companies' misinformation campaign are the ideas that plastic is recyclable, and that recycling is the responsibility of consumer rather than the producer.⁴⁴⁷

PLASTIC RESIN IDENTIFICATION CODES



PERCENTAGE OF GLOBAL PLASTIC WASTE, 2015

EASE OF RECYCLING BY TYPE

- EASY ●
- DIFFICULT ●
- VERY DIFFICULT ●



Figure 4.3: Plastics by numbers

4.2.8. Promoting industry-friendly studies and research

The industry also works through the FPA, which includes nearly all the country's major plastic and plastics-chemical companies, and represents chemical companies and plastic-bag manufacturers that produce thick-plastic packaging products - from bags, Saran™ wrap and bubble wrap to plastic lids.⁴⁴⁸ These products are among the most difficult to recycle and the most harmful for the environment.

The FPA has been on the frontline of actively misinforming the public through the release of several life-cycle assessments (LCAs). These studies focus on some of the top sources of discarded, non-recycled or recovered plastic waste - coffee lids, laundry-detergent pods, single-serve juice packages and baby food - and compare them to metal, plastic PET/HDPE on water usage, carbon impact and material to landfill. They mostly come out in favour of flexible plastic, ignoring the fact that flexible packaging is rarely recyclable (instead, they blame lack of consumer participation in collection as the key problem in waste management) and failing to assess the impacts of plastic that ends up in the environment or ocean. And there's another problem - these studies were commissioned to PTIS LLC, itself a packaging consultancy, not an independent or academic institution.⁴⁴⁹ This conflict of interest is disclosed in neither the case studies nor the accompanying materials.

Industry groups cite the FPA studies and use them to lobby against proposed legislation. When Charleston, South Carolina, was considering a plastic-bag ban in 2015 and 2016, the industry countered with a range of materials, including academic research.⁴⁵⁰ This included a 2014 study with an LCA of grocery bags, which concluded that bans *'may result in negative impact on the environment rather than positive'*.⁴⁵¹ A deeper look by Public Integrity uncovered that Hilex Poly Co. (Novolex's previous name) paid for the research, while, according to Greenpeace research, lead author Robert Kimmel is the director of Clemson's Center for Flexible Packaging, which is funded by membership fees from plastic converters and packaging manufacturers.⁴⁵²

Other groups use similar tactics. In its public messaging, the ACC regularly cites a 2016 study by the firm Trucost⁴⁵³ (owned by the financial firm S&P Global), which it claims shows that *'replacing plastics with alternatives in common packages and consumer products would raise environmental costs nearly fourfold'*. It focuses on the lighter weight and durability of plastics compared to alternatives in industrial use, while downplaying the long-term environmental impacts of single-use plastics. These studies, and their potentially false conclusions, confuse and undermine factual analysis on plastic's true impacts on climate and the environment.

4.2.9. Lobbying through fake environmental groups

In June 2019, a new group was registered in California - Californians for Recycling and Environment (CRE). Behind this seemingly green name was a lot of dirty plastic money. The group, founded by plastic-bag manufacturer Novolex, was led by two Novolex staff members. Its goal was not to promote environmental solutions but rather to fight against efforts to ban plastic, or restrict the production of plastic products, in California. Some environmental organisations believe CRE was formed specifically to fight the California Circular Economy and Pollution Reduction Act (SB54) - a piece of legislation that would impose a comprehensive regulatory scheme on producers, retailers and wholesalers of single-use packaging. The bill's aim is that, by 2030, manufacturers and retailers will achieve a 75% reduction in the waste generated from single-use packaging and products offered for sale or sold in the state through source reduction, recycling or composting. It has garnered fierce opposition from not only CRE but also the ACC and PLASTICS. Thus far, CRE has spent nearly \$1 million dollars opposing EPR legislation in California, including lobbying against SB54.⁴⁵⁴



Waste sorting centres in California |

Credit: Les Stone |

4.2.10. Where next for US plastic pollution legislation?

For decades, the American plastics industry has successfully avoided legislation by ploughing millions of dollars into distraction campaigns, putting the blame on consumers for littering, and promoting recycling as a way out of the crisis. The overall rate of recycling has been less than 10%, while the production of plastic has grown exponentially, and a significant amount of new capacity is in the pipeline. The industry has constantly reinvented new organisations that, on the surface, look like a serious attempt to improve recycling infrastructure - but a closer look at what they promote shows excessive reliance on voluntary approaches and false solutions, like chemical recycling, under the guise of innovation. None of these industry-funded organisations has supported proven ways of bringing the plastic crisis under control, like bottle bills, producer responsibility and a greater focus on reuse.

Pre-empting, rather than waiting for, legislation has been another key industry tactic - whether attacking local bag bans or state legislation. We're currently witnessing an attempt at the federal level to pass weak RECOVER and Save our Seas 2.0 acts, which ask for significant sums of public funding, without making the industry accountable for plastic pollution and financially responsible for solving it. The industry is using the Covid-19 health crisis to justify its latest demand for public funds. However, at the same time it is also exploiting public fear to undermine any restrictions on single-use plastics, like bag bans, and to introduce even more single-use plastic in a post-COVID world.

Despite the flurry of voluntary initiatives, consumer brands only cover around 7% of what is needed to fix the US recycling system.⁴⁵⁵ These companies have fought producer-responsibility legislation for decades, and, unlike Europe, no US state has EPR legislation in place for packaging. As we have seen, the industry is also fighting bottle bills, although the recycling rate for beverage containers has stagnated at around 30% for many years - except for the 10 states that have bottle bills, where the rate is between 66% and 96%.⁴⁵⁶ Brands' commitments to make their products recyclable and increase the share of recycled content will, once again, dissolve into empty promises without legislation that supports collection and delivers clean materials for recycling.

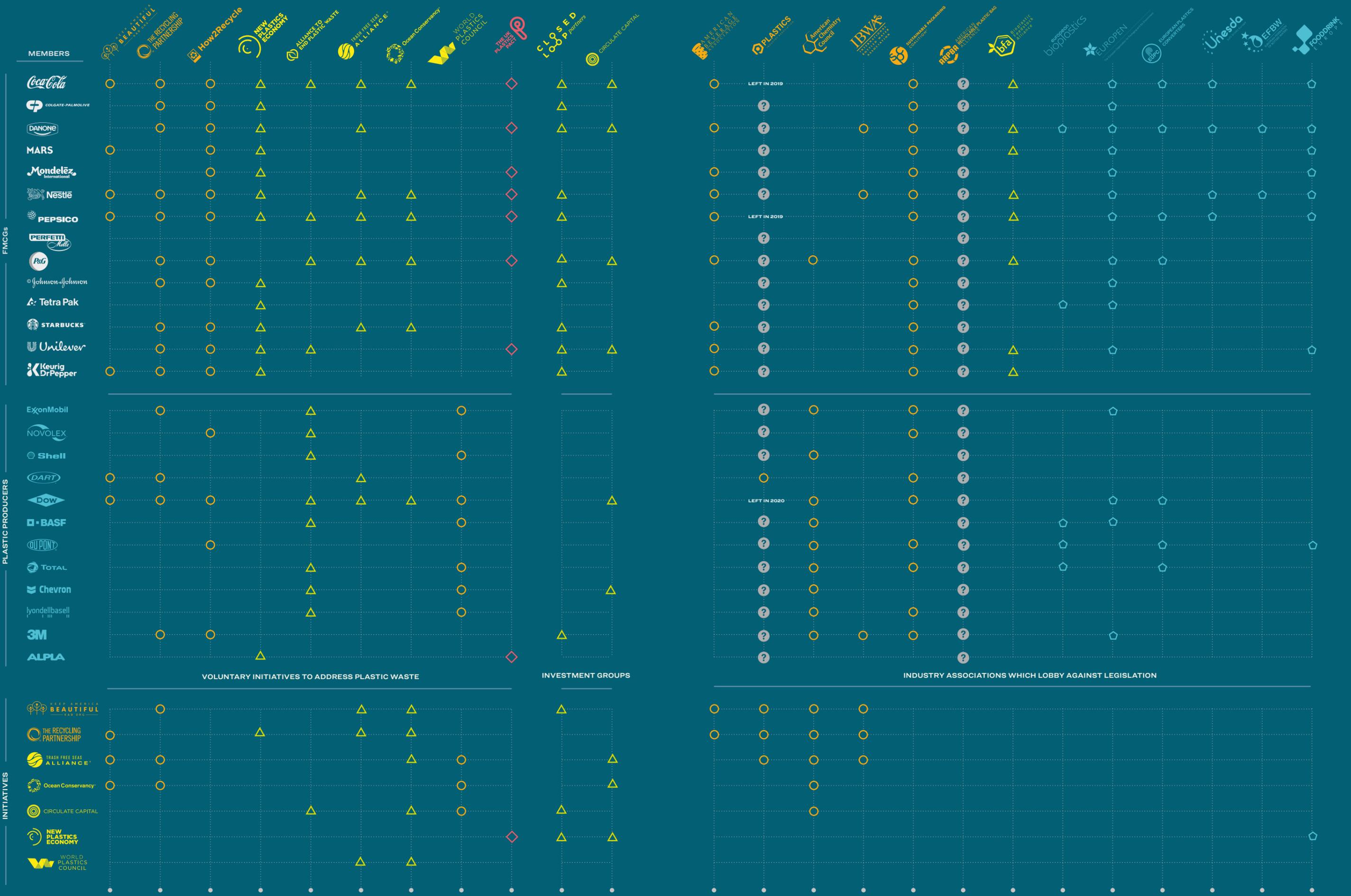
REVOLVING DOORS BETWEEN DIFFERENT INDUSTRY INITIATIVES

△ GLOBAL ORGANISATION |
 ○ US ORGANISATION |
 ◇ UK ORGANISATION |
 ◡ EU ORGANISATION |
 ? NO TRANSPARENCY ON MEMBERS

VOLUNTARY INITIATIVES TO ADDRESS PLASTIC WASTE

INVESTMENT GROUPS

INDUSTRY ASSOCIATIONS WHICH LOBBY AGAINST LEGISLATION





4.3. The EU: Time's up for single-use plastic?

The plastics industry is a powerful lobby in Europe, represented through numerous industry associations, consultancies and lobby groups. PlasticsEurope is one of Brussels' biggest lobby groups, with members including all the big names in chemicals and petrochemicals: BASF, Borealis, Dow Europe, ExxonMobil Chemical, Ineos, Novamont, Solvay and many others.⁴⁵⁷ Another industry association - which recently sent an open letter to delay the implementation of the EU SUP Directive in light of the Covid-19 crisis - is the EuPC, which represents all sectors of the European plastics-converting industries.⁴⁵⁸ The industry also has a specific association representing recycling - Plastics Recyclers Europe (PRE), which represents 500 companies with a combined €3 billion turnover⁴⁵⁹ - and another representing packaging - the European Organization for Packaging and Environment (EUROPEN), whose members range from Arcelor Metal, BASF and major FMCGs, like Coca-Cola, Danone, Mars and L'Oreal.⁴⁶⁰

The plastics industry also works through numerous, more specific, trade bodies and seemingly independent environmental organisations. For example, CEO revealed that Pack2Go Europe (a trade association for the convenience-food-packaging industry) and Serving Europe (a trade association for the fast-food industry) are both initiatives of notorious EU lobbyist, Eamonn Bates.⁴⁶¹ On behalf of all these organisations, Bates has proactively lobbied on European and national legislation on single-use-plastic packaging, attempting to reframe the issue as one of litter rather than of corporations taking responsibility for their products and their opposition to DRS in Ireland. Pack2Go also established an organisation called Clean Europe Network,⁴⁶² which, according to CEO's exposé, remained closely connected with Eamonn Bates's consultancy, and represented industry interests by putting litter centre-stage in the political debate on packaging waste and ensuring industry contributions should only be voluntary. Member organisations Keep Scotland Beautiful, Mooimakers in Flanders and Nederland Schoon in the Netherlands openly opposed policies on DRS in their respective legislatures.⁴⁶³

In addition to specific groups set up to defend industry interests on plastic, the same companies are also members of many national and European associations - ranging from FoodDrinkEurope to Business Europe (a very powerful group representing all businesses in Europe) - and influence EU policy in the guise of these little-known groups, where the lowest common denominator often prevails in defending industry interests from policy interventions. The European Soft Drinks Industry (UNESDA) and European Federation of Bottled Waters (EFBW) - whose members include Coca-Cola, Danone, Pepsi and Nestlé - were especially active in lobbying on the SUP Directive.

The industry has tried to delay and undermine the ambition of EU legislation on waste, plastics and other aspects of the circular economy for many years. In this section, we investigate its attempt to influence the Plastics Strategy (since 2017) and the SUP Directive (proposed in May 2018).

4.3.1. The industry's attempt to weaken the Plastics Strategy

Corporate lobbyists initially focused on the European Commission (EC) - the institution that proposes legislation and was therefore in charge of drafting the Plastics Strategy, which set out how plastics would be addressed under the EU's plan for a circular economy. Of the 92 EC lobby meetings on the Plastics Strategy, 76% were with corporate interests.⁴⁶⁴ Access to information requests by CEO revealed the industry's response was not blatant opposition but broadly welcoming - while still delaying and derailing legislative efforts.⁴⁶⁵ The EC held several meetings with the industry to try to obtain concrete commitments on the way forward in the Plastics Strategy, but the industry ultimately succeeded in avoiding any mandatory measures and delaying voluntary commitments.⁴⁶⁶

The main objective of the Plastics Strategy was that, by 2030, all plastic packaging placed on the EU market should be either reusable or recyclable cost-effectively - with 55% actually being recycled.⁴⁶⁷ Annex III calls on stakeholders to make voluntary pledges to boost the uptake of recycled plastics - which would ensure that, by 2025, 10 million tonnes of recycled plastics would find their way into new products on the EU market.⁴⁶⁸ The EC would only consider taking action if the pledged contributions were deemed insufficient.

Some voluntary commitments were published at the same time as the strategy (January 2018), but they were notably weaker than those the EC promoted. PlasticsEurope expressed an ambition to reuse and recycle 60% of plastics packaging by 2030, and said: *'this will lead us to achieve our goal of 100% reuse, recycling and/or recovery of all plastics packaging in the EU-28, Norway and Switzerland by 2040'*.⁴⁶⁹ Voluntary commitments from the EuPC and PRE were also 10 years behind the EU proposals - they stated they would *'launch Circularity Platforms aiming to reach 50% plastics waste recycling by 2040'*.⁴⁷⁰

CEO notes that the EC created the CPA because of the failure to include voluntary industry commitments in the strategy, and because industry pledges failed to meet the minimum targets the EC had pushed for.⁴⁷¹ In essence, the CPA was the most buy-in the EC was able to achieve from industry - but even this led to more delays. In May 2018 - more than three months after the Plastics Strategy launch - no pledges had been received. Instead, there had been lobbying calls from BusinessEurope - the corporate world's most significant EU lobby group - for 'flexibility' on the 30 June 2018 deadline, and a strong expression of support for voluntary approaches.⁴⁷²

The EC launched the CPA in December 2018, saying it would invite key industry stakeholders to join. In the press release, the EC said its preliminary analysis of the pledges *'indicates that at least 10 million tons of recycled plastics could be supplied by 2025 if the pledges are fully delivered'* - but, on the demand side, *'only 5 million tons will be absorbed by the market'*.⁴⁷³ From the CPA's meeting in September 2019, and its formal launch, it seemed the industry had committed to work together to actually absorb this recycled plastic and convert it into new products.⁴⁷⁴ However, environmental NGOs were excluded from any involvement in drafting the CPA's declaration, and have criticised its lack of transparency, lack of ambition, insufficient emphasis on reuse and redesign, omission of risks associated with the presence of toxic substances in plastic waste, and emphasis on investments in chemical recycling.⁴⁷⁵

4.3.2. Lobbying around the EU SUP Directive

The SUP Directive, whose primary aim is to reduce environmental litter,⁴⁷⁶ was formally adopted in April 2019 and published in the Official Journal of the European Union in June 2019. The measures it established include outright bans of certain single-use plastic products, consumption reduction for others, EPR, marking and labelling requirements, awareness-raising measures and separate collection. Some of the key elements of the Directive are:

- EU-wide bans for 15 items (e.g. plastic plates, cutlery, straws);
- consumption reduction and fee-modulated EPR schemes for a number of plastic products;
- an obligation to separately collect 90% of beverage bottles put on the market by 2029, with an intermediate target of 77% by 2025; and
- design requirements for products, including an obligation for drinks containers to have attached (or tethered) lids or caps by 2024, and an obligation for beverage bottles to include at least 30% recycled content by 2030 (and, for PET bottles, at least 25% by 2025).⁴⁷⁷

The speed at which the Directive was drafted and adopted caught both the industry and NGOs by surprise; proposed in May 2018, it took just eight months for the main EU institutions to agree on a text. A range of different industry groups was involved in lobbying on various aspects, though the activity of bottled-drinks companies and their industry federations - UNESDA and EFBW - was particularly notable, given that so much of the legislation related to beverage bottles.

The final text of the legislation remained broadly intact from the original EC proposal, though the industry won some important concessions at the last minute - the most significant changes occurred at the final stage of the negotiations. Although unwilling to compromise on substance, the EU institutions did compromise on targets and timeframes, delaying more ambitious targets for single-use plastic collection and recycled content, as well as the introduction of tethering caps to bottles.⁴⁷⁸

CEO's investigative research shows that various member-state officials working on the single-use-plastics proposal reported 'a lot of lobbying' on this issue, and that it had been 'very intensive'.⁴⁷⁹ Officials reported that many different industrial sectors had contacted them, including via lobby emails, requests for face-to-face meetings, invitations to attend debates and events, and the circulation of position papers. One member-state official noted 'that the level of industry lobbying outnumbered that by NGOs three-fold'.⁴⁸⁰

Below, we outline some of the main findings of our investigations into lobbying around the SUP Directive. As we will see later, lobbying continues - at both the EU and national levels - to weaken implementation of the Directive.

4.3.3. Tethered caps

The requirement to attach caps and lids to beverage containers was a major battlefield. Plastic caps and lids are a significant source of marine litter; they easily enter the natural environment, and are hard to collect for recycling, if they are not attached to beverage containers. The major FMCG companies, however, strongly opposed

Loose bottle caps in a kerbside collection
Credit: David Mirzoeff



the introduction of tethering caps by design as a solution to this problem. A leaked letter - written by Coca-Cola, Danone, PepsiCo and Nestlé, and sent to Frans Timmermans, First Vice President of the European Commission, on 9 October 2018 - revealed their strong opposition; they suggested 'that tethered caps will only become mandatory if our proposed alternatives do not prove to be effective by end of 2021'.⁴⁸¹ Their proposed alternatives included DRS or EPR schemes, combined with consumer-awareness education.

Two major EU FMCG lobby groups, UNESDA and EFBW, commissioned the consultants PricewaterhouseCoopers (PwC) to conduct an impact assessment on the proposed measure, and used these inflated figures extensively in their lobby meetings. They claimed introducing the measure could require 50,000-200,000 tonnes of additional new plastic, leading to carbon emissions equivalent to adding 244 million cars to the roads. PwC also estimated the cost of the disruption to bottle-production lines across Europe as €2.7-8.7 billion.⁴⁸² The industry also claimed no technology existed for the design of tethered caps, despite the existence of solutions using minimal additional plastic.⁴⁸³

An email (released under an FOI request) shows that, on 23 November 2018, UNESDA met with a member of Frans Timmermans' cabinet to outline the figures in the forthcoming PwC report.⁴⁸⁴ The email correspondence reveals the industry presented even more inflated costs at the meeting (€4.9-13.6 billion), instead of the substantially lower figures (€2.7-8.7 billion) in the final PwC report. Although the meeting was with UNESDA, it is telling that the email correspondence came from Hans Van Bochove, Vice-President of European Public Affairs for Coca-Cola European Partners, who is also chairman of the lobby group EUROPEN. A further released email reveals UNESDA also targeted the EU Council; on 20 November 2018, it invited all permanent representatives to a meeting to present the PwC findings.

Other evidence released reveals that, on 10 December 2018, FoodDrinkEurope (including representatives from Nestlé, PepsiCo and Coca-Cola) organised a meeting with cabinet members representing Vella, Timmermans and Katainen to lobby against tethered caps. Again, the industry said the measure would be very damaging, and proposed waiting until 2025 to see if 90% of plastic caps could be collected as part of the 90% collection target. The industry said it was confident many member states would raise this issue at the final trilogue^b meeting,⁴⁸⁵ indicating its belief that its lobbying against this proposal had been successful.

Although the lobbying took place behind the scenes, UNESDA and EFBW also made their position on tethered caps public in a post on *Politico* in December 2018. The article, titled 'More plastic, more carbon, more cost: Why attached bottle caps are not the way to fix waste', is also available on Coca-Cola's EU Dialogue webpage.⁴⁸⁶

4.3.4. 90% separate collection for beverage bottles

The EC's original proposal stated the 90% collection target should be achieved by 2025. The four-column document, which showed the positions of different institutions regarding the final meeting of the trilogue process, clearly demonstrates that lobbying had taken place to delay target dates - the Commission and European Parliament agreed on a 90% collection rate by 2025, but not the European Council, which proposed 90% by 2030. In the final text, the agreed figure is 90% by 2029 with an intermediary target of 77% by 2025.

The SUP Directive mentions the introduction of DRS as a means to achieving a 90% separate-collection rate, but member states are, in theory, able to choose the system they want - despite all evidence showing that, without DRS, it is impossible to achieve these collection rates. The industry is divided when it comes to the introduction of DRS, and our country case studies reveal the battles that have now moved to the national level, with many industries trying to delay the introduction of DRS for as long as possible. However, some actors have changed their

^b Trilogue refers to a series of meetings between the representatives of the European Commission, Council and the European Parliament, which is part of the EU legislative process to reach an agreement between the three institutions on a specific piece of legislation.

opinions on this issue due to the obligation to include recycled content in beverage containers. DRS delivers a clean and high-quality stream of plastic recyclates, and will essentially finance itself - via the deposit - once the infrastructure is in place.⁴⁸⁷ This requirement for recycled material made some big beverage companies, such as Coca-Cola, reluctantly support DRS in Western Europe, although - as will be exposed - they have continued to undermine it elsewhere.

4.3.5. Implementation of the SUP Directive

These battles did not come to an end with the adoption of the SUP Directive. It is evident, from their participation in meetings and workshops, that corporations are still trying to influence and delay the guidelines and implementing acts the EC is developing to ensure effective implementation of the Directive. Among these are unrelenting efforts to exempt single-use-plastic items made from bio-based, biodegradable or compostable plastics, and continued resistance to a design standard for tethered caps.⁴⁸⁸ In addition, the industry is trying to influence the very definition of plastic, which would affect the essence of the Directive and undermine its purpose by exempting certain materials - such as PHAs (a novel group of polymers) and lyocell (a man-made cellulosic fibre used for items like disposable wet-wipes).⁴⁸⁹

The industry's lobbying efforts have also moved to the national level, where it is trying to influence, delay and weaken the transposition of the Directive into national legislation, as we will expand on in our country case studies. One example is the industry's attempt to undermine the 90% separate-collection obligation by including bottles from post-sorted residual waste. NGOs have called on the EC and member states to resist these lobbying efforts as, notably, they will only be able to achieve the Directive's recycled-content targets, if plastic bottles are collected as a clean, separate waste stream.⁴⁹⁰

Box 4.2: Green Dot and producer responsibility

The Green Dot™ symbol is widely used on plastic products and packaging sold in the EU and beyond. According to a UNEP and Consumer International report, 'consumers typically misinterpret these symbols to mean recyclability or perhaps recycled content', which leads to an overestimation of what items can be recycled, as well as the contamination of waste streams with non-recyclable material.⁴⁹¹ This is because, in reality, the label means only that a producer or retailer has paid a financial contribution to a qualified national packaging-recovery organisation, set up in accordance with the principles defined in European Packaging and Packaging Waste Directive 94/62.⁴⁹² Green Dot is a protected trademark, registered and owned by Der Grüne Punkt Duales System Deutschland GmbH and licensed for all European countries to the Packaging Recovery Organisation Europe (PRO Europe). However, it is used in over 140 countries and displayed on more than 400 billion packaging items per year,⁴⁹³ creating additional confusion for consumers.⁴⁹⁴



In this report's EU case studies, we also analyse the actions of PROs - national organisations that collect licensing fees for packaging placed on the market, and that sub-license Green Dot™ label to companies for their packaging. The money accumulated by these fees is partly used to provide funding for waste management and recycling - usually managed by a PRO. The companies that pay these fees are also relieved from their individual obligation to manage used packaging. Some of the Green Dot organisations examined in this report are ARA (Austria), EKO-KOM (Czech Republic), Ecoembes (Spain) and CITEO (France). As we will see, the companies paying into these schemes often exert undue amounts of influence, and are even coordinating lobbying activities against more effective collection (and recycling) legislation, such as DRS.⁴⁹⁵ PRO organisations also have two associations at the EU level: the PRO Europe, founded in 1995, and the Extended Producer Responsibility Alliance (EXPRA), established in 2013. Unsurprisingly, one of EXPRA's first position papers set out its clear opposition to deposit systems, calling them 'problematic from an internal market perspective'.⁴⁹⁶



4.4. Austria: A plastic pollution lobby mobilising against DRS

In 2016, Austria produced about 300,000 tonnes of plastic waste,⁴⁹⁷ with PET bottles accounting for a large proportion of litter found in Austria's natural environment.⁴⁹⁸

Although Austria has a relatively good collection system, it is still far from reaching EU targets on either plastic recycling or bottle collection. In 2016, 34% of all packaging waste was sent to mechanical recycling, after which 26% was recovered as granulate,^c 40% was treated in waste-to-energy plants and 33% was used for incineration in the cement industry.⁴⁹⁹

The Austrian Federal Ministry of Climate Action and Environment is currently considering introducing a DRS to achieve the new targets set out in the EU SUP Directive. A government-commissioned study recently confirmed that a DRS not only achieves the highest collection rate for plastic bottles but is also the most cost-effective option, ensures the best material quality for subsequent recycling and has the strongest anti-littering effect.⁵⁰⁰



Plastic pollution in Austria's natural environment
Credit: Global 2000

4.4.1. Lobby against introduction of DRS

Our investigation in Austria revealed that a powerful coalition of companies, including retail giants REWE Group (Billa, Merkur, Penny, Bipa, etc.), SPAR, Hofer and Lidl - as well as beverage companies, including Brau Union, Spitz and Pfanner - have been tirelessly working to influence the government's decision against a DRS.⁵⁰¹ They have largely orchestrated their lobbying efforts through the highly reputed Altstoff Recycling Austria AG (ARA), Austria's largest PRO, a non-profit organisation with a near-monopoly on Austria's waste-management

^c According to the new calculation method mandated by the EU, the recycling rate has been reduced from 34% to 25%.

market. A closer look at ARA's complex corporate structure reveals that companies under its umbrella have a position almost like that of owners, with legal powers that allow them to use ARA for their own interests - in this case, to lobby against DRS legislation that would reduce litter and increase plastic-recycling rates in Austria.

With the introduction of a DRS, which would replace the need for companies to pay licensing fees, ARA would lose more than €24 million in fees for plastic bottles alone. Since it is likely that a future DRS would also cover other waste streams, such as cans and single-use glass, the loss in licensing fees would consequently be even higher.

Not surprisingly, ARA is a loud opponent of a DRS. Among the lobbying tactics used, it coordinated letters sent in December 2019 to the current Federal Chancellor (Sebastian Kurz), Environment Minister (Leonore Gewessler) and other key politicians, vehemently rejecting the introduction of a DRS for single-use plastic. Next to ARA, the signatories include retail giants REWE Group, SPAR, Lidl and Hofer, as well as multinational plastic-packaging manufacturer ALPLA. Unsurprisingly, following the submission of the letters, DRS was neither included nor mentioned in the government programme launched in January 2020.

ARA also attempted to influence the development of the government-commissioned study that examined four options for implementing the 90% collection target. ARA advocated for an improved method for separate collection, as well as additional collection from residual waste. The findings unequivocally show a DRS would achieve at least 95% separate collection, while ARA's proposals would only achieve 80%, would require sorting through 60% (840,000 tonnes) of Austria's residual waste⁵⁰² and are also not in line with the interpretation of the SUP Directive.⁵⁰³



Red Bull cans are frequently found in Austria's natural environment
Credit: Global 2000



While Austrians are keen to participate in such clean-up activities, initiatives such as *Reinwerfen statt Wegwerfen* only provide €700,000-1 million of private funding for clean-ups,⁵⁰⁵ with public institutions - not only municipalities but also the Austrian rail and road associations, ÖBB and ASFINAG - bearing the majority of the costs. According to ArgeAWV well over €120 million in personnel and operational costs are spent annually on daily street-cleaning and litter campaigns.⁵⁰⁶ The Austrian Beverage Manufacturers Association has also built its DRS-opposition strategy on voluntary initiatives, providing great support for the aforementioned anti-littering campaign. The powerful organisations that represent the interests of retail and industry also support *Reinwerfen statt Wegwerfen*.⁵⁰⁷ Through Arge Sustainability Agenda for Drinks Packaging, a consortium headed by the Austrian Chamber of Commerce (WKÖ), the retail and beverage industries use this 'voluntary commitment by the drinks industry' as a central instrument to focus efforts on the consequences of littering - rather than its causes - continuously delaying better solutions.⁵⁰⁸ The beverage industry has also found itself at a crossroads; its position was divided in a surprising U-turn by Coca-Cola, which, for the first time, publicly announced its support for the introduction of DRS for single-use plastic in Austria.⁵⁰⁹ Coca-Cola did not sign the lobby letter against the introduction of DRS in Austria that Höllinger, Pfanner, Alpquell, Starzinger, Brau Union and Spitz did.



ARA has a monopoly on the Austrian waste market
Credit: Changing Markets Foundation



4.4.2. The Austrian public supports more action on plastic pollution

A recent YouGov public opinion poll, commissioned by the Changing Markets Foundation and Global 2000, showed that 83% of Austrians support the introduction of a DRS and 86% believe more needs to be done to address plastic pollution.⁵¹⁰ It is imperative that the Austrian government puts in place a DRS for all single-use-plastic bottles and other beverage containers. In addition, it should introduce measures to promote reuse, such as a specific sub-target for refillables. Such measures are backed by both science and the public. A government roundtable that took place in the beginning of June 2020 showed promising signs of a wide consensus among stakeholders to introduce DRS and reuse measures.⁵¹¹

Meanwhile, the WKÖ initiated a working group to examine possible alternatives to a DRS system. This step, however, has been criticised in an open letter⁵¹² from the ÖPG Deposit System Company Gm.b.H. to the President of the Austrian Chamber of Commerce (WKÖ), Harald Mahrer, on the basis that such a working group should include *all* representatives of economic enterprises, not only those that oppose DRS. Membership of the WKÖ is compulsory for all Austrian companies, and, by law, it should represent all of them⁵¹³ – not just those that oppose progressive legislation. Despite these calls, WKÖ's 'holistic model' to achieve EU recycling targets, published in August 2020, claims that they can achieve these targets without DRS. To prevent littering they propose containers with microchips that would award consumer for returning their recyclables with bonus points on their mobile phones, which could be redeemed with participating companies⁵¹⁴ – a system surprisingly similar to DRS, which they oppose. ARA also published a press release calling WKÖ's 10 point plan 'a big step in the right direction'.⁵¹⁵

While conversations in Austria are ongoing, we can expect that ARA and WKÖ will further intensify their lobbying tactics to undermine an effective DRS.⁴



Reusable milk bottles on sale at the Thornton's Budgens supermarket in Belsize Park, London

Credit: David Mirzoeff



Box 4.3: An unusual opponent to DRS: The glass industry

As DRS is being considered across many European countries, an unlikely opponent is operating behind the scenes to try to undermine the establishment of the system, or to lobby for exemptions: the glass industry. This is strange because refillable glass bottles in a local distribution system are considered a very sustainable alternative to plastic packaging and are supported by NGOs across the world. Many countries used to have such systems in place, and the key to their success was a voluntary deposit to encourage consumers to return their bottles.

The glass industry in Europe is, however, firmly opposed to DRS. The European Container Glass Federation (FEVE) has commissioned a study showing that DRS does not lead to greater levels of refill, glass-collection or recycling rates.⁵¹⁶ It also claims 'including one-way glass in a mandatory DRS on single-use packaging only diverts materials from established collection and recycling systems and creates confusion among consumers'.⁵¹⁷ According to the industry report, the highest impact on glass-recycling rates is the number of available bottle banks, and DRS does not achieve such high recycling rates.⁵¹⁸ The glass industry has lobbied against DRS in Scotland and France, and is currently opposing its introduction in Spain, Portugal and Poland. In Spain, glass Green Dot organisation, Ecovidrio, claims a planned national DRS is one of the 'threats and challenges' to its strategic plan.⁵¹⁹

Glass is included in the DRS of Croatia, Denmark, Estonia, Finland, Germany, Iceland and Lithuania. The deposit law⁵²⁰ for single-use beverage containers, passed in Portugal, also includes glass. Taking advantage of the fact that said law is still pending regulation (which will establish the DRS model to be implemented on 1 January 2022), our investigation found the Portuguese government is receiving a lot of pressure to exclude glass from the deposit system. Portugal has a serious problem of glass containers ending up as litter in the environment,⁵²¹ which is already a powerful argument to include glass in the DRS. However, there is another equally important reason – the draft of the new Portuguese waste law establishes reusable-packaging quotas for producers, and forces supermarkets to dedicate a differentiated and designated area for products in reusable packaging. If glass were excluded from the single-use container-deposit system, RVMs able to take glass containers would not be installed, which would make it difficult to return refillable beverage containers, and would very likely mean the Portuguese government would not be able to achieve its reusable quota.

One of the latest tricks from the glass industry at the EU level was the launch of an industry platform, Close the Glass Loop, at the end of June 2020. The initiative aims to achieve '90% average EU collection rate of used glass packaging by 2030' and 'better quality of recycled glass, so more recycled content can be used in a new production'.⁵²² This appears to be a typical industry attempt to push a voluntary approach and prevent glass from being included in upcoming DRS in different EU member states. Despite the industry's claims that glass is already the most-recycled material, the glass-recycling rate in Europe currently stands only at 76%.⁵²³ Far higher rates can be achieved – and, as with other beverage containers, it is impossible to reach levels of over 90% without DRS.

d For a full report on the Plastic Pollution Lobby in Austria, see http://changingmarkets.org/wp-content/uploads/2020/05/CM_PLASTIC-POLLUTION-LOB-BY_FinalEN.pdf



4.5. Spain: A wolf in sheep's clothing

Spain is the fifth most populous country in the EU and the fourth-largest consumer of plastic containers, as well as producing 4.6 million tonnes of plastic in 2016.⁵²⁴ Spain accounts for 10% of all single-use plastics consumed in Europe, including 3.5 billion soda bottles, 1.5 billion disposable cups of coffee, 50 billion cigarette butts, 5 billion plastic straws and 207 million disposable packaging units per year.⁵²⁵

Spain is one of the world's top plastic polluters, and has one of the highest rates of plastic generation per person: 0.28 kg daily. Spain dumps more plastic into the Mediterranean Sea - the sixth-largest area of plastic accumulation in the world - than any other country in the region except Turkey.⁵²⁶

Despite all this, on the surface it would appear that Spain leads the way in plastic recycling in Europe. In the EU, an estimated 42% of plastic-packaging waste was recycled in 2017, according to Eurostat; Spain, meanwhile, recycled 48% of its plastic-packaging waste.⁵²⁷ However, several organisations have questioned this data; for

Plastic pollution on a beach in Spain

Credit: Fabien Montell/
Shutterstock



example, Greenpeace states that the real figure is closer to 25% or lower, partly because much of the information provided to the Spanish government originates from the plastics industry itself.⁵²⁸

The Spanish plastics industry is accused of not only hiding the real extent of the plastic-recycling crisis in Spain but also preventing, and lobbying against, the introduction of measures that would effectively address the problem. Companies in the plastics supply chain leverage an incredible range of tactics to stave off legislation that threatens business as usual.

4.5.1. Spain's plastics data is trash

Currently there are no reliable figures on the generation and treatment of plastic waste (including plastic packaging) in Spain. It is important to note that the approximate data available varies considerably, and comes mainly from three different sources.

First, the Spanish government - through the Ministry for Ecological Transition - supplies information to the EU. It has been criticised for providing figures that contain statistical limitations and do not provide a full picture of how the waste of single-use plastic containers is being managed.⁵²⁹ This data has also been questioned by several organisations, which claim the real figure is lower than that provided - partly because much of the information provided to the Spanish government originates from the plastics industry itself, which has a vested interest in obfuscating the data to conceal the need for change.⁵³⁰

The second source - also accused of publishing false figures due to the absence of methodological descriptions or statistical breakdowns - is Ecoembes (Ecoembalajes España, SA). Ecoembes is a non-profit PRO responsible for managing plastic recycling in Spain.⁵³¹ According to Ecoembes, 69.7% of disposable plastic containers were recycled in 2017⁵³² - almost three times the figure provided by Greenpeace that year (25.4%). Ecoembes added that 75.8% of disposable plastic containers were recycled in 2018⁵³³ not only an improvement on the previous year but also three times the target set out by the EU (22.5%).⁵³⁴ Prominent environmental organisations in Spain (such as Greenpeace, Ecologistas en Acción and Friends of the Earth) have accused Ecoembes of manipulating data to create the impression that Spain is on track to achieve EU targets.⁵³⁵ The data Ecoembes generates is extremely influential, since this organisation manages most of the waste in Spain.



