ClientEarth

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Plastics on trial:

a briefing series on evolving liability risks related to plastics.

Brief 4 Waste disposal & recycling

Introduction to this briefing series

Since plastics first started being used commercially in the 1950s, the material has become ubiquitous in modern life. However, with single-use plastic products accounting for over around half plastic produced each year,[1] the world has experienced an exponential increase in plastic production and waste. These plastics are contributing to climate change, degrading our ecosystems, threatening biodiversity, harming economies and impacting on human health.[2]

The damage caused by plastics, and the corresponding costs for governments, businesses, and society,[3] is increasingly recognized by the public, by governments, and in courts. The first wave of legal cases on plastics have now been launched.[4] We predict that these will evolve rapidly as public and government concern around the impact of plastics continues to grow, bolstered by the ongoing negotiations for a legally binding treaty on plastic pollution, the mandate for which was established in an historic resolution at the United Nations Environment Assembly in March 2022.[5]

This series of four briefs explores the developments in plastic-related legal action targeting companies. We have identified four themes around which plastic-related cases converge:

1. Greenwashing

2. Hazardous chemicals

3. In the environment

4. Waste disposal & recycling

Each brief outlines developments in legal action against companies relating to the relevant theme, and also considers how these trends may unfold in the future. Such legal cases have knock-on impacts on the financial sector, including banks and investors that provide financing for these companies, as well as the insurers that underwrite the risks they face.

Geographic focus and other research limitations

Our research has identified many plastic-related legal cases converging around the four themes identified above against corporate actors in the United States (US), Europe and to a lesser extent other countries and regions. We have identified very few cases challenging corporates in other regions that relate to these themes. The geographic focus of these briefs reflects this. In part, the higher concentration of plastic-related litigation against companies in the US and Europe is likely to arise from characteristics of these legal systems, which may make it easier – or, in some cases, more desirable from a claimant's perspective – to bring claims in these jurisdictions.

However, we fully acknowledge that our research has been limited by linguistic factors and the regional expertise of the authors of these briefs. We note from our consultations with experts from around the globe on developments in plastic-related litigation that there are several highly significant cases in other regions, particularly in Asia. To our knowledge, to date, these cases name state actors as defendants, as opposed to corporate actors, and therefore fall outside the scope of these briefs. Nevertheless, such cases are likely to have direct and indirect implications for corporate actors (as we note with reference to specific examples in Brief 3 on Plastics in the environment and Brief 4 on Plastic waste disposal & recycling) and may foreshadow future legal claims directly challenging companies in the future.

The briefs focus on reporting the existence and/or likelihood of claims, allegations and actions, and not on their merits. In some cases, we describe legal actions that have already concluded (whether through a finding by the courts, settlement out of court or otherwise) and others that are ongoing. We cannot discount the possibility that there have been developments in ongoing cases that occurred since the research was carried out. Where readers identify such omissions and any resulting inaccuracies, we would be grateful for this to be brought to our attention.

It also highly likely that developments in climate litigation and environmental litigation on topics other than plastics will influence future legal cases on plastics. Throughout the briefing series, we occasionally refer to litigation on other topics where there are clear parallels to plastic, but note that such parallels could be explored in greater depth.

Regional analysis on how trends in environmental or other public interest litigation could affect future plastic lawsuits would be a particularly interesting complement to the findings of these briefs.

The web of national, regional and international legislation and agreements affecting the production, use and disposal of plastics is complex and, in many cases, subject to change, particularly in light of the ongoing plastic treaty negotiations referred to above. We have considered some relevant regional and supra-regional policy trends that may impact the type of frequency of plastic-related litigation but acknowledge that the complexity of the global policy landscape renders comprehensive consideration of its impact on plastic litigation beyond the scope of these briefs.