The third set of data is presented by environmental organisations - such as Ecologistas en Acción, Friends of the Earth and Greenpeace - that conduct their own calculations, based on official government figures (at municipal and regional levels), and combine those with data obtained on the ground across the plastic-waste-treatment system. According to Greenpeace (2019), Spain lags behind most European

countries in terms of plastic recycling - only around 25% of plastic waste is recycled,⁵³⁶ 790,000 tonnes of plastic end up in landfills and 170,000 tonnes are incinerated. Crucially, just over 318,926 tonnes were exported to other countries in 2016 - a statistical grey area, which is often counted towards the overall recycling rate, despite the fact that exported plastic is rarely recycled by the importing country.⁵³⁷

Table 4.2: Reported recycling rates of plastic containers in Spain

Year	Reporting organisation			
	Ecoembes	Eurostat ⁵³⁸	Cicloplast ⁵³⁹	Greenpeace ⁵⁴⁰
2016	66.5%	45.5%	45.4%	-
2017	69.7%	48%	48%	25.4%
2018	75.8%	-	-	-

Notes

(i) The numbers provided by Ecoembes account for all packaging collected, regardless of material and form of collection.

(ii) The data provided by Greenpeace is an approximate calculation of plastic containers recycled.

Given this dissonance in the data - and given the industry has been accused of covering up the real extent of Spain's plastic pollution and recycling gaps - it is almost impossible to know the actual figures.⁵⁴¹ Neither are there any official figures on the kind of plastic packages recovered, littering of plastic packages, the amount of plastic packages companies put on the market, nor the amount of plastic packages that go to landfill sites - only the total plastic-waste figure is provided.

4.5.2. The tentacles of Ecoembes

Ecoembes is the PRO responsible for managing the funds raised from the fees packaging companies pay to recycle plastic. It is controlled by the company Ecoembalajes España SA - a powerful business network comprising more than 12,000 companies linked to the plastics industry - which holds 60% of the shares. Ecoembes' oversight includes all materials for containers and packaging; however, it acts as the main lobbying group for the plastics industry in Spain.⁵⁴²

The most prominent consumer brand members of Ecoembes are Bimbo, Pascual, Campofrío, Coca-Cola, Colgate, Danone, Henkel, L'Oreal, Nestlé and PepsiCo. Among its plastic-packaging members are Tetra Pak Hispania, Cicloplast and Ecoacero. Finally, its membership includes large retailers, such as Alcampo, Carrefour, DIA, El Corte Inglés, Mercadona and SPAR. The board of Ecoembes is not only controlled by these same companies but also operates through a proxy organisation; as a result, consumer-goods companies and retailers can avoid directly staining their hands with lobbying. It is also worth noting that Ecoembes' top executives earn more than double the President of the Government of Spain, despite Ecoembes being a non-profit organisation.⁵⁴³

In Spain, the Packaging Law allows a choice between EPR or DRS. However, since its inception in 1996, Ecoembes has repeatedly rejected DRS under the premises that it would be too costly for the industry and that recycling rates of plastic packages in Spain are already very high - above EU targets, according to its own, highly questionable data.

4.5.2.1. Ecoembes: The art of manipulation

They have a lot of money and what they do is spend everything on communications. It is very difficult to stand up to them because they have bought almost all the media outlets. There are people who dare to denounce the lies of Ecoembes, but they don't go far because Ecoembes invests so much money in the media that everything ends up being buried.

- Juantxo López de Uralde, Spanish politician and former director of Greenpeace Spain

Ecoembes uses communications as a key influencing tool, disseminating its messages through digital and printed media, sponsored content and advertising in the main national and regional broadcasters and TV stations in the country. All this translates into a wide reach and influence in the Spanish press, and an ability to denounce any claims or accusations made against it.

For example, in 2019, Greenpeace published a report questioning Ecoembes's data on the recycling of plastic waste and packaging in Spain, and debunking the alleged collection success of its current EPR model.⁵⁴⁴ Just hours after Greenpeace launched the report, several national and regional media outlets publicised Ecoembes's response, which accused the environmental organisation of being 'irresponsible' and creating mere 'lies' - although without any specific refutation of Greenpeace's research, nor any evidence to the contrary.⁵⁴⁵

Other advertising campaigns raise concerns about Ecoembes's greenwashing.⁵⁴⁶ This includes using the image of environmental activists like Greta Thunberg in announcements and documents, and the publication of manipulated images. For example, in Ecoembes's TV ad, #ReciclaYRespira ('recycle and breathe'),⁵⁴⁷ the company uses an image supposedly of a polluted street in Spain; however, it was discovered that the photo depicted a road in Beijing with the road signs photoshopped.⁵⁴⁸ Additionally, Ecoembes finances and is a main sponsor of the National Congress on the Environment and the Journalists Association for Environmental Information - and was even a large sponsor of the UN Climate Change Conference, COP25 Madrid, in 2019.⁵⁴⁹

Figure 4.4: Ecoembes: The power of manipulation⁵⁵⁰



4.5.2.2. Controlling the narrative

Another way in which Ecoembes manipulates Spain's narrative around plastic waste is through sponsoring scientific studies from prestigious Spanish public and private universities. Ecoembes directly sponsors the Environmental Chair at the Polytechnic University of Madrid⁵⁵¹ - the only department in that institution that investigates plastic-packaging waste.⁵⁵² The Polytechnic University of Madrid, the University of Alicante and the University of Alcalá de Henares have also accepted similar funding from Ecoembes.

Through its sponsorship, it appears Ecoembes has exercised undue influence on the academic rigour of these institutions' reports on plastic waste - reports that have been criticised for misinforming the public about real recycling rates, providing misleading information about the options for improving the current system and disclosing neither methodological details nor how certain calculations were reached. For example, the ARIADNA study - led by the ESCI-UPF School of International Studies - analysed the environmental, economic and social sustainability of the implementation of a mandatory DRS in Spain, alongside the current EPR system.⁵⁵³ The study concluded the addition of a DRS would be less sustainable than continuing with the current system, and that any resources should be used to improve the existing system. However, the study was wholly funded by the industry associations behind the current EPR system in Spain, as well as Ecoembes.⁵⁵⁴ A study by ENT Environment and Management Consultancy examined the ARIADNA study results and methodology, and concluded that the latter created unfounded assumptions about a DRS system in Spain, and was devised to satisfy the needs of the industry rather than to effectively consolidate a DRS in the country.⁵⁵⁵

The scientific rigour of another academic study - conducted by the Polytechnic University of Madrid and the University of Alcalá de Henares - was also called into question, since it was funded by the Plataforma Envases y Sociedad (an NGO under Ecoembes's control) and some of Spain's main plastics-industry organisations (the National Spanish Association of PET Packaging and the Spanish Association of the Plastics Industry). The comparative report, *Models of Household Packaging Management*, advised against implementing DRS in Spain and claimed it would be financially unfeasible, due to high rental costs for supermarkets to install RVMs.⁵⁵⁶ The version of the study released to the public not only fails to fully disclose its methodology but also based its considerations on luxury and prime retailing rental spaces, using some of Madrid's most exclusive zones - which are more expensive than the national average - as an average.^{557,558}

While Ecoembes has previously spent large sums financing studies to attack DRS, its latest tactic to control the narrative has been to pilot a new voluntary DRS programme called RECICLOS.⁵⁵⁹ With a limited number of RVMs installed in four municipalities of Catalonia, and a plan to introduce RECICLOS in five other autonomous communities of Spain,⁵⁶⁰ the programme rewards citizens' environmental behaviour when returning their cans or plastic bottles by offering credit through a digital platform, which can be redeemed in certain shops or as donations to NGOs. This tactic attempts to prove that voluntary measures can achieve high collection rates - but is strikingly ironic, given Ecoembes's persistence in undermining DRS.

4.5.3. Supermarkets: Too little action, too much lobbying

Whereas consumer brands with strong brand equity face direct reputational damage when their products are found as litter, supermarkets are one step removed from this risk. Spanish supermarket chains are major contributors to plastic pollution, but are blamed to a far lesser extent.⁵⁶¹ However, a recent report revealed that Spanish supermarkets' commitments to tackle plastic pollution and eliminate single-use plastics are very limited. Most of the commitments use lightweighting as a mechanism to reduce their plastic by weight - with the notable exceptions of Mercadona and Dia - as well as swapping to biodegradable single-use packaging.⁵⁶²

Supermarkets claim reducing plastics in their establishments is too costly and time-consuming, and instead blame suppliers and consumers for a lack of demand for plastic-free products.⁵⁶³ While redirecting blame, these

retailers have also become the main opposition to introducing legislation to tackle plastic pollution. Such is the case for Mercadona and Carrefour, which lobby and pressure politicians to prevent the implementation of DRS, mainly through Ecoembes.^{564, 565}

Mercadona and Carrefour also threaten other companies in Ecoembes that are more amenable to such legislation, including Coca-Cola, PepsiCo and Danone. According to our sources, tensions have escalated, with Mercadona threatening to remove dissenting companies' products from their shelves if they come out publicly in favour of DRS. While fighting DRS, Mercadona has introduced a new target to increase recycled content - as part of its strategy to reduce the consumption of plastics - by 25% by 2025.⁵⁶⁶ It is worth noting that, of the consumer brands supportive of DRS, many state the need for reliable sources of recycled content as their motivation, so it is unclear how Mercadona will reach its target without DRS.

4.5.4. Same tactics, different regions



Mercadona - one of the biggest opponents of DRS
Credit: Wikimedia

With waste management a devolved issue in Spain, some autonomous regions have tried taking steps towards better environmental legislation, and have proposed implementing DRS systems in their territories - but these efforts have been quickly undermined by the industry through Ecoembes and by big retailers. Only Navarra and the Balearic Islands managed to partly stand up to the powerful industry lobby, but most DRS initiatives have failed. In Valencia, Navarra and Catalonia, a combination of industry groups' tactics have transpired to delay or derail the establishment of DRS.

4.5.4.1. Navarra: Mixed progress

On 7 June 2018, the parliament of Navarra passed a new law on recycling, which aimed to encourage waste reduction and promote recycling by discouraging incineration and landfilling. Through the establishment of a legal framework to tax both practices, the law also proposed the creation of a DRS.⁵⁶⁷

From the start, Ecoembes opposed and quickly undermined the reforms under this law, as well as the introduction of a DRS system. Massive pressure also came from companies like Eroski, Coca-Cola, Ecovidrio and the water industry. Regardless of industry claims that the reforms would pose a risk to the current system, the Waste Plan and the law were passed following a process of public consultation.⁵⁶⁸

The new law set out DRS pilot projects for a period of two years, followed by a presentation of the results. These projects included establishing RVMs in parks in the summer of 2018.⁵⁶⁹ However, due to high levels of industry pressure, the initial articles of the law proposing a complementary DRS were amended. Four amendments were incorporated, including an obligation to consult various stakeholders when approving any initiatives, which was seen as a covert way of delaying the process.

Ultimately, an appeal to the Council of Ministers was presented. This resulted in the repeal of the Waste Law in March 2019, based on the unconstitutionality of certain paragraphs that contravened state regulations, specifically those focused on the reduction of plastic bags and creation of a producer registry.⁵⁷⁰ The appeal is currently being analysed by the Constitutional Court, which can take up to three years to determine its verdict. Fortunately, in this particular case, the law remains in place.

In the meantime – according to former Navarra Director General of the Environment, Eva Garcia Balaguer – industry has renewed pressure against the reform and the implementation of DRS, pushing to delay the deadline for banning single-use plastics in the region to 2021.⁵⁷¹

4.5.4.2. Valencia: Pressure to dismiss and fire opposition

It appears that the entire business sector [the large packaging companies and their associated companies] has moved against DRS since it involves certain changes to the conditions in the market in which they compete.⁵⁷²

- Julià Álvaro, former regional secretary of Environment and Climate Change of the Valencian Autonomous Community

We have no doubt that the cessation of Julià Alvaro is a response to pressures against the policies that were carried out and is the culmination of industry's months of obstruction and obstacles to environmental policies.

- López de Uralde, former Equos political party's spokesperson

In April 2016, the Valencian government announced its intention to implement a mandatory 10-cent refundable deposit on the purchase of all water, beer, soda and juice containers in 2017. In October 2016, the region made DRS a priority, drafting a law on Additional Environmental Protection and applying DRS to plastic, metal, Tetra Pak and glass containers of beers, juices, soft drinks and water.⁵⁷³ However, by mid-2017 growing opposition from the plastics industry, Ecoembes and the Confederation of Tourist Entrepreneurs of the Valencian Community (CET-CV), as well as divisions in the government, led to the abandonment of the idea of DRS. Lobbying letters to the government reveal that Ecoembes even offered €17 million per year, or additional funding, subject to the proposed legislation being dropped.⁵⁷⁴

The industry's tactics in this particular case led to the dismissal of Julià Álvaro – regional secretary of Environment and Climate Change of the Valencian Autonomous Community, and a great defender of DRS.⁵⁷⁵ With

Ecoembes leading the way, the big drink brands and large supermarkets – Mercadona, Consum, MásyMás – systematically attacked and discredited Álvaro's work through the media, and put pressure on the Generalitat (state government) to act.⁵⁷⁶ Mercadona, in particular, directly lobbied politicians to prevent the implementation of DRS in the region.⁵⁷⁷ also continued to publicly push the claims that DRS would affect business costs and reduce shelving space in supermarkets. Pressure was also exerted via industry and trade associations, which continually raised this issue during meetings with the regional government.

CET-CV also openly lobbied against DRS, which it said would complicate hotel management, represent a clear risk of food cross-contamination and cause logistical problems, including the problem of finding space for RVMs.⁵⁷⁸

In the end, the combined efforts of Mercadona and overall industry pressure undermined the introduction of DRS and prompted the dismissal of Mr Álvaro.

4.5.4.3. Catalonia: Silenced by the industry lobby

Discussions around the introduction of DRS in Catalonia started in 2013, following a successful pilot project in the Cadaques municipality,⁵⁷⁹ but fierce industry opposition has largely derailed these efforts.

With the intention of implementing a DRS for single-use beverage containers in the whole region, the Catalan Waste Agency commissioned a technical, environmental and economic viability study. Even though the industry pressured the Catalan government not to carry out this study in the first place, the report was finally published in July 2017, and was presented to Catalonia's Secretary of the Environment and Sustainability.⁵⁸⁰ The industry lobby – led by the president of DAMM (a beer manufacturer) and representatives from Ecoembes, Ecovidrio, Foment del Treball, Freixenet and others – orchestrated an in-person intervention a day before the Catalan minister in charge of the study, Santi Vila, was supposed to give it the green light.

As a result, the industry managed to delay the report's launch for over a year – although the study was, subsequently, published. After its release, the industry continued to denounce the report for underestimating the real costs of DRS and the effects it would have on businesses, especially small businesses.⁵⁸¹ Among the loudest opponents were Foment del Treball (a federation of entrepreneurs and Catalan industry),⁵⁸² the Spanish Association of Supermarket Chains (whose members include Alcampo, Carrefour, Eroski, Lidl, Mercadona and SuperCor)⁵⁸³ and the Spanish Commerce Confederation.⁵⁸⁴ Ecoembes also used its resources to attack the report through the aforementioned study by ESCI-UPF School of International Studies – funded by companies including Ecovidrio and Tetra Pak – and in a press release disputing the environmental benefits of DRS.^{585,586}

Despite the extent to which the industry lobbied to discredit it, the study concluded that, with an appropriate system in place, a DRS would result in higher recycling rates for beverage containers; an overall annual 90% reduction in litter; and a reduction in clean-up costs, saving municipalities €16.90 million annually.⁵⁸⁷ Despite the clear benefits confirmed by the study, the industry has still managed to delay its implementation.

4.5.5. Fighting to the end

The example of Spain shows how a wide array of industry tactics have successfully undermined attempts to introduce DRS, or any other meaningful reform, at both national and regional levels.

The plastics lobby (led by Ecoembes and major supermarket giants, like Mercadona and Carrefour) continues to exert pressure – even threatening other companies – and is thus far succeeding in undermining attempts to tackle plastic pollution in Spain.

In June 2020, the Spanish government approved a tax on single-use plastic packaging for the manufacture, import or intra-community acquisition of containers to be used in the Spanish market.⁵⁸⁸ This tax, which will come into force on 1 July 2021, will raise €724 million annually. While this new law sets a target of reducing waste generation by 15% by 2030 (compared to 2010 levels),⁵⁸⁹ sooner or later Spain will have to comply with the EU SUP Directive, which stipulates that 77% of beverage bottles introduced into the market should be separately collected by 2025 and 90% collection should be reached by 2029 – for which the only proven method is DRS. Leaving DRS as a voluntary commitment for producers and retailers to implement on their own, rather than part of mandatory legislation, would be to cave to industry lobbying, yet again allowing the industry to evade its responsibility for plastic pollution.



4.6. France: A missed opportunity

The situation in France shines a spotlight on a missed opportunity for the introduction of effective deposit return legislation in the country, which will be needed to meet the SUP Directive's 90% separate-collection target for beverage bottles.

According to data from Ecological Transition Agency (ADEME), which is responsible for waste-prevention and -management policy, France produced 4.6 tonnes of waste per capita in 2016. Of that waste, 65% was recycled, 29% ended up in landfills and 6% was incinerated, the latter showing an increase of 59% over the previous 10 years.⁵⁹⁰

In 2017, France generated 2.32 million tonnes of plastic-packaging waste, of which only 27% was recycled.⁵⁹¹ According to Suez, each French person consumes an average of 96 plastic bottles per year. Only 57% of those plastic bottles are currently recycled;⁵⁹² 43% end up in landfills, incinerated or in the natural environment, demonstrating significant room for improvement.⁵⁹³

4.6.1. The Anti-Waste Law

The Anti-Waste Law for a Circular Economy, released in January 2020, was the outcome of a wide-ranging consultation initiated in October 2017.⁵⁹⁴ The law introduced 50 measures, including a ban on all single-use plastics by 2040.⁵⁹⁵ The transition towards banning some single-use plastic products began back in 2015 with the French Energy Transition Law.⁵⁹⁶ Under this new piece of legislation, however, the ban on single-use cups, plates and cotton buds was fully introduced on 1 January 2020, and was followed by a ban on straws, cutlery, stirrers and other problematic items by 2021. Described as an '*ambitious piece of legislation*'⁵⁹⁷ and a '*world-first*'⁵⁹⁸ by the French government, it also generated positive press because it banned the destruction of clothes, cosmetics, electrical items, hygiene products and other unsold goods.⁵⁹⁹ Implementation of the targets for reduction, reuse and recycling (a ban on all single-use plastic packaging by 2040, all plastic to be recyclable by 2025, a 50% reduction in single-use plastic bottles by 2030, replacing disposable tableware in fast-food restaurants with reusable tableware by 2023, etc.) is being set under decrees, three of which are currently undergoing public consultation, which will be revised every five years.^{600,601,602}

4.6.2. Development of a DRS

The new Anti-Waste Law has set a reuse target of 5% of packaging units put on the market by 2023, and 10% by 2027. However, crucially, this target was introduced without corresponding container-deposit legislation, which limits the ability to operate robust reuse systems at scale. DRS will only be introduced after discussions in mid-2023, when the selective collection schemes and voluntary systems can be shown to have failed in reach-

ing the 90% plastic-bottle-collection target. Implementation is subject to a further study from ADEME, which needs to investigate whether EU targets can be reached in any other way, such as through waste sorting and kerbside collection.⁶⁰³ This pushes mandatory collection at least five years into the future, makes reuse targets more difficult to hit and will produce several years' worth of preventable plastic pollution.

4.6.3. The municipalities and recyclers against DRS

Initially, the debate around DRS for PET bottles and cans was prompted by a report presented to the government by Collectif Boissons – an informal group within CITEO (a French EPR organisation) and an industry conglomerate composed of the beer, food-processing, soda, mineral and water producers and milk industries, as well as the National Beverage Federation and the supermarket associations.⁶⁰⁴

Among the most prominent members of the Collectif Boissons group were Coca-Cola, Nestlé and Danone. Notably, this DRS proposal – which included the amount of deposit, the type of packaging included and the economic balance of the system – was initially entirely proposed by EPR scheme organisations and the beverage and retailers industry. The plan – which did not include glass, and was presented as a *fait accompli* – faced strong opposition and scepticism from recyclers, can manufacturers,⁶⁰⁵ NGOs and municipalities. This prompted a wider debate, and put the government under pressure to include a more diverse group of stakeholders in discussions.

The main opposition to DRS came from French municipalities and recyclers. While the Association of French Mayors declared support for reusable packaging in local distribution networks, it firmly opposed a deposit system, calling it '*an attempt to privatise the collection of plastic in favour of producers*', which would supposedly destabilise public services.⁶⁰⁶ The municipalities claimed they would experience a drop in revenue for local authorities, and that such a system could unfairly favour large-scale distribution, where collection machines would be installed.⁶⁰⁷ Additionally, municipalities were further pushed against DRS due to a study commissioned by the Senate, which estimated that local authorities would suffer at least €240 million in net financial losses annually from the implementation of a deposit on PET bottles and cans.^{608,609} This contradicted the study by the governments' pilot committee – chaired by Jacques Vernier and launched in June 2018 by the Secretary of State for Ecological Transition – whose mandate was developing the conditions for the implementation of DRS in France.⁶¹⁰ Vernier's study disputed the numbers in the Senate report and claimed the real cost to municipalities would only be €12 million, as municipalities only pay 20% of collection costs.⁶¹¹

Most of the resistance to the Anti-Waste Law from large supermarkets – such as Casino, Auchan, Monoprix and Carrefour – focused on the targets proposed towards food-waste reduction and the prohibition of plastic packaging around fruit and vegetables. However, the most aggressive opposition to the introduction of deposit came from recycling and waste-management specialists, who launched an aggressive campaign against DRS.

Recycling companies (such as Paprec and Federec) and the Association of French Mayors criticised the idea of a DRS due to their investment in sorting centres to manage all household plastic-packaging waste, sorted at source across France, by 2022. Until 2014, French citizens were required to sort all types of packaging and all types of materials – except plastics. For plastics, the exception ruled that citizens were only required to sort plastic bottles and jars. However, after a CITEO study, other types of single-use plastics were included in the scheme, implemented in 2016, which mandated all plastics to be sorted in the 'yellow bin'. Yet, to make this expansion viable, sorting centres had to make certain investments to upgrade the system.⁶¹² Jean-Luc Petithugenin, CEO of Paprec, claimed that local authorities and recycling companies had invested €2 billion.⁶¹³ Their opposition to DRS was based on the fact that some of the investment made would become redundant, as the amount of material collected through kerbside collection would decrease. The municipalities' associations were very active in



trying to unite all stakeholders (including recyclers), and joined forces to support the stance against mandatory DRS, arguing that it would reduce revenue but not kerbside collection costs.⁶¹⁴

In the campaign against DRS, Paprec even released a statement claiming ‘not a single French plastic bottle ended up in the oceans’ and blaming the problem of marine plastic pollution on countries without proper waste-management systems. It also stated that France has one of the most advanced waste-management systems in the world, with 98% of water bottles collected⁶¹⁵ – a false number used to downplay the need for mandatory measures.

Veolia – another big player in waste management – held a favourable position on DRS, and only became more vocal towards the end of national discussions.⁶¹⁶ Even though Veolia referred to the system as ‘complementary to the already existing selective sorting approach’,⁶¹⁷ its silence up to that point meant the opportunity for ambitious legislation was lost.

4.6.4. A missed opportunity

Three public opinion polls conducted in March,^e September^f and November^g 2019 showed support for DRS stood at 89%, 90% and 84% respectively. Although NGOs supported DRS, they mostly focused on targets for reuse, including financing a deposit for refillables, and were very sceptical about a deposit system for recycling.⁶¹⁸ In a joint paper contribution to the debate, France Nature Environment, Surfrider, WWF, Tara Ocean and Zero Waste France stated that, as environmental organisations, their aims were reducing the disposable packaging placed on the market and increasing the use of reusable packaging.⁶¹⁹ In fact, while further reuse provides undeniable environmental benefits, pushing for refill without an underpinning DRS hampers the uptake of reuse and refill by creating an uneven playing field (see Box 4.4).

The French example shows how an unusual coalition of players united against DRS, resulting in the loss of critical time that could have been used to develop infrastructure, steer consumer behaviour towards returning beverage containers and reduce plastic pollution. It also shows the government missed a trick by not including glass and the reuse target in its DRS proposal from the start. While the French reuse target sends an important signal, without DRS on all beverage containers, it remains a lost opportunity to prevent plastic pollution.



Non, les bouteilles d’eau ne finissent pas dans la mer

Data di pubblicazione: 5 settembre 2019

Jean-Luc Petithuguenin
PDG chez PAPREC GROUP

1 articolo + Segui

Hier matin, j’étais invité de l’Eco de France Info. C’était l’occasion de dénoncer une « fake news ». Il est en effet faux de dire que les bouteilles d’eau, en France, finissent à la mer.

La pollution des océans par des emballages plastiques est dramatique et indéniable. Mais ces emballages viennent de pays qui ne bénéficient pas de système de gestion des déchets. En France, il existe un des systèmes de gestion des déchets les plus

Figure 4.5: ‘Not a single French plastic bottle ended up in the oceans.’

Source: Statement released by Founder and CEO of Paprec Group Jean-Luc Petithuguenin.⁶²⁰

e Poll conducted by The Institut français d’opinion publique (IFOP) for the organisation Agir pour l’environnement on 20 – 22 March 2019 via a self-administered online questionnaire with a sample size of 1,004. 55% voted strongly in favour of introducing a DRS on glass bottles; 35% voted partly in favour. Merceyron, A. and Moizo, M. (2019) *Ifop pour Agir pour l’environnement: Les Français et le plastique* [ONLINE] Available at: https://www.agirpourl’environnement.org/sites/default/files/communiqués_presses/190401%20-%20Sondage%20Plastique.pdf

f Poll conducted by Ipsos on 17 – 20 September 2019 via a self-administered online questionnaire with a sample size of 2,138. ReLoop (2020) *Fact sheet: Public support for Deposit-Return Systems (2003-2020)* [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2020/03/Table-of-Polling-Studies-2003-2020-updated-10March2020.pdf>

g Poll conducted by Océans sans Plastiques, Tara Océan Foundation, in partnership with the Harris Interactive Institute on 22 – 27 November 2019 via an online questionnaire with a sample size of 1,044 people, representative of the French population aged 18 and over and an over-sample making it possible to obtain 546 young people under 35. Tara Océan Foundation (2019) *84% des Millenials favorables à la mise en place de la consigne* [ONLINE] Available at: <https://oceans.taraexpeditions.org/m/environnement/ocean-homme-et-pollution/etude-millennials-consigne/#>

Box 4.4: Refill and reuse

Refillables are crucial to tackling plastic pollution and achieving a circular economy. Refillable beverage containers can be used several times before they are recycled, keeping valuable resources in the production cycle for a longer time. Refillable PET bottles can be reused up to 15 times, and refillable glass bottles around 25 times,⁶²¹ eliminating the need to manufacture new bottles and avoiding many of the environmental impacts associated with their production and end-of-life management. Some LCAs calculate that refillable bottles can save 40% of the equivalent raw materials and 50% of the carbon emissions of single-use bottles, although this depends on key variables, such as the size of the distribution network.⁶²²

Reuse offers significant economic benefits – replacing just 20% of single-use plastic packaging with reusable alternatives offers a business opportunity of at least \$10 billion.⁶²³ Reusables not only eliminate plastic waste but also reduce many of the GHG emissions associated with plastic or glass production and recycling.

Over the past two decades, we have seen a decline in the use of refillables across the world, with single-use packaging becoming the predominant choice for producers. In Western Europe alone, sales of refillable beverage containers have dropped from 63.2 billion units in 2000 to 40.2 billion units in 2015 – a decrease of 36%.⁶²⁴

A reusable plastic bottle can be reused up to 15 times, preventing up to 14 single-use ones from being made. As such, if you displace 1 refillable bottle from the market you replace it with 15 single-use ones over the course of its use⁶²⁵ (or 25, in the case of glass bottles). In countries such as Mexico, the Philippines and Indonesia, refillables still make up more than 30% of beverages sold. However, the share of refillables continues to drop; in India, for example, refill declined from 86% in 1999 to 37% in 2018.⁶²⁶

This decline has occurred for a variety of reasons. First, many FMCGs have enacted a deliberate policy of removing refillables from the market and replacing them with single-use plastic; this is particularly prevalent in low- and middle-income countries.⁶²⁷ Second, large retailers have opposed selling products in reusable packaging, and many are only required to pay a small EPR fee for single-use packaging, rather than bearing the higher costs of a refill system.⁶²⁸ Third, without supportive legislation, refill systems cannot compete in countries where single-use containers can be produced, delivered and sold cheaply at scale.

Many refill systems operate through a deposit system to incentivise the return of packaging. However, having DRS only for refill – and not for single-use packaging – ends up creating an uneven playing field, whereby participating in the refill system involves an extra cost and inconvenience for the consumer, who must pay a refundable deposit and return the packaging after use; single-use is cheaper, as it has no deposit and can

Minimal packaging and refillable store: ‘Harm Less Store’ in Hornsey, UK

Credit: David Mirzoeff



be thrown away after use. In contrast, a DRS system combining refill and single-use containers places both types of packaging at the same level of convenience – both types have a deposit, and both must be returned after use. Furthermore, additional policy mechanisms must be applied to shore up refill in such a system; for example, higher deposits for single use, refillable quotas, lower fees for refillables producers and a tax on virgin material.⁶²⁹



Refillable glass bottles

Credit: Mateo Abrahan

Other challenges that need to be addressed to operate DRS for refill at scale include container standardisation across brands; managing decentralised bottling and distribution in nationwide schemes, particularly for imported goods; and the economic cost of setting up the initial system. Crucially, levelling the playing field through mandatory DRS is an important first step, ensuring the system is set up to anticipate a future move to refillables from the start, with further policy measures available for reinforcing refill and reuse once a level playing field has been created.



4.7. Scotland: Coca-Cola's U-turn

In Scotland - the first UK country to implement such a system - a DRS will come into force in July 2022, after a delay of over a year due to the Covid-19 pandemic.⁶³⁰ The plan was finally announced in 2017, but the idea has been mooted since the very first session of the Scottish parliament over 20 years ago, and has gained traction since then.⁶³¹ While Scotland turned out to be a success story, as DRS got the green light to go ahead, it is also a case study of delay - and a case study for Coca-Cola's and retailers' lobbying against progressive legislation.

The breakthrough for DRS in Scotland came in 2017, when Coca-Cola changed its opposing position, following weeks of negative press after a leaked internal document showed the company perceived legislation for refill quotas and DRS to be risks warranting 'fight back'.⁶³² The Greenpeace investigation also revealed years of behind-the-scenes lobbying by the drinks giant, which spent close to \$1 million lobbying the EU Commission, and (alongside industry association Packaging Recycling Group Scotland) met frequently with senior government officials to assure deposit systems would be off the table in future policy considerations.⁶³³

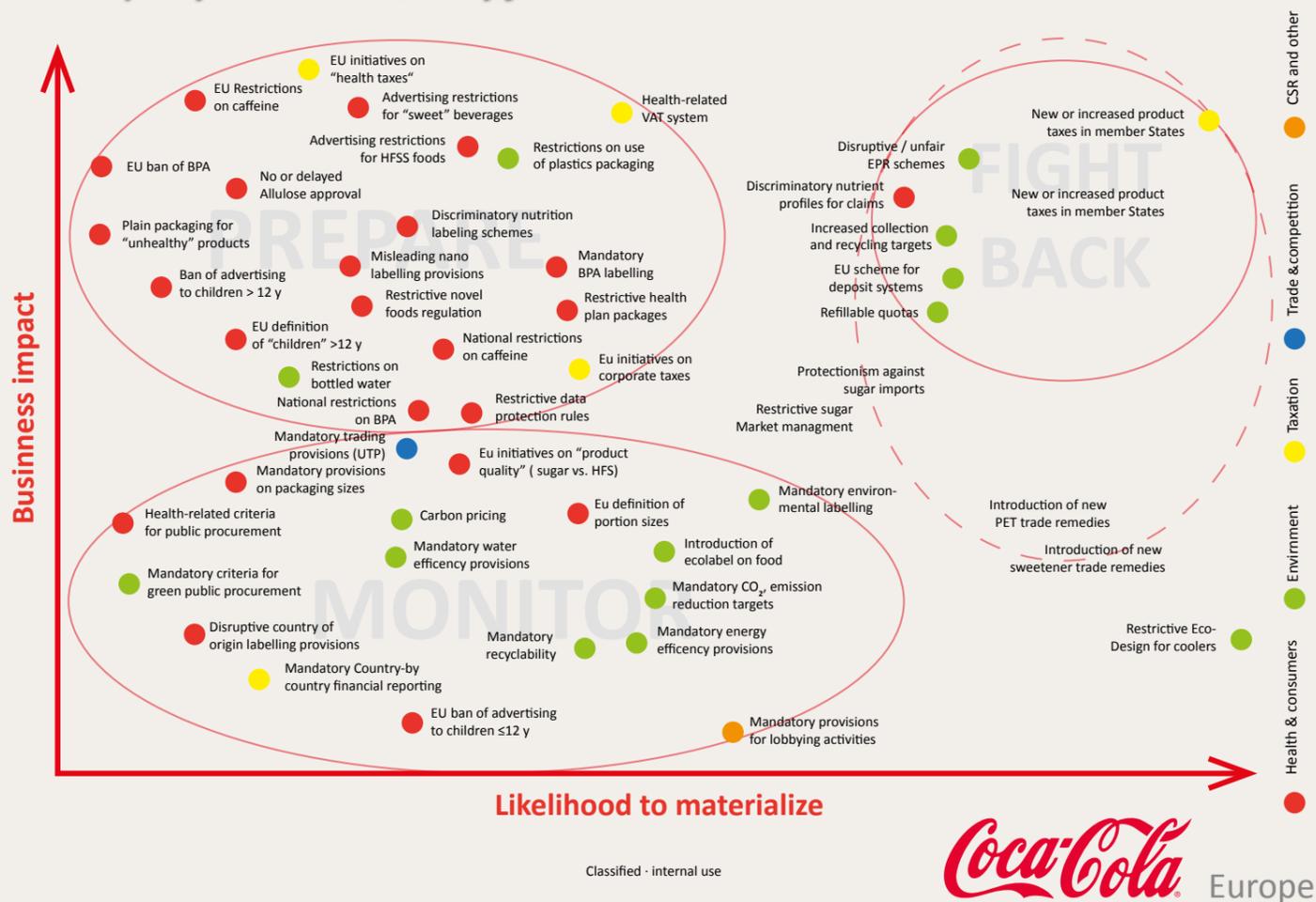


Talking trash: the corporate playbook of false solutions to the plastic crisis

Other FMCG companies also applied direct and indirect political pressure by co-opting civil society groups, creating a greater perceived plurality of dissenting voices. Keep Scotland Beautiful (KSB), an environmental NGO active in many areas of Scottish policy, receives funding from corporate supporters - including Coca-Cola.⁶³⁵ KSB took a sceptical position on DRS, citing similar arguments to industry, namely that the system would be costly but wouldn't significantly reduce litter levels.⁶³⁶ Opponents to DRS - such as Packaging Recycling Group Scotland and Coca-Cola - cited litter-count surveys, conducted by KSB and commissioned by the Industry Council for Packaging & the Environment (whose members include Coca-Cola, Danone, Diageo, Dow, Nestlé and Unilever), despite those surveys' simplistic counting methodology.⁶³⁷ Following Coca-Cola's U-turn in February 2017 (the company now backs a 'well-designed deposit scheme'),⁶³⁸ KSB released an opinion piece (since deleted) stating DRS was 'a step forward' and could make a 'positive difference' in addressing litter in Scotland.⁶³⁹

While many hurdles remain for fully implementing the system, the Scottish example demonstrates the determination of industry actors to derail or delay progressive plastic legislation by lobbying, funding diverse voices from NGOs (and influencing their positions), and commissioning studies claiming systems like DRS are costly and/or unfeasible - all to protect business as usual. While beverage companies such as Coca-Cola eventually caved to pressure on DRS in Europe, its policy is not global, begging the question of where else they're working behind closed doors to prevent progress on plastic pollution. Scotland also demonstrates how the industry will continue to look for opportunities to water down or undermine legislation, even into the eleventh hour, with many retailers recently using the Covid-19 pandemic to attempt to derail DRS on economic and sanitation arguments.⁶⁴⁰

Public policy risk matrix & lobby focus



Plastic pollution on a beach in North West Scotland
Credit: John Campbell/ Flickr



4.8. Czech Republic: The cleanest thing in the Czech waste business is the waste

Battle lines were drawn early around the introduction of DRS in the Czech Republic, following a similar pattern to countries like Spain and Austria - the central EPR organisation (representing key industry players) fought against DRS, while NGOs, campaigners and the public were overwhelmingly in favour. Both sides remain entrenched in their position, with the Ministry of Environment (MoE) siding with the industry in resisting DRS as late as January 2020, despite the impending SUP Directive timelines. The opposition has sought to delay legislation by claiming the collection system in place is already achieving EU targets, distracting through 'study wars', and undermining potential legislative approaches through behind-the-scenes relationships between the MoE and waste management.

4.8.1. Data manipulation

According to the Czech EPR organisation, EKO-KOM, around 80% of single-use plastic beverage containers are currently collected, from a total of more than 267,000 tonnes of plastic-packaging waste.⁶⁴¹ However, there is a great deal of scepticism around EKO-KOM's figures and inconsistency in reporting. For example, in 2018, EKO-KOM reported a rate of 82% for PET collection - a jump up from EKO-KOM's own data in previous years, as well as the 74% rate reported by the MoE in 2017, and an unrealistic increase without a corresponding development in collection infrastructure.⁶⁴² The data remains a black box, unverifiable and not officially or independently audited - which is concerning, given that the MoE takes its official figures from EKO-KOM.



Figure 4.6: A leaked document showing Coca-Cola's intention to fight back against deposit systems in Europe

Source: Coca-Cola Europe⁶³⁴

This led the Czech research organisation Institut Cirkulární Ekonomiky⁶⁴³ (INCIEN) to conduct a study of material flow analysis in December 2018, with the results showing significantly lower collection rates than EKO-KOM suggested. For PET bottles, this was estimated at 69.5%, with 25% of PET bottles ending up in mixed municipal waste and 5.5% as litter. In total, 24,000 tonnes of PET bottles, or 42.7% of the total put on the market, were lost during consumption, separation and sorting - a significant volume, and justification for greater action. In a further spread of misinformation, EKOKOM's claimed collection rate of 82% has been labelled as recycling, whereas INCIEN's study showed that in reality, only 57.3% was recycled.

4.8.2. Campaign in support of DRS

This case for action was followed by the release of research, conducted by Eunomia in January 2019, evaluating the cost-benefit ratio of introducing DRS in the Czech Republic.⁶⁴⁴ The research concluded DRS was the most efficient way to comply with the SUP Directive on separate collection. Following this, a public campaign, *Zálohujme* ('Let's Deposit'),⁶⁴⁵ was launched with the support of several Czech beer and mineral-water producers, including Mattoni 1873 (formerly known as KMV).⁶⁴⁶ Mattoni is one of the largest producers of mineral water in Central Europe - and one of the largest users of single-use plastic packaging. It also owns the licence to sell PepsiCo brands in the Czech Republic, Slovakia and Hungary.⁶⁴⁷ In early 2020, KMV explored the idea of introducing an independent deposit system for PET bottles for delivery company, Kosik, in Prague.⁶⁴⁸

The campaign was also supported by public figures, such as singer and jiu-jitsu fighter Ben Cristovao, and singer-songwriter Tomáš Klus. The campaign found widespread public support; in September 2019, two opinion polls (commissioned by the movement and carried out separately by Ipsos Mori and Kantar TNS) showed that 76% and 85% of the population were in favour of DRS. Additionally, Greenpeace, Friends of the Earth and Fashion Revolution in the Czech Republic launched a compatible campaign, *Más na Míň* ('More for Less'), which collected more than 90,000 signatures urging politicians to introduce DRS legislation.⁶⁴⁹

4.8.3. Government opposition

Six months after Eunomia and INCIEN's studies, the MoE commissioned its own study, conducted by the Centre for Economic and Market Analysis (CETA),⁶⁵⁰ a Czech research institution. On the same day that the study was first introduced to key stakeholders (including KMV, INCIEN and EKO-KOM), the MoE announced in a press conference that it would not introduce a DRS, and used the CETA study to justify its position.⁶⁵¹

The MoE's decision reflected protracted lobbying against DRS by certain interest groups. These include EKO-KOM - which, as an industry-owned company responsible for managing the country's present waste-management system, has strong vested interests in the status quo and operates a de facto monopoly over waste separation. In January 2020, the Environment Minister, Richard Brabec, declared the Czech Republic would not need to introduce such a '*cost-intensive refund system*'. The main arguments used were that it is too risky and costly, and that collection rates are already high enough.⁶⁵² It is important to remember, however, that the MoE bases its rates on EKO-KOM's disputed collection figures.

More recently (May 2020), the Environment Committee of the Czech Parliament voted down mandatory deposits; instead, it said, companies could establish voluntary systems - a proposal denounced as '*completely insufficient*' by environmental experts.⁶⁵³ A final decision on the new waste law has been postponed to September 2020, when renewed discussions on packaging and DRS will take place.

4.8.4. Industry using EKO-KOM to oppose DRS

Unravelling the motivation for EKO-KOM and the MoE rejecting a system proven to create high return rates and effective closed-loop recycling reveals a web of conflicting interests and industry tactics to put off change.

First - and like other EPR organisations - EKO-KOM offers a convenient front for a familiar cast of beverage and consumer-goods companies looking to protect their interests, without undermining their brand value by coming out against DRS in their own names. EKO-KOM was founded by a number of companies - including Coca-Cola's bottler, Coca-Cola Hellenic Bottling Company (HBC)⁶⁵⁴ - in the mid-1990s to set up the EPR system.⁶⁵⁵ Today, EKO-KOM is owned by 10 additional shareholders, including top-10 plastic polluters Unilever, P&G and PepsiCo, as well as packaging companies Ball and Tetra Pak.⁶⁵⁶ The chairman of EKO-KOM's supervisory board is the former CEO of HBC in the Czech Republic, and held both positions for several years.⁶⁵⁷ Coca-Cola promotes a close partnership with EKO-KOM on its website.⁶⁵⁸ Despite Coca-Cola European Partners now supporting DRS in Western Europe, Coca-Cola HBC does not appear to follow the same line.⁶⁵⁹

Second, EKO-KOM has a business interest in the status-quo separation system. Fronted by its CETA study, and with the MoE acting as a key ally, EKO-KOM is keen to retain control over lucrative PET waste streams from kerbside collection, and is even considering sorting facilities at incinerators to capture any valuable material before it is burned.⁶⁶⁰ As part of the current system, it receives funding from beverage companies, as well as taxpayer money, to subsidise the separation system. A deposit system would not only remove PET bottles from its waste streams but also apportion industry funding to running the new system.

Third, EKO-KOM is the only authorised company to manage the plastic waste stream in the Czech Republic, and has established an effective monopoly. Four other companies tried to acquire an authorisation under the Czech Packaging Act from 2001, including Interseroh (from the German Alba Group),⁶⁶¹ Slovakian company Natur-Pack,⁶⁶² and the Czech companies REMA AOS and Ekovedic. All these companies' applications failed, or remain pending, as a result of EKO-KOM maintaining a stranglehold on the Packaging Act. Under the Act, competitors' applications requires EKO-KOM's approval,⁶⁶³ resulting in an institutionalised monopoly by a privately owned company operating on behalf of the Czech Republic's legislation.

To be approved, sources complain they would have to share their financial data, business plans and offers they have made to municipalities with EKO-KOM - their competitor. In one case, the MoE shared an applicant's confidential business intel with EKO-KOM, which subsequently (in 2018) led to a legal case against MoE on proceedings against illegal interference.⁶⁶⁴ This strongly suggests it is not EKO-KOM that works for the MoE but the MoE that serves to protect EKO-KOM's vested interests. Furthermore, the MoE summarily dismissed several complaints brought against EKO-KOM in 2015-16, including allegations it had pressured municipalities into accepting its contracts and attempted to illegally enrich shareholders through the company's reserve fund.⁶⁶⁵ This is part of an ongoing police investigation.⁶⁶⁶

The case of the Czech Republic is another example of how Green Dot organisations, which are central to a country's waste management, often stand in the way of progress due to vested interests. EKO-KOM is particularly egregious in its efforts to squash competition, manipulate legislation through its close allegiance with the MoE, and use opaque and misleading data to justify its case. Claiming questionably high collection rates in this way is an attempt to delay mandatory measures for as long as possible by showing voluntary measures can achieve high rates by themselves. Crucially, the companies behind EKO-KOM are the same culprits undermining legislation in other countries. Especially interesting here is that Coca-Cola - despite its proclaimed support for DRS elsewhere in Europe - is again behind the scenes, under the guise of a Green Dot organisation, opposing this important legislation.

Box 4.5: Bioplastics: A false solution to plastic pollution?

The market for so-called 'bioplastics' is projected to grow exponentially – from \$17 billion in 2017 to \$44 billion in 2022 – in a corporate rush to find a 'green' alternative to single-use plastics.⁶⁶⁷ However, bioplastic is not a silver bullet to the problem of plastics; indeed, it can lead to many environmental problems and unintended consequences. So, what are bioplastics, and are they as environmentally friendly as they are made out to be?

'Bioplastics' has become a misleading catch-all term, incorporating bio-based plastics, biodegradable plastics and compostable plastics.

Bio-based plastics refer to the source material, or feedstock, used to make the plastic. For conventional plastics this means fossil fuels (such as oil or shale gas), whereas bio-based plastics are made from biological material (such as animal or plant products).⁶⁶⁸ The term makes no assumptions regarding the technical properties of the material in use, or how it behaves or should be disposed of at the end of its life. In fact, in many cases, bio-based plastics can be identical to fossil-fuel-based plastics, and frequently contain a blend of the two.⁶⁶⁹ Bio-based plastics can either be 'drop-in' replacements for fossil-fuel-based plastics (such as bio-PET) or 'novel' bio-based plastics with different structures and properties. While the former can be recycled with conventional PET, the latter is problematic; it creates consumer confusion, and existing recycling facilities do not have separate collection for novel plastics, meaning they will either clog up recycling facilities or be sent to landfills or incinerators.

Biodegradable or **compostable** refers to how the material behaves in specific environments with conditions allowing it to break down. This is an entirely separate issue to what raw material the plastic is made from, and biodegradable plastics are usually made from fossil fuels. *Not all bio-based plastics are compostable or biodegradable, and not all compostable or biodegradable plastics are bio-based.*⁶⁷⁰ The biodegradability of a plastic is also heavily influenced by the environmental conditions it ends up in; for example, one plastic may biodegrade relatively quickly in one environment but take hundreds of years in a different environment. Any 'biodegradable' material may decompose quickly in industrial composting conditions but not (or at a considerably slower rate) on land, in a marine environment or in anaerobic digesters, which some municipalities use for compostable waste. While it decomposes and is digested by micro-organisms, the material fragments into

microplastics, which have the risk of being eaten by wildlife and entering the food chain.⁶⁷¹ Additionally, many markets in which compostable packaging is available are not equipped with the facilities to manage it, meaning it is instead landfilled or incinerated, releasing harmful emissions into the atmosphere.⁶⁷² Finally, efforts around biodegradable plastic beg the question: Why would companies design a product to break down in the ocean or soil, rather than work on preventing it from leaking into the natural environment in the first place?

Consumer perception

Consumer-goods companies' promotion of bio-based, biodegradable or compostable packaging efforts demonstrates they are attempting to trade off the eco-credentials of a material being perceived as 'green'. These efforts are not only questionable from an environmental perspective but have also generated a large amount of consumer confusion.⁶⁷³ Indeed, a recent study demonstrated that, although consumers perceived bio-based and compostable plastics to be better for the environment, they were still confused about how to dispose of these materials correctly.⁶⁷⁴ As a result, consumers accidentally contaminate recyclable waste

streams, compromising recycling infrastructure with compostable or biodegradable packaging – or may even litter it, because they assume it will break down in the natural environment. Likewise, bio-based plastics can be erroneously assumed to be biodegradable, and therefore disposed of in composters or the natural environment.

Land use

A further complication regarding the environmental impacts of bio-based, biodegradable and compostable plastics is the origin of their feedstocks. Raw material can come from a wide range of crops, such as corn, wheat, potatoes and cassava (representing around 80% of bioplastics on the market);⁶⁷⁵ less commonly from agricultural by-product, such as straw or cornhusk; and even from novel ingredients, such as algae, or even fish skin and crustacean shells.^{676,677} However, many feedstocks are grown or rely on fertile agricultural land, and therefore displace natural ecosystems or crops that could be grown for food. A push to scale up bio-based plastics could therefore drive competition for scarce land, leading to deforestation, habitat destruction and undermining the fight for food security and biodiversity protection.⁶⁷⁸

Greenhouse gases

Bio-based plastics are often presented as a more climate-friendly alternative to conventional plastics. Coming from theoretically renewable raw materials, they are assumed to be carbon neutral over their life cycle, as opposed to fossil plastics. However, from a GHG perspective, bio-based plastic can be even worse than conventional plastics, as the EU's Joint Research Centre has found regarding bio-PET bottles and flexible packaging film.⁶⁷⁹ First, they can lead to cropland expansion, displacing forests or other carbon sinks.⁶⁸⁰ Second, for biodegradable bio-based plastics,

those that end up in landfill, industrial composting or anaerobic digestors release varying (but significant) amounts of carbon dioxide and methane – a GHG up to 84 times more potent than carbon dioxide⁶⁸¹ – depending on the feedstock.

Corporate activity

Our research into the corporate commitments of the biggest plastic polluters shows a range of approaches to bio-based, biodegradable and compostable plastics. Many of these efforts are highly publicised – such as Coca-Cola's PlantBottle, which uses a bio-PET blend⁶⁸² – in an attempt to trade on the perceived 'greenness' of bio-based plastics. While bio-based plastics that are fully recyclable can fit in with existing systems, some companies have highly ill-advised approaches to biodegradable or compostable plastics, which run counter to wider circular-economy efforts. This includes Nestlé's ambition to develop a biodegradable water bottle for areas without recycling infrastructure,⁶⁸³ and PepsiCo investing in snack packaging that will 'fully biodegrade regardless of how it is disposed of'.⁶⁸⁴ These applications show consumer-goods brands opting for a simple swap-out approach – replacing one single-use material with another, and perpetuating a throwaway culture – rather than pushing for different ways of distributing and collecting, which could lead to greater reuse and recycling for their packaging.

Furthermore, many of the companies investigated have publicly committed to making all packaging 'recyclable, reusable or compostable' within the next 10 years, as part of the *EMF New Plastics Economy Global Commitment*. Although compostable plastics currently represent only 1% of signatories' plastic packaging,⁶⁸⁵ there is a danger this will lead to scaling up the use of biodegradable or compostable material as an easy solution to replace some single-use packaging. Commitments to increase the recyclability of products should be coupled with ensuring those products are not just *theoretically* able to be recycled, but are *in fact* collected and recycled, in practice and at scale. The same should be the case for any introduction of compostable packaging.

Any commitments to these materials should be accompanied by an explicit public acknowledgement of the role of compostable/biodegradable plastics only in beneficial niche applications, and not used to negate wider responsibilities to address plastic pollution at source, scaling reuse and recycling, and reducing plastic output in absolute terms.

In short, there is ample evidence that bio-based, biodegradable and compostable plastics could lead to significant environmental consequences. Companies' attempts to salvage their reputations through the proxy of bioplastics should be regarded as another greenwashing tactic to continue a business-as-usual linear economy.

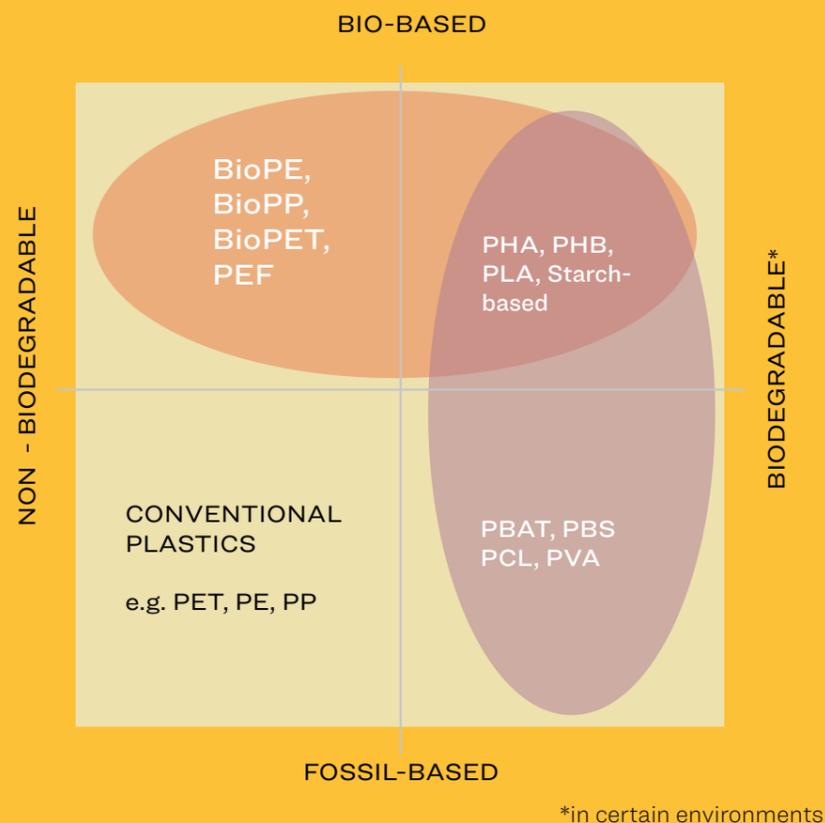
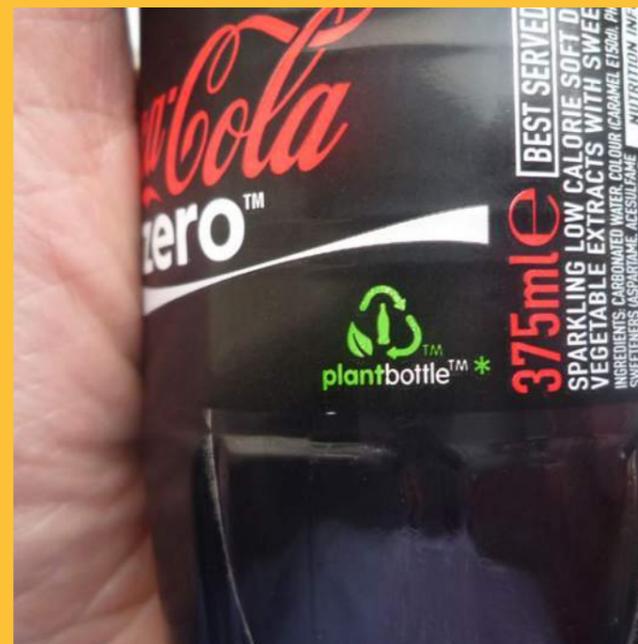


Figure 4.7: Bioplastic materials*

a Based on figures available at <https://www.european-bioplastics.org/bioplastics/materials/>.



Coca-Cola's PlantBottle

Credit: Dunk/Flickr



4.9. China: Banking on biodegradables

In 2019, China's annual output of plastic products reached 81.8 million tonnes, with an increase of 3.9% year on year,⁶⁸⁶ accounting for about 25% of the world's total output.⁶⁸⁷ China is also the largest user of plastic in the world on aggregate, and one of the 20 worst countries for plastic-waste management, producing 8.82 million tonnes of mishandled plastic waste every year. Of that, at least 1.32 million tonnes of plastic finally goes into the ocean⁶⁸⁸ - the equivalent of filling almost twice the area of Beijing's Forbidden City with a layer of trash 1 metre thick.

Chinese citizens' awareness of plastic pollution and desire to do more has also steadily increased: While a 2008 survey reported that only 26% of citizens participated in eco-friendly behaviour,⁶⁸⁹ another national survey a decade later found that 93% of Chinese customers actively sought to buy fewer single-use plastic items.⁶⁹⁰ A more comprehensive national survey in 2019 revealed that 94.6% of respondents indicated they were willing to sort their waste, although about half (51.6%) thought that the result of garbage classification was only OK, while 39.1% found it unsatisfactory.⁶⁹¹

The Chinese government has been among the more strident in terms of sweeping legislation to tackle plastic waste - from a poorly enforced plastic-ban bag in 2007 to the landmark National Sword policy of January 2018, which sent shockwaves through the world of waste management, and, in January 2020, an extended plan to curb plastic pollution that seeks to reduce the use of problematic single-use plastics - such as cutlery, straws and bags - by 2025.⁶⁹² Crucially, the plan is not binding and does not go into detail on collection mechanisms or targets, devolving specific waste-management policies to provincial governments. A concerning amount of emphasis is placed on the use of 'alternative' materials (such as biodegradable and compostable materials) to replace packaging, rather than on scaling collection, effective recycling or reuse-and-refill systems. As one of the world's largest suppliers of biodegradable plastics, China accounts for about 20% of global production capacity, with output expected to rise with favourable national policies.⁶⁹³ The push towards biodegradable plastics lacks specific guidelines on their suitable uses or precautions against scaling other environmental problems in their wake, and is a concerning extension of a linear, throwaway economy.

Despite this, a promising signal from the central government was the State Council's Zero Waste Cities pilot programme, which includes development of waste infrastructure, improved recycling and restricting production of single-use plastics, although retains the same focus on biodegradability. Sixteen cities were selected as pilots,



Grocery stores vegetables wrapped in single-use plastic in China | Credit: Wen Bo

Bottled beverages in a supermarket in Hainan, China | Credit: Wen Bo

with an emphasis on exploring partnerships and innovation to reduce plastic waste.⁶⁹⁴ Yet, beyond the central government's efforts to regulate the problem, corporates' responses to the plastics challenge have been tepid.

4.9.1. Corporate response

Beach clean-ups and brand litter audits conducted between 2017⁶⁹⁵ and 2019⁶⁹⁶ reveal a different cast of corporate characters responsible for marine pollution in China, with the top five polluters listed as Master Kong, Wahaha, C'estbon, Nongfu Spring and the ever-present Coca-Cola.⁶⁹⁷ Some of these brands (such as Nongfu Spring) are household names to Chinese consumers, while others are better known by their branded products. These consumer brands' responses and initiatives highlight the relative lack of progress in China on key areas such as collection, recycled-content inclusion, and reduction and reuse. The majority of their efforts - with the notable exception of Coca-Cola's global targets (100% recyclability by 2025 and use of at least 50% recycled content in packaging by 2030)⁶⁹⁸ - fall into several categories of tactics designed to pay lip service to their responsibility for the plastics crisis (at best) or ignore it altogether (at worst).

4.9.1.1. Awarding prizes

The top-polluting Chinese brands boast a glut of sustainability and CSR awards, handed out by government departments, trade associations and even state media (such as *CCTV*, *People's Daily* and *Xinhua News*). Examples include 'Outstanding Chinese Enterprise in CSR 2018' and 'The Honorary Title of Cleaner Production Enterprise' for Master Kong,⁶⁹⁹ and 'Water-Saving Excellent Enterprise of China Beverage Industry' and 'China's Pioneer for Improving People's Livelihood' for Wahaha.⁷⁰⁰ Many companies also prominently display the Sustainable Development Goals on their websites and publications, yet offer no further detail - and none at all regarding any aspect of plastic or packaging.

4.9.1.2. Avoiding mentions of plastic waste

With the exclusion of Coca-Cola, these brands are also keen to highlight their efforts to tackle other sustainability challenges, such as emissions and water usage. Neither Master Kong, Wahaha nor C'estbon makes more than a scant mention of plastic or recycling, let alone plastics' environmental harm, in their publicly accessible information,⁷⁰¹ and Nongfu Spring has no environmental sustainability-related information available online at all. Furthermore, in 2018, Master Kong assessed plastic-waste management as having a low potential impact on their business, and as being of limited importance to shareholders.⁷⁰² For companies with vast plastic footprints and high litter counts, simply ignoring or not mentioning packaging or pollution is a significant abdication of responsibility.

The CEOs or senior executives of these five brands are also vice-chairmen of the China Beverage Industry Association (CBIA), an industry association with close ties to the government. The CBIA is a staunch defender of these beverage brands,⁷⁰³ in one case denouncing the methodology of a media report that found antimony in PET bottles sold by several large brands, including Coca-Cola and Nongfu Spring.⁷⁰⁴

In 2018, Master Kong organised a team of more than 500 people - comprised of student volunteers, parents and members of staff - to pick up garbage on an island in Chongqing city, and called on the general public to protect the environment. The company has not acknowledged its position as one of the worst sources of beach litter in China.

4.9.1.3. Voluntary collection or tokenism

Chinese consumer-goods companies have initiated several voluntary pilots designed to showcase recycling and collection, but seemingly without advocating mandatory collection or scaling these pilots beyond their



limited timescale or scope. These include 'Bottles Recycle Program: Re-Create Together', a temporary event stand sponsored by Wahaha at the 34th International Exhibition on Plastics and Rubber Industries. Visitors were invited to recycle plastic bottles in RVMs; as a prize, they received a novelty T-shirt or Wahaha beverage - in a plastic bottle.⁷⁰⁵

Partnering with Incom Recycle, C'estbon participated in the Green Lucky Star pilot in 2016. Consumers who returned used C'estbon bottles with star stickers to waste-sorting and -recycling machines, placed by Incom in a supermarket chain in Beijing, received a small amount of money back.⁷⁰⁶ However, this pilot was not extended beyond Beijing, and is not mentioned in the company's sustainability reports.

Finally, Coca-Cola installed 2,000 RVMs in schools and communities in Beijing in 2017 and 2018 to encourage recycling or plastic bottles, using the slogans '*We care*' and '*It's up to you to take environmental action*'. There is no information about whether this scheme was successful, and it appears to have been discontinued.⁷⁰⁷ The company also teamed up with e-commerce platform JD.com in Shanghai, using JD.com's logistics network to collect bottles from 50,000 households. However, the project only ran for two weeks.

4.9.2. Hainan's disappearing DRS

The island province of Hainan is a key tourist destination and burgeoning Special Economic Zone. It currently uses about 120,000 tonnes of plastic each year, and is one of the more progressive provinces in its efforts to curb plastic pollution. The island's capital, Sanya, is one of China's pilot Zero Waste Cities, and Hainan has plans to implement a ban on broad range of non-biodegradable single-use plastics by 2025 (such as straws, bags and some single-use tableware),⁷⁰⁸ which will come into force in December 2020.⁷⁰⁹ During the consultation process, PLASTICS of Hainan strongly opposed the ban, and the China Plastics Processing Industry Association made comments on the policy,⁷¹⁰ yet the secretary-general of the former spoke positively of the ban in an interview with the bioplastics industry.⁷¹¹ The industry association counts at least one bioplastic producer among its members.

Hainan's legislation additionally indicates that recycling plastic bottles should be managed through an EPR system; yet, come the official issuing of the regulation, DRS was conspicuously missing. In documents and media coverage from mid-2019, DRS was explicitly mentioned as an avenue of exploration in Hainan.^{712,713} A further article in state media outlet the *People's Daily* refers to DRS as though it is already a done deal, stating Hainan will lead the way in establishing deposit systems in China.⁷¹⁴ As late as November 2019, the *Sanya Daily* declared that the Hainanese government issued '*strong signals that the establishment of DRS in Hainan will go from request to reality*', and extolled the benefits of the system for reducing plastic waste and ushering in an '*ecological civilisation*'.⁷¹⁵ Despite getting the green light, back-room dealing seems to have undermined DRS at the last moment. Indeed, industry sources in our investigation revealed that a coalition of vested interests - including Coca-Cola - entered discussions in the final stages to ensure that DRS was taken off the table. Furthermore, on-the-ground investigations revealed significant reluctance from local business and retailers



Article in the *Sanya Daily* announcing the progress of DRS |

Credit: *Sanya Daily* |

to participate in DRS, stating there would be little incentive were the system not made compulsory. Today, DRS remains a small, voluntary system, undertaken in some shops and with little public awareness. It is unknown whether similar DRS proposals in Fujian and Guizhou met the same fate.

Action on plastics in China reveals a very different landscape to other developed economies. Broad and high-profile government moves pale in comparison to the level of production and consumption of the world's most populous nation. While the willingness to legislate on the issue is promising, the focus on end-of-pipe solutions (like biodegradable plastics) is not, and serves to perpetuate a linear economy. Meanwhile, companies are well behind the curve, and many do not even acknowledge the plastics problem they perpetuate. With Hainan set to be a pioneer in the introduction of DRS in China, its apparent failure is a significant stumbling block, and demonstrates the hypocrisy of multinational consumer-goods companies that want to appear progressive, where it matters to their image, but continue to campaign to undermining progressive legislation whenever they can get away with it.

| Automatic vending machines in Tokyo
| Credit: Pietro Bruni



4.10. Japan: Out of sight, out of mind

*We shouldn't treat plastic as an enemy, nor ostracize those who use it... What's needed is appropriate management of trash and to search for solutions through innovation.*⁷¹⁶

- Prime Minister Shinzo Abe, October 2019

It is, for the most part, business as usual in Japan when it comes to plastic. According to a report in *The Japan Times*, Japan produces an estimated 9 million tonnes of plastic waste each year, with disposable packaging and food containers accounting for more than 40% of this waste.⁷¹⁷ The report also estimated that Japanese shoppers use 30 billion plastic shopping bags, and that the average person in Japan buys 183 plastic drink bottles, each year. According to the United Nations Environmental Programme, this makes Japan the second-biggest consumer of plastic on a per-capita basis - second only to the US - with around 35kg of plastic-packaging waste per capita.⁷¹⁸

Japan is also home to several of the largest global consumer-goods, chemical and plastics companies. Despite this, the Japanese government has done little to address the global plastic pollution crisis. There remains no strong time-bound national framework or legislation for the reduction of single-use plastics, besides a plastic-bag fee with several loopholes. Voluntary commitments include a government target for corporations to reduce single-use plastics by 25% by 2030.⁷¹⁹

4.10.1. Misleading recycling data

The plastic crisis is obscured by official figures, which inflate the national recycling rate and confuse citizens with inaccurate language. The oft-cited national recycling rate of 80-85% includes categories such as 'thermal recycling' and 'chemical recycling', which are false solutions and misleading. The former is incineration, which accounts for 56% of plastics' end use in Japan; the latter, which includes liquefaction and gasification, accounts for 4%.⁷²⁰

The Japanese public is mostly unaware of this; a recent Greenpeace Japan survey found that 80% believe the plastic they so carefully sort through is recycled, rather than incinerated or exported abroad.⁷²¹ When all of this is factored in, Japan's true municipal recycling rate is just 23%. Even that figure is problematic, as it assumes the 14% total plastic waste exported to countries like China, Malaysia, and Thailand is recycled - rather than land-filled, burned or dumped in the environment, as investigations have found. The remainder of Japan's plastic waste (8%) is landfilled. There is some discrepancy in the figures for waste exports, which Greenpeace Japan claims accounts for 14% of plastic waste; other reports put the raw figure at, variously, 900,000 and 510,000 tonnes,^{722,723} while the most recent figure - from Japan External Trade Organization, via Bloomberg - put the 2018 figure at more than 1 million tonnes.⁷²⁴

Prior to 2018, by some estimates, Japan was the second-biggest exporter of plastic waste to China (by weight). Those exports have completely stopped due to China's National Sword Policy. However, to date, this has had limited upstream impact in Japan due to authorities diverting plastic waste to other markets; in 2018, 80% of exports went to Thailand, Malaysia, Vietnam and Taiwan.⁷²⁵ As those markets are also closing to waste imports, there are now reports that plastic waste is gathering in warehouses and other facilities in Japan. Despite this, the government has yet to put forth a meaningful plan to deal with this crisis. Without a clear policy to reduce

plastic production, increase recycling capacity or introduce reuse at scale, Japan is likely to see a crisis with mounting plastic waste. Akira Sakano of Zero Waste Japan has observed early signs of economic challenges in the industry, with plastic recyclers at capacity and waste piling up across the country, and believes that, if action is not taken, the system could collapse.

4.10.2. Corporate laggards

Japanese brands are mostly lagging behind European and US brands, even when it comes to voluntary commitments. Of the 17 major retailers and consumer brands we investigated, only Kirin,⁷²⁶ Coca-Cola Japan⁷²⁷ and 7 & i Holdings⁷²⁸ have time-bound commitments. Others merely mention either lightweighting plastic packaging (like Meiji,⁷²⁹ Kao⁷³⁰ and Lion⁷³¹), commitments to use plant-based or biodegradable plastics (like Lawson⁷³² and Nissin Foods⁷³³), or switching to paper packaging (like Sapporo⁷³⁴). Overall, the industry is lacking actionable plans to reduce plastic use or promote genuine circular-economy solutions, such as reuse or collection.

Japan has some strengths. The collection system is strong, despite the lack of a DRS, due to high resident awareness and education. High-quality PET bottles are recycled at a relatively high rate, though only partially reintroduced into the system. In 2017, bottle-to-bottle accounted for 25% of rPET, with the remainder going to textiles, sheets and moulding/industrial use. This figure has grown every year, more than doubling since 2012.⁷³⁵ Besides PET, however, very little of Japan's plastic is getting recycled - most ends up being incinerated. Prior to 2018, Japan's efforts to expand mechanical recycling took a back seat to the growing demand for recyclable materials being sent to China, which undercut the economic viability of proposed recycling facilities.

Beverage bottles for sale in a Japanese supermarket

Credit: Pietro Bruni



A single banana wrapped in plastic

Credit: Pietro Bruni



What has been proposed either remains voluntary or focuses on false solutions. Both the government and brands have focused heavily on bioplastics or biodegradable plastics, which distract from the core problem of disposable single-use products. Worryingly, the government - through partnerships, foreign aid and development agencies - is promoting solutions such as bioplastics and Japanese incineration technology to low- and middle-income countries, as both a waste-management and marine-litter solution.⁷³⁶

The case of Japan underlines how crucial it is to look beyond reported statistics to reveal the true fate of plastic. By collecting high volumes of packaging without any way to effectively recycle or reuse it - relying instead on end-of-pipe solutions, like incineration, gasification or waste exporting - the problem is hidden from consumers, who, in turn, will be less inclined to demand change from companies and government. Without mandatory collection and recycled-content targets, there is no incentive to improve recycling infrastructure - and, having invested heavily in incineration, there is a perverse incentive against finding better ways to tackle plastic waste.



4.11. Kenya: A game of cat and mouse

While a great deal of attention is paid to plastic pollution in high-income countries (such as those in the EU and North America), middle- or low-income countries, including many in Africa and Asia, are bearing a disproportionate share of the burden of plastic waste.⁷³⁷ Beverage companies and FMCGs increasingly see these countries as key markets for growth; in 2019, for example, Coca-Cola's CEO, James Quincey, said Africa represents 'one of the core growth engines for the company going forward'.⁷³⁸ When consumer-goods companies push their products into new markets, they frequently do so without ensuring country's waste infrastructure can cope with the new materials arriving by the truckload. A report by the NGO Tearfund also found that many FMCGs use a larger amount of plastic, per euro of sales, in middle- and low-income countries.⁷³⁹



The result is a pernicious and growing plastic pollution nightmare, creating environmental devastation and crippling the health of communities deluged in plastic trash.⁷⁴⁰ Communities on the frontline of the plastics crisis are struggling to find ways to stem the tide of trash, from both imports and mismanaged domestic waste, contributing to the huge human-health and environmental ramifications of open waste burning and overflowing dump sites. According to a 2017 report by the World Bank, only about 7% of plastic waste in Kenya is ever recycled, about 24% is taken to dumpsites, where it is usually burnt, and an alarming 69% ends up in water bodies.⁷⁴¹

Kenya, which made headlines in 2017 by successfully bringing in the world's strictest plastic-bag ban - the third attempt at passing the legislation - has been at the forefront of the 34 African nations with bag bans or taxes.⁷⁴² It is worth noting that the Kenya Association of Manufacturers (KAM) strongly opposed the ban and filed a legal challenge against it, which was ultimately unsuccessful.⁷⁴³

According to the National Environment Management Authority,⁷⁴⁴ the bag ban resulted in 80% of the population ceasing to use single-use carrier bags. Subsequently, in 2018, the government signalled the extension of the ban to single-use plastics - including plastic bottles - in protected areas, such as national parks, from June 2020.⁷⁴⁵

In response to the plastic-bag ban, FMCGs such as Unilever and Coca-Cola have deployed a variety of tactics to ensure they can continue to sell single-use plastic products in the country. Together with KAM, they formed PETCO, an organisation (with offices in Coca-Cola's Nairobi headquarters) with the aim of 'self-regulating' the recycling of PET, avoiding mandatory measures.^{746,747} Akin to misleading Green Dot symbols or recycling numbers in other countries, the PETCO symbol (a green circle of arrows) and tagline ('#do1thing. Recycle.')

pushes the responsibility and blame for pollution onto consumers. However, the initiative has not resulted in reliable streams of clean recyclates to stimulate the recycling market in Kenya, and plastic bottles continue to litter roadsides and rubbish dumps.⁷⁴⁸ Furthermore, the subsidy PETCO provided for collection is so low - as little as 9 cents for 14kg of plastic⁷⁴⁹ - that it requires many hours of hard work to collect enough for payment. Even then, due to limited demand for recyclable plastic some waste pickers report being stuck with thousands of kilos of plastic bottles, collected over months, with nowhere to go.⁷⁵⁰

Growing plastic pollution in a dumpsite in Nairobi, Kenya

Credit: Clean-Up Kenya

An overflowing dumpsite in Nairobi, Kenya

Credit: Clean-Up Kenya

As in other countries, the industry sponsors widely publicised litter-clean-up days, working with local groups, such as the clean-up days organised by Coca-Cola with the youth organisation Dandora HipHop City. For this initiative, ironically, volunteers were 'paid' in Coca-Cola beverages - in plastic bottles.