Finally, as described by UN Special rapporteur on toxics and human rights, Dr Marcos Orellana, "every stage of the plastics cycle has adverse effects on the full enjoyment of human rights".[6] Increasingly, civil society academia and governments are recognising the substantial human rights and environmental justice implications of the plastics crisis. We have not explored this angle in depth in these briefs – principally because human rights arguments are not yet widely used in the legal cases we refer to - but would welcome future research exploring how an improved understanding of the human rights implications of plastics may impact plastic-related litigation.

Plastic waste disposal and recycling

As explored in Brief 3 on plastic in the environment, the impacts of unmanaged plastic waste on people and planet are severe. But even management of plastic waste in formal waste management systems poses significant environmental problems. This Brief explores how some common and emerging methods of managing ever-increasing volumes of plastic waste are giving rise to litigation, and the types of legal challenges faced.

First, we look at the environmental and societal harms that result from incineration of plastic waste. We consider how existing legal challenges against waste management companies building and operating incineration facilities could escalate in light of growing incinerator build-out and increased climate pressure.

We also explore litigation risks linked to recycling. We consider how public promotion of waste management initiatives by companies manufacturing and using plastics (including recycling, 'chemical' recycling and plastic credit schemes) are leaving companies exposed to criticism, as well as potential legal action.

Finally, we provide an overview of the global trade in plastic waste, which at present, underpins plastic waste management strategies of higher income countries. We review instance of criminal prosecution for companies and their executives involved in illegal waste shipment, and consider how amendments to the global treaty governing the waste trade (the Basel Convention) will make such instances more common in the future.

Incineration

Simply put, incineration refers to the practice of burning waste. In this Brief, we distinguish incineration from open burning, which may take place in nature, open dumps or even in the home,[i] and instead refer to the practice of burning waste at industrial scale in formal facilities.[ii] There are various different types of incineration, but all involve the controlled burning of waste materials[iii] into ash, gases, and heat. In some cases, the heat is captured to generate energy in 'waste-to-energy' facilities.

[i] "Many people affected by a build-up of uncollected waste use burning as the only practicable means of disposal." For more on the effects of open burning, see: TearFund et al, "No time to waste: Tackling the plastic pollution crisis before it's too late" (2019). Available online: https://res.cloudinary.com/tearfund/image/fetch/https://learn.tearfund.org/-/media/learn/resources/reports/2019-tearfund-consortium-no-time-to-waste-en.pdf.

[ii] The reason for considering litigation in respect of formal incineration exclusively is because formal incineration facilities are assets with legal owners (often corporate, but may also be state/municipal, or a combination of both) that can be held legally liable. There are circumstances were those responsible for open burning could be held liable (including criminally liable) for open burning, but this is the scope of this Brief.

[iii] Generally, waste inputs to incineration facilities are unsorted and will therefore comprise mixed inputs including plastic waste. However, due to the high proportion of plastic waste in waste streams, significant proportions of these inputs will comprise plastic. Either mixed waste is burned directly, or transformed into fuels which are then burned.

Globally, around a quarter of plastic waste is incinerated each year.[7] In some places, the rates are much higher. In Europe, 41.6% of plastic waste was incinerated in 2016.[8] The global rise in production and consumption of plastic has led to an increased reliance on incineration, as cities and governments face the challenge of managing the "ever-increasing amount of plastic waste".[9] However, incineration is far from being a quick-fix to address waste, and has serious environmental, public health and social justice implications:

- **Greenhouse gas emissions:** burning plastic emits 2.9kg of carbon dioxide for every kilogram of plastic burned.[10] European studies indicate that energy produced from incineration is around twice as carbon-intensive as that of average grid electricity.[11]
- **Toxic emissions and byproducts:** incinerating plastics gives rise to toxic emissions. Workers and communities near to incinerators can be directly and indirectly exposed to these emissions, which persist and accumulate in the environment, including in groundwater, as well as enter the food chain.[iv] Incineration also produces highly toxic byproducts at various stages, including ash, which contain high quantities of toxic persistent organic pollutants. These are carcinogenic, mutagenic and/or harm reproductive health.[12] Research has found that proximity to waste incineration may increase risk of cancers, birth defects and other adverse health impacts.[13]
- **Social and environmental justice impacts:** incineration facilities are disproportionately located in low income and marginalized areas.[14] [15]

Across the globe, the construction of incinerators is already fiercely opposed by local communities and environmental groups, including through legal action. To date, this has mostly taken the form of challenges to state actors for granting permits for the operation of such facilities. For example, in Bosnia and Herzegovina, environmental NGOs and citizens have sustained pressure against plans to construct incineration facilities in the country. One such case gave rise to a legal challenge against the environment ministry for issuing a permit to the company planning to construct the incinerator. The case remains ongoing. Although the corporate interests in the facility in question are not the direct target of legal action, the construction company has been hit by an injunction preventing it from building the incinerator pending judgment on the case.[16]

But companies – in particular, waste management companies involved in the construction and running of incineration facilities – are exposed to the threat of direct legal action, too. For example, in the UK, where rates of incineration doubled between 2012 and 2018,[17] legal proceedings were filed against waste management company Viridor on behalf of nearly 200 local residents claiming damages for harm to health and quality of life arising from pollution from an incinerator. The proceedings are ongoing.[18]

[iv] "Smoke and particulates emitted from burning plastic and other waste can trigger respiratory health problems… The toxins from emissions, fly ash, and bottom ash in the burn pile can travel long distances and deposit on soil and water, eventually entering human bodies after being accumulated in the tissues of plants and animals in the food chain". CIEL et. al., "Plastic & Climate The Hidden Costs of a Plastic Planet" (May 2019). Available online: https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf.

Globally, projections indicate that incineration is expected to grow,[19] with the industry targeting Asia in particular for growth.[20] As incineration becomes increasingly predominant as a form of waste management – and evidence about the harmful effects it has on health, the environment and climate accumulate[v] – legal opposition is likely to continue to rise.

The "recycling myth"

Failed promises of recycling

Between 1990 and 2019 only 6% of non-durable plastic was recycled, with the remainder of plastic produced during these two decades being landfilled (54%), mismanaged (24%) or incinerated (14)%.[21] Historically, Europe and China have reported the highest plastic recycling rates (30% and 25% respectively". [22] The US recently corrected its recycling rate from 9% to 5%.[23] However, it must be noted that the EU and US have relied on other countries importing plastic waste for recycling (see more on this below, under 'The waste trade – illegal waste shipments').[24]

Recycling of plastics is hampered by a number of factors. These include a lack of recycling infrastructure, the wide number of plastics used, the variety of chemical substances added to plastic materials to give them certain qualities and the fact that plastic materials are degraded by the recycling process, and therefore cannot be infinitely recycled. [25] Another key contributor is the sheer volume of plastic produced, which overwhelms even the most well-developed recycling systems.[vi] In summary, "recycling systems have failed to deliver on the promise to both recover enough material to reduce demand for virgin plastic or to ensure proper disposal".[26]

Despite this, many of the companies at the forefront of plastics crisis have focussed their plastic strategies around recycling, for example, by investing in recycling infrastructure and efforts to improve recyclability of products and packaging. Where companies and industry alliances have advertised such efforts, and in doing so promoted recycling as a quick-fix to the problems posed by plastics, this could give rise to allegations of misleading the public, especially where evidence suggests companies were aware of the limited potential of recycling-based strategies to fully address the plastic crisis. This follows an established tradition of such claims against the tobacco industry and more recently, fossil fuel companies.[27]

A key development indicating that this kind of lawsuit may be on the horizon for large and influential companies along the plastics value chain occurred in April 2022. California Attorney General Rob Bonta announced an investigation "into the fossil fuel and petrochemical industries for their role in causing and exacerbating the global plastics pollution crisis", with ExxonMobil being the first company to receive

[v] As explained by Material Economics, the carbon footprint of waste-to-energy incineration is likely to come under increased scrutiny as the energy system decarbonises: "Today, when plastics are burned instead of other fossil fuels, the net increase in emissions is relatively small. This would change dramatically in a decarbonised energy system, where the alternative would be zero-carbon energy sources". Material Economics, "The circular economy: A powerful force for climate mitigation" (2018), p. 22. Available online: https://materialeconomics.com/publications/the-circular-economy-a-powerful-force-for-climate-mitigation-1.