Proposals to introduce DRS for beverage containers have been met with fierce opposition, particularly from Coca-Cola, despite its commitment to collect a bottle for every bottle it sells globally and its grudging support for DRS in some European countries. Clean Up Kenya was even met with veiled threats from beverage-industry representatives when the local NGO met them to discuss a national bottle-deposit system.⁷⁵¹ Coca-Cola argues that DRS would not be appropriate for Kenya, even though KAM deemed it feasible in a 2019 report,⁷⁵² and de-



Plastic bottles, collected over months, with nowhere to go

Credit: Clean-Up Kenya



Waste pickers report being stuck with thousands of kilos of plastic bottles.

Credit: Clean-Up Kenya



| The huge human-health and environmental ramifications of open waste burning and overflowing dump sites in Kenya

| Credit: Clean-Up Kenya

spite the fact that a deposit for returnable glass bottles has long been a feature of Kenyan consumers' lives. In this regard, Coca-Cola has a double incentive to stymie DRS - every refillable glass bottle that is displaced from the market is replaced by 25 single-use-plastic bottles, and, in Kenya, the advent of single-use-plastic bottles has outpaced local glass bottlers - which would also bottle beverages from local soda brands, stifling the company's competition.⁷⁵³

NGOs (such as Clean Up Kenya) attempts to directly engage with Coca-Cola have fallen on deaf ears. The plastic giant is accused of failing to recognise the scale of the plastic-bottle problem in Kenya and of failing in its commitment to the Kenyan people - and even of being complicit in child labour and human-rights violations, through its control of PETCO and its weak subsidy scheme, which requires waste pickers to collect as many as 320 bottles for a single US dollar.⁷⁵⁴

The case of Kenya demonstrates the hypocrisy of consumer brands pushing their products on markets not adequately equipped to manage the resultant waste, while also actively blocking measures that would equip them to do so. It demonstrates the importance of forcing companies to adopt a consistent approach to tackling plastic waste across all markets, and not continuing with its double standards. While the industry is under the watchful eye of consumers and NGOs in the EU and North America, it often escapes such scrutiny in low- and middle-income countries, where citizens are more directly and heavily impacted by plastic pollution.



4.12. Bolivia: The rights of plastics trump the rights of Mother Earth

Bolivia's Law of the Rights of Mother Earth is one of the first pieces of national environmental legislation that recognises the rights of a natural entity as equal to the rights of humans.⁷⁵⁵ One might assume that, under such an overarching law, the lobbying of large FMCG companies and the plastics industry would have been curtailed, but the case of Bolivia shows otherwise.

In May of 2019, the city of La Paz approved the first ever legislative project to ban all plastic bags, PET bottles and single-use plastic at the local level.⁷⁵⁶ The bill, which garnered support from the Municipal La Paz government (which has continuously worked to put forward progressive environmental and waste-management legislation), mandated that all commercial establishments - including informal commerce, but particularly targeting supermarkets - would have 45 days to stop using plastic bags and start using cloth bags.⁷⁵⁷ The regulation also gave a 60-day deadline to end the delivery, supply, use and marketing of PET plastic bottles and containers, and of expanded polystyrene containers for beverages and food.⁷⁵⁸ Companies using plastic bottles would be required to report the number of PET bottles in stock, and the timeframe for using that stock, to the Secretary of Mother Earth - a separate entity that operates under the Autonomous Municipal Government of La Paz.

Under this law, companies would have had an obligation to present a contingency plan for the collection of PET bottles introduced onto the market,⁷⁵⁹ and to be responsible for collecting existing PET bottles and replacing them with alternative materials, such as glass.



Plastic Trash in La Paz, Bolivia

Credit: Shutterstock

The opposition - loud and public - came from the National Chamber of Industry (CNI).⁷⁶⁰ The industry warned that 470 companies - including large retailers, like Hipermaxi, Pil Andina S.A. and Coca-Cola's bottling company, EMBOL - would be affected by the plastic-disposal law. The president of the CNI, Ibo Blazicevic, depicted the law as 'a serious issue' that would put great pressure on the industry, which would not be able to find a substitute for PET bottles.⁷⁶¹ The industry has always used the argument of lack of legislative action or taxation in the informal sector to disregard any new legislative action pursued by the local or national governments. REDciclar Bolivia - a virtual platform and citizen initiative for environmental waste management - also came out in opposition, with its founder Barbara Giaviarini claiming this type of change 'is rather a process and you can't tell the producers of PET bottles to suddenly stop using this product'.⁷⁶² The organisation proposed the implementation of awareness campaigns, targeting the reduction of plastic consumption in civil society, and said it didn't want a new law that 'would just be written in paper and not fully executed'.⁷⁶³

The law was put on hold - initially for the three months but, later on, completely changed.⁷⁶⁴ During discussions between the industry and legislators, the introduction of biodegradable plastic bags was mooted as a way to prevent a shift away from plastic in its entirety. However, the introduction of biodegradable bags has been previously contested by environmental organisations such as Plástico? No Gracias! and Greenpeace, which analysed plastic bags and plastic-container samples in a 2018 study. The results indicated that plastic bags in Bolivia fragment but do not fully biodegrade (despite the claims on the label),⁷⁶⁵ showing this solution to be environmentally problematic.

The ban, which the industry referred to as 'the crazy law', was slowly weakened.⁷⁶⁶ Evidence as to just how much the ban was watered down comes from the testimonies of legislators who initially proposed it, such as the President of the Legislative, Legal and Electoral Commission of the Departmental Assembly of the city of La Paz, Elizabeth Morales Gutierrez, who explained on national television that 'the law is not a prohibitive or forceful law but rather of gradual implementation'.⁷⁶⁷

Persistent arguments against the ban finally led to its rejection, with municipalities within La Paz saying they had neither the resources nor the budgets to apply the ban or control the new system, and that smaller local businesses - especially local beverage manufacturers - would bear the burden of the ban's costs. The legislation was ultimately postponed, and will be totally revised in dialogue with the National Chamber of Commerce and the CNI of La Paz.



4.13. Uruguay: Tax backlash

Uruguay is an interesting case study, given the recent introduction of legislation that makes the industry more accountable for both the waste it produces and the plastic products it puts on the market. According to the MoE in Uruguay, 16% of the waste generated is plastic, and only 10% of this plastic is recycled.⁷⁶⁹ According to CTplas, 14,000 tonnes of beverage containers were placed on the Uruguayan market in 2017 - and, shockingly, almost 1 million beverage containers end up in landfills or the natural environment every day.⁷⁷⁰ Montevideo, the capital and most populous city, generates 1,600 tonnes of household waste per day,⁷⁷¹ making urban solid waste management a huge problem.

4.13.1. The General Law of Integral Waste Management

In August 2019, Alejo Umpierrez presented a bill in the chamber of representatives to prohibit the production, import, distribution and marketing of PET bottles and single-use containers - which ultimately failed.⁷⁷² Shortly after, in September 2019, the chamber of senators approved the General Law of Integral Waste Management, which became the new legislation for plastic-waste management in Uruguay.⁷⁷³

This legislation sought to minimise waste generation by promoting the reuse and recovery of resources through recycling, energy recovery and other forms of waste recovery, and, ultimately, evaluating alternatives for end-of-life disposal.⁷⁷⁴ It also set EPR for manufacturers and importers, and introduced an environmental tax to finance special waste-management programmes and promote the recovery of waste nationally.

Although manufacturers and importers will have to pay the corresponding environmental tax, they will also have the option of implementing a collection system to recover the containers placed on the market. This will enable them to redeem the environmental tax through a tax credit. Article 40 of the law also stipulates that, once the useful life of a single-use-plastic container or product ends, the merchants, retailers and sales stores - as well as other intermediaries in the chain of distribution and commercialisation - will be obliged to accept the return of the products or packaging.⁷⁷⁵

Acting as an EPR system, the tax applies to products placed on the market in single-use containers, disposable trays used as food containers, plastic packaging film, disposable cups and plastic bags. Great emphasis was placed on single-use plastics. During the legislative process, the industry lobbied to prevent this legislation from coming to fruition, according to National Director of the Environment, Alejandro Nario.⁷⁷⁶ The most active lobbyist was the Association of the Plastics Industry in Uruguay (AUIP) - whose members include plastic producers Ecomet SA and CristalPet SA - which declared that consumers would be the most affected by the legislation, because the price of products would likely have to increase in order to compensate for the tax.⁷⁷⁷

A clear example of how the lobby materialised is its influence of several articles in the law. For example, the responsibility for implementing the environmental tax on single-use plastics falls exclusively on the producers and importer, and gives companies a leeway; they have the options of reusing or recycling the waste they generate, or just paying a tax. Unfortunately, the tax - which was initially set higher than the amount finally agreed - was, at first, completely rejected by the AUIP. This segment of the legislation was received with great disapproval by both sides, with other political party members also arguing that taxing certain types of waste acts as a perverse incentive for companies to continue using single-use plastics and producing waste, while exempting them from any responsibility. A member of the Colorado Party, Cecilia Eguiluz, acknowledged: *'If you pay the tax, you have the right to keep producing waste and not be accountable for it'*.

The new General Law of Integral Waste Management ended up disregarding the earlier proposed bill to prohibit PET bottles and containers, which would have been a much bolder step towards tackling the plastics issue in Uruguay.⁷⁷⁸

Figure 4.8: 'it's not plastic, it's you' (No es el plástico, eres tú) Source: AUIP⁷⁸⁰



4.13.2. Business as usual for the plastics industry

AUIP includes approximately 49 members of the plastics industry, such as the prominent names Ecopet and CristalPet.⁷⁷⁹ Its mission is to defend the general interests of the plastics industry, and, particularly, those of its members - companies that represent approximately 90% of the total processing of imported plastic raw materials.

AUIP is in charge of a great part of the lobbying executed in Uruguay. To continue business as usual, it places the blame on the consumer, diverting responsibility away from producers and onto citizens. An example of this messaging can be found on their official website - *'It's not plastics, it's you'* - which places the blame on consumers for not knowing how to dispose of their waste. As we have seen, this is a typical industry tactic to shift responsibility onto others, while continuing to produce products and packaging that can't be properly recycled at the end of their life cycle.

4.13.3. Cristalpet and Ecopet blame consumers

CristalPet is one of the largest plastic producers in Uruguay, while Ecopet is the environmental responsibility branch that poses as its corporate responsibility organisation. Ecopet recycles approximately 60% of the plastic CristalPet produces, dedicating itself exclusively to recycling PET bottles (mainly of sodas and water) and working closely with Coca-Cola, among other beverage companies.⁷⁸¹ Ecopet is the first recycling plant in Uruguay capable of processing the PET plastic bottles placed on the market.⁷⁸² According to Ecopet, the largest bottle manufacturer in Uruguay has the capacity to inject 900 tonnes of bottles into the market per month, while Ecopet processes only 120 tonnes per month.⁷⁸³ These figures expose that Ecopet is capable of processing much more than it actually does; its full capacity is not used, due to the lack of proper collection of PET bottles.

However, testimonies from Ecopet's managers have identified that the main obstacle to a sustainable world is not so much *'technical but cultural'*, blaming consumers yet again instead of promoting improved collection, mandatory recycled content or true producer responsibility.⁷⁸⁴

Additionally, the connections between Ecopet and Coca-Cola in Uruguay are intimate. Coca-Cola currently uses 100% recycled material only in its still-water brand, Vitale (625ml).⁷⁸⁵ However, it is not clear how Coca-Cola reaches these numbers. The two companies' collaborations are convoluted; they create joint advertisement campaigns, advocating for more public education, clean-ups and public-awareness campaigns⁷⁸⁶ - all while promoting downcycling plastic bottles for use in clothing, accessories, glasses, frames or even roofing.⁷⁸⁷

Uruguay is a fascinating case for several reasons. First, it constantly seeks to lead on the improvement of environmental legislation in the region, setting stronger environmental standards. Second, due to its cultural and geographical proximity to other Latin American nations, it can set a clear example of the correct path to take to introduce further legislative environmental action. It seems the industry is well aware of this, and has quickly mobilised to prevent any progressive legislative precedent on the Latin American continent.



5. Conclusion and recommendations

This report has exposed a raft of strategies and tactics companies in the plastics supply chain employ to obfuscate attempts to tackle the plastic pollution crisis. We have revealed how plastic producers and consumer brands have created a whole network of organisations to distract, delay and derail legislation, and presented case studies on how these tactics play out in different regions across the world.

We have also uncovered what lies behind the smokescreen of voluntary commitments and nice-sounding initiatives to address the issue. Although the industry has been under pressure to reduce single-use plastic, and to transition to a circular economy through reuse and effective recycling, these outcomes still represent less than 10% of what happens to plastic at the end of its life.

The rest ends up as pollution in our natural environment, is burned in toxic incinerators or is left to slowly rot in ever-growing landfills. The scourge of plastic pollution across the world is evidence enough to show the voluntary approach has failed. The tide of plastic pollution must be stemmed at its source - through effective legislation for absolute reduction in plastics, and through mandatory collection - so that those currently flooding the world with plastic are responsible for ensuring it no longer ends up in the environment.

5.1. Weak individual company commitments

Our research has revealed how voluntary commitments from major plastic polluters consistently fail to meet the levels of ambition required. Few companies call for mandatory collection of packaging globally, while progress on reuse and refill is very limited. Likewise, consistent plastic policy across markets is missing from most FMCG companies - indeed, many use even larger amounts of plastic in the products they sell in low- and middle-income countries. False solutions - such as replacing single-use plastics with other single-use materials, or promoting bio-based, biodegradable and compostable plastics - may cause unintended consequences and scale up other environmental problems in their wake.

Companies often appear keen to seek magical technical fixes (such as chemical recycling) instead of focusing on solutions that have already been proven to work effectively (such as DRS with refill and effective mechanical recycling). They fight these proven solutions tooth and nail because such solutions would require them to fully step up their responsibility and taking on the true costs of plastic pollution, which have been externalised onto the environment and the health of vulnerable communities for too long. The linear-economy business model of buy-use-dispose is always cheaper for these corporations because somebody else is footing the bill for the waste they create.

5.2. Misguided group initiatives

Similarly, we have analysed some of the most prominent group initiatives that have sprung up in response to unprecedented public awareness of the plastics crisis. In terms of content, most of these initiatives serve to distract attention from efforts that will create real, lasting change, focusing instead on products' recyclability or end-of-pipe solutions (such as clean-ups), which saddle the consumer with most of the blame - and public authorities with most of the cost - for a waste problem created by corporations. The barrier to entry for these initiatives is startlingly low; in some cases, even the most basic requirements (such as reporting total plastic footprint) seem not to be required of the major FMCGs, and, once a corporation is in, there is little to no external accountability. At best, by lending credibility to the worst polluters - without accountability or enforcement - group alliances are helping to construct a smokescreen of sustainability, behind which plastic producers and consumer brands can continue to pump the world full of plastic unabated. At worst, these groups are complicit in actively delaying and undermining more transformative legislative action.

5.3. History of broken promises

Regardless of how ambitious voluntary commitments sound, we have revealed that many companies regard them as merely headline-generating paper promises - easily warped, reframed or ignored.

Our analysis of the commitments of Coca-Cola - the biggest plastic polluter - shows the company has broken, delayed or morphed most of their impressive-sounding commitments over the last 30 years. At the same time, it has fiercely opposed progressive legislation, from DRS to redesign obligations (such as tethered caps). Coca-Cola did this both by lobbying directly and by proxy through different industry associations, such as ABA in the US and UNESDA at the EU level. Only when they realised the battle was lost did they come out in favour of 'well-designed DRS', as we have seen in Scotland and, later, at the EU level. But we should not be fooled by this

support; our investigation has revealed Coca-Cola continues to undermine DRS proposals in other regions, such as China's Hainan province and Kenya.

Coca-Cola is not the only company breaking its promises. Nestlé Waters N.A. and PepsiCo both broke their commitments to *As You Sow* to double recycling of PET plastic bottles to 60% by 2018, and to increase the US beverage-container recycling rate to 50% by 2018, respectively.

5.4. Corporate actions to stop legislation

As our case studies across the world have shown, large international corporations have the benefit of operating at numerous levels and participating in many different organisations and associations - some created to make them look like they are committed to helping, others to defend their interests from policy interventions. These corporations also have budgets that buy them influence and access to decision-makers - and leverage over consumers - through well-resourced campaigns, which seek to either demonstrate they are part of the solution or rehabilitate the sinking reputation of plastics as a foundation of modern life.

We have exposed the companies behind these attempts, which range from oil and chemical companies to major retailers, beverage producers, consumer brands and even waste-management companies. This report has revealed the incredible web of influence these corporations have, and how quickly and fiercely they react to even the smallest attempt by legislators to restrict or regulate plastic. They mobilise in full force against local grassroots initiatives to ban plastic bags (as we have seen in the US) or plastic bottles (as we have seen in La Paz, Bolivia). Their efforts to derail legislation range from early attempts to distract and delay (by not providing reliable data on plastic footprints and recycling rates, which would enable meaningful decision-making) to legal challenges to legislation, and even pre-emptive laws to nip future regulation in the bud.

5.5. Pushing responsibility for waste and recycling onto consumers

One of the key tactics in this playbook of false solutions has been to point the finger of blame firmly at consumers. It's not plastic that's the problem - it's the 'litterbugs' who do not properly dispose of their waste. The industry cooked up this strategy in the 1950s, and has become more and more sophisticated as NGOs and investigative journalists have started to expose its tricks. The industry invests enormous amounts of effort and money into convincing consumers the plastic problem could be solved through recycling alone. However, the evidence shows that many of these companies' products and packaging are impossible to recycle, or cannot be recycled at scale. Instead of switching to other materials and business models, the industry has disseminated campaigns to 'educate consumers' about where and how they should recycle their non-recyclable waste, and invested in new problematic technologies such as chemical recycling.

Industry tactics for placing the blame elsewhere have also become increasingly elaborate. Instead of taking responsibility for the waste it creates, the industry now blames low- and middle-income countries - especially in Asia - for ocean plastics, due to their '*lack of waste-management infrastructure*'. In doing this, they are conveniently forgetting that most ocean plastic pollution consists of the products these corporations sell there, and that many of these countries also face the double burden of being the dumping ground for the world's exported waste.



A beach clean-up in southern England
Credit: David Mirzoeff

5.6. Exploiting the crisis

The Covid-19 health crisis has, once again, shown that Big Plastic is always primed and ready to co-opt a crisis to their advantage, pushing to undermine environmental legislation or any restrictions on their products. As the tide has turned in attitudes towards (single-use) plastics - from local grassroots action to the adoption of progressive legislation in Europe and China's decision to stop accepting the world's waste - the plastics industry was quick to spot an opportunity in the pandemic, both to roll back some of this legislation (notably plastic-bag bans) and to position all plastic (not just PPE) as vital to sanitation, conveniently ignoring the wide-ranging deleterious effects to human health caused by every stage of the plastics life cycle.

This report shows that the plastics industry does not have people's best interests at heart; instead, it is making cold calculations to carry on with business as usual. Meanwhile, ever-increasing production of plastic threatens to overwhelm our remaining carbon budget, with emissions generated at each juncture of extraction, production, use and disposal. A robust, mandatory and timely response to plastic pollution is critical to maintaining the health of our planet and people.

Plastic pollution is unprecedentedly problematic, and its instigators have evaded real accountability for too long. This report shows we need urgent and radical legislative action to bring this crisis under control. The following recommendations suggest how to start this process.

5.7. Recommendations

5.7.1. For policymakers

This report has shown that voluntary initiatives and commitments by the industry do not work. For this reason, policymakers should adopt progressive legislation, built on the following key elements:

Separate collection

- Introduce legislation mandating at least 90% separate collection of plastic waste (while systems for plastic bottles and other beverage containers are already well established, this should go beyond beverage containers to look at other types of packaging), and acknowledge that mandatory deposit return systems are the only proven and effective way to achieve high levels of collection and litter reduction.

Reuse policy

- Introduce reuse targets and other supportive policy mechanisms (such as differentiated deposits for refillables), built into policies from the outset - and, in doing so, acknowledge that plastics and other materials cannot be reused at a significant scale without at least 90% mandatory collection and deposit return systems.

Recycled content

- Implement minimum recycled-content targets in the production of packaging and containers of at least 50% for beverage containers and at least 30% for other items, as a starting point. This creates a market for effective plastic recycling, and maintains plastic in a closed loop without downcycling the material.
- Address the issue of hazardous chemicals, and ensure companies design products from the start that can be recycled in a healthy closed loop. For example, at the EU level, end exemptions for chemicals in recycled materials and regulate chemical groups (rather than individual chemicals) to avoid regrettable substitution.

Virgin-plastic tax

- Introduce a tax on virgin plastic, which must ensure the use of recycled plastic is incentivised over virgin plastic. This should be accompanied with a clear position on the use of alternative materials, such as bio-based, biodegradable and compostable plastic, with justifications for what is - and what is not - a good use of these materials.

Ban harmful materials and chemicals

- Introduce bans on unnecessary or harmful plastic materials, such as PVC and polystyrene, and on single-use products that frequently end up as litter in the environment and ocean.
- Ban toxic chemicals across all products, and in recycled materials as well as in virgin materials.
- Prioritise reusable alternatives and act to avoid regrettable substitutions - for example, replacing single-use plastic with other single-use materials, such as bio-based, biodegradable or compostable plastic - which do not fix pollution problems and may also lead to other environmental problems.

Extended producer responsibility

- Introduce well-designed Extended Producer Responsibility schemes with modulated fees, the polluter-pays principle and reduction targets, and include funding for better alternatives to single-use.
- This report has also shown, however, that many PROs in the EU (ARA in Austria, Ecoembes in Spain, etc.) are being abused to lobby against progressive legislation, defending the interests of plastic producers and large retailers. If this is the case, governments should pass the necessary reforms to address it.

Zero Waste Cities

- Support the Zero Waste Cities approach by creating and implementing systems that continuously intend to phase out waste – not by incinerating, landfilling or exporting it, but instead by not generating waste in the first place.

Global action

- Establish an intergovernmental negotiating committee at the United Nations Environment Assembly to negotiate a dedicated global agreement – a Convention on Plastic Pollution – that eliminates plastic discharges into the environment while also promoting a safe circular economy for plastics; one that addresses the full life cycle of plastics, from production and design to prevention and waste management.

Include affected communities

- When legislation is developed in countries with informal waste-collection sectors, it is important that it is context-specific and actively includes waste-picker communities in its development.

5.7.2. For companies

Support legislation

- Ensure commitments are more ambitious than existing, or proposed, legislation to address plastic pollution.
- Openly express support of – and call for – progressive legislation to address the plastic crisis, encourage peers to do the same and leave any industry initiatives that oppose, delay or undermine progressive legislation – including its implementation.

Transparency

- Be transparent about the company’s full plastic footprint (including products and packaging) and progress against targets on plastic, setting out a holistic approach to discourage ‘virtue signalling’ with tokenistic gestures (e.g. products from ocean plastic).
- Ensure reporting includes achievements across all markets and brands, and is based on independently verified data.

Reduction

- Commit to meaningful measures that would lead to a significant reduction in single-use plastics and other single-use materials. These measures need to be specific, measurable, time-bound and independently verified, and should include support for reuse, redesign of products and effective recycling.
- Ensure transparency in reporting progress on the number of units.

Clarity on alternative materials

- Outline clear positions on the use of alternative materials, such as bio-based, bio-degradable and compostable plastic, with justifications for what is – and isn’t – a good use of these materials, including clear sustainability criteria that prevent deforestation or competition with food.
- Ensure such products are only commercialised in markets with the appropriate waste-management infrastructure to deal with them.

Consistency across markets

- Ensure commitments are enacted consistently across all markets in which the company (and its subsidiaries) operates; that is, ensure there is no contradiction between how a company acts on the issue of plastic pollution in one market compared to how it acts in another.

Robust voluntary commitments

- Ensure any voluntary initiative the company is part of adheres to the guidelines in Box 2.2 (Chapter 2) on what a good voluntary initiative looks like.

5.7.3. For consumers

It is not easy to solve this problem as a consumer. Because companies keep control over their packaging, they make it incredibly difficult to opt for plastic-free solutions or business models. An important step towards identifying where true accountability lies is recognising that, to a certain extent, we can only act as sustainably as the system allows us to. We firmly believe reducing plastics shouldn't be solely the consumer's responsibility, but rather part of a systemic change that is led by legislators and implemented by corporations. For this reason, we encourage individuals to be vocal in calling for legislation, holding corporations accountable, and amplifying the voices of those pushing for change.

We hope this report will help people to call out corporate hypocrisy where they see it, and to recognise when companies are trying to delay, distract and derail progress to remedy the crisis. Individual actions do help to send a signal - to both corporations and governments - that there is an appetite and an urgent need for change. So, if you do want to make changes as an individual, here are some recommendations on how to reduce your plastic footprint: <https://www.breakfreefromplastic.org/campaigns/goingforzerowaste/>



Refill at the 'Harm Less Store'
in Hornsey, UK
Credit: David Mirzoeff

6. References

- 1 Parker, L. (2018) We made plastic. We depend on it. Now we're drowning in it. National Geographic [ONLINE] Available at: <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis/>.
- 2 Plastic Soup Foundation (n.d.) What to do with plastic waste? [ONLINE] Available at: <https://www.plasticsoupfoundation.org/en/files/what-to-do-with-plastic-waste/>
- 3 United Nations Grid-Arendal (2018) Global plastic production and future trends [ONLINE] Available at: <https://www.grida.no/resources/6923>
- 4 Jambeck, J. R., et al. (2015) Plastic waste inputs from land into the ocean. Science, 13 Feb 2015: Vol. 347, Issue 6223, pp. 768-771 [ONLINE] Available at: <https://science.sciencemag.org/content/347/6223/768>
- 5 Peng, X., Chen, M., Chen, S., Dasgupta, S., Xu, H., Ta, K., Du, M., Li, J., Guo, Z. and Bai, S. (2018) Microplastics contaminate the deepest part of the world's ocean. Geochemical Perspectives Letters, 9: 1-5.
- 6 Sobhani, Z., Lei, Y., Tang, Y., et al. (2020) Microplastics generated when opening plastic packaging. Scientific Reports, 10: 4841. [ONLINE] Available at: <https://doi.org/10.1038/s41598-020-61146-4>
- 7 Spary, S. (2018) Now even insects are eating plastic – and that's bad news for our food chain. The Huffington Post, 19 September. [ONLINE] Available at: https://www.huffingtonpost.co.uk/entry/now-even-insects-are-eating-plastic-and-thats-bad-news-for-our-food-chain_uk_5ba21077e4b04d32ebfe20aa
- 8 Plastic Soup Foundation (2020) New studies: Microplastics found in fruit and veg. [ONLINE] Available at: <https://www.plasticsoupfoundation.org/en/2020/06/new-studies-microplastics-found-in-fruit-and-veg/>
- 9 Harvey, F. and Watts, J. (2018) Microplastics found in human stools for the first time. The Guardian, 22 October [ONLINE] Available at: <https://www.theguardian.com/environment/2018/oct/22/microplastics-found-in-human-stools-for-the-first-time>
- 10 Critchell, K., and O'Hoogenboom, M. (2018) Effects of microplastic exposure on the body condition and behaviour of planktivorous reef fish (Acanthochromis polyacanthus). PloS One, 13:3 (e0193308). [ONLINE] Available at: [doi:10.1371/journal.pone.0193308](https://doi.org/10.1371/journal.pone.0193308).
- 11 Prata, J. (2017) Airborne microplastics: Consequences to human health? Environmental Pollution [ONLINE] Available at: https://www.researchgate.net/profile/Joana_Prata3/publication/321299826_Airborne_microplastics_Consequences_to_human_health/links/5a915a16aca2721405630a1f/Airborne-microplastics-Consequences-to-human-health.pdf
- 12 WWF (2019) No plastic in nature: Assessing plastic ingestion from nature to people [ONLINE] Available at: http://awsassets.panda.org/downloads/plastic_ingestion_press_singles.pdf
- 13 Tearfund (2019) No time to waste [ONLINE] Available at: https://learn.tearfund.org/-/media/files/tilz/circular_economy/2019-tearfund-consortium-no-time-to-waste-en.pdf?la=en
- 14 CIEL (2019) Plastic & health: The hidden costs of a plastic planet. [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf>
- 15 World Economic Forum (2016) The new plastics economy: Rethinking the future of plastics [ONLINE] Available at: http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf p.6
- 16 Plastic Oceans (2020) The facts [ONLINE] Available at: <https://plasticoceans.org/the-facts/>
- 17 World Economic Forum (2016) The new plastics economy: Rethinking the future of plastics [ONLINE] Available at: http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf p.6
- 18 Shen, M., Ye, S., Zeng, G., Zhang, Y., Xing, L., Tang, W., Wen, X. and Liu, S. (2020) Can microplastics pose a threat to ocean carbon sequestration? Marine Pollution Bulletin, 150 [ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S0025326X19308689>
- 19 CIEL (2019) Plastic & climate: The hidden costs of a plastic planet (executive summary) [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-Executive-Summary-2019.pdf>
- 20 CIEL (2019) Plastic & climate: The hidden costs of a plastic planet [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>
- 21 UNEP (2018) Single-use plastics: A roadmap for sustainability [ONLINE] Available at: <https://wedocs.unep.org/handle/20.500.11822/25496>
- 22 CIEL (2017) Fuelling plastics: Plastic industry awareness of the ocean plastics problem [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Plastic-Industry-Awareness-of-the-Ocean-Plastics-Problem.pdf>
- 23 Three Worlds (2017) Why we suddenly have a plastics crisis [ONLINE] Available at: <http://threeworlds.campaignstrategy.org/?p=1764>
- 24 Sullivan, L. (2020) Plastic wars: Industry spent millions selling recycling – to sell more plastic. NPR, 31 March [ONLINE] Available at: <https://www.npr.org/2020/03/31/822597631/plastic-wars-three-takeaways-from-the-fight-over-the-future-of-plastics>
- 25 Buranyi, S. (2018) The plastic backlash: What's behind our sudden rage – and will it make a difference? The Guardian, 13 November [ONLINE] Available at: <https://www.theguardian.com/environment/2018/nov/13/the-plastic-backlash-whats-behind-our-sudden-rage-and-will-it-make-a-difference>
- 26 CIEL (2017) Fueling plastics: Plastic industry awareness of the ocean plastics problem [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Plastic-Industry-Awareness-of-the-Ocean-Plastics-Problem.pdf>
- 27 World Economic Forum (2018) The world's plastic problem in numbers [ONLINE] Available at: <https://www.weforum.org/agenda/2018/08/the-world-of-plastics-in-numbers>
- 28 Arkin, C. (2019) Waste exports: The rubbish dump is closed. Henrich Böll Foundation, 4 November [ONLINE] Available at: <https://www.boell.de/en/2019/11/04/waste-exports-rubbish-dump-closed>

29 Hook, L. and Reed, J. (2018) Why the world's recycling system stopped working. The Financial Times, 25 October [ONLINE] Available at: <https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8>

30 McDermid, C. (2019) Dozens of companies launch US\$1 billion bid to end plastic pollution in Asia but environmentalists dismiss it as 'greenwashing' stunt. Break Free from Plastic, 13 February [ONLINE] Available at: <https://www.breakfreefromplastic.org/2019/02/13/companies-bid-end-plastic-pollution-asia-greenwashing-stunt/>

31 Arkin, C. (2019) Waste exports: The rubbish dump is closed. Henrich Böll Foundation, 4 November [ONLINE] Available at: <https://www.boell.de/en/2019/11/04/waste-exports-rubbish-dump-closed>

32 Lema, K. (2019) Slave to sachets: How poverty worsens the plastics crisis in the Philippines. Reuters, 3 September [ONLINE] Available at: <https://uk.reuters.com/article/uk-asia-waste-philippines/slave-to-sachets-how-poverty-worsens-the-plastics-crisis-in-the-philippines-idUKKCN1VOOFX>

33 BBC News (2020) Why is UK recycling being dumped by Turkish roadsides? 26 June [ONLINE] Available at: <https://www.bbc.com/news/av/uk-53181948/why-is-uk-recycling-being-dumped-by-turkish-roadsides>

34 Three Worlds (2017) Why we suddenly have a plastics crisis. 11 December [ONLINE] Available at: <http://threeworlds.campaignstrategy.org/?p=1764>

35 European Commission (2020) New Eurobarometer Survey: Protecting the environment and climate is important for over 90% of European citizens [Press Release] 3 March [ONLINE] Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_20_331

36 GLOBAL 2000 (2020) Majority of Austrians for deposit system. 10 March [ONLINE] Available at: <https://www.global2000.at/news/umfrage-pfandsystem>; Changing Markets Foundation (2020) Genie in a bottle: Unlocking the full potential of California's bottle bill [ONLINE] Available at: <http://changingmarkets.org/wp-content/uploads/2020/05/GENIE-IN-A-BOTTLE-UNLOCKING-CALIFORNIAS-BOTTLE-BILL-web.pdf>

37 Yu, A. (2020) Insight: China Ban on single use plastics threatens 4m tonnes/year of polymer demand. ICIS, 24 January [ONLINE] Available at: <https://www.icis.com/explore/resources/news/2020/01/24/10461510/insight-china-ban-on-single-use-plastics-threatens-4m-tonnes-year-of-polymer-demand>

38 US Congress (2020) Break Free From Plastic Pollution Act of 2020 (H.R.5845) [ONLINE] Available at: <https://www.congress.gov/bill/116th-congress/house-bill/5845>

39 Coca Cola Europe (2016) Radar screen of EU public policies. Monthly issue update: February & March 2016 [ONLINE] Available at: <https://www.documentcloud.org/documents/3409808-EU-Radar-Screen-Issue-Update-2016-02-03.html>

40 Environmental Investigation Agency and Greenpeace (2019) Checking out on plastics II: Breakthroughs and backtracking from supermarkets [ONLINE] Available at: <https://eia-international.org/wp-content/uploads/Checking-Out-on-Plastics-2-report.pdf>

41 InfluenceMap (2020) Tracking corporate climate lobbying in response to the COVID-19 crisis [ONLINE] Available at: https://influ-encemap.org/site/data/000/486/Influence-Map_CoronavirusClimateLobby_April2020.pdf

42 CIEL (2020) Pandemic crisis, systemic decline: Why exploiting the COVID-19 crisis will not save the oil, gas, and plastic industries [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2020/04/Pandemic-Crisis-Systemic-Degradation-April-2020.pdf>

43 EuPC (2020) Open letter: COVID19 – request for a recast or postponement of the Single-Use Plastics Directive. 8 April [ONLINE] Available at: https://fd0ea2e2-fecf-4f82-8b1b-9e5e1ebec6a0.filesusr.com/ugd/2eb778_9d8ec284e39b4c7d84e774f0da14f2e8.pdf

44 Radoszewski, T. (2020) Letter to Alex Azar, Secretary, US Department of Health and Human Services. 18 March [ONLINE] Available at: <https://www.politico.com/states/f/?id=00000171-0d87-d270-a773-6fdfcc4d0000>

45 Lerner, S. (2020) Big Plastic asks for \$1 billion coronavirus bailout. The Intercept, 27 April [ONLINE] Available at: <https://theintercept.com/2020/04/27/plastic-industry-coronavirus-bailout/>

46 Anderson, H. (2020) Coronavirus could increase interest in gas-driven Pennsylvania petrochemical growth. Pennsylvania Business Report, 8 April [ONLINE] Available at: <https://pennbizreport.com/news/16040-coronavirus-could-increase-interest-in-gas-driven-pennsylvania-petrochemical-growth/>

47 Henrich Böll Foundation (2019) Plastic atlas: Facts and figures about the world of synthetic polymers [ONLINE] Available at: https://www.boell.de/sites/default/files/2020-01/Plastic%20Atlas%202019%202nd%20Edition.pdf?dimension1=ds_plastic_atlas

48 Muncke, J., Andersson, A.-M., Backhaus, T. et al. (2020) Impacts of food contact chemicals on human health: A consensus statement. Environmental Health, 19:25 [ONLINE] Available at: https://uploads-ssl.webflow.com/5e5989de7d8ff17dd9d726c9/5e5ec3f0181cf6cf9a71db88_Impacts%20of%20food%20contact%20chemicals%20on%20human%20health-%20a%20consensus%20statement.pdf

49 Birnbaum, L. S. and Heindel, J. J. (2020) Endocrine-disrupting chemicals weaken us in our COVID-19 battle. Environmental Health News, 23 April [ONLINE] Available at: <https://www.ehn.org/chemical-exposure-coronavirus-2645785581.html>