[vi] Even in Germany, which has one of the world's highest collection rates for recycling, only 38% of plastic waste is recycled and 60% is incineration: https://www.boell.de/de/2019/06/05/plastikatlas-raus-aus-der-plastikkrise-umsteuern-auf-allen-ebenen-jetzt?dimension1=presse.

demands for information in the form of a subpoena. In particular, the Attorney General seeks to examine industry efforts to "[perpetuate] a myth that recycling can solve the plastics crisis" and assess whether these actions may have violated laws on unfair competition and deceptive business practices.[28]

If the investigation confirms wrong-doing by ExxonMobil, a lawsuit could follow, seeking damages or the imposition of fines.[29] Bonta has reportedly stated that the main objective of the investigation is a legal order requiring companies to remediate the effects of plastic waste in the State of California.[30]

'Alternative' or 'chemical' recycling

In the last few years, new technologies, labelled by industry proponents as 'chemical' or 'advanced' recycling (though use of the word 'recycling' in relation to some of these technologies has been disputed, as explored below) have emerged. These terms can refer to several categories of technology, which either produce raw materials that can be used to manufacture chemicals or plastics, or oils and that are burnt as fuel.[vii] These practices have increased significantly since 2018 when China closed its borders to waste imports.[31]

Chemical recycling has attracted widespread concern and criticism.[32] [33] A recent study in the US found that most chemical recycling facilities are not recycling plastic, but producing materials that are burnt.[34] The use of the term "recycling" has also come under fire, with the Association of Plastic Recyclers calling for the definition to exclude processes that result in waste being turned into oil and gases.[35]

In 2021, Reuters published an investigation into chemical recycling, entitled "The Recycling Myth: Big Oil's Solution for Plastic Waste Littered with Failure". The article cited the lack of demonstrated commercial viability for some types of chemical recycling, technological failures to deliver as promised, abandoned investments and high emissions.[36]

Despite this, petrochemicals companies and consumer brands alike are funnelling investment into these technologies, in search of "solutions to plastic pollution that do not require [them] to scale back… production."[37] The American Chemistry Council has also announced that there are plans for "a massive wave of new projects" in the US.[38]

In a clear indication that civil society is mobilising to put the brakes on industry's adoption of chemical recycling as the preferred 'solution' to the plastics crisis, Ocean Conservancy, a non-profit based in Washington, is working with over two dozen members of Congress to request that two forms of chemical recycling methods[viii] are regulated as "municipal waste combustion units" – i.e. incinerators. This would force them to meet the requirements of the federal Clean Air Act.[39]

There are several ways that litigation on these technologies could develop in the future:

- Due to the concerns over toxic emissions from chemical recycling facilities, we predict that the fierce opposition – including legal opposition – faced by those seeking to construct incineration facilities will be replicated for chemical recycling facilities.

[vii] "Chemical recycling changes the chemical structure of plastic waste through solvent purification, chemical depolymerisation or thermal depolymerisation". EIA and Rethink Plastic, "The truth behind trash: The scale and impact of the international trade in plastic waste" (September 2021), p. 16. Available online: https://eia-international.org/wp-content/uploads/EIA-The-Truth-Behind-Trash-FINAL.pdf.
[viii] Gasification and pyrolysis.