50 CIEL (2020) Pandemic crisis, systemic decline: Why exploiting the COVID-19 crisis will not save the oil, gas, and plastic industries [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2020/04/Pandemic-Crisis-Systemic-Degradation-April-2020.pdf>

51 Quinn, I. (2020) DRS in doubt as supermarket bosses call for rethink. The Grocer, 3 July [ONLINE] Available at: <https://www.thegrocer.co.uk/supermarkets/drs-in-doubt-as-supermarket-bosses-call-for-rethink/646068.article>

52 Omaha World Herald (2020) Amid coronavirus, Iowa grocers don't have to take bottle returns. They'd like to keep it that way. 5 April [ONLINE] Available at: https://www.omaha.com/money/amid-coronavirus-iowa-grocers-dont-have-to-take-bottle-returns-theyd-like-to-keep-it/article_dc626942-d929-57f5-b267-2eb73404c991.html

53 Reloop (2018) Deposit systems for one-way beverage containers: Global overview 2018 [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2018/05/BOOK-Deposit-Global-27-APR2018.pdf>

54 Reloop Platform (2020) Deposit return: How it works [ONLINE] Available at: <https://www.reloopplatform.org/resources/videos/>

55 Reloop (2018) Deposit systems for one-way beverage containers: Global overview 2018 [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2018/05/BOOK-Deposit-Global-27-APR2018.pdf>

56 Bottle Bill Resource Guide (n.d.) Litter studies in bottle bill states [ONLINE] Available at: <http://www.bottlebill.org/index.php/>

57 Reloop (2019) Deposit Return System: Studies confirm big savings to municipal budgets. 12 July [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2019/12/Fact-Sheet-Economic-Impacts-to-Municipalities-12July2019.pdf>

58 Reloop (2020) Deposit Return Systems: Public support. 20 March [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2020/03/Fact-Sheet-Public-Support-20March2020.pdf>

59 Zero Waste Europe (2019) Deposit Return Scheme manifesto [ONLINE] Available at: https://zerowasteurope.eu/wp-content/uploads/2019/07/2019_07_23_zwe_drs_manifesto.pdf?fbclid=IwAR19BQ-D_1A40Q5CZCwNkTdm-wlFpoLsefvz3dT4k92LEYBmXJUfbHwH4m7Y

60 Alliance to End Plastic Waste (2020) First anniversary report 2019. [ONLINE] Available at: https://endplasticwaste.org/wp-content/uploads/2020/01/55779_WBCSD_Alliance-to-end-plastic-waste_AWIO_V9_spreads.pdf

61 Tearfund (2020) The burning question: Will companies reduce their plastic use? [ONLINE] Available at: https://learn.tearfund.org/-/media/files/tilz/circular_economy/2020-tearfund-the-burning-question-en.pdf?la=en

62 Date, W. (2019) Coca-Cola investments aid recycled content for bottles. Let's Recycle, 20 June [ONLINE] Available at: <https://www.letsrecycle.com/news/latest-news/coca-cola-to-increase-rpet/>

63 The Coca-Cola Company (2020) 2019 Business & sustainability report [ONLINE] Available at: <https://www.coca-colacompany.com/content/dam/journey/us/en/reports/coca-cola-business-and-sustainability-report-2019.pdf>

64 Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2019/>

65 Break Free From Plastic (2018) Branded vol. I: In search of the world's top corporate plastic polluters [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2018/>

66 Changing Markets (2020) Genie in a bottle: Unlocking the full potential of California's bottle bill [ONLINE] Available at: <http://changingmarkets.org/wp-content/uploads/2020/05/GENIE-IN-A-BOTTLE-UNLOCKING-CALIFORNIAS-BOTTLE-BILL-web.pdf>

	TLE-UNLOCKING-CALIFORNIAS-BOTTLE-BILL-web.pdf		https://www.theguardian.com/news/datablog/2019/nov/09/coca-cola-world-biggest-plastics-polluter-again-datablog	(2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	97	Colgate-Palmolive (2020) Providing access to more affordable products [ONLINE] Available at: https://www.colgatepalmolive.com/en-us/core-values/sustainability/performance#accordion-content-118768398-5	
67	Reloop (2016) Policy instruments to promote refillable beverage containers. 19 July [ONLINE] Available at: https://www.reloopplatform.org/wp-content/uploads/2016/07/Refillables-policy-Final-Fact-sheet-June30.pdf	77	Tearfund (2020) The burning question: Will companies reduce their plastic use? [ONLINE] Available at: https://learn.tearfund.org/-/media/files/tilz/circular_economy/2020-tearfund-the-burning-question-en.pdf?la=en	88	The Coca-Cola Company (2020) 2019 Business and sustainability report [ONLINE] Available at: https://www.coca-colacompany.com/content/dam/journey/us/en/reports/coca-cola-business-and-sustainability-report-2019.pdf	98	Ibid.
68	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report. [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	78	The Coca-Cola Company (2018) 2018 Business and sustainability report [ONLINE] Available at: https://www.coca-colacompany.com/content/dam/journey/us/en/policies/pdf/safety-health/coca-cola-business-and-sustainability-report-2018.pdf	89	The Coca-Cola Company (2009) Live positively: 2008/2009 sustainability review [ONLINE] Available at: https://www.yumpu.com/en/document/read/46286033/2008-2009-sustainability-review-the-coca-cola-company	99	Ibid.
69	Morawski, C. (2019) Update on Europe's new waste legislation. Re-loop, 22 January [ONLINE] Available at: https://www.reloopplatform.org/wp-content/uploads/2019/03/Prague-January22_Reloop.pdf	79	Coca-Cola European Partners (2020) Coca-Cola sets ambitious new sustainable packaging goals for Western Europe [ONLINE] Available at: https://www.coca-cola.eu/news/ambitious-new-sustainable-packaging-goals-western-europe/	90	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	100	Wood, Z. (2020) Colgate launches vegan certified toothpaste in recyclable tube. The Guardian, 14 January [ONLINE] Available at: https://www.theguardian.com/environment/2020/jan/14/colgate-launches-vegan-certified-toothpaste-in-recyclable-tube
70	Rethink Plastic Alliance and Break Free From Plastic (2019) Moving away from single-use: Guide for national decision makers to implement the single-use plastics directive [ONLINE] Available at: https://rethinkplasticalliance.eu/wp-content/uploads/2019/10/2019_10_10_rpa_bffp_sup_guide.pdf	80	As you Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: https://www.asyousow.org/reports/waste-and-opportunity-2020-searching-corporate-leadership	91	Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters. [ONLINE] Available at: https://www.breakfreefromplastic.org/globalbrandauditreport2019/	101	Danone (2020) Danone at a glance [Infographic] [ONLINE] Available at: https://www.danone.com/about-danone/at-a-glance/danone-data.html
71	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report. [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	81	Coca-Cola European Partners (2016) Radar screen of EU public policies [ONLINE] Available at: https://www.documentcloud.org/documents/3409808-EU-Radar-Screen-Issue-Update-2016-02-03.html	92	Colgate-Palmolive (2020) Providing access to more affordable products [ONLINE] Available at: https://www.colgatepalmolive.com/en-us/core-values/sustainability/performance#accordion-content-118768398-5	102	Danone (2018) Accelerating the transition towards the circular economy [ONLINE] Available at: https://www.danone.com/content/dam/danone-corp/danone-com/about-us-impact/policies-andcommitments/en/2018/Danone_Packaging_Policy.pdf
72	Rethink Plastic Alliance and Break Free From Plastic (2019) Moving away from single-use: Guide for national decision makers to implement the single-use plastics directive [ONLINE] Available at: https://rethinkplasticalliance.eu/wp-content/uploads/2019/10/2019_10_10_rpa_bffp_sup_guide.pdf	82	Lerner, S. (2018) Leaked audio reveals how Coca-Cola undermines plastic recycling efforts. The Intercept, 18 October [ONLINE] Available at: https://theintercept.com/2019/10/18/coca-cola-recycling-plastics-pollution/	93	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	103	Ibid.
73	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	83	Lerner, S. (2020) Africa's exploding plastic nightmare. The Intercept, 19 April [ONLINE] Available at: https://theintercept.com/2020/04/19/africa-plastic-waste-kenya-ethiopia/	94	Colgate-Palmolive (2019) Colgate-Palmolive joins TerraCycle's Loop initiative to eliminate single-use packaging. [Press Release] 21 May [ONLINE] Available at: https://investor.colgatepalmolive.com/news-releases/news-release-details/colgate-palmolive-joins-terracycles-loop-initiative-eliminate	104	Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: https://www.breakfreefromplastic.org/globalbrandauditreport2019/
74	Ibid.	84	The Coca-Cola Company (2020) 2019 Business & sustainability report [ONLINE] Available at: https://www.coca-colacompany.com/content/dam/journey/us/en/reports/coca-cola-business-and-sustainability-report-2019.pdf	95	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report. [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	105	Danone (2020) Circular economy of packaging [ONLINE] Available at: https://www.danone.com/impact/planet/packaging-positive-circular-economy.html
75	Laville, S. (2019) Coca-Cola admits it produces 3m tonnes of plastic packaging a year. The Guardian, 14 March [ONLINE] Available at: https://www.theguardian.com/business/2019/mar/14/coca-cola-admits-it-produces-3m-tonnes-of-plastic-packaging-a-year	85	The Coca-Cola Company (2018) 2018 Business and sustainability report [ONLINE] Available at: https://www.coca-colacompany.com/content/dam/journey/us/en/policies/pdf/safety-health/coca-cola-business-and-sustainability-report-2018.pdf , p. 11.	96	Colgate-Palmolive (2020) 2020 sustainability commitments progress [ONLINE] Available at: https://www.colgatepalmolive.com/en-us/core-values/sustainability/2020-sustainability-comitments-progress	106	Ibid.
76	Chalabi, M. (2019) Coca-Cola is world's biggest plastic polluter - again. The Guardian, 9 November [ONLINE] Available at:	86	Ibid.	97	Ellen MacArthur Foundation and UN Environment Programme (2019)	107	Danone (2018) Accelerating the transition towards the circular economy [ONLINE] Available at: https://www.danone.com/content/dam/danone-corp/danone-com/about-us-impact/policies-andcommitments/en/2018/Danone_Packaging_Policy.pdf
		87	Ellen MacArthur Foundation and UN Environment Programme	98		108	Circular (2020) Danone to halve amount of virgin plastic used by the water brands. 9 March [ONLINE] Available at: https://www.circularonline.co.uk/news/danone-to-halve-amount-of-virgin-plastic-used-by-the-water-brands/
				99		109	Ellen MacArthur Foundation and UN Environment Programme (2019)

110	The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	121	https://www.breakfreefromplastic.org/globalbrandauditreport2019/				
	Beverage Daily (2002) Danone continues water cooler expansion. 12 November [ONLINE] Available at: https://www.beveragedaily.com/Article/2002/11/12/Danone-continues-water-cooler-expansion	122	Mars (2020) Plans to rethink our packaging, today [ONLINE] Available at: https://www.mars.com/sustainability-plan/healthy-planet/sustainable-packaging				
111	Danone (2018) Accelerating the transition towards the circular economy [ONLINE] Available at: https://www.danone.com/content/dam/danone-corp/danone-com/about-us-impact/policies-andcommitments/en/2018/Danone_Packaging_Policy.pdf	123	Ibid.				
112	Ibid.	124	Mars (2020) Sustainable packaging [ONLINE] Available at: https://www.mars.com/sustainability-plan/healthy-planet/sustainable-packaging				
113	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	125	Mars (2015) Principles in action: Summary 2015 [ONLINE] Available at: https://www.yumpu.com/en/document/read/59229276/mars-principles-in-action-summary-2015_p4				
114	Danone (2018) Accelerating the transition towards the circular economy [ONLINE] Available at: https://www.danone.com/content/dam/danone-corp/danone-com/about-us-impact/policies-andcommitments/en/2018/Danone_Packaging_Policy.pdf	126	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf				
115	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	127	Mars (2020) Plans to rethink our packaging, today [ONLINE] Available at: https://www.mars.com/sustainability-plan/healthy-planet/sustainable-packaging				
116	Ibid.	128	Ibid.				
117	Danone (2018) Accelerating the transition towards the circular economy [ONLINE] Available at: https://www.danone.com/content/dam/danone-corp/danone-com/about-us-impact/policies-andcommitments/en/2018/Danone_Packaging_Policy.pdf	129	As You Sow (2020) Ocean plastics [ONLINE] Available at: https://www.asyousow.org/our-work/waste/ocean-plastics				
118	Mars (2020) Made by Mars [ONLINE] Available at: https://www.mars.com/made-by-mars	130	Mondelēz International (2019) Snacking made right [ONLINE] Available at: https://www.mondelezinternational.com/-/media/Mondelez/Snacking-Made-Right/SMR-Report/2019_MDLZ_Snacking_Made_Right_Report.pdf				
119	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	131	Edie (2020) Mondelēz signs up to UK Plastics Pact and Ellen MacArthur Foundation's Global Commitment [ONLINE] Available at: https://www.edie.net/news/5/Mondelez-signs-up-to-UK-Plastics-Pact-and-Ellen-MacArthur-Foundation-s-Global-Commitment/				
120	Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters. [ONLINE] Available at:	132	Mondelēz International (2020) Packaging innovation [ONLINE] Available at: https://www.mondelezinternational.com/Snacking-Made-Right/Packaging-Innovation				
		133	Mondelēz International (2018) Mondelēz International com-				
			mits to making all packaging recyclable by 2025 [Press Release] 9 October [ONLINE] Available at: https://ir.mondelezinternational.com/news-releases/news-release-details/mondelez-international-commits-making-all-packaging-recyclable				
				134	Mondelēz International (2018) Impact report [ONLINE] Available at: https://www.mondelezinternational.com/-/media/MondelezCorporate/uploads/downloads/2018_Impact_Progress_Report.pdf	144	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf
				135	Toloken, S. (2020) Chemically recycled plastic to be used in cream cheese packaging. Plastic News, 2 June [ONLINE] Available at: https://www.plasticsnews.com/news/chemically-recycled-plastic-be-used-cream-cheese-packaging	145	Nestlé (2020) Nestlé creates market for food-grade recycled plastics, launches fund to boost packaging innovation [Press Release] 16 January [ONLINE] Available at: https://www.nestle.co.uk/en-gb/media/pressreleases/allpressreleases/nestle-creates-market-food-grade-recycled-plastics-launches-fund-boost
				136	As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership	146	Nestlé (2020) Developing packaging-free delivery systems and reuse models [ONLINE] Available at: https://www.nestle.com/csv/impact/environment/packaging#developing-packaging-free-delivery-systems-and-reuse-models
				137	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf	147	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report. [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf
				138	Greenpeace Switzerland (2019) Nestlé: A giant plastic problem [ONLINE] Available at: https://storage.googleapis.com/planet4-switzerland-stateless/2019/05/62cbfc33-62cbfc33-nestle-a-giant-plastic-problem.pdf	148	Abboud, L. (2019) Can we overcome the curse of the single-use sachet? Financial Times, 5 December [ONLINE] Available at: https://www.ft.com/content/1aa60666-f64b-11e9-bbe1-4db3476c5ff0
				139	Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: https://www.breakfreefromplastic.org/globalbrandauditreport2019/	149	Nestlé (2020) Improve packaging performance [ONLINE] Available at: https://www.nestle.com/csv/impact/environment/packaging
				140	Nestlé (2019) Creating shared value and meeting our commitments 2019: Progress report. [ONLINE] Available at: https://www.nestle.com/sites/default/files/2020-03/creating-shared-value-report-2019-en.pdf	150	Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf
				141	Nestlé (2020) Improve packaging performance [ONLINE] Available at: https://www.nestle.com/csv/impact/environment/packaging	151	Nestlé (2018) Creating shared value and meeting our commitments 2018: Progress report [ONLINE] Available at: https://www.nestle.com/sites/default/files/asset-library/documents/library/documents/corporate_social_responsibility/creating-shared-value-report-2018-en.pdf
				142	Nestlé (2018) Creating shared value and meeting our commitments 2018: progress report. [ONLINE] Available at: https://www.nestle.com/sites/default/files/asset-library/documents/library/documents/corporate_social_responsibility/creating-shared-value-report-2018-en.pdf	152	Nestlé (2019) Nestlé inaugurates packaging research institute, first-of-its-kind in the food industry [Press Release] 12 September [ONLINE] Available at: https://www.nestle.com/media/pressreleases/allpressreleases/nestle-inaugurates-packaging-research-institute
				143	As You Sow (2020) Waste and opportunity 2020: Searching for cor-	153	Nestlé (2019) Nestlé and Danimer Scientific to develop biodegrad-

- able water bottle [Press Release] 15 January [ONLINE] Available at: <https://www.nestle.com/media/pressreleases/allpressreleases/nestle-danimer-scientific-develop-biodegradable-water-bottle>
- 154 Forbes (2019) Global 2000: The world's largest public companies [ONLINE] Available at: <https://www.forbes.com/global2000/list/>
- 155 Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters. [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2019/>
- 156 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 157 PepsiCo (2019) PepsiCo sustainability report 2018 [ONLINE] Available at: https://www.pepsico.com/docs/album/sustainability-report/2018-csr/pepsico_2018_csr.pdf?sfvrsn=b23814c0_6
- 158 PepsiCo (2020) Packaging: Our approach [ONLINE] Available at: <https://www.pepsico.com/sustainability/packaging>
- 159 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 160 Ibid.
- 161 PepsiCo (2020) Packaging: Our approach. [ONLINE] Available at: <https://www.pepsico.com/sustainability/packaging>
- 162 PepsiCo (2020) 2019 Sustainability report goals and progress [ONLINE] Available at: <https://www.pepsico.com/sustainability/goals-and-progress>
- 163 Zero Waste Europe (2019) Deposit Return Systems (DRS) manifesto [ONLINE] Available at: https://zerowasteurope.eu/wp-content/uploads/2019/12/2019_12_10_zwe_drs_manifesto.pdf
- 164 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 165 PepsiCo (2020) 2019 Sustainability report goals and progress [ONLINE] Available at: <https://www.pepsico.com/sustainability/goals-and-progress>
- 166 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 167 Loop Industries (2018) PepsiCo and Loop Industries sign multi-year supply agreement for Loop branded 100% sustainable plastic [Press Release] 10 October [ONLINE] Available at: <https://www.loopindustries.com/en/article/pepsico>
- 168 PepsiCo (2019) PepsiCo sustainability report 2018. [ONLINE] Available at: https://www.pepsico.com/docs/album/sustainability-report/2018-csr/pepsico_2018_csr.pdf?sfvrsn=b23814c0_6
- 169 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 170 Perfetti van Melle (2020) At a glance [ONLINE] Available at: <https://www.perfettivanmelle.com/who-we-are/at-a-glance/>
- 171 Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2019/>
- 172 Perfetti van Melle (2016) Our road to sustainability: Corporate social responsibility report 2016 [ONLINE] Available at: https://www.perfettivanmelle.com/assets/pdf/pvm_csr_global_2016.pdf
- 173 Ibid.
- 174 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 175 P&G (2020) Brands [ONLINE] Available at: <https://www.pg.co.uk/brands/>
- 176 Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2019/>
- 177 Danigelis, A. (2020) Procter & Gamble signs deal for recycled plastic supply. Environment & Energy Leader, 21 February. [ONLINE] Available at: <https://www.environmentalleader.com/2020/02/procter-gamble-recycled-plastic-uk/>
- 178 Edie (2019) Inside P&G's plastics packaging strategy. 15 May [ONLINE] Available at: <https://www.edie.net/news/5/Inside-P-G-s-plastics-packaging-strategy/>
- 179 P&G (2020) Environmental sustainability [ONLINE] Available at: <https://us.pg.com/environmental-sustainability/>
- 180 Ibid.
- 181 Ibid.
- 182 Ibid.
- 183 Loop (2020) Our brand partners [ONLINE] Available at: <https://loopstore.com/brand-partners>
- 184 P&G (n.d.) Ambition 2030: A new global commitment to reduce plastic [ONLINE] Available at: https://assets.ctfassets.net/oggad6svuzkv/2DpQLt6huvHZo2180ZgS4/3c6ffcd3fe7d405441a17b30d80b9512/Plastic_Reduction_infographic_final_April_12_1_.pdf
- 185 P&G (n.d.) Brand 2030 criteria. [ONLINE] Available at: (https://assets.ctfassets.net/oggad6svuzkv/c51rnXxwqeuGOx4RUPJ4o/daef678c940da189cdacc0a7723e5ee7/P_G-Ambition2030-Brands-Final_4.8.19v2.pdf)
- 186 P&G (n.d.) Ambition 2030: A new global commitment to reduce plastic [ONLINE] Available at: https://assets.ctfassets.net/oggad6svuzkv/2DpQLt6huvHZo2180ZgS4/3c6ffcd3fe7d405441a17b30d80b9512/Plastic_Reduction_infographic_final_April_12_1_.pdf
- 187 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 188 EU (2019) Pledge by: Procter & Gamble. European Circular Economy Stakeholder Platform. 10 October [ONLINE] Available at: <https://circulareconomy.europa.eu/platform/en/commitments/pledges/procter-gamble>
- 189 Danigelis, A. (2020) Procter & Gamble signs deal for recycled plastic supply. Environment & Energy Leader, 21 February. [ONLINE] Available at: <https://www.environmentalleader.com/2020/02/procter-gamble-recycled-plastic-uk/>
- 190 P&G (n.d.) Ambition 2030: A new global commitment to reduce plastic [ONLINE] Available at: https://assets.ctfassets.net/oggad6svuzkv/2DpQLt6huvHZo2180ZgS4/3c6ffcd3fe7d405441a17b30d80b9512/Plastic_Reduction_infographic_final_April_12_1_.pdf
- 191 Head & Shoulder (2017) Recycling beach plastic [YouTube] 11 October [ONLINE] Available at: <https://www.youtube.com/watch?v=CS6bJwZOKdk>
- 192 Head & Shoulders (n.d.) Head & Shoulders beach bottle reaches a milestone with over 1 million bottles recovered through plastic recycling [ONLINE] Available at: <https://www.headandshoulders.com/en-us/whats-new/head-and-shoulders-beach-bottle-reaches-a-milestone>
- 193 EU (2019) Pledge by: Procter & Gamble. European Circular Economy Stakeholder Platform. 10 October [ONLINE] Available at: <https://circulareconomy.europa.eu/platform/en/commitments/pledges/procter-gamble>
- 194 Edie (2017) How P&G formed a new supply chain to combat ocean plastics. 9 October [ONLINE] Available at: [https://www.edie.net/news/5/How-P-G-formed-a-new-supply-chain-to-combat-ocean-plastics-/](https://www.edie.net/news/5/How-P-G-formed-a-new-supply-chain-to-combat-ocean-plastics/)
- 195 Brunsman, B. J. (2019) P&G CEO leads \$1b effort to curb plastic pollution. The Business Journals, 16 January [ONLINE] Available at: <https://www.bizjournals.com/cincinnati/news/2019/01/16/pg-ceo-leads-1b-effort-to-curb-plastic-pollution.html>
- 196 P&G (2015) 2015 Sustainability report [ONLINE] Available at: https://assets.ctfassets.net/oggad6svuzkv/6vklbcuYakYclluOMSQWIO/2fa281c305ed8d140e23b71f54b96462/2015_Full_Sustainability_Report.pdf
- 197 P&G (2018) 2018 Citizenship report [ONLINE] Available at: https://downloads.ctfassets.net/oggad6svuzkv/1LqUQKMqVOVK3yDQn1Mnu7/db2ee9e1eb9b480e2bd-d356e8327720c/2018_Full_Citizenship_Report.pdf, p.112
- 198 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>

- org/assets/doc/Global-Commitment-2019-Progress-Report.pdf
- 199 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report summary [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report-Summary.pdf>
- 200 Break Free From Plastic (2019) Branded vol. II: Identifying the world's top corporate plastic polluters [ONLINE] Available at: <https://www.breakfreefromplastic.org/globalbrandauditreport2019/>
- 201 Unilever (2019) Purpose led, future fit: Unilever annual report and accounts 2019 [ONLINE] Available at: https://www.unilever.com/Images/unilever-annual-report-and-accounts-2019_tcm244-547893_en.pdf
- 202 Unilever (2019) Unilever announces ambitious new commitments for a waste-free world [Press Release] 7 October [ONLINE] Available at: <https://www.unilever.com/news/press-releases/2019/unilever-announces-ambitious-new-commitments-for-a-waste-free-world.html>
- 203 Unilever (2019) We're innovating for a reuse-refill revolution [Press Release] 30 July [ONLINE] Available at: <https://www.unilever.co.uk/news/news-and-features/2019/we-are-innovating-for-a-reuse-revolution.html>
- 204 Morrison, O. (2019) Cheaper plastic set to test industry's 'true commitment to sustainability', warns report. Food Navigator, 15 October [ONLINE] Available at: <https://www.foodnavigator.com/Article/2019/10/15/Cheaper-plastic-set-to-test-industry-s-true-commitment-to-sustainability-warns-report>
- 205 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 206 Unilever (2019) Unilever announces ambitious new commitments for a waste-free world [Press Release] 7 October [ONLINE] Available at: <https://www.unilever.com/news/press-releases/2019/unilever-announces-ambitious-new-commitments-for-a-waste-free-world.html>
- 207 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 208 Ibid.
- 209 Unilever (2019) Unilever sustainable living plan: 3-year summary of progress 2016-2018 [ONLINE] Available at: https://www.unilever.com/Images/uslp-3-year-performance-summary-2016-2018-final_tcm244-536744_en.pdf; Unilever (2019) Unilever sustainable living plan: 3-year summary of progress [ONLINE] Available at: https://www.unilever.com/Images/uslp-targets--3-year-progress_tcm244-523202_en.pdf
- 210 Unilever (2019) Unilever sustainable living plan: 3-year summary of progress 2017-2019 [ONLINE] Available at: https://www.unilever.com/Images/uslp-3-year-performance-summary-2017-2019_tcm244-549781_en.pdf
- 211 Unilever (2020) Rethinking plastic packaging: Towards a circular economy [ONLINE] Available at <https://www.unilever.com/sustainable-living/reducing-environmental-impact/waste-and-packaging/rethinking-plastic-packaging/>
- 212 Unilever (n.d.) Unilever's position on bioplastics [ONLINE] Available at: https://www.unilever.com/Images/bioplastics-position-statement-typo-amends-nov-2015_tcm244-423101_en.pdf
- 213 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 214 Ibid.
- 215 Alliance to End Plastic Waste (2020) First anniversary report 2019 [ONLINE] Available at: https://endplasticwaste.org/wp-content/uploads/2020/01/55779_WBCSD_Alliance-to-end-plastic-waste_AW10_V9_spreads.pdf
- 216 Staub, C. (2019) Billion dollar alliance targets plastic waste. Plastics Recycling Update, 16 January [ONLINE] Available at: <https://resource-recycling.com/plastics/2019/01/16/billion-dollar-alliance-targets-plastic-waste/>
- 217 Alliance to End Plastic Waste (2019) Alliance to End Plastic Waste joins Project STOP to help tackle plastic waste in the environment in Indonesia [Press Release] 23 September [ONLINE] Available at: <https://endplasticwaste.org/latest/alliance-to-end-plastic-waste-joins-project-stop-to-help-tackle-plastic-waste-in-the-environment-in-indonesia/>
- 218 Alliance to End Plastic Waste (2019) The Alliance in action around the globe [Press Release] 3 July [ONLINE] Available at: <https://endplasticwaste.org/latest/the-alliance-in-action/>
- 219 African Parks (2020) The Alliance to End Plastic Waste and African Parks partner to improve waste management in protected areas across the continent [Press Release] 23 June [ONLINE] Available at: <https://www.africanparks.org/alliance-end-plastic-waste-and-african-parks-partner-improve-waste-management-protected-areas>
- 220 Financial Times (2020) Equities: Royal Dutch Shell PLC [ONLINE] Available at: <https://markets.ft.com/data/equities/tearsheet/profile?s=RDSA:LSE> [accessed 9 January 2020]
- 221 McDermid, C. (2019) Dozens of companies launch US\$1 billion bid to end plastic pollution in Asia but environmentalists dismiss it as 'greenwashing' stunt. Break Free from Plastic, 13 February [ONLINE] Available at: <https://www.breakfreefromplastic.org/2019/02/13/companies-bid-end-plastic-pollution-asia-greenwashing-stunt/>
- 222 Food and Water Watch (2019) New report details vast scope and scale of emerging fracking infrastructure boom [Press Release] 5 June [ONLINE] Available at: https://www.foodandwaterwatch.org/fracking_endgame_plastics_pollution_climate
- 223 Reuters Events (2019) ACC: US chemical output expected to jump, key issue at 'Downstream 2019. 10 June [ONLINE] Available at: <https://analysis.petchem-update.com/supply-chain-logistics/acc-us-chemical-output-expected-jump-key-issue-downstream-2019>
- 224 Food and Water Watch (2019) New report details vast scope and scale of emerging fracking infrastructure boom [Press Release] 5 June [ONLINE] Available at: https://www.foodandwaterwatch.org/fracking_endgame_plastics_pollution_climate
- 225 Haigh, L. (2019) A who's who of companies investing in plastics production: Is the Alliance to End Plastic Waste hypocritical? Packaging Insights, 23 January [ONLINE] Available at: <https://www.packaginginsights.com/news/A-whos-who-of-companies-investing-in-plastic-production-Is-the-Alliance-to-End-Plastic-Waste-hypocritical.html>
- 226 Keep America Beautiful (2019) Mission & history [ONLINE] Available at: <https://kab.org/about/approach/mission-history/>
- 227 Keep America Beautiful (2019) Our partners [ONLINE] Available at: <https://kab.org/about/partners/#corporate>
- 228 Alliance to End Plastic Waste (n.d.) Alliance to End Plastic Waste [ONLINE] Available at: <https://endplasticwaste.org/>
- 229 Godrej, D. (2018) It's all down to you. New Internationalist, 1 November [ONLINE] Available at: <https://newint.org/features/2018/11/01/its-all-down-you>
- 230 Alliance to End Plastic Waste (2019) The Alliance launches today [Press Release] 16 January [ONLINE] Available at: <https://endplasticwaste.org/latest/the-alliance-launches-today/>
- 231 Ocean Conservancy and McKinsey Centre for Business and Environment (2015) Stemming the tide: Land-based strategies for a plastic-free ocean [ONLINE] Available at: <https://oceanconservancy.org/wp-content/uploads/2017/04/full-report-stemming-the.pdf>
- 232 Gaia (2015) Open letter and technical critique to Ocean Conservancy regarding deep concerns about the 'Stemming the Tide' report [ONLINE] Available at: <https://www.no-burn.org/open-letter-to-ocean-conservancy-regarding-deep-concerns-about-the-stemming-the-tide-report/>
- 233 Gaia (2015) Open letter to Ocean Conservancy regarding the report 'Stemming the Tide' [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Open_Letter_Stemming_the_Tide_Report_2_Oct_15.pdf
- 234 Ocean Conservancy (2020) Take a deep dive [ONLINE] Available at: <https://oceanconservancy.org/trash-free-seas/take-deep-dive/>
- 235 Gaia (2015) Open letter to Ocean Conservancy regarding the report 'Stemming the Tide' [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Open_Letter_Stemming_the_Tide_Report_2_Oct_15.pdf
- 236 Gaia (2015) Technical critique of 'Stemming the Tide' [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Technical_critique_Stemming_the_Tide_report.pdf
- 237 Ocean Conservancy (2019) The beach and beyond [ONLINE] Available at: <https://oceanconservancy.org/wp-content/uploads/2019/09/Final-2019-ICC-Report.pdf>
- 238 Ocean Conservancy (2020) Trash Free Seas Alliance membership principles [ONLINE] Available at: <https://oceanconservancy.org/trash-free-seas/alliance-membership-principles/>

- conservancy.org/trash-free-seas/plastics-in-the-ocean/trash-free-seas-alliance/membership-principles/
- 239 Schuyler, Q., Hardesty, B. D., Lawson, T. J., Opie, K. and Wilcox, C. (2018) Economic incentives reduce plastic imports to the ocean. *Marine Policy*, 96: 250–55 [ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S0308597X17305377>
- 240 Global Plastic Action Partnership (2020) Home page [ONLINE] Available at: <https://www.weforum.org/gpap>
- 241 Mordaunt, P. (2019) Penny Nordaunt doubles support for plastic recycling. 11 March [ONLINE] Available at: <https://www.gov.uk/government/speeches/penny-mordaunt-doubles-support-for-plastic-recycling>
- 242 Government of Canada (2020) Zero plastic waste: Canada's actions [ONLINE] Available at: <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/zero-plastic-waste/canada-action.html>
- 243 Global Plastic Action Partnership (2020) Home page [ONLINE] Available at: <https://www.weforum.org/gpap>
- 244 World Economic Forum (2020) Radically reducing plastic pollution in Indonesia: A Multistakeholder Action Plan [ONLINE] Available at: https://globalplasticaction.org/wp-content/uploads/NPAP-Indonesia-Multistakeholder-Action-Plan_April-2020.pdf
- 245 Ellen MacArthur Foundation (2020) Home page [ONLINE] Available at: <https://www.ellenmacarthurfoundation.org/>
- 246 New Plastics Economy (2020) Home page [ONLINE] Available at: <https://www.newplasticseconomy.org>
- 247 Gerretsen, I. (2018) Big brands pledge to turn tide on global plastic waste. Reuters, 29 October. [ONLINE] Available at: <https://www.reuters.com/article/us-global-plastic-waste/big-brands-pledge-to-turn-tide-on-global-plastic-waste-idUSKCN1N303V>
- 248 Ellen MacArthur Foundation (2020) New Plastics Economy [ONLINE] Available at: <https://www.ellenmacarthurfoundation.org/our-work/activities/new-plastics-economy>
- 249 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report summary [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report-Summary.pdf>
- 250 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 251 Ibid.
- 252 Abboud, L. (2019) Consumer goods giants fall short on plastic pledges. *Financial Times*, 24 October [ONLINE] Available at: <https://www.ft.com/content/c04b9806-f58d-11e9-b018-3ef8794b17c6>
- 253 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 254 Gaia (2019) Questions and answers: Chemical recycling [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Questions-and-Answers_Chemical-Recycling.pdf
- 255 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 256 Loop (2020) Home page [ONLINE] Available at: <https://loopstore.com>
- 257 Vann, K. (2019) Can Loop disrupt society's packaging habit? Inside TerraCycle's grand experiment. *Waste Dive*, 23 December [ONLINE] Available at: <https://www.wastedive.com/news/terracycle-loop-consumption-experiment-convenience-costs/569363/>
- 258 Dickinson, T. (2020) Planet plastic: How Big Oil and Big Soda kept a global environmental calamity a secret for decades. *Rolling Stone*, 3 March [ONLINE] Available at: <https://www.rollingstone.com/culture/culture-features/plastic-problem-recycling-myth-big-oil-950957?fbclid=IwAR0uXaIrXQf9GbFpO-phzcoyBs1NWkSadg2uqe53IYOXZN14fD6NiePJKXc>
- 259 Ellen MacArthur Foundation (2019) New Plastics Economy: Reuse book launched [Press Release] 13 June [ONLINE] Available at: <https://www.ellenmacarthurfoundation.org/news/new-plastics-economy-reuse-book-launched>
- 260 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 261 Abboud, L. (2019) Consumer goods giants fall short on plastic pledges. *Financial Times*, 24 October [ONLINE] Available at: <https://www.ft.com/content/c04b9806-f58d-11e9-b018-3ef8794b17c6>
- 262 Ellen MacArthur Foundation and UN Environment Programme (2019) The New Plastics Economy global commitment: 2019 progress report [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 263 The Recycling Partnership (2019) The bridge to circularity: Putting the New Plastics Economy into practice in the US [ONLINE] Available at: <https://recyclingpartnership.org/circularity/>
- 264 Ellen MacArthur Pact (2017) Plastics pact [ONLINE] Available at: <https://www.newplasticseconomy.org/projects/plastics-pact>
- 265 WRAP (n.d.) The UK plastics pact [ONLINE] Available at: <https://www.wrap.org.uk/content/the-uk-plastics-pact>
- 266 ENDS Report (n.d.) Waste voluntary agreement study delayed [ONLINE] Available at: <https://www.endsreport.com/article/1551891/waste-voluntary-agreement-study-delayed>
- 267 ENDS Report (n.d.) Disappointment in England's 'half-hearted' waste review [ONLINE] Available at: <https://www.endsreport.com/article/1551444/disappointment-englands-half-hearted-waste-review>
- 268 Bulleid, R. and Marshall, A. (2011) The voluntary approach: Look before your leap. *ENDS Report*, 25 January [ONLINE] Available at: <https://www.endsreport.com/article/1563876/voluntary-approach-look-leap>
- 269 ENDS Report (n.d.) Waste voluntary agreement study delayed [ONLINE] Available at: <https://www.endsreport.com/article/1551891/waste-voluntary-agreement-study-delayed>
- 270 Bulleid, R. and Marshall, A. (2011) The voluntary approach: Look before your leap. *ENDS Report*, 25 January [ONLINE] Available at: <https://www.endsreport.com/article/1563876/voluntary-approach-look-leap>
- 271 Ochs, R. (2018) UK corporations pledge to reduce plastic packaging. *European Scientist*, 26 April [ONLINE] Available at: <https://www.europeanscientist.com/en/environment/uk-corporations-pledge-to-reduce-plastic-packaging/>
- 272 Laville, S. and Taylor, M. (2018) Nearly 1m tonnes every year: Supermarkets shamed for plastic packaging. *The Guardian*, 17 January [ONLINE] Available at: <https://www.theguardian.com/environment/2018/jan/17/nearly-1m-tonnes-every-year-supermarkets-shamed-for-plastic-packaging>
- 273 Fernandez, C. (2019) Two-thirds of companies who signed 'plastic pact' in a vow to crack down on pollution have shown no progress in cleaning up, report says. *The Daily Mail*, 3 June. [ONLINE] Available at: <https://www.dailymail.co.uk/news/article-7097233/Two-thirds-firms-involved-UK-Plastics-Pact-campaign-no-progress.html>
- 274 RIVM (2020) Plastic Pact Nederland: de Monitor Nulmeting (2017-2018) [ONLINE] Available at: https://www.rivm.nl/publicaties/plastic-pact-nederland-monitor-nulmeting-2017-2018#abstract_en
- 275 Franklin, M. (2020) European Plastic Pact: A positive gesture but NGOs unimpressed. *Break Free From Plastic*, 6 March [ONLINE] Available at: <https://www.breakfreefromplastic.org/2020/03/06/european-plastic-pact-a-positive-gesture-but-ngos-unimpressed/>
- 276 Plastic Soup Foundation (2020) Letter to the editor: Look beyond the European Plastic Pact and tackle the producers. Starting with Shell! [ONLINE] Available at: <https://www.plasticsoupfoundation.org/en/2020/03/look-beyond-the-european-plastic-pact-and-tackle-the-producers-starting-with-shell/>
- 277 Minderoo Foundation (2020) No plastic waste [ONLINE] Available at: <https://www.minderoo.org/no-plastic-waste/>
- 278 Cox, L. (2019) Andrew Forrest launches US\$300m war on plastic to tackle ocean pollution. *The Guardian*, 25 September. [ONLINE] Available at: <https://www.theguardian.com/australia-news/2019/sep/25/andrew-forrest-launches-us300m-war-on-plastic-to-tackle-ocean-pollution>
- 279 Ibid.
- 280 Natural Bottle Alliance (2018) Danone, Nestlé Waters and Origin Materials welcome PepsiCo to the NaturALL Bottle Alliance [Press Release] 10 September Alliance [ONLINE] Available at: https://www.nestle-waters.com/sites/g/files/pydnoa611/files/asset-library/documents/press%20releases/2018/pepsico_joins_naturall_alliance.pdf

- 281 Ibid.
- 282 The Ocean Cleanup (2020) Home page [ONLINE] Available at: <https://theoceancleanup.com/>
- 283 Fairs, M. (2019) The Ocean Cleanup labelled 'a dream that seduced many people' Dezeen, 23 May [ONLINE] Available at: <https://www.dezeen.com/2019/05/23/the-ocean-cleanup-failure-great-pacific-garbage-patch-plastic/>
- 284 Next Wave Plastics (2020) Home page [ONLINE] Available at: <https://www.nextwaveplastics.org/>
- 285 Corporate Europe Observatory (2019) Picking up the plastics trail: How Ireland cooperated with the plastics industry [ONLINE] Available at: <https://corporateeurope.org/en/2019/11/picking-plastics-trail-how-ireland-cooperated-plastics-industry>
- 286 Bulleid, R. and Marshall, A. (2011) The voluntary approach: Look before your leap. ENDS Report, 25 January [ONLINE] Available at: <https://www.endsreport.com/article/1563876/voluntary-approach-look-leap>
- 287 Ibid.
- 288 Plastic Waste Management Institute (2019) An introduction to plastic recycling [ONLINE] Available at: http://www.pwmi.or.jp/ei/plastic_recycling_2019.pdf
- 289 EuPC (2020) Open letter: COVID19 – request for a recast or postponement of the Single-Use Plastics Directive. 8 April [ONLINE] Available at: https://fd0ea2e2-fecf-4f82-8b1b-9e5e1ebec6a0.filesusr.com/ugd/2eb778_9d8ec284e39b4c7d84e774f0da14f2e8.pdf
- 290 The Drum (2019) Coca-Cola: Don't buy Coca-Cola if you're not going to help us recycle [ONLINE] Available at: <https://www.thedrum.com/creative-works/project/coca-cola-dont-buy-coca-cola-if-youre-not-going-help-us-recycle>
- 291 Jones, C. (2020) Davos: Coke insists customers still want plastic bottles. The Times, 22 January [ONLINE] Available at: <https://www.thetimes.co.uk/article/davos-coke-insists-customers-still-want-plastic-bottles-7q8t00xdt>
- 292 Keep America Beautiful (n.d.) Trash Dash [ONLINE] Available at: <https://kab.org/programs/trashdash/>
- 293 Circular (2017) P&G launches new Fairy bottle made from ocean plastic [Press Release] 5 October [ONLINE] Available at: <https://www.circularonline.co.uk/news/pg-launches-new-fairy-bottle-made-ocean-plastic/>
- 294 Adidas (n.d.) Adidas and Parley Collection [ONLINE] Available at: <https://www.adidas.co.uk/parley>
- 295 Coca-Cola EU Dialogue (2020) Introducing a world-first: A Coke bottle made with plastic from the sea [ONLINE] Available at: <https://www.coca-cola.eu/news/marine-bottle/>
- 296 Redfern, C. (2018) The blight of Tetra Paks covering Vietnam's beaches and towns. The Guardian, 9 December [ONLINE] Available at: <https://www.theguardian.com/environment/2018/dec/09/billions-discarded-tetra-pak-cover-vietnams-beaches-towns>
- 297 UNEP & Consumers International (2020) 'Can I recycle this?' Global mapping and assessment of standards, labels and claims on plastic packaging [ONLINE] Available at: <https://www.consumersinternational.org/news-resources/news/releases/plastic-recycling-labelling-confusing-and-inconsistent/>
- 298 Lerner, S. (2019) Starbucks promised a recyclable drink lid. Don't believe the hype. The Intercept, 19 April [ONLINE] Available at: <https://theintercept.com/2019/04/19/starbucks-plastic-lids-recyclable/>
- 299 The Ellen MacArthur Foundation (2019) The New Plastics Economy global commitment progress report 2019 [ONLINE] Available at: <https://www.ellenmacarthurfoundation.org/assets/downloads/Global-Commitment-2019-Progress-Report.pdf>
- 300 Head and Shoulders (n.d.) Shampoo bottles made from recycled plastics [ONLINE] Available at: <https://www.headandshoulders.co.uk/en-gb/whats-new/shampoo-bottles-made-from-recycled-plastic>
- 301 Gesvalt (2015) Informe Locales Comerciales 2015 [ONLINE] Available at: <http://gesvalt.es/wp-content/uploads/2015/09/Informe-de-Mercado-Retail-2015.pdf>
- 302 LobbyFacts.eu (n.d.) Coca-Cola European Partners plc (CCEP) [ONLINE] Available at: <https://lobbyfacts.eu/representative/adc0733d-b2ea4c628ab02b1f9f101223/coca-cola-european-partners-plc>; LobbyFacts.eu (n.d.) The Coca-Cola Company (Coca-Cola (NYSE: KO)) [ONLINE] Available at: <https://lobbyfacts.eu/representative/ee290a85143f4308a1fe4ced21f0dad0/the-coca-cola-company>
- 303 LobbyFacts.eu (n.d.) PepsiCo (PepsiCo) [ONLINE] Available at: <https://lobbyfacts.eu/representative/7eb19469aa7b4a25ba74e25652c8a558>
- 304 LobbyFacts.eu (n.d.) Nestlé S.A. (Nestlé (SIX: NESN)) [ONLINE] Available at: <https://lobbyfacts.eu/representative/4a88a7470d1d4877a8359a5e5761624b/nestl-s-a>
- 305 LobbyFacts.eu (n.d.) Tetra Pak Group [ONLINE] Available at: <https://lobbyfacts.eu/representative/1ecc0fdb3acd4dd29ae30e9da906d746/tetra-pak-group>
- 306 McClenaghan, M. (2017) Investigation: Coca Cola and the 'fight back' against plans to tackle plastic waste. Uneathed, 25 January [ONLINE] Available at: <https://unearthed.greenpeace.org/2017/01/25/investigation-coca-cola-fight-back-plans-tackle-plastic-waste/>
- 307 National Conference of State Legislatures (2020) State plastic and paper bag legislation [ONLINE] Available at: <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>
- 308 ReLoop (2020) The Single Use Plastics Directive: Is it in jeopardy? [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2020/05/SUPD-Is-it-in-jeopardy-May-2020-1.pdf>
- 309 Ambiente Sicurezza (2019) Rifiuti di plastica: annullata l'ordinanza del Tar Puglia [ONLINE] Available at: <https://www.ambientesicurezzaweb.it/rifiuti-di-plastica-annullata-lordinanza-del-tar-puglia/>
- 310 The American Chemistry Council (n.d.) What is advanced recycling? [ONLINE] Available at: <https://plastics.americanchemistry.com/what-is-chemical-recycling/>
- 311 Closed Loop Partners (2020) Accelerating circular supply chains for plastics [ONLINE] Available at: https://www.closedlooppartners.com/wp-content/uploads/2020/01/CLP_Circular_Supply_Chains_for_Plastics.pdf
- 312 Casey, Z. (2019) Chemical recycling won't solve the plastics crisis. Zero Waste Europe, 17 October [ONLINE] Available at: <https://zerowasteurope.eu/2019/10/chemical-recycling-wont-solve-the-plastic-crisis/>
- 313 Doherty, J. (2019) Chemical recycling of plastics '10 years away'. Let's Recycle, 21 October [ONLINE] Available at: <https://www.letsrecycle.com/news/latest-news/chemical-recycling-of-plastics-10-years-away/>
- 314 Gaia (2020) Chemical recycling: Distraction, not solution [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/CR-Briefing_June-2020.pdf
- 315 Rollinson, A. (2018) Fire, explosion and chemical toxicity hazards of gasification energy from waste. Journal of Loss Prevention in the Process Industries, 54: 273-80.
- 316 Gaia (2019) Questions and answers: Chemical recycling [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Questions-and-Answers_Chemical-Recycling.pdf
- 317 CIEL (2019) Plastic & health: The hidden costs of a plastic planet. [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf>
- 318 Greenpeace (2019) Throwing away the future: how companies still have it wrong on plastic pollution 'solutions' [ONLINE] Available at: <https://www.greenpeace.org/usa/wp-content/uploads/2019/09/report-throwing-away-the-future-false-solutions-plastic-pollution-2019.pdf#FalseSolutions2019.indd%3A.94634%3A1531>
- 319 Toloken, S. (2019) ACC pushes chemical recycling legislation. Plastics News, 22 April [ONLINE] Available at: <https://www.plasticsnews.com/article/20190422/NEWS/190429997/acc-pushes-chemical-recycling-legislation>
- 320 Rethink Plastic Alliance (2020) Recycled carbon fuels in the Renewable Energy Directive [ONLINE] Available at: https://rethinkplasticalliance.eu/wp-content/uploads/2020/06/rpa_recycled_carbon_fuels_in_the_renewable_energy_directive.pdf
- 321 Ibid.
- 322 Gaia (2019) Factsheet: Plastics and incineration [ONLINE] Available at: https://www.no-burn.org/wp-content/uploads/Plastic-x-Incineration_final-Nov-14-2019-1.pdf
- 323 Crook, L. (2019) BIG opens Copenhill power plant topped with rooftop ski slope in Copenhagen. Dezeen, 8 October [ONLINE] Available at: <https://www.dezeen.com/2019/10/08/big-copenhill-power-plant-ski-slope-copenhagen/>
- 324 Wien Energie (n.d.) Spittelau waste-to-energy plant [ON-

- LINE] Available at: <https://www.wienenergie.at/eportal3/ep/channelView.do/pageTypeId/67860/channelId/-51715>
- 325 Kansai Odyssey (n.d.) Maishima incineration plant: World's prettiest garbage facility? 22 January [ONLINE] <http://kansai-odyssey.com/maishima-incineration-plant-osaka/>
- 326 CIEL (2019) Plastic & health: The hidden costs of a plastic planet. [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf>
- 327 Ibid.
- 328 United Kingdom Without Incineration Network (UKWIN) (2018) Evaluation of the climate change impacts of waste incineration in the United Kingdom [ONLINE] Available at: <https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf>
- 329 Ibid.
- 330 National Geographic (2019) Is burning plastic waste a good idea? [Online] Available at: <https://www.nationalgeographic.com/environment/2019/03/should-we-burn-plastic-waste/>
- 331 Morris, J. (2015) Comparative LCAs for curbside recycling versus either landfilling or incineration with energy recovery. *International Journal of Life Cycle Assessment*, 10: 273284. [ONLINE] Available at: <https://doi.org/10.1065/lca2004.09.180.10>
- 332 The Independent (2016) Sweden's recycling is so revolutionary, the country has run out of rubbish [ONLINE] Available at: <https://www.independent.co.uk/environment/sweden-s-recycling-is-so-revolutionary-the-country-has-run-out-of-rubbish-a7462976.html>
- 333 Gupta, A. and Bais, A. S. (2016) Global market insights, waste to energy (WTE) market size, industry outlook potential report: Regional analysis [ONLINE] Available at: <https://www.gminsights.com/industry-analysis/waste-to-energy-wte-market>.
- 334 National Research Council Committee on Health Effects of Waste Incineration (2000) Executive summary. Waste incineration & public health. Washington DC: National Academies Press. [ONLINE] Available at: <https://www.ncbi.nlm.nih.gov/books/NBK233633/>
- 335 Carrington, D. (2020) Air pollution may be 'key contributor' to Covid-19 deaths - study. *The Guardian*, 20 April [ONLINE] Available at: <https://www.theguardian.com/environment/2020/apr/20/air-pollution-may-be-key-contributor-to-covid-19-deaths-study>
- 336 United States Environmental Protection Agency (n.d.) Facts and figures about materials, waste and recycling [ONLINE] Available at: <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/plastics-material-specific-data>
- 337 Maplecroft, V. (2019) US tops list of countries fuelling the waste crisis [ONLINE] Available at: <https://www.maplecroft.com/insights/analysis/us-tops-list-of-countries-fuelling-the-mounting-waste-crisis/>
- 338 Holden, E. (2019) US produces far more waste and recycles far less of it than other developed countries. *The Guardian*, 3 July [ONLINE] Available at: <https://www.theguardian.com/us-news/2019/jul/02/us-plastic-waste-recycling>
- 339 Ibid.
- 340 Plastics Industry Association (2019) Jobs in US plastics industry increase according to 2018 size and impact report. 9 January [ONLINE] Available at: <https://www.plasticsindustry.org/article/jobs-us-plastics-industry-increase-according-2018-size-and-impact-report>
- 341 United States Environmental Protection Agency (n.d.) Facts and figures about materials, waste and recycling [ONLINE] Available at: <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/plastics-material-specific-data>
- 342 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 343 Joyce, C. (2019) Where will your plastic trash go now that China doesn't want it? *NPR Goats and Soda*, 13 March [ONLINE] Available at: <https://www.npr.org/sections/goatsandsoda/2019/03/13/702501726/where-will-your-plastic-trash-go-now-that-china-doesnt-want-it>
- 344 Reuters (2018) Malaysia to curb imports of plastic waste - minister, 26 October [ONLINE] Available at: <https://www.reuters.com/article/us-malaysia-waste-imports-idUSKCN1N028P>
- 345 Endo, J. (2019) Philippines slams the door on world's plastic waste. *Nikkei Asian Review*, 14 September [ONLINE] Available at: <https://asia.nikkei.com/Spotlight/Environment/Philippines-slams-the-door-on-world-s-plastic-waste>
- 346 Thegumpanat, P. (2018) Thailand to ban imports of high-tech trash, plastic waste. *Reuters*, 16 August [ONLINE] Available at: <https://www.reuters.com/article/us-thailand-environment-waste-idUSKBN1L10QW>
- 347 Chasan, E. (2020) The oil crash created a recycled plastic trap. *Bloomberg*, 6 May [ONLINE] Available at: <https://www.bloomberg.com.cdn.ampproject.org/c/s/www.bloomberg.com/amp/news/articles/2020-05-06/oil-crash-means-single-use-plastic-is-back-as-recycling-struggles>
- 348 The Center for Public Integrity (2019) Inside the long war to protect plastic [ONLINE] Available at: <https://publicintegrity.org/environment/pollution/pushing-plastic/inside-the-long-war-to-protect-plastic/>
- 349 Barringer, F. (2010) In California, a step toward BYOB (Bring Your Own Bag). *The New York Times*, 2 June [ONLINE] Available at: <https://www.nytimes.com/2010/06/03/science/earth/03bags.html>
- 350 Lerner, S. (2019) Waste only. *The Intercept*, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 351 Maldonado, S. (2020) Plastics industry goes after bag bans during pandemic. *Politico*, 24 March [ONLINE] Available at: <https://www.politico.com/states/new-jersey/story/2020/03/24/plastics-industry-goes-after-bag-bans-during-pandemic-1268843>
- 352 Lerner, S. (2019) Waste only. *The Intercept*, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 353 Ibid.
- 354 CIEL (2017) Fuelling plastics: Plastic industry awareness of the ocean plastics problem [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Plastic-Industry-Awareness-of-the-Ocean-Plastics-Problem.pdf> p.6
- 355 Dunaway, F. (2017) The crying Indian ad that fooled the environmental movement. *Chicago Tribune*, 21 November [ONLINE] Available at: <https://www.chicagotribune.com/opinion/commentary/ct-perspec-indian-crying-environment-ads-pollution-1123-20171113-story.html>
- 356 Schlosberg, D. (2020) The Story of Plastic. [ONLINE] Available at: <https://www.storyofplastic.org>
- 357 Sullivan, L. (2020) Plastic wars: Industry spent millions selling recycling — to sell more plastic. *NPR*, 31 March [ONLINE] Available at: <https://www.npr.org/2020/03/31/822597631/plastic-wars-three-takeaways-from-the-fight-over-the-future-of-plastics>
- 358 Ibid.
- 359 CIEL (2017) Fuelling plastics: Plastic industry awareness of the ocean plastics problem [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Plastic-Industry-Awareness-of-the-Ocean-Plastics-Problem.pdf>, p.6
- 360 Nash-Hoff, M. (2015). Why are there so few states with 'bottle bill' laws? *Industry Week*, 16 September [ONLINE] Available at: <https://www.industryweek.com/the-economy/regulations/article/22008100/why-are-there-so-few-states-with-bottle-bill-laws>
- 361 Ibid.
- 362 Corkery, M. (2019) Beverage companies embrace recycling, until it costs them. *The New York Times*, 4 July [ONLINE] Available at: <https://www.nytimes.com/2019/07/04/business/plastic-recycling-bottle-bills.html>
- 363 Lerner, S. (2019) Waste only. *The Intercept*, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 364 Corkery, M. (2019) Beverage companies embrace recycling, until it costs them. *The New York Times*, 4 July [ONLINE] Available at: <https://www.nytimes.com/2019/07/04/business/plastic-recycling-bottle-bills.html>
- 365 Ibid.
- 366 American Beverage Association (2019) America's leading beverage companies unite to reduce new plastic use & increase collection of their valuable bottles through 'Every Bottle Back' initiative [Press Release] 29 October [ONLINE] Available at: <https://www.ameribev.org/education-resources/blog/post/america-s-leading-beverage-companies-unite-to-reduce-new-plastic-use-increase-collection-of-their-valuable-bottles-through-every-bottle-back-initiative/>
- 367 Ibid.
- 368 Toloken, S. (2019) ABA, beverage makers launch \$100M PET recycling fund. *Plastic News*, 30 October [ONLINE]

- Available at: <https://www.plasticsnews.com/news/ababeverage-makers-launch-100m-pet-recycling-fund>
- 369 Bottle Bill Resource Guide (2020) Bottle bill myths and facts [ONLINE] Available at: <http://www.bottle-bill.org/index.php/about-bottle-bills/myths-facts>
- 370 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 371 Beverage Industry (2009) IBWA delays NY bottle law, 27 May [ONLINE] Available at: <https://www.bevindustry.com/articles/82932-ibwa-delays-n-y-bottle-law>
- 372 Changing Markets (2020) Genie in a bottle: Unlocking the full potential of California's Bottle Bill [ONLINE] Available at: <http://changingmarkets.org/wp-content/uploads/2020/05/GENIE-IN-A-BOTTLE-UNLOCKING-CALIFORNIAS-BOTTLE-BILL-web.pdf>
- 373 Container Recycling Institute (2019) California's CRV beverage container recycling program: quantifying payments to curbside and drop-off programs [ONLINE] Available at: <http://www.container-recycling.org/images/stories/PDF/CACurbsideandDropoffProfitsFINAL.pdf>
- 374 Tucker, L. (2020) Trashed: How Californian recycling failed and how to fix it. [ONLINE] Available at: <https://www.consumerwatchdog.org/sites/default/files/2020-01/Trashed%20-%20How%20California%20Recycling%20Failed%20and%20How%20to%20Fix%20It.pdf>
- 375 Ibid.
- 376 Thompson, D. (2020) California recycling overhaul plan dies in legislature. The North Bay Business Journal, 31 January [ONLINE] Available at: <https://www.northbaybusinessjournal.com/northbay/napacounty/10657499-181/california-wine-dairy-recycling-law>
- 377 PR Newswire (2020) Wine & beverage industry stops bill to overhaul and expand bottle deposit system on senate floor, says consumer watchdog, 30 January [ONLINE] Available at: <https://www.prnewswire.com/news-releases/wine--beverage-industry-stops-bill-to-overhaul-and-expand-bottle-deposit-system-on-senate-floor-says-consumer-watchdog-300996439.html>
- 378 Klearman, S. (2020) Wine industry maintains opposition to inclusion in recycling program. Napa Valley Register, 31 January [ONLINE] Available at: https://napavalleyregister.com/news/local/wine-industry-maintains-opposition-to-inclusion-in-recycling-program/article_4c383e45-05d0-52d0-83ed-fe076f0a40ff.html
- 379 Changing Markets (2020) Genie in a bottle: Unlocking the full potential of California's Bottle Bill [ONLINE] Available at: <http://changingmarkets.org/wp-content/uploads/2020/05/GENIE-IN-A-BOTTLE-UNLOCKING-CALIFORNIAS-BOTTLE-BILL-web.pdf>
- 380 PlasticBagLaws.org (n.d.) Preemption laws [ONLINE] Available at: <https://www.plasticbaglaws.org/preemption>
- 381 CIEL (2017) Fuelling plastics: Plastic industry awareness of the ocean plastics problem [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Plastic-Industry-Awareness-of-the-Ocean-Plastics-Problem.pdf>, p.5
- 382 Ballopedia (n.d.) California Proposition 67, plastic bag ban veto referendum (2016) [ONLINE] Available at: [https://ballotpedia.org/California_Proposition_67,_Plastic_Bag_Ban_Veto_Referendum_\(2016\)](https://ballotpedia.org/California_Proposition_67,_Plastic_Bag_Ban_Veto_Referendum_(2016))
- 383 CBS3 Philly (2020) New Jersey assembly fails to pass ban on plastic bags after clearing senate, 13 January 2020. [ONLINE] Available at: <https://philadelphia.cbslocal.com/2020/01/13/new-jersey-assembly-fails-pass-ban-on-plastic-bags/>
- 384 Giambusso, D. (2014) Bag lobby pays anti-fee advocate. Politico, 19 November [ONLINE] Available at: <https://www.politico.com/states/new-york/city-hall/story/2014/11/bag-lobby-pays-anti-fee-advocate-017590>
- 385 Perrett, C. (2020) Angering bodega owners, New York will ban plastic bags on Sunday, joining California and hundreds of cities that have adopted similar policies. Business Insider, 29 February [ONLINE] Available at: <https://www.businessinsider.com/new-york-plastic-bag-ban-delay-2020-2>
- 386 PlasticBagLaws.org (n.d.) Preemption laws. [ONLINE] Available at: <https://www.plasticbaglaws.org/preemption>
- 387 Greenpeace (2020) The making of an echo chamber: How the plastic industry exploited anxiety about COVID-19 to attack reusable bags [ONLINE] Available at: https://www.greenpeace.org/usa/wp-content/uploads/2020/03/The-Making-of-an-Echo-Chamber_-How-the-plastic-industry-exploited-anxiety-about-COVID-19-to-attack-reusable-bags-1.pdf
- 388 Lerner, S. (2019) Waste only. The Intercept, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 389 American Legislative Exchange Council (n.d.) Regulating containers to protect business and consumer choice [ONLINE] Available at: <https://www.alec.org/model-policy/regulating-containers-to-protect-business-and-consumer-choice/>
- 390 PlasticBagLaws.org (n.d.) Preemption laws [ONLINE] Available at: <https://www.plasticbaglaws.org/preemption>
- 391 Maldonado, S., Ritchie, B. and Kahn, D. (2020) Plastic bags have lobbyists and they are winning. Politico, 20 January [ONLINE] Available at: <https://www.politico.com/news/2020/01/20/plastic-bags-have-lobbyists-winning-100587>
- 392 Gibbens, S. (2019) See the complicated landscape of plastic bans in the US. National Geographic, 15 August [ONLINE] Available at: <https://www.nationalgeographic.com/environment/2019/08/map-shows-the-complicated-landscape-of-plastic-bans/>
- 393 Osborne, J. (2019) As plastic bans spread, industry went on attack. Houston Chronicle, 31 July [ONLINE] Available at: <https://www.houstonchronicle.com/business/energy/article/As-plastic-bans-spread-industry-went-on-attack-14273378.php>
- 394 Saplakoglu, Y. (2020) How long can the new coronavirus last on surfaces? Live Science [ONLINE] Available at: <https://web.archive.org/web/20200219124418/https://www.livescience.com/how-long-coronavirus-last-surfaces.html>
- 395 Atkin, E. (2020) Using COVID-19 to wage war on reusable grocery bags. Heated, 26 March [ONLINE] Available at: <https://heated.world/p/the-right-is-using-covid-19-to-wage>
- 396 Greenpeace (2020) The making of an echo chamber: How the plastic industry exploited anxiety about COVID-19 to attack reusable bags [ONLINE] Available at: https://www.greenpeace.org/usa/wp-content/uploads/2020/03/The-Making-of-an-Echo-Chamber_-How-the-plastic-industry-exploited-anxiety-about-COVID-19-to-attack-reusable-bags-1.pdf
- 397 McVeigh, K. (2020) Rightwing thinktanks use fear of Covid 19 to fight bans on plastic bags. The Guardian, 27 March [ONLINE] Available at: <https://www.theguardian.com/environment/2020/mar/27/rightwing-thinktanks-use-fear-of-covid-19-to-fight-bans-on-plastic-bags>
- 398 Tierney, J. (2020) Greening our way to infection. City Journal, 12 March [ONLINE] Available at: <https://www.city-journal.org/banning-single-use-plastic-bags-covid-19#.XmvPoCbFKjU.twitter>
- 399 Greenpeace (2020) The making of an echo chamber: How the plastic industry exploited anxiety about COVID-19 to attack reusable bags [ONLINE] Available at: https://www.greenpeace.org/usa/wp-content/uploads/2020/03/The-Making-of-an-Echo-Chamber_-How-the-plastic-industry-exploited-anxiety-about-COVID-19-to-attack-reusable-bags-1.pdf
- 400 PlasticBagLaws.org (n.d.) Plastic Bag Law Maps. [ONLINE] Available at: <https://www.plasticbaglaws.org/bagmaps>
- 401 PLASTICS (2020) Letter to Honorable Alex Azar, 18 March [ONLINE] Available at: <https://www.politico.com/states/f/?id=00000171-0d87-d270-a773-6fdfcc4d0000>
- 402 Ivanova, I. (2020) Plastic bag bans are being reversed amid coronavirus panic. CBS News, 8 April [ONLINE] Available at: <https://www.cbsnews.com/news/plastic-bag-bans-are-being-reversed-amid-coronavirus-panic/>
- 403 Rosengren, C. (2019) Wheeler: EPA will set national recycling goals in 2020. Waste Dive, 15 November [ONLINE] Available at: <https://www.wastedive.com/news/wheeler-epa-will-set-national-recycling-goals-in-2020/567396/>
- 404 Crunden, E. A., 2019. Industry-backed RECOVER Act calls for \$500M in recycling infrastructure grants. Waste Dive, 20 November [ONLINE] Available at: <https://www.wastedive.com/news/RECOVER-act-plastics-glass-industry-backing-recycling-waste-legislation/567541/>
- 405 Ibid.
- 406 American Chemistry Council, AMERIPEN, Association of Plastics Recyclers et al. (2020) RECOVER: Coalition letter. [ONLINE] Available at: <https://assets.documentcloud.org/documents/6877535/RECOVER-Coalition-Letter.pdf>
- 407 Ocean Conservancy (2020) Save Our Seas Act just passed the senate - here's why it matters. 16 January [ONLINE] Available at: <https://oceanconservancy.org/blog/2020/01/16/save-seas-2-0-act-just-passed-senate-heres-matters/>
- 408 Break Free from Plastic (2019) Opposition letter to Save

- our Seas legislation. 25 September [ONLINE] Available at: <https://www.breakfreefromplastic.org/2019/09/25/opposition-letter-to-save-our-seas-legislation/>
- 409 Udall, T. (2019) Udall proposes amendments to Strengthen Save Our Seas legislation, calls for urgent action on plastic pollution. 13 November [ONLINE] Available at <https://www.tomudall.senate.gov/news/press-releases/udall-proposes-amendments-to-strengthen-save-our-seas-legislation-calls-for-urgent-action-on-plastic-pollution>
- 410 Plastic Pollution Coalition (n.d.) Summary of Break Free from Plastic Pollution Act of 2020 [ONLINE] Available at: <https://www.plasticpollutioncoalition.org/break-free-from-plastic-pollution-act-summary>
- 411 Staub, C. (2020) Legislation pushing national bottle bill hits Congress. 12 February [ONLINE] Available at <https://resource-recycling.com/plastics/2020/02/12/legislation-pushing-national-bottle-bill-hits-congress/>
- 412 Ahmed, I. (2020) Draft US law seeks to make plastic industry responsible for waste. Yahoo News, 12 February [ONLINE] Available at https://news.yahoo.com/draft-us-law-plastic-industry-responsible-recycling-192337876.html?soc_src=hl-viewer&soc_trk=tw
- 413 American Chemistry Council (2019) Legislation would lead to increased environmental impacts. [ONLINE] Available at: <https://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/Legislation-Would-Lead-To-Increased-Environmental-Impacts.html>
- 414 GreenBlue (n.d.) How2Recycle: On-package recycling instructions for the public. [ONLINE] Available at: <https://greenblue.org/work/how2recycle/>
- 415 The Center for Public Integrity (2019) Inside the long war to protect plastic [ONLINE] Available at: <https://publicintegrity.org/environment/pollution/pushing-plastic/inside-the-long-war-to-protect-plastic/>
- 416 Klockenbrink, M. (1988) Plastic industry, under pressure, begins to invest in recycling. The New York Times, 30 August [ONLINE] Available at: <https://www.nytimes.com/1988/08/30/science/plastics-industry-under-pressure-begins-to-invest-in-recycling.html>
- 417 Ibid.
- 418 Bruner, R. G. (1990) The plastics industry and marine debris: Solutions through education. In R. S. Shonura and L. Godfrey (eds) Proceedings of the Second International Conference on Marine Debris, 2 – 7 April 1989, Honolulu, Hawaii. [ONLINE] Available at: https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154_P1077.PDF
- 419 Ibid.
- 420 Plumer, B. (2006) The origins of anti-litter campaigns. Mother Jones, 22 May [ONLINE] Available at: <https://www.motherjones.com/politics/2006/05/origins-anti-litter-campaigns/>
- 421 Ibid.
- 422 Alter, L. (2018) That's not a bag of garbage, it's a bag of energy! Treehugger, 16 March [ONLINE] Available at: <https://www.treehugger.com/corporate-responsibility/s-not-bag-garbage-its-bag-energy.html>
- 423 Gaia (2017) Organizations denounce Dow Chemical and Keep America Beautiful's 'Hefty Energy Bag' program expansion [Press Release] 3 January [ONLINE] Available at: <https://www.no-burn.org/organizations-denounce-dow-chemical-and-keep-america-beautifuls-hefty-energy-bag-program-expansion/>
- 424 Guidestar (2017) Return of organization exempt from income tax: Keep America Beautiful INC. [ONLINE] Available at: https://pdf.guidestar.org/PDF_Images/2017/131/761/2017-131761633-0fb4ea83-9.pdf
- 425 The Recycling Partnership (2019) The bridge to circularity: Putting the New Plastics Economy into practice in the US [ONLINE] Available at: <https://recyclingpartnership.org/circularity/>
- 426 Ibid.
- 427 Ibid., p.46.
- 428 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 429 Ibid.
- 430 Phipps, L. (2019) The 5 things you need to know about chemical recycling. Green Biz, 15 April [ONLINE] Available at: <https://www.greenbiz.com/article/5-things-you-need-know-about-chemical-recycling>
- 431 Ibid.
- 432 Lerner, S. (2019) Waste only. The Intercept, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 433 Lingle, R. (2019) How2Recycle label is growing – here's who, why and how. Packaging Digest, 7 February [ONLINE] Available at: <https://www.packagingdigest.com/sustainable-packaging/how2recycle-label-growing-1901>
- 434 Lerner, S. (2019) Waste only. The Intercept, 20 July [ONLINE] Available at: <https://theintercept.com/2019/07/20/plastics-industry-plastic-recycling/>
- 435 Ibid.
- 436 Ibid.
- 437 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>
- 438 Frontline PBS (2020) Plastic wars [YouTube] [ONLINE] Available at: <https://www.youtube.com/watch?v=-dk3NOEgX7o>
- 439 Ibid.
- 440 Greenpeace (2020) Circular claims fall flat: Comprehensive US survey of plastics recyclability [ONLINE] Available at: <https://www.greenpeace.org/usa/wp-content/uploads/2020/02/Greenpeace-Report-Circular-Claims-Fall-Flat.pdf>
- 441 Ibid.
- 442 Plastic Film Recycling (2020) WRAP in your community [ONLINE] Available at: <https://www.plasticfilmrecycling.org/recycling-in-your-community/wrap/>
- 443 Plastic Film Recycling (2020) About us [ONLINE] Available at: <https://www.plasticfilmrecycling.org/about/>
- 444 How2Recycle (n.d.) Store drop-off [ONLINE] Available at: <https://how2recycle.info/sdo>
- 445 Greenpeace (2020) Circular claims fall flat: Comprehensive US survey of plastics recyclability [ONLINE] Available at: <https://www.greenpeace.org/usa/wp-content/uploads/2020/02/Greenpeace-Report-Circular-Claims-Fall-Flat.pdf>
- 446 Ibid.
- 447 Loftus-Farren, Z. (2020) Earth Island sues 10 companies, including Coke, Pepsi, and Nestle, over plastic use. Earth Island Journal, 26 February [ONLINE] Available at: <https://www.earthisland.org/journal/index.php/articles/entry/earth-island-coke-pepsi-nestle-plastic-pollution-lawsuit/>
- 448 Flexible Packaging Association (n.d.) Members of the Flexible Packaging Association [ONLINE] Available at: <https://www.flexpack.org/membership-directory>
- 449 FPA (2018) Sustain the world: The case for flexible packaging [ONLINE] Available at: <https://www.flexpack.org/publication/RG93bmxvYWQ6NDE=/download>
- 450 The Center for Public Integrity (2019) Inside the long war to protect plastic [ONLINE] Available at: <https://publicintegrity.org/environment/pollution/pushing-plastic/inside-the-long-war-to-protect-plastic/>
- 451 Clemson University Digital Press (2014) Life cycle assessment of grocery bags in common use in the United States [ONLINE] Available at: https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=1006&context=cudp_environment
- 452 Greenpeace (2020) The making of an echo chamber: How the plastic industry exploited anxiety about COVID-19 to attack reusable bags [ONLINE] Available at: https://www.greenpeace.org/usa/wp-content/uploads/2020/03/The-Making-of-an-Echo-Chamber_-How-the-plastic-industry-exploited-anxiety-about-COVID-19-to-attack-reusable-bags-1.pdf
- 453 American Chemistry Council (n.d.) Study from Trucost finds plastics reduce environmental costs by nearly 4 times compared to alternatives. [ONLINE] Available at: <https://plastics.americanchemistry.com/Study-from-Trucost-Finds-Plastics-Reduce-Environmental-Costs/>
- 454 California Secretary of State (n.d.) Lobbying activity: Californians for recycling and the environment [ONLINE] Available at: <http://cal-access.sos.ca.gov/Lobbying/Employers/Detail.aspx?id=1420035&view=activity>
- 455 As You Sow (2020) Waste and opportunity 2020: Searching for corporate leadership [ONLINE] Available at: <https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership>