- Given that many consumer brands are heavily (and publicly) involved in the rush on investment in chemical recycling, they too could find themselves facing legal challenges relating to claims made about this technology in the vein of the 'greenwashing' actions explored in the first briefing in this series.
- Concerns relating to the commercial viability of chemical recycling could result in actions from disgruntled shareholders. As noted in a Reuters investigation into 30 chemical recycling projects, "[a]ll are still operating on a modest scale or have closed down, and more than half are years behind schedule on previously announced commercial plans…Three advanced recycling companies that have gone public in the last year have seen their stock prices decline since their market debuts".[40]

Notably, the California Attorney General's investigation into the way that fossil fuel companies and other players have presented recycling as a solution to the plastic crisis will cover how the industry is marketing chemical recycling today.[41]

Plastic 'credits'

Over the last few years, plastic credit initiatives have become more common. These follow similar principles to carbon offsetting schemes. Companies can purchase credits representing tonnes of plastic waste removed from the environment and/or purchase credits representing tonnes of plastic waste subsequently recycled. These schemes have been highly criticised for their reliance on the labour of informal waste workers, challenges on confirming how much waste is diverted from the environment, and the outcomes for waste collected but not recycled, which is often burned in cement kilns.[42]

Companies – particularly consumer goods companies – have signed up to such schemes and used them as a basis for claims of "plastic neutrality".[43] Such claims could form the basis of future legal challenges, as demonstrated by a slew of recent legal actions challenging corporate "net zero" and "climate neutrality" claims and commitments based on carbon offsetting schemes.[44]

The waste trade – illegal waste shipments

The waste trade is fraught with problems. In many cases, the domestic recycling capacity of importing countries is insufficient to process domestic waste, less still imports.[ix] As such, the waste trade gives rise to serious environmental, human rights, economic and public health implications.[45]

To address the growing plastic waste trade problem, signatories to the Basel Convention (1989)[46] - the world's only global treaty governing waste and waste trade - took an important step to improve the governance of the international plastic waste trade in the form of new amendments[47] to the Convention. Pursuant to the amendments (which were agreed in 2019 and came into force from January 2021):

- mixed and contaminated plastic waste can only be exported with the 'prior informed consent' of authorities in the import destination;[48]

[ix] For example, Turkey can only officially manage 10% of its municipal waste, yet 11.4 million tons of waste from EU countries was exported to Turkey in 2019 alone. See: https://rethinkplasticalliance.eu/news/the-inherent-problem-with-the-global-plastic-waste-trade/.

- hazardous plastic waste in most cases can no longer be exported by Parties to the Convention to non-OECD countries;[49] and
- breach of these restrictions is a criminal offence, which the relevant signatory countries are responsible for prosecuting[50].

Despite the existence of an international regulatory framework governing the waste trade (and now including some forms of plastic waste) waste continues to be transported in huge quantities and in many cases, illicitly. The European Commission estimates that 15 – 30% of waste shipments might be illegal, amounting to EU 9.5 billion annual revenues from the illicit waste markets in the EU alone.[51]

The waste trade involves a great number of private and public actors, from waste management companies, to shipping lines, waste brokers, plastic converters, as well as local authorities and government agencies.[52] As we explore below, companies have been held criminally liable for breaching laws governing the export and import of waste, which we predict is likely to increase in light of the new restrictions on the shipment of plastic waste under the Basel Convention, as well as growing public scrutiny and awareness of the issues arising from the waste trade.

In the US, which is not a Party to the Basel Convention, there have nevertheless been a number of prosecutions of recycling companies and their owners/directors for fraudulent activity relating to the export of electronic wastes. In one such case, which was prosecuted in 2018,[53] the owners and executives of recycling firm, Total Reclaim, "admitted that they collected millions of dollars from public agencies and other organizations by falsely telling them that Total Reclaim would recycle used electronics products domestically in an environmentally safe manner".[54] In fact, the company shipped waste to Hong Kong where it was dealt with in a way "that risked serious health consequences to workers, and damage to the environment".[55] The two executives admitted to fraud charges, agreed to pay restitution over US$ 1 million and served more than a year's prison time.[56]