- https://www.asyousow.org/report-page/waste-and-opportunity-2020-searching-corporate-leadership
- 456 Ibid.
- 457 LobbyFacts.EU (2020) Plastics Europe [ONLINE] Available at: <https://lobbyfacts.eu/representative/df373735f5694ccdb629d25ee9f469ca/plasticseurope>
- 458 EuPC (2020) Open letter: COVID19 – request for a recast or postponement of the Single-Use Plastics Directive. 8 April [ONLINE] Available at: https://fd0ea2e2-fecf-4f82-8b1b-9e5e1ebec6a0.filesusr.com/ugd/2eb778_9d8ec284e39b4c7d84e774f0da14f2e8.pdf
- 459 Plastic Recyclers Europe (2018) Who we are [ONLINE] Available at: <https://www.plasticsrecyclers.eu/who-we-are>
- 460 EUROOPEN (2020) Corporate members [ONLINE] Available at: <https://europen-packaging.eu/about-us/our-members/corporate.html>
- 461 Corporate Europe Observatory (2018) Packaging lobby's support for anti-litter groups deflects tougher solutions [ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2018/03/packaging-lobby-support-anti-litter-groups-deflects-tougher-solutions>
- 462 Ibid.
- 463 Ibid.
- 464 Corporate Europe Observatory (2018) Plastic promises: Industry seeking to avoid binding regulations [ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2018/05/plastic-promises>
- 465 Ibid.
- 466 Ibid.
- 467 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 (COM/2018/028) [ONLINE] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:28:FIN>
- 468 Ibid.
- 469 PlasticsEurope (2018) PlasticsEurope publishes its Voluntary Commitment to increase circularity and resource efficiency [Press Release] 16 January [ONLINE] Available at: https://www.plasticseurope.org/application/files/1015/1966/6017/press_release.pdf
- 470 Ibid.
- 471 Corporate Europe Observatory (2018) Plastic promises: Industry seeking to avoid binding regulations [ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2018/05/plastic-promises>
- 472 Ibid.
- 473 European Commission (2018) Commission launches Circular Plastics Alliance to foster the market of recycled plastics in Europe [Press Release] 11 December [ONLINE] Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_18_6728
- 474 European Commission (2019) Circular Plastics Alliance: 100+ signatories commit to use 10 million tons of recycled plastic in new products by 2025 [Press Release] 20 September [ONLINE] Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5583
- 475 Zero Waste Europe (2019) The Circular Plastics Alliance, a missed opportunity [Press Release] 20 September [ONLINE] Available at: <https://zerowasteurope.eu/2019/09/press-release-the-circular-plastics-alliance-a-missed-opportunity/>
- 476 European Commission (2018) Single-use plastics: New measures to reduce marine litter. Factsheet [ONLINE] Available at: https://ec.europa.eu/environment/waste/pdf/single-use_plastics_factsheet.pdf
- 477 Rethink Plastics Alliance (2019) Moving away from single-use: Guide for national decision makers to implement the Single-Use Plastics Directive. [ONLINE]. Available at: <https://rethinkplasticalliance.eu/news/moving-away-from-single-use-guide-for-national-decision-makers-to-implement-the-single-use-plastics-directive/>
- 478 Corporate Europe Observatory (2019) Picking up the plastics trail: How Ireland cooperated with the plastics industry [ONLINE] Available at: <https://corporateeurope.org/en/2019/11/picking-plastics-trail-how-ireland-cooperated-plastics-industry>
- 479 Corporate Europe Observatory (2018) Plastic pressure: Industry turns up the heat to avoid plastics regulation spurred by public demand [ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2018/11/plastic-pressure>
- 480 Ibid.
- 481 The Coca-Cola Company, Danone, Nestlé and PepsiCo (2018) Letter on single-use plastics: Alternative proposal to address littering of beverage caps. 9 October [ONLINE] Available at: https://www.euractiv.com/wp-content/uploads/sites/2/2018/10/Letter-on-tethered-cap-alternative-solution_Council.pdf
- 482 New Food Magazine (2018) PwC report claims tethered bottle caps means more plastic, more carbon and more cost. 7 December [ONLINE] Available at: <https://www.newfood-magazine.com/news/76731/pwc-plastic-carbon-cost/>
- 483 This Cap (2019) Home page [ONLINE] Available at: <http://www.thiscap.com>
- 484 Correspondence released under Freedom of Information request [ONLINE] Available at: https://www.asktheeu.org/en/request/6394/response/22056/attach/25/Ares%202018%206211158%20Cocacola%20Redacted.pdf?cookie_passthrough=1
- 485 Correspondence released under Freedom of Information request [ONLINE] Available at: <https://www.asktheeu.org/en/request/6394/response/22056/attach/html/32/Ares%202018%206386952%20fooddrink%20Redacted.pdf.html>
- 486 Coca-Cola EU Dialogue (2018) More plastic, more carbon, more cost: Why attached bottle caps are not the way to fix waste [ONLINE] Available at: <https://www.coca-cola.eu/news/more-plastic-more-carbon-more-cost/>
- 487 Zero Waste Europe (2019) Deposit return systems: An effective instrument towards a zero waste future, 23 July [ONLINE] Available at: <https://zerowasteurope.eu/2019/07/deposit-return-systems-an-effective-instrument-towards-a-zero-waste-future/>
- 488 Lévi Alvarès, D. (2020) Europe must resist attempts to weaken single-use plastics laws. Euractiv, 10 February [ONLINE] Available at: <https://www.euractiv.com/section/circular-economy/opinion/europe-must-resist-attempts-to-weaken-single-use-plastics-laws/>
- 489 ReLoop (2020) The Single Use Plastics Directive: Is it in jeopardy? [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2020/05/SUPD-Is-it-in-jeopardy-May-2020-1.pdf>
- 490 Rethink Plastics Alliance (2020) Single Use Plastics Directive: NGOs call on Commission and EU countries to resist attempts to undermine separate collection of plastic bottles [Press Release] 15 May [ONLINE] Available at: <https://rethinkplasticalliance.eu/news/resist-attempts-to-undermine-separate-collection-of-plastic-bottles/>
- 491 United Nations Environment Programme & Consumers International (2020) 'Can I recycle this?': A global mapping and assessment of standards, labels and claims on plastic packaging [ONLINE] Available at: <https://www.consumersinternational.org/media/352255/canirecyclethis-finalreport.pdf>
- 492 PRO Europe (2020) The Green Dot trademark [ONLINE]. Available at: <https://www.pro-e.org/the-green-dot-trademark>
- 493 PRO Europe (2020) About us [ONLINE] Available at: <https://www.pro-e.org/about-us>
- 494 United Nations Environment Programme & Consumers International (2020) 'Can I recycle this?': A global mapping and assessment of standards, labels and claims on plastic packaging [ONLINE] Available at: <https://www.consumersinternational.org/media/352255/canirecyclethis-finalreport.pdf>
- 495 Changing Markets (2020) Plastic pollution lobby: A coalition against the introduction of a deposit return system in Austria [ONLINE]. Available at: http://changingmarkets.org/wp-content/uploads/2020/05/CM_PLASTIC-POLLUTION-LOBBY_FinalEN.pdf
- 496 EXPRA (2013) Commission public consultation on the Green Paper on Plastic Waste [ONLINE] Available at: http://www.expra.eu/downloads/green_paper_on_p_N1qn5.pdf
- 497 Van Eygen, E. (2018) Management of plastic wastes in Austria: Analysis of the status quo and environmental improvement potentials [PhD Thesis] Vienna: Vienna University of Technology [ONLINE] Available at: https://publik.tuwien.ac.at/files/publik_271427.pdf.
- 498 GLOBAL 2000 (2019) Rubbish in Austria's nature: City, country and river (Müll in Österreichs Natur: Stadt, Land, Fluss) [ONLINE] Available at: <https://bit.ly/3bu3jIF>
- 499 Van Eygen, E. (2018a) Management of plastic wastes in Austria: Analysis of the status quo and environmental improvement potentials. [ONLINE] Available at: <https://bit.ly/3bwOJ2U>
- 500 Hauer, W., Merstallinger M., Allesch, A., Beigl, P., Happenhofer, A., Huber-Humer, M., Obersteiner, G. and Wellacher, M. (2020). Möglichkeiten zur Umsetzung der EU-Vorgaben Betreffend Getränkegebinde, Pfandsys-

- teme und Mehrweg. HAUER Umweltwirtschaft GmbH 15 [ONLINE] Available at: <https://bit.ly/2TOuVi7>
- 501 Changing Markets Foundation (2020) Plastic pollution lobby [ONLINE] Available at: http://changingmarkets.org/wp-content/uploads/2020/05/CM_PLASTIC-POLLUTION-LOBBY_FinalEN.pdf
- 502 Hauer, W., Merstallinger M., Allesch, A., Beigl, P., Happenhofer, A., Huber-Humer, M., Obersteiner, G. and Wellacher, M. (2020) Möglichkeiten zur Umsetzung der EU-Vorgaben Betreffend Getränkegebilde, Pfandsysteme und Mehrweg. HAUER Umweltwirtschaft GmbH [ONLINE] Available at: <https://bit.ly/2TOuVi7>
- 503 Changing Markets Foundation (2020) Resümee zum Meeting der Experts Group on Waste betreffend die SUP Richtlinie. 11 March [ONLINE] Available at: <https://bit.ly/2WZmrbZ>
- 504 ARA (2020) ARA demands factual discussion on the subject of pledges [Press Release] 27 May [ONLINE] Available at: https://www.ots.at/presseaussendung/OTS_20200527_OTS0158/ara-fordert-sachliche-diskussion-beim-thema-pfand
- 505 Lee, P. (2018) Raise the glass: Summary [ONLINE] Available at: <https://bit.ly/3dM3C2Q>
- 506 Pladerer, C. and Hietler, P. (2019) In diversen Littering- und Hotspotanalysen basierend auf Quellen der Arge Abfallwirtschaftsverbände. Berichte der Asfinag, UBA Littering Studie.
- 507 Handels Verband (2020) Austrian trade on the study on the achievement of the EU collection rates: One-way deposit system economically questionable [Press Release] 31 January [ONLINE] Available at: <https://bit.ly/3dLOeVX>
- 508 Reinwerfen Statt Wegwerfen (n.d.) Home page [ONLINE] Available at: <https://www.reinwerfen.at/>
- 509 APA OTS (2020) Coca Cola: DRS on single use plastic. Coca-Cola supports environment ministry initiative. [Press Release] 31 January [ONLINE] Available at: <https://bit.ly/2T6Fmk4>
- 510 Global 2000 and Changing Markets Foundation (2020) Where do Austrians stand on a deposit return scheme? Public opinion poll in Austria [ONLINE] Available at: <https://bit.ly/2Z4zZpl>
- 511 Kronen Zeitung (2020) Plastic summit: 'All signs are on deposit' [ONLINE] Available at: <https://www.krone.at/2165271>
- 512 Abl, C. (2020) Letter from the President of ÖPG Pfandsystemgesellschaft m.b.H to the President of the Austrian Federal Economic Chamber (WKÖ) Harald Mahrer [ONLINE] Available at: https://www.oepg-pfandsystem.at/wp-content/uploads/2020/07/Offener-Brief-an-die-WKO_%C3%96PG_20200706.pdf
- 513 Advantage Austria (2018) Wirtschaftskammer Österreich Austrian Chamber of Commerce [ONLINE] Available at: <https://www.advantageaustria.org/af/oesterreich-in-afghanistan/netzwerk/wko.en.html>
- 514 WKÖ (2020) Ressourcen schonen & Kosten sparen: Kreislaufwirtschaft alltagstauglich machen, 1 August, [ONLINE] Available at: <https://news.wko.at/news/oesterreich/ressourcen-schonen---kosten-sparen---kreislaufwirtschaft-.html>
- 515 ARA (2020) ARA: 10-Punkte-Plan der Wirtschaft 'Jahrhundertchance', 2 August, [ONLINE] Available at: https://www.ots.at/presseaussendung/OTS_20200802_OTS0012/ara-10-punkte-plan-der-wirtschaft-jahrhundertchance
- 516 The European Container Glass Federation-FEVE (2018) Study on impact assessment of Deposit return systems [ONLINE] Available at: <https://feve.org/study-on-impact-assessment-of-deposit-return-schemes/>
- 517 Euractiv (2018) Deposit-Return Schemes for single-use packaging: An unnecessary evolution? [ONLINE] Available at: <https://www.euractiv.com/section/circular-economy/opinion/deposit-return-schemes-for-single-use-packaging-an-unnecessary-evolution/>
- 518 Ibid.
- 519 Hodson, R. (2020) Sinkevicius endorses 90% glass recycling initiative. ENDS Europe, 30 June [ONLINE] Available at: [https://www.endseurope.com/article/1688158/sinkevicius-endorses-90-glass-recycling-initiative?bulletin=bulletin%2Fendseurope&utm_medium=EMAIL&utm_campaign=eNews%20Bulletin&utm_source=20200630&utm_content=ENDS%20Europe%20Daily%20\(144\)::www_endseurope_com_articl_4&email_hash=](https://www.endseurope.com/article/1688158/sinkevicius-endorses-90-glass-recycling-initiative?bulletin=bulletin%2Fendseurope&utm_medium=EMAIL&utm_campaign=eNews%20Bulletin&utm_source=20200630&utm_content=ENDS%20Europe%20Daily%20(144)::www_endseurope_com_articl_4&email_hash=)
- 520 Assembly of the Republic (2018) Law No. 69/2018. Diário da República, 248/2018(I): 5937-8, 26 December 2018 [ONLINE] Available at: <https://dre.pt/web/guest/pesquisa/-/search/117484671/details/maximized>
- 521 Flint, K. (2019) Our recap from the World Clean Up Day 2019, 28 November [ONLINE] Available at: <https://www.wondas-wim.com/our-recap-from-world-clean-up-day-2019/>
- 522 The European Container Glass Federation-FEVE (2018) Introducing 'Close the Glass Loop': The European ambition to collect glass more and better, together [ONLINE] Available at: <https://feve.org/about-glass/introducing-close-the-glass-loop/>
- 523 Hodgson R. (n.d.) Sinkevicius endorses 90% glass recycling initiative. [ONLINE] Available at: [https://www.endseurope.com/article/1688158/sinkevicius-endorses-90-glass-recycling-initiative?bulletin=bulletin%2Fendseurope&utm_medium=EMAIL&utm_campaign=eNews%20Bulletin&utm_source=20200630&utm_content=ENDS%20Europe%20Daily%20\(144\)::www_endseurope_com_articl_4&email_hash=](https://www.endseurope.com/article/1688158/sinkevicius-endorses-90-glass-recycling-initiative?bulletin=bulletin%2Fendseurope&utm_medium=EMAIL&utm_campaign=eNews%20Bulletin&utm_source=20200630&utm_content=ENDS%20Europe%20Daily%20(144)::www_endseurope_com_articl_4&email_hash=)
- 524 WWF (2018) Una trampa de plástico: Liberando de plástico el Mediterráneo [ONLINE] Available at: https://d80g3k8vovjyp.cloudfront.net/downloads/wwf_trampa_plasticook.pdf
- 525 Seas at Risk (2017) Single use plastic and the marine environment [ONLINE] Available at: <https://seas-at-risk.org/24-publications/800-single-use-plastic-and-the-marine-environment.html>
- 526 WWF (2018) Una trampa de plástico: liberando de plástico el Mediterráneo [ONLINE] Available at: https://d80g3k8vovjyp.cloudfront.net/downloads/wwf_trampa_plasticook.pdf
- 527 Eurostat (2019) How much plastic packaging waste do we recycle? 5 November [ONLINE] Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20191105-2>
- 528 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 529 Ministerio para la Transición Ecológica (2017) Memoria Anual de Generación y Gestión de Residuos de Competencia Municipal 2017 [ONLINE] Available at: https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/publicaciones/memoriaanualdegeneracionygestionderesiduosresiduos-decompetenciamunicipal2017_tcm30-505953.pdf
- 530 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 531 Ecoembes (n.d.) Who we are [ONLINE] Available at: <https://www.ecoembes.com/en/citizens/ecoembes/who-are-we>
- 532 Ecoembes (2018) Resumen Ejecutivo 2017 [ONLINE] Available at: <https://www.ecoembes.com/landing/informe-anual-2017/wp-content/uploads/2018/06/resumen-ejecutivo-Ecoembes-2017.pdf>
- 533 Ecoembes (2019) Las cifras del reciclaje [ONLINE] Available at: <https://www.ecoembes.com/sites/default/files/cifras-reciclaje-2018.pdf>
- 534 Official Journal of the European Union (2004) Directive 2004/12/EC of the European Parliament and of the Council of 11 February 2004 [ONLINE] Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32004L0012>
- 535 Boletín Oficial de las Cortes Generales (2015) Otras actividades parlamentarias ponencias de estudio constituidas en el seno de las comisiones. 14 October [ONLINE] Available at: http://www.senado.es/legis10/publicaciones/pdf/senado/bocg/BOCG_D_10_612_4194.PDF
- 536 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 537 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 538 Eurostat (2019) How much plastic packaging waste do we recycle? 5 November [ONLINE] Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20191105-2>
- 539 Anarpla and Cicloplast (2017) El plástico reciclado supera al depositado en vertedero por primera vez en España [ONLINE] Available at: [http://www.cicloplast.com/index.php?accion=notas-de-prensa&sub-Accion=ver-noticia&id=83&page=1&frm\[keyword\]=&actopc=42](http://www.cicloplast.com/index.php?accion=notas-de-prensa&sub-Accion=ver-noticia&id=83&page=1&frm[keyword]=&actopc=42)
- 540 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 541 Boletín Oficial de las Cortes Generales (2015) Otras actividades parlamentarias ponencias de estudio constituidas en el seno de las comisiones. 14 October [ONLINE] Available at: http://www.senado.es/legis10/publicaciones/pdf/senado/bocg/BOCG_D_10_612_4194.PDF
- 542 Ecoembes (2019) Junta General Accionistas [ONLINE]

- Available at: <https://www.ecoembes.com/es/empresas/sobre-nosotros/informacion-corporativa/gobierno-corporativo/organos-de-gobierno/junta-general-de-accionistas>
- 543 Ecoembes (2019) Cuentas Anuales Ecoembes [ONLINE] Available at: <https://www.ecoembes.com/landing/informe-anual-2018/archive/Cuentas-Anuales-Ecoembes-2018.pdf>
- 544 Greenpeace (2019) Maldito plástico: Reciclar no es suficiente [ONLINE] Available at: https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/03/reciclar_no_es_suficiente.pdf
- 545 NN.AA (2019) Ecoembes acusa a Greenpeace de 'gravísima irresponsabilidad' por 'confundir' al ciudadano sobre el reciclaje. Europa Press, 7 March [ONLINE] Available at: <https://www.europapress.es/sociedad/medio-ambiente-00647/noticia-ecoembes-acusa-greenpeace-gravisima-irresponsabilidad-confundir-ciudadano-reciclaje-20190307141732.html>
- 546 Robaina, E. (2019) Fridays For Future: España denuncia que empresas usan su logo sin permiso para fines lucrativos. Climática, 4 October [ONLINE] Available at: <https://www.climatica.lamarea.com/fridays-for-future-espana-denuncia-que-empresas-usan-su-logo-sin-permiso/>
- 547 Ecoembes *España* (2017) Anuncio Ecoembes 2017/2018: #ReciclaYRespira [YouTube] 26 January [ONLINE] Available at: https://www.youtube.com/watch?v=_79QGRFxiBU
- 548 Vicaíno López, A. (2018) Ecoembes: ¿por qué nos mientas? Público, 5 September [ONLINE] Available at: <https://blogs.publico.es/ecologismo-de-emergencia/2018/09/05/ecoembes-por-que-nos-mientas/>
- 549 Ecoembes (2019) Notas de Prensa: La Orquesta La Orquesta de la Música del Reciclaje de Ecoembes ha inaugurado la 'Award Ceremony Global Youth Video Competition' celebrada en la COP25, 5 December [ONLINE] Available at: <https://www.ecoembes.com/es/ciudadanos/sala-de-prensa/notas-de-prensa/la-musica-del-reciclaje-cop25>
- 550 Vicaíno López, A. (2018) Ecoembes: ¿por qué nos mientas? Público, 5 September [ONLINE] Available at: <https://blogs.publico.es/ecologismo-de-emergencia/2018/09/05/ecoembes-por-que-nos-mientas/>
- 551 UPM (n.d) Cátedra Ecoembes [ONLINE] Available at: <http://www.catedraecoembes.upm.es>
- 552 UPM (2016) La Cátedra Ecoembes de Medio Ambiente pone en marcha la VI edición del Máster en Gestión Sostenible de los Residuos. Universidad Politécnica de Madrid, 5 April [ONLINE] Available at: <http://www.upm.es/UPM/SalaPrensa/Noticias?fmt=detail&prefmt=articulo&id=25426f345e5e3510VgnVCM10000009c7648a>
- 553 UNESCO (2017) Chair in life cycle and climate change ESCI-UPF [ONLINE] Available at: https://www.esci.upf.edu/frontend/web/uploads/files/ARIADNA_Project_Executive_Summary_EN.pdf
- 554 Ibid.
- 555 UNESCO (2017) Chair in life cycle and climate change ESCI-UPF [ONLINE] Available at: https://www.esci.upf.edu/frontend/web/uploads/files/ARIADNA_Project_Executive_Summary_EN.pdf
- 556 Universidad Politécnica de Madrid and Universidad de Alcalá de Henares (2015) Estudio comparativo de los modelos de gestión de envases domésticos en España, Bélgica, Alemania y Noruega [ONLINE] Available at: <https://www.envaseysociedad.com/wp-content/uploads/2019/05/resumen-ejecutivo-estudio-comparativo-modelos-de-gestioun-de-envases-2015.pdf>
- 557 Gesvalt (2015) Informe Locales Comerciales 2015 [ONLINE] Available at: <http://gesvalt.es/wp-content/uploads/2015/09/Informe-de-Mercado-Retail-2015.pdf>
- 558 Álvarez Barba, Y., López G. and Saavedra C. (2017) Ecoembes, un negocio poco eco. El Salto, 30 May [ONLINE] Available at: <https://www.elsaltodiario.com/reciclaje/ecoembes-un-negocio-poco-eco>
- 559 Sabadell, D. (2020) El Salto Diario: Los 'Reciclos' de Ecoembes son greenwashing [ONLINE] Available at: <https://www.elsaltodiario.com/reciclaje/reciclos-ecoembes-sddr-greenwashing>
- 560 Ecoembes (2019) Reciclos: Ecoembes y el Reciclaje del futuro [ONLINE] Available at: <https://www.ecoembes.com/es/ciudadanos/sobre-nosotros/proyectos-destacados/reciclos>
- 561 Greenpeace (2019) Supermercados, eliminad vuestro maldito plástico [ONLINE] Available at: <https://es.greenpeace.org/es/wp-content/uploads/sites/3/2019/12/supermercados.pdf>
- 562 Ibid.
- 563 AECOC (n.d.) Los riesgos del SDDR [ONLINE] Available at: <https://www.aecoc.es/articulos/los-riesgos-del-sddr/>
- 564 Arribas, C. (2019) Personal communication with the Director of the Waste department of Ecologistas en Acción - environmental organisation, 13 January 2020.
- 565 Ibid.
- 566 Valencia Plaza (2020) Mercadona apuesta por material reciclado y no se plantea envases retornables, 6 June [ONLINE] Available at: <https://valenciaplaza.com/mercadona-apuesta-por-material-reciclado-y-no-se-plantea-envases-retornables>
- 567 Gobierno de Navarra (2016) Plan de Residuos de Navarra 2017-2027 [ONLINE] Available at: https://gobiernoabierto.navarra.es/sites/default/files/3295_plan_pigrn_anexo.pdf
- 568 NN.AA (2018) El Parlamento de Navarra aprueba la nueva Ley Foral de Residuos. Residuos Profesional, 8 June [ONLINE] Available at: <https://www.residuosprofesional.com/navarra-aprueba-nueva-ley-residuos/>
- 569 Navarra.es (2018) Recogidos 1.200 kg de envases en dos meses en una experiencia piloto realizada en Urbasa y Alloz, 21 September [ONLINE] Available at: https://www.navarra.es/home_es/Actualidad/Sala+de+prensa/Noticias/2018/09/21/recogida+envases+experiencia+piloto+urbasa+aloz.htm
- 570 La Moncloa (2019) Recurso de inconstitucionalidad contra dos apartados del artículo 23 de la Ley foral de Navarra sobre residuos y fiscalidad, 15 March [ONLINE] Available at: <https://www.lamoncloa.gob.es/consejodeministros/Paginas/enlaces/150319-enlacenavarra.aspx>
- 571 NN.AA (2019) Ampliado hasta 2021 el plazo para prohibir el uso de determinados productos de plástico de un solo uso en Navarra. Envira, 31 December [ONLINE] Available at: <https://envira.es/es/ley-foral-residuos/>
- 572 Plaza, R. (2018) Julià Álvaro: 'Pagamos tres veces por la gestión de los envases abandonados'. El Salto, 7 May [ONLINE] Available at: <https://www.elsaltodiario.com/residuos/julia-alvaro-pagamos-tres-veces-envases-abandonados>
- 573 Reloop (2016) Why container deposit systems are gaining ground. 29 June [ONLINE] Available at: <https://www.reloopplatform.org/why-container-deposit-systems-are-gaining-ground/>
- 574 Retorna (2016) 'El Sistema de Deposito, Ecoembes y las multinacionales.' Secretario de Medio Ambiente y Cambio Climático de la Generalitat Valenciana, Julià Álvaro. Interview, [YouTube] [ONLINE]
- Available at: https://www.youtube.com/watch?v=_tHyS74NXfl
- 575 Zafra, I. (2018) El Gobierno valenciano destituye al secretario autonómico de Medio Ambiente. El País, 2 February [ONLINE] Available at: https://elpais.com/ccaa/2018/02/02/valencia/1517585276_473190.html
- 576 Retorna (2016) 'El Sistema de Deposito, Ecoembes y las multinacionales.' Secretario de Medio Ambiente y Cambio Climático de la Generalitat Valenciana, Julià Álvaro. Interview, [YouTube] [ONLINE] Available at: https://www.youtube.com/watch?v=_tHyS74NXfl
- 577 Arribas, C. (2019) Personal communications with the Director of the Waste department of Ecologistas en Acción - environmental organisation, 13 January 2020.
- 578 Federation of Hospitality of Valencia (2017) El sector hostelero valenciano se opone radicalmente a la implantación del SDDR. Iresiduo, 7 July [ONLINE] Available at: <https://iresiduo.com/noticias/espana/federacion-hosteleria-valencia/16/07/07/sector-hostelero-valenciano-se-opone>
- 579 Retorna (2013) Report on the temporary implementation of a deposit and refund scheme in Cadaqués [ONLINE] Available at: http://www.retorna.org/mm/file/Resum%20executiu_Cadaqués_ENG_SETEMBRE%281%29.pdf
- 580 Hogg, D. and Elliott T. (2017) Viability study: Implementing a beverage container DRS for Catalonia. Eunomia [ONLINE] Available at: <https://www.eunomia.co.uk/reports-tools/viability-study-of-the-implementation-of-a-deposit-refund-scheme-in-catalonia/>
- 581 Palou, N. (2017) El comercio en pie de guerra contra el sistema de retorno de envases. La Vanguardia, 28 July [ONLINE] Available at: <https://www.lavanguardia.com/natural/20170728/43151335577/sddr-retorno-envases-comercio-sistema-catalunya-depositos.html>
- 582 Foment del Treball Nacional (n.d.) About us [ONLINE] Available at: <https://www.foment.com/en/about-us/>
- 583 Asociados ACES (n.d.) Asociados. [ONLINE] Available at: <http://www.asociacionsupermercados.com/asociados/>
- 584 Consell de Gremis (n.d.) Presentació del Consell de Gremis [ONLINE] Available at: <http://www.conselldegremis.cat/presentacio>
- 585 UNESCO (2017) Chair in life cycle and climate change ESCI-UPF

- [ONLINE] Available at: https://www.esci.upf.edu/frontend/web/uploads/files/ARIADNA_Project_Executive_Summary_EN.pdf
- 586 ESCI-UPF (n.d.) La introducción del SDDR en Cataluña no reportaría beneficios ambientales y tendría un mayor coste económico y social [ONLINE] Available at: <https://www.esci.upf.edu/en/latest-news/news/introduccion-del-sddr>
- 587 Generalitat de Catalunya (2017) Un estudi encarregat per l'ARC conclou que un sistema de dipòsit, devolució i retorn (SDDR) podria augmentar fins el 95% el reciclatge d'envasos subjectes al sistema [ONLINE] Available at: http://residus.gencat.cat/web/.content/home/actualitat/2017/07-25_presentacio_estudiSDDR/NP-SDDR.pdf
- 588 Planelles M. (2020) España recurre a un impuesto verde para luchar contra el plástico. El País, 2 June [ONLINE] Available at: <https://elpais.com/sociedad/2020-06-02/el-gobierno-lanza-un-nuevo-impuesto-sobre-los-envases-plasticos-que-preve-recaudar-724-millones-de-euros.html>
- 589 Ibid.
- 590 ADEME (2018) Déchets Chiffre-Clés: L'essentiel 2018 en Infographie [ONLINE] Available at: https://www.ademe.fr/sites/default/files/assets/documents/dechets_chiffres_cles_essentiel2018_infographie_010691.pdf
- 591 Eurostat (2019) How much plastic packaging waste do we recycle? 5 November [ONLINE] Available at: <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/DDN-20191105-2>
- 592 Suez (2020) At Limay in France, SUEZ manufactures plastic food packaging from recycled PET plastics [ONLINE] Available at: <https://www.suez.com/en/our-offering/success-stories/our-references/fpr-plastic-bottles-recycling>
- 593 Chauvot, M. (2019) La consigne des bouteilles plastiques inquiète les collectivités locales. Les Echos, 16 May [ONLINE] Available at: <https://www.lesechos.fr/industrie-services/energie-environnement/la-consigne-des-bouteilles-plastiques-inquiete-les-collectivites-locales-1021726>
- 594 Ministère de l'écologie du développement durable et de l'énergie France (2020) The Anti-Waste law in the daily lives of the French people: What does that mean in practice? [ONLINE] Available at: https://www.ecologique-solidaire.gouv.fr/sites/default/files/en_DP%20PJL.pdf
- 595 Ibid.
- 596 French Government Official Website (2015) Energy transition [ONLINE] Available at: <https://www.gouvernement.fr/en/energy-transition>
- 597 Ministère de la Transition Écologique et Solidaire (2020) The Anti-waste Law in the daily lives of the French people: what does that mean in practice? [ONLINE] Available at: https://www.ecologique-solidaire.gouv.fr/sites/default/files/en_DP%20PJL.pdf
- 598 Waste360 (2020) France announces anti-waste, circular economy law, 25 February [ONLINE] Available at: <https://www.waste360.com/legislation-regulation/france-announces-anti-waste-circular-economy-law>
- 599 Wilsher, K. (2020) Landmark French law will stop unsold goods being thrown away. The Guardian, 30 January [ONLINE] Available at: <https://www.theguardian.com/world/2020/jan/30/france-passes-landmark-law-to-stop-unsold-goods-being-thrown-away>
- 600 Ministère de la Transition Écologique et Solidaire (2020) Projet de décret relatif à l'interdiction de certains produits en plastique à usage unique [ONLINE] Available at: <http://www.consultations-publiques.developpement-durable.gouv.fr/projet-de-decret-relatif-a-l-interdiction-de-a2159.html>
- 601 Ibid.
- 602 Ibid.
- 603 Ministère de l'écologie du développement durable et de l'énergie France (2020) The anti-waste law in the daily lives of the French people: What does that mean in practice? [ONLINE] Available at: https://www.ecologique-solidaire.gouv.fr/sites/default/files/en_DP%20PJL.pdf
- 604 Saporta, H. (2019) Consigne: l'étude du 'Collectif boissons' dévoilée. Emballages Magazine [ONLINE] Available at: <https://www.emballagesmagazine.com/economie-circulaire/consigne-l-etude-du-collectif-boissons-devoilee.51214>
- 605 Senet, S. (2019) France's newly implemented deposit-return scheme receives strong criticism. EURACTIV, 25 June [ONLINE] Available at: <https://www.euractiv.com/section/circular-economy/news/frances-newly-implemented-deposit-return-scheme-receives-strong-criticism/>
- 606 Association de Maires de France et des Présidents d'Intercommunalité (2019). Projet de loi sur l'économie circulaire: l'amf se prononce en faveur du réemploi des emballages [ONLINE] Available at: <https://www.amf.asso.fr/documents-projet-loi-sur-leconomie-circulaire-lamf-se-prononce-en-faveur-du-reemploi-emballages/39629>
- 607 Senet, S. (2019) France's newly implemented deposit-return scheme receives strong criticism. EURACTIV, 25 June [ONLINE] Available at: <https://www.euractiv.com/section/circular-economy/news/frances-newly-implemented-deposit-return-scheme-receives-strong-criticism/>
- 608 Collet, P. (2019) Consigne: un rapport commandé par le Sénat évalue à 240 M€ par an le coût pour les collectivités. Actu-Environnement, 20 September [ONLINE] Available at: <https://www.actu-environnement.com/ae/news/rapport-stefanini-senat-impact-consigne-bouteilles-plastique-canette-34075.php4#:~:text=%C3%A0%20nos%20abonn%C3%A9s.,Consigne%20%3A%20un%20rapport%20command%C3%A9%20par%20le%20S%C3%A9nat%20%C3%A9value%20%C3%A0%20240,le%20co%C3%BBt%20pour%20les%20collectivit%C3%A9s&text=La%20consigne%20pourrait%20co%C3%BBter%20240,pr%C3%A9-remis%20au%20gouvernement.>
- 609 Stefanini, P. (2018) Étude D'impact: Des alinéas 48 à 51 de l'article 8 du projet de loi relatif à la lutte contre le gaspillage et à l'économie circulaire [ONLINE] Available at: <https://www.actu-environnement.com/media/pdf/news-34075-etude-impact-stefanini-consigne.pdf>
- 610 Collet, P. (2019) Consigne: Jacques Vernier propose de réviser le soutien aux collectivités. Actu-Environnement, 4 December [ONLINE] Available at: <https://www.actu-environnement.com/ae/news/consigne-soutien-collectivites-34554.php4>
- 611 Vernier, J. (2019). Rapport sur la consigne des emballages de boissons [ONLINE] Available at: <https://jacques-vernier.fr/wp-content/uploads/Rapport-consigne-Novembre-2019.pdf>
- 612 Pouliquen, F. (2019) Tri des déchets : Pourquoi la consigne passe si mal auprès des maires et entreprises du recyclage? [ONLINE] Available at: <https://www.20minutes.fr/planete/2595915-20190904-tri-dechets-pourquoi-consigne-passe-si-mal-aupres-maires-entreprises-recyclage>
- 613 Pouliquen, F. (2019). Tri des déchets : Pourquoi la consigne passe si mal auprès des maires et entreprises du recyclage? 20 Minutes, 4 September [ONLINE] Available at: <https://www.20minutes.fr/planete/2595915-20190904-tri-dechets-pourquoi-consigne-passe-si-mal-aupres-maires-entreprises-recyclage>
- 614 Vernier, J. (2019) Rapport sur la consigne des emballages de boissons [ONLINE] Available at: <https://jacques-vernier.fr/wp-content/uploads/Rapport-consigne-Novembre-2019.pdf>
- 615 Petithuguenin, J. (2019). Non, les bouteilles d'eau ne finissent pas dans la mer. Linked In, 5 September [ONLINE] Available at: <https://www.linkedin.com/pulse/non-les-bouteilles-deau-ne-finissent-pas-dans-la-mer-petithuguenin/>
- 616 Détröyat, O. (2019) Plastique: Le cese favorable à une consigne plus encadrée. Économie, 13 November [ONLINE] Available at: <https://www.lefigaro.fr/conjoncture/plastique-le-cese-favorable-a-consigne-plus-encadree-20191113>
- 617 Mestayer, T. (2019) L'intelligence artificielle au service du recyclage. Le Monde, 14 April [ONLINE] Available at: https://www.lemonde.fr/economie/article/2019/04/14/l-intelligence-artificielle-au-service-du-recyclage_5450028_3234.html
- 618 Chatel, L. (2019) Zero Waste France mobilisé dans le débat sur la consigne. [ONLINE] Available at: <https://www.zerowaste-france.org/zero-waste-france-mobilise-debat-consigne/>
- 619 France Nature Environnement, Surfrider, Zero Waste France, WWF France and Fondation Tara Océans (2019) Contribution au débat sur la Consigne et propositions d'amendements pour le développement du réemploi des emballages consignés. [ONLINE] Available at: https://www.wwf.fr/sites/default/files/doc-2019-11/20191108_Position_paper_Consigne_PJL_Economie_circulaire.pdf
- 620 Petithuguenin, J. (2019). Non, les bouteilles d'eau ne finissent pas dans la mer. Linked In, 5 September [ONLINE] Available at: <https://www.linkedin.com/pulse/non-les-bouteilles-deau-ne-finissent-pas-dans-la-mer-petithuguenin/>
- 621 Edwards, S. and Carhart, J. (2020) Environmental and social impacts of a failing bottle bill in California. Eunomia, 14 May [ONLINE] Available at: <https://www.eunomia.co.uk/reports-tools/california-bottle-bill/>
- 622 Albrecht, P., Brodersen, J., Horts, D., and PricewaterhouseCoopers AG (2011) Reuse and recycling systems for selected beverage packaging from a sustainability perspective [ONLINE] Available at: <http://www.duh.de/>

- fileadmin/user_upload/download/Projektinformation/Kreislaufwirtschaft/PwC-Study_reading_version.pdf
- 623 The New Plastics Economy (2019) Reuse/rethinking packaging [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Reuse.pdf>
- 624 ReLoop (2016) The vanishing refillable [ONLINE] Available at: <https://www.reloopplatform.org/beverage-sales-by-container-type-in-austria-16/>
- 625 O-I (2018) Making what matters: 2018 corporate sustainability update [ONLINE] Available at: <https://www.o-i.com/wp-content/uploads/2019/04/2018csrreportupdate.pdf>
- 626 Oceana (2020) Just one word: Refillables [ONLINE] Available at: <https://oceana.org/publications/reports/just-one-word-refillables>
- 627 Ibid.
- 628 ReLoop (2017) Are we ready for reusable packaging? [ONLINE] Available at: <https://www.reloopplatform.org/are-we-ready-for-reusable-packaging/>
- 629 ReLoop (2016) Policy instruments to promote refillable beverage containers [ONLINE] Available at: <https://www.reloopplatform.org/wp-content/uploads/2016/07/Refillables-policy-Final-Fact-sheet-June30.pdf>
- 630 Wells, L. (2020) Scotland forges on with deposit return scheme despite coronavirus crisis. Talking Retail, 1 May [ONLINE] Available at: <https://www.talkingretail.com/news/industry-news/scotland-forges-deposit-return-scheme-despite-coronavirus-crisis-01-05-2020/>
- 631 Have You Got the Bottle? (2017) A modern Deposit Return System for Scotland [ONLINE] Available at: <http://www.haveyogotthebottle.org.uk/wp-content/uploads/2017/08/APRS-Holyrood-submission.pdf>
- 632 Coca Cola Europe (2016) Radar screen of EU public policies. Monthly issue update: February & March 2016 [ONLINE] Available at: <https://www.documentcloud.org/documents/3409808-EU-Radar-Screen-Issue-Update-2016-02-03.html>
- 633 McClenaghan, M. (2017) Investigation: Coca Cola and the 'fight back' against plans to tackle plastic waste. Unearthed, 25 January [ONLINE] Available at: <https://unearthed.greenpeace.org/2017/01/25/investigation-coca-cola-fight-back-plans-tackle-plastic-waste/>
- 634 Coca Cola Europe (2016) Radar screen of EU public policies. Monthly issue update: February & March 2016 [ONLINE] Available at: <https://www.documentcloud.org/documents/3409808-EU-Radar-Screen-Issue-Update-2016-02-03.html>
- 635 Keep Scotland Beautiful (2016) Our corporate partnerships [ONLINE] Available at: <https://www.keepsotlandbeautiful.org/media/1557639/our-corporate-partnerships.pdf>
- 636 Corporate Europe Observatory (2018) Packaging lobby's support for anti-litter groups deflects tougher solutions, 28 March [ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2018/03/packaging-lobby-support-anti-litter-groups-deflects-tougher-solutions>
- 637 Ibid.
- 638 Kirkaldy, L. (2017) EXCLUSIVE: Coca-Cola to back deposit return scheme in major U-turn. Holyrood, 22 February [ONLINE] Available at: https://www.holyrood.com/news/view-exclusive-cocacola-to-back-deposit-return-scheme-in-major-uturn_13134.htm
- 639 Keep Scotland Beautiful (2017) Opinion piece from our CEO Derek Robertson, 28 March [ONLINE] Available at: <https://web.archive.org/web/20180821115415/https://www.keepsotlandbeautiful.org/news/keep-scotland-beautiful/opinion-piece-from-our-ceo-derek-robertson/>
- 640 Wells, L. (2020) Trade body calls on Scottish politicians to stop deposit return scheme. Talking Retail, 13 May [ONLINE] Available at: <https://www.talkingretail.com/news/industry-news/trade-body-calls-scottish-politicians-stop-deposit-return-scheme-13-05-2020/>
- 641 ISSAR (n.d.) Packaging waste production and recycling [ONLINE] Available at: <https://issar.cenia.cz/en/core-set-of-environmental-indicators/waste-and-material-flows/packaging-waste-production-and-recycling/>
- 642 EKO-KOM (2018) Annual report [ONLINE] Available at: <https://www.ekokom.cz/uploads/attachments/OD/SBORN%C3%8DK%2018.pdf>; EKO-KOM (2017) Annual report [ONLINE] Available at: https://www.ekokom.cz/uploads/attachments/OD/SBORN%C3%8DK%2017_20170619.pdf
- 643 Institut Cirkulární Ekonomiky (2018) Study of material flows of PET beverage packaging in the Czech Republic for 2016 [ONLINE] Available at: https://www.zalohujme.cz/wp-content/uploads/2020/02/STUDIE-MATERI%C3%81LOV%C3%9DCH-TOK%C5%AE_EN.pdf
- 644 Cordle, M., Elliott, L., Elliott, T., Kemp, S., Sherrington, C. and Woods, O. (2019) A Deposit Refund System for the Czech Republic. Eunomia, 25 January [ONLINE] Available at: <https://www.eunomia.co.uk/reports-tools/deposit-refund-system-czech-republic/>
- 645 Zalohujme (2019) Home page [ONLINE] Available at: <https://www.zalohujme.cz/#o-projektu>
- 646 Mattoni (n.d.) Krok za krokem k ochrane prirody [ONLINE] Available at: <https://www.mattoni.cz/styl-mattoni/ekologie>
- 647 Powidl (2019) Mattoni in Karlsbad stieg zum Marktleader in Zentraleuropa auf, 28 March [ONLINE] Available at: <http://www.powidl.eu/mattoni-28.03.-2019.html>; see also Powidl (2018) Karlsbader Mineralwasser übernimmt PepsiCo, 8 November [ONLINE] Available at: <http://www.powidl.eu/karlsbader-mineralwasse-pepsi-08.11.2018.html>
- 648 Stephens, J. (2020) Mattoni and E-Košik.cz to trial deposit system for PET bottles. BRNO Daily, 22 January [ONLINE] Available at: <https://brnodaily.com/2020/01/22/news/mattoni-and-e-kosik-cz-to-trial-deposit-system-for-pet-bottles/>
- 649 Máš na miň (2019) Home page [ONLINE] Available at: <https://www.masnamin.cz/>
- 650 CETA (2019) Impact study on introduction of the Deposit Return System (DRS) for PET beverage packaging.
- 651 Ministerstvo životního prostředí (2019) Zálohování nápojových PET lahví je v tuto chvíli nadbytečné a riskantní, littering nevyřeší, říká studie CETA, 4 June [ONLINE] Available at: https://www.mzp.cz/cz/news_190606-zalohovani-PET
- 652 Expats.cz (2020) The Czech Republic will not introduce a PET bottle deposit refund system, 16 January [ONLINE] Available at: <https://news.expats.cz/weekly-czech-news/the-czech-republic-will-not-introduce-a-pet-bottle-deposit-refund-system/>
- 653 Gavriněv, V. (2020) Zálohy na PET lahve budou. Ale jen dobrovolné, doporučili poslanci. Seznam Zprávy, 13 May [ONLINE] Available at: <https://www.seznamzpravy.cz/clanek/zalohy-na-pet-lahve-budou-ale-jen-dobrovolne-doprocili-poslanci-105653>
- 654 Coca-Cola HBC (n.d.) Environment [ONLINE] Available at: <https://www.coca-colahellenic.com/en/sustainability/environment/>; Coca-Cola HBC (n.d.) Coca-Cola HBC Czech and Slovakia TOP responsible company 2018, 19 November [ONLINE] Available at: <https://cz.coca-colahellenic.com/en/media/news/top-responsible-company/>
- 655 Official Journal of the European Union (1994) Směrnice evropského parlamentu a rady 94/62/e, 31 December [ONLINE] Available at: <https://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=CELEX:31994L0062&from=CS>
- 656 Czech Commercial Register (2019) Zápis ze zasedání představenstva obchodní společnosti: EKO-KOM, a.s.; see also Czech Commercial Register (2019) Zápis ze zasedání dozorčí rady společnosti: EKO-KOM, a.s.
- 657 EKO-KOM (2013) Annual summary [ONLINE] Available at: https://www.ekokom.cz/uploads/attachments/English/Annual_Summary_2013.pdf
- 658 Coca-Cola HBC (2018) Coca-Cola HBC Czech and Slovakia TOP responsible company 2018 [ONLINE] Available at: <https://cz.coca-colahellenic.com/en/media/news/top-responsible-company/>
- 659 Ibid.
- 660 EKO-KOM (2019) Systém EKO-KOM je na evropské směrnice připraven [ONLINE] Available at: https://www.ekokom.cz/uploads/attachments/Klienti/Ekomunikace/EKOKOMUNIKACE_01_2019.pdf
- 661 Interseroh (2018) Nachhaltigkeits-bericht [ONLINE] Available at: https://www.interseroh.de/fileadmin/PDF/Nachhaltigkeits-reporting_und_Zertifikate/Nachhaltigkeitsbericht_2018.pdf
- 662 Natur-Pack (2018) The municipalities in the Extended Producer Responsibility system [ONLINE] Available at: <https://www.naturpack.sk/en/services/municipalities/the-municipalities-in-the-extended-producer-responsibility-system/>
- 663 Ministry of the Environment of the Czech Republic (2001) 477/2001 Sb. ZÁKON ze dne 4. prosince 2001 o obalech a o změně některých zákonů [ONLINE] Available at: https://www.mzp.cz/www/platnolegislativa.nsf/2E3A627D45671704C1257563004137A8-%24file/Z%20477_2001.pdf; see also Ministry of the Environment of the Czech Republic (2020) Packaging legislation [ONLINE] Available at: https://www.mzp.cz/en/packaging_legislation
- 664 Name withheld (2020) Personal communication, 15 May.

- 665 Ibid. a way to turn lobster shells into biodegradable packaging and it could help reduce plastic waste. Business Insider, 9 May [ONLINE] Available at: <https://www.businessinsider.com/lobster-shells-plastic-biodegradable-recycle-single-use-waste-2019-5?r=US&IR=T>
- 666 Ibid.
- 667 Cho, R. (2017) The truth about bioplastics. State of the Planet, 13 December [ONLINE] Available at: <https://blogs.ei.columbia.edu/2017/12/13/the-truth-about-bioplastics/>
- 668 Vert, M., Doi, Y., Hellwich, K.-H., et al. (2012) Terminology for biorelated polymers and applications (IUPAC Recommendations 2012). Pure and Applied Chemistry, 84(2): 377-410.
- 669 Hann, S. and Scholes, R. (2020) Understanding the role of bio-based and biodegradable plastics. Eunomia study commissioned by Changing Markets Foundation.
- 670 Ibid.
- 671 Greenpeace (2019) Throwing away the future: False solutions to plastics pollution [ONLINE] Available at: <https://www.greenpeace.org/usa/wp-content/uploads/2019/09/report-throwing-away-the-future-false-solutions-plastic-pollution-2019.pdf>
- 672 Spencer, C. (2019) Plant-based compostable plastics going to landfill. BBC News, 16 February [ONLINE] Available at: <https://www.bbc.co.uk/news/uk-wales-47238220>
- 673 Green Alliance (2020) Plastic promises: What the grocery sector is really doing about packaging [ONLINE] Available at: https://www.green-alliance.org.uk/resources/Plastic_promises.pdf
- 674 Taufik, D., Reinders, M. J., Molenveld, K. and Onwezen, M. C. (2020) The paradox between the environmental appeal of bio-based plastic packaging for consumers and their disposal behaviour. Science of the Total Environment, 705. [ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S0048969719358152>
- 675 British Plastics Federation (2020) Bio-based plastics: Feedstocks, production and the UK market. [ONLINE] Available at: https://www.bpf.co.uk/plastipedia/polymers/Biobased_plastics_Feedstocks_Production_and_the_UK_Market.aspx
- 676 Vowls, N. (2019) How fish skins and algae could help solve the plastic pollution crisis. Phys.org, 13 January [ONLINE] Available at: <https://phys.org/news/2019-06-fish-skins-algae-plastic-pollution.html>
- 677 La Grasta, M. and Ibekwe, D. (2019) Students in London developed
- 678 Giljum, S., et al. (2016) Land under pressure: Global impacts of the EU bioeconomy. Brussels: Friends of the Earth Europe. [ONLINE] Available at: www.foeeurope.org/sites/default/files/resource_use/2016/land-under-pressure-report-global-impacts-eu-bioeconomy.pdf
- 679 Nessi S., Bulgheroni C., Garbarino E., Garcia-Gutierrez P., Orveillon G., Sinkko T., Tonini D. and Pant R. (2018) Environmental sustainability assessment comparing through the means of lifecycle assessment the potential environmental impacts of the use of alternative feedstock (biomass, recycled plastics, CO2) for plastic articles in comparison to using current feedstock (oil and gas), Report for European Commission, December. [ONLINE] Available at: https://ep.lca.jrc.ec.europa.eu/permalink/PLASTIC_LCI/Plastic_LCA_Report%2011_2018.11.20.pdf
- 680 University of Bonn (2018) More bioplastics do not necessarily contribute to climate change mitigation: Potential implications of transitioning to plant-based plastics. Science Daily, 7 December [ONLINE] Available at: <https://www.sciencedaily.com/releases/2018/12/181207112714.htm>
- 681 Environmental Defense Fund (n.d.) Methane, the other important greenhouse gas [ONLINE] Available at: <https://www.edf.org/climate/methane-other-important-greenhouse-gas>
- 682 Coca-Cola Great Britain (n.d.) What is PlantBottleTM? [ONLINE] Available at: <https://www.coca-cola.co.uk/our-business/faqs/what-is-plantbottle>
- 683 Nestlé (2019) Nestlé and Danimer Scientific to develop biodegradable water bottle [Press Release] 15 January [ONLINE] Available at: <https://www.nestle.com/media/pressreleases/allpressreleases/nestle-danimer-scientific-develop-biodegradable-water-bottle>
- 684 PepsiCo (2019) PepsiCo sustainability report 2018 [ONLINE] Available at: https://www.pepsico.com/docs/album/sustainability-report/2018-csr/pepsico_2018_csr.pdf?sfvrsn=b23814c0_6
- 685 Ellen MacArthur Foundation (2019) The New Plastics Economy global commitment progress report 2019 [ONLINE] Available at: <https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf>
- 686 National Bureau of Statistic of China (2020) National data [ONLINE] Available at: <http://data.stats.gov.cn/easyquery.htm?cn=A01&zb=A02090X&sj=201912>
- 687 Ministry of Commerce of the People's Republic of China (2018) Global plastics production reached a record high [ONLINE] Available at: <http://www.mofcom.gov.cn/article/i/jyj/e/201805/20180502738977.shtml>
- 688 Heinrich Böll Foundation (2017) Ocean atlas [ONLINE] Available at: https://www.boell.de/sites/default/files/web_170607_ocean_atlas_vektor_us_v102.pdf
- 689 China Environmental Culture Promotion Association (2009) China public environmental protection index (2008) [ONLINE] Available at: http://www.gov.cn/gzdt/2009-01/16/content_1207380.htm.
- 690 Kemira (2019) International consumer survey: Concern over plastic use is reflected in consumer attitudes on food packaging [Press Release] 16 October [ONLINE] Available at: <https://www.kemira.com/company/media/newsroom/releases/international-consumer-survey-concern-over-plastic-use-is-reflected-in-consumer-attitudes-on-food-packaging/>
- 691 Shanghai Jiao Tong University (2019) Survey on environmental awareness among Chinese urban residents [ONLINE] Available at: <https://news.sjtu.edu.cn/zhxw/20191018/112933.html>
- 692 Xinhua (2020) China reveals plan to cut plastic use by 2025. 19 January [ONLINE] Available at: http://www.xinhuanet.com/english/2020-01/19/c_138718297.htm
- 693 Swift, R. (2019) Chinese plastics makers are switching to biodegradable materials as Beijing stresses on pollution-free economic progress. South China Morning Post, 23 March [ONLINE] Available at: <https://www.scmp.com/business/china-business/article/3002888/chinese-plastics-makers-are-switching-biodegradable>
- 694 Ministry of Ecology and Environment of the People's Republic of China, 2019. 2019 4 [ONLINE] Available at: http://www.mee.gov.cn/xxgk2018/xxgk/xxgk15/201904/t20190430_701559.html
- 695 Shanghai Rendu Ocean NPO Development Center (2018) 2017 Beach litter brand audit annual report [ONLINE] Available at: http://oss.renduocean.org/wwwroot/yanjiucheng-guo/rd_BrandMonitoringAnnualReport2017.pdf
- 696 Shanghai Rendu Ocean NPO Development Center (2019) 2018 Beach litter brand audit annual report [ONLINE] Available at: http://oss.renduocean.org/wwwroot/yanjiucheng-guo/rd_BrandMonitoringAnnualReport2018.pdf
- 697 Break Free from Plastic (2019) Global brand audit report [ONLINE] Available at: <https://www.breakfreefromplastic.org/wp-content/uploads/2020/02/branded-2019-web-FINAL-v2.pdf>
- 698 The Coca-Cola Company (2019) 2018 Business & sustainability report [ONLINE] Available at: <https://www.coca-cola.com.cn/content/dam/journey/cn/zh/private/pdf/lvcheng/Coca-Cola-Business-and-Sustainability-Report.pdf>
- 699 Investor Relations Asia Pacific (2020) Tingyi (Cayman Islands) Holding Corp. 2018 annual report [ONLINE] Available at: <https://doc.irasia.com/listco/hk/tingyi/annual/2018/car2018.pdf>
- 700 Hangzhou Wahaha Group Co., Ltd. (2020) Industry serving the country [ONLINE] Available at: <https://en.wahaha.com.cn/socialResp/industry.htm>
- 701 Xinghu, Z., et al. (2018) General guidelines for the evaluation of outstanding social responsibility enterprises in the Chinese beverage industry. Beijing: China Quality Inspection Press.
- 702 Investor Relations Asia Pacific (2020) Tingyi (Cayman Islands) Holding Corp. 2018 annual report [ONLINE] Available at: <https://doc.irasia.com/listco/hk/tingyi/annual/2018/car2018.pdf>
- 703 China Plastics Processing Industry Association (2013) Explanation of issues related to antimony in PET bottles [ONLINE] Available at: <http://www.chinabeverage.org/news.php?id=4129>
- 704 Sohu Health (2013) Plastic packaging contains carcinogen antimony, 5 March [ONLINE] Available at: <https://health.sohu.com/20130305/n367821950.shtml>
- 705 Taizhou Plastics Industry Association (2018) It turns out that plastic bottles can still play like this! 17 April [ONLINE] Available at: www.tzpia.com/html/xingyezixun-show-95.html
- 706 Sohu (2016) China resources: C'estbon assists Yingchuang Recycling to open a demonstration station for smart, convenient and safe recycling, 7 June [ONLINE] Available at: www.sohu.com/a/81938129_254054
- 707 The China Environmental Protection Foundation (2017) 'We

- care - it's up to you to do environmental protection' launched in Beijing, 22 September [ONLINE] Available at: http://www.cepf.org.cn/jjhd/201709/t20170922_422131.htm
- 708 Ecological Environment Department of Hainan Province (2020) 19 March [ONLINE] Available at: http://hnsthb.hainan.gov.cn/xxgk/0200/0202/hjywg/trhjgl/202003/t20200320_2764481.html
- 709 Stanway, D. (2019) China's Hainan to ban single-use plastics by 2025: State media. Reuters, 22 February [ONLINE] Available at: <https://uk.reuters.com/article/us-china-environment-plastic/chinas-hainan-to-ban-single-use-plastics-by-2025-state-media-idUKKCNIQB013>
- 710 China Plastic Processing Industry Association (2020) CPPIA 2019 annual report and 2020 work plan [ONLINE] Available at: <http://www.cppia.com.cn/cppia/zdbd/202018125920.htm>
- 711 Bio-based Chemicals and Materials Webpage (2018) Hainan has a comprehensive 'plastics ban'. Which plastics industry is happy and which sad? [ONLINE] Available at: <http://www.bio-basedconf.com/nd.jsp?id=189>
- 712 Shanghai Observer (2019) Plastic restrictions are changed to bans. Hainan completely bans the use of plastic bags. What should I use for shopping in the future? 24 February [ONLINE] Available at: <https://www.jfdaily.com/news/detail?id=134786>
- 713 China Daily (2019) The 'deposit recovery system' represented by plastic bottles will aid in a new journey, 10 October [ONLINE] Available at: <https://baijiahao.baidu.com/s?id=1646992750018930238&wfr=spider&for=pc>
- 714 The People's Government of Shuangtaizi (2019) Hainan will open the way for a deposit recovery system in China, 4 September [ONLINE] Available at: http://www.stq.gov.cn/art/2019/9/4/art_2147_490343.html
- 715 Sanya Daily (2019) Governments at all levels issue strong signals the implementation of Hainan's deposit system will change from request to reality, 6 November [ONLINE] Available at: http://epaper.sanyar.com.cn/html/2019-11/06/content_12250_1827338.htm
- 716 Reynolds, I. (2019) Japan's Abe says plastics not the 'enemy' as trash piles up, 7 October [ONLINE] Available at: <https://www.bloomberg.com/news/articles/2019-10-07/japan-s-abe-says-plastics-not-the-enemy-as-trash-piles-up>
- 717 McKirdy, A. (n.d.) Throwaway society: Rejecting a life consumed by plastic. The Japan Times [ONLINE] Available at: <https://features.japantimes.co.jp/climate-crisis-plastic/>
- 718 United Nations Environment Programme (2018) Single-use plastics: A roadmap for sustainability [ONLINE] Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf?isAllowed=y&sequence=1
- 719 Kazuhiro, I. (2018) Environment Ministry compiles targets to combat single-use plastic pollution. Mainichi Japan, 20 October [ONLINE] Available at <https://mainichi.jp/english/articles/20181020/p2a/00m/0na/024000c>
- 720 Plastic Waste Management Institute (2019) An introduction to plastic recycling [ONLINE] Available at: http://www.pwmi.or.jp/ei/plastic_recycling_2019.pdf
- 721 Greenpeace Japan (2019) . [ONLINE] Available at: https://storage.googleapis.com/planet4-japan-stateless/2019/03/da82d0d7-20190301tokyo_petbottle_free_pollreport.pdf
- 722 Ryall, J. (2018) How China's plastic waste ban has left Japan to deal with mountains of trash. South China Morning Post, 4 July [ONLINE] Available at: <https://www.scmp.com/news/asia/east-asia/article/2153690/how-chinas-plastic-waste-ban-has-left-japan-deal-mountains-trash>
- 723 Shibata, N. (2019) Plastic recycling attracts investment in Japan after China ban. Nikkei Asian Review, 12 January [ONLINE] Available at: <https://asia.nikkei.com/Spotlight/Environment/Plastic-recycling-attracts-investment-in-Japan-after-China-ban>
- 724 Reynolds, I. (2019) Japan's Abe says plastics not the 'enemy' as trash piles up, 7 October [ONLINE] Available at: <https://www.bloomberg.com/news/articles/2019-10-07/japan-s-abe-says-plastics-not-the-enemy-as-trash-piles-up>
- 725 Gooddo (2019) What's wrong with plastic recycling? What is the current situation and measures in Japan? 18 October [ONLINE] Available at: <https://gooddo.jp/magazine/sustainable-consumption-production/recycling/4633/>
- 726 Kirin Holdings Company Ltd (2019) Kirin Group establishes its plastic policy, 7 February [ONLINE] Available at https://www.kirinholdings.co.jp/english/news/2019/0207_01.html
- 727 Coca-Cola Bottlers Japan Holdings Inc (n.d.) Coca-Cola Bottlers Japan Holdings Inc. Group 'CSV Goals (Creating Shared Value)' [ONLINE] Available at <https://en.ccbji.co.jp/csv/csvgoal/>
- 728 Seven and i Holdings (2019) Seven & i Group's Environmental Goals: 'Green Challenge 2050' [Press Release] 8 Mar [ONLINE] Available at: https://www.7andi.com/library/dbps_data/_material/_localhost/en/release_pdf/20190508_01en.pdf
- 729 Meiji Holdings Co., Ltd (n.d.) Circular economy [ONLINE] Available at https://www.meiji.com/global/sustainability/caring_for_the_earth/recycling_society/
- 730 Kao (n.d.) Our approach to packaging [ONLINE] Available at: <https://www.kao.com/global/en/who-we-are/actions/recyclable-package/>
- 731 Lion (2019) Sustainability report [ONLINE] Available at: https://www.lion.co.jp/en/csr/pdf/2019/2019-all_EN.pdf
- 732 Lawson (n.d.) Identify Lawson's material issues, and promote sustainable initiatives to realize its future vision [ONLINE] Available at: https://www.lawson.jp/en/csr/environmental_management/
- 733 Nissin Group (n.d.) Sustainability [ONLINE] Available at: https://www.nissin.com/en_jp/csr/
- 734 Pokka Sapporo (2020) Proposal of a paper beverage container 'Kurtkan' as a drink for meetings: 'Umimameloka green tea' 'Slightly scented lemon water' [Press Release] 10 February [ONLINE] Available at: https://www.pokkasapporo-fb.jp/company/news/release/200207_01.html
- 735 The Council for PET Bottle Recycling (n.d.) Actual volume of collected PET bottles and collection rate [ONLINE] Available at: <http://www.petbottle-rec.gr.jp/english/actual.html>
- 736 Ministry of Environment, Japan (2019) G20 Report on Actions against Marine Plastic Litter [ONLINE] Available at: https://www.env.go.jp/en/water/marine_litter/pdf/112576.pdf
- 737 Tearfund (2020) The burning question [ONLINE] Available at: https://learn.tearfund.org/-/media/files/tilz/circular_economy/2020-tearfund-the-burning-question-en.pdf?la=en
- 738 CNBC Africa (2019) Exclusive: Why Coca-Cola believes Africa will be its growth engine, 11 November [ONLINE] Available at: <https://www.cnbcfrica.com/videos/2019/11/11/exclusive-why-coca-cola-believes-africa-will-be-its-growth-engine/>
- 739 Tearfund (2020) The burning question [ONLINE] Available at: https://learn.tearfund.org/-/media/files/tilz/circular_economy/2020-tearfund-the-burning-question-en.pdf?la=en
- 740 CIEL (2019) Plastic & health: The hidden costs of a plastic planet [ONLINE] Available at: <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf>
- 741 World Bank (2017) What a waste 2.0 [ONLINE] Available at: http://datatopics.worldbank.org/what-a-waste/tackling_increasing_plastic_waste.html
- 742 UN Environment Programme (2018) Legal limits on single-use plastics and microplastics: A global review of national laws and regulations [ONLINE] Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/27113/plastics_limits.pdf?isAllowed=y&sequence=1
- 743 Musasia, B. M. (2020) Debunking Kenya Association of Manufacturers plastic action plan. Clean Up Kenya, 28 May [ONLINE] Available at: <https://cleanupkenya.org/debunking-kenya-association-of-manufacturers-plastic-action-plan/>
- 744 National Environment Management Authority (2020) 2 years on: Say no to plastic bags [ONLINE] Available at: http://www.nema.go.ke/index.php?option=com_content&view=article&id=296&catid=2&Itemid=451
- 745 Deonath, G. (2019) Kenya bans single-use plastics from beaches and parks. Global Citizen, 6 June [ONLINE] Available at: <https://www.globalcitizen.org/en/content/single-use-plastics-banned-kenya-protected-areas/>
- 746 Lerner, S. (2020) Africa's exploding plastic nightmare. The Intercept, 19 April [ONLINE] Available at: <https://theintercept.com/2020/04/19/africa-plastic-waste-kenya-ethiopia/>
- 747 PETCO (n.d.) Home page [ONLINE] Available at: <https://www.petco.co.ke/>
- 748 Ndiso, J. (2019) Plastic, plastic everywhere but not for African recyclers. Reuters, 9 August [ONLINE] Available at: <https://af.reuters.com/article/worldNews/idAFKCN1UZOVJ>
- 749 Musasia, B. M. (2020) Coca-Cola's despicable operations in Kenya. Clean Up Kenya, 10 May [ONLINE] Available at: <https://>

- 750 cleanupkenya.org/coca-colas-despicable-operations-in-kenya/ Ibid.
- 751 Lerner, S. (2020) Africa's exploding plastic nightmare. The Intercept, 19 April [ONLINE] Available at: <https://theintercept.com/2020/04/19/africa-plastic-waste-kenya-ethiopia/>
- 752 Kenyan Association of Manufacturers (2019) Kenya plastic action plan [ONLINE] Available at: http://kam.co.ke/kam/wp-content/uploads/2019/12/KPAP_Document-pages.pdf
- 753 Lerner, S. (2020) Africa's exploding plastic nightmare. The Intercept, 19 April [ONLINE] Available at: <https://theintercept.com/2020/04/19/africa-plastic-waste-kenya-ethiopia/>
- 754 Musasia, B. M. (2020) Coca-Cola's despicable operations in Kenya. Clean Up Kenya, 10 May [ONLINE] Available at: <https://cleanupkenya.org/coca-colas-despicable-operations-in-kenya/>
- 755 Asamblea Legislativa Plurinacional de Bolivia (2012) Ley N. 300. Ley de 15 de Octubre de 2012 [ONLINE] Available at: http://www.fao.org/fileadmin/user_upload/FAO-countries/Bolivia/docs/Ley_300.pdf
- 756 America Economía (2019). Analizan en capital boliviana prohibir bolsas de plástico y envases PET, 7 June [ONLINE] Available at: <https://www.americaeconomia.com/negocios-industrias/analizan-en-capital-boliviana-prohibir-bolsas-de-plastico-y-envases-pet>
- 757 ATB Digital (2019) Ley departamental prohíbe el uso de bolsas plásticas y botellas pet de un solo uso en La Paz, 31 May [ONLINE] Available at: <https://www.atb.com.bo/sociedad/ley-departamental-proh%C3%ADbe-el-uso-de-bolsas-pl%C3%A1sticas-y-botellas-pet-de-un-solo-uso-en-la-paz>
- 758 El Deber (2019) Privados piden revisar Ley del Plástico que afecta a la industria, 14 June [ONLINE] Available at: https://eldeber.com.bo/138627_privados-piden-revisar-ley-del-plastico-que-afecta-a-la-industria
- 759 Eju! (2019) Ley abre plazo de 30 días para que supermercados y empresas en La Paz dejen de usar bolsas y botellas plásticas, 31 May [ONLINE] Available at: <https://eju.tv/2019/05/ley-abre-plazo-de-30-dias-para-que-supermercados-y-empresas-en-la-paz-dejen-de-usar-bolsas-y-botellas-plasticas/>
- 760 Eju! (2019) Industriales advierten: 470 empresas se verán afectadas con la ley de eliminación de plásticos, 5 June [ONLINE] Available at: <https://eju.tv/2019/06/industriales-advierten-470-empresas-se-veran-afectadas-con-la-ley-de-eliminacion-de-plasticos/>
- 761 El Deber (2019) Privados piden revisar Ley del Plástico que afecta a la industria, 14 June [ONLINE] Available at: https://eldeber.com.bo/138627_privados-piden-revisar-ley-del-plastico-que-afecta-a-la-industria
- 762 Eju! (2019) Ley que busca eliminar el uso de plástico es consensuada para garantizar su aplicación, 25 July [ONLINE] Available at: <https://eju.tv/2019/07/ley-que-busca-eliminar-el-uso-de-plastico-es-consensuada-para-garantizar-su-aplicacion/>
- 763 Ibid.
- 764 Ibid.
- 765 El Deber (2018) Estudio asegura que bolsas de Bolivia no son biodegradables, 3 November [ONLINE] Available at: https://www.eldeber.com.bo/62580_estudio-asegura-que-bolsas-de-bolivia-no-son-biodegradables
- 766 ATB (2019) Presentan proyecto de ley para prohibir el uso de plásticos, 20 September [ONLINE] Available at: <https://www.atb.com.bo/sociedad/presentan-proyecto-de-ley-para-prohibir-el-uso-de-pl%C3%A1sticos>
- 767 Ibid.
- 768 Coca-Cola Journey (2018) Nudelpa, embotellador de Coca-Cola en Bolivia, lanza programa para conservar los ríos en la Amazonia de Beni, 18 September [ONLINE] Available at: <https://www.coca-coladebolivia.com.bo/historias/medio-ambiente-nudelpa--embotellador-de-coca-cola-en-bolivia--lanza-programa-pa>
- 769 Careadio, V. (2019). Uruguay recicla solo el 5% de sus residuos y entierra toneladas de gran valor. Sudestada, 5 June [ONLINE] Available at: https://www.sudestada.com.uy/articleId_efbc9cd9-a075-451d-ba8c-a38a77d9720f/10893/Detalle-de-Noticia
- 770 Andrada, L. and Baráibar, F. (2018) Centro Tecnológico del Plástico. Infomre Diagnóstico Reciclado [ONLINE] Available at: <https://ctplas.com.uy/wp-content/uploads/2018/10/informe-diagnostico-reciclado-2016-2017.pdf>
- 771 Careadio, V. (2019). Uruguay recicla solo el 5% de sus residuos y entierra toneladas de gran valor. Sudestada, 5 June [ONLINE] Available at: https://www.sudestada.com.uy/articleId_efbc9cd9-a075-451d-ba8c-a38a77d9720f/10893/Detalle-de-Noticia
- 772 Umpierrez, A. (2019) Envases plásticos fabricados con tereflatato de polietileno (botellas pet) [ONLINE] Available at: https://parlamento.gub.uy/documentosyleyes/documentos/repardo/representantes/48/1200/0/pdf/?width=800&height=600&hl=en_US1&iframe=true&rel=nofollow.
- 773 IMPO (2019) Ley N° 19829. Aprobación de normas para la gestión integral de residuos [ONLINE] Available at: <https://www.impo.com.uy/bases/leyes/19829-2019>
- 774 Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente (2019) Uruguay ya aprobó la Ley de gestión integral de residuos [ONLINE] Available at: <https://www.mvotma.gub.uy/novedades/noticias/item/10013248-uruguay-ya-aprobo-la-ley-de-gestion-integral-de-residuos#:~:text=La%20ley%20se%20basa%20en,y%20su%20puesta%20en%20valor>.
- 775 Ferrere (2019) Nuevas responsabilidades e impuestos en la Ley de Gestión de Residuos, 12 September [ONLINE] Available at: <https://www.ferrere.com/es/novedades/nuevas-responsabilidades-e-impuestos-en-la-ley-de-gestion-de-residuos/>
- 776 Montevideo (2019) Empresas se plantan contra el proyecto de ley que regula la gestión de residuos, 25 July [ONLINE] Available at: <https://www.montevideo.com.uy/Ciencia-y-Tecnologia/Empresas-se-plantan-contr-el-proyecto-de-ley-que-regula-la-gestion-de-residuos-uc725210>
- 777 El Observador (2019). Parlamento aprobó ley de residuos que según empresas afectará precios de productos, 11 September [ONLINE] Available at: <https://www.elobservador.com.uy/nota/se-vota-la-ley-de-residuos-que-cambia-para-las-empresas-y-para-el-consumidor-2019911134654>
- 778 Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente (2019) El problema del plástico [ONLINE] Available at: <https://www.mvotma.gub.uy/novedades/noticias/item/10012036-el-problema-del-plastico>. [accessed 13 April 2020].
- 779 Asociación Uruguaya de Industria del Plástico (2020) Socios industria del plástico [ONLINE] Available at: http://www.auipl.com.uy/socios/socios-industria-del-plastico_4.php
- 780 Ibid.
- 781 CristalPet (2020) Gestión ambiental [ONLINE] Available at: http://www.cristalpet.com.uy/include/responsa_gestion.php
- 782 EcoPet S.A. (2020) Nosotros [ONLINE] Available at: <https://ecopet.com.uy/sitio/nosotros/>
- 783 Coca Cola Uruguay (2020) Conocé cómo se reciclan las botellas PET en Uruguay y su impacto positivo [ONLINE] Available at: <https://www.coca-coladeuruguay.com.uy/historias/medio-ambiente-conoce-como-se-reciclan-las-botellas-pet-en-uruguay-y-su-impacto>
- 784 Ibid.
- 785 Ctplas (2020) El desafío: Plásticos de un solo uso, 11 March [ONLINE] Available at: <https://ctplas.com.uy/wp-content/uploads/2020/04/20200309-Presentacion-pla%CC%81sticos-de-un-solo-uso.pdf>
- 786 The Coca Cola Company (2018) Conocé cómo se reciclan las botellas PET en Uruguay y su impacto positivo [YouTube] 27 April [ONLINE] Available at: <https://www.youtube.com/watch?v=IG5BPI53JYM&feature=youtu.be>
- 787 Ibid.