In 2020, the illegal export of waste from Italy to Tunisia attracted widespread media attention after Italian journalists revealed the existence of an illegal contract between Italian waste company Sviluppo Risorse Ambientali (which has been previously investigated for its links to organised crime[57]) and Tunisian waste importers, Soreplast. The shipment of 282 containers labelled as plastic waste for recycling was actually household and hospital waste, which should have been prohibited from import to Tunisia.[58]

In February 2022, after sustained campaigning from environmental NGOs in Tunisia, an agreement was finally reached between the Italian and Tunisian governments for the repatriation of the waste.[59] Tunisia has since taken legal action against several individuals involved in facilitating the import, including government representatives.[60] A Tunisian arrest warrant is also out for the owner of Soreplast, who we understand to date has not been located.[61] The Tunisian government is also seeking damages from the Italian Ministry of the Environment, the Campania Region (the location of origin of the waste), Sviluppo Risorse Ambientali and the transport company involved, Arkas, for costs linked to the waste.[62]

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[43] Forbes, "Are Plastic Offset Schemes The 'Next Big Thing' In Sustainability?" (January 2022). Available online: https://www.forbes.com/sites/jamiehailstone/2022/01/13/are-plastic-offset-schemes-the-next-big-thing-in-sustainability/?sh=7223e4e86bf7.
[44] These include a court action launched in June 2022 but ClientEarth and Dutch NGOs Fossilevrij Netherlands and Reclame Fossielvrij in June 2022 against Dutch airline KLM alleging a breach of consumer protection law with its "Fly Responsibly" advertising campaign Stichting Ter Bevordering Van De Fossielvrij-Beweging v De Koninklijke Luchtvaart Maatschappij N.V. C/13/719848 - 22/524. In the Netherlands, the Dutch advertising watchdog (Reclame Code Commissie) has ruled in favour of two complaints regarding advertising campaigns based on carbon neutrality (see: Law students' complaint upheld – Shell advertisements with claim 'CO2 neutral' are misleading – Reclame Fossielvrij (verbiedfossielereclame.nl) and RCC: Shell again guilty of deception with 'CO2 compensation' – Advertising Fossil free (verbiedfossielereclame.nl)). One of Shell's advertising campaigns ("Drive Carbon Neutral") was also the subject of a complaint to the Canadian Competition Bureau (see: Greenpeace Canada v. Shell Canada - Climate Change Litigation (climatecasechart.com)).

[45] EIA and Rethink Plastic, "The truth behind trash: The scale and impact of the international trade in plastic waste" (September 2021), p. 9.
[46] Basel Convention on the control and transboundary movements of hazardous waste and their disposal. Basel 22 March 1989. Available online: https://treaties.un.org/pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-3&chapter=27&clang=_en.
[47] Decision BC-14/12. Available online: http://www.basel.int/Implementation/Plasticwaste/PlasticWasteAmendments/FAQs/tabid/8427/Default.aspx.
[48] Annex II, entry Y48.
[49] Annex VIII, entry A3210.
[50] Article 9 of the Basel Convention.
[51]https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5918.
[52] See EIA and Rethink Plastic, "The truth behind trash: The scale and impact of the international trade in plastic waste" (September 2021), p. 12, Table 1 for an overview.
[53] United States of America v Craig Lorch and Jeffrey Zirkle [CR18-277RAJ].
[54] https://www.justice.gov/usao-wdwa/pr/owners-northwest-s-largest-electronics-recycling-firm-plead-guilty-wire-fraud.
[55] Ibid.
[56] Ibid.
[57] France24 "Tunisian NGOs triumph in David-vs-Goliath toxic waste battle with Italy" (February 2022). Available online: https://www.france24.com/en/africa/20220221-tunisian-ngos-triumph-in-david-vs-goliath-toxic-waste-battle-with-italy.
[58] Pursuant to the Basel Convention (1989) and the Bamako Convention.
[59] France24 "Tunisian NGOs triumph in David-vs-Goliath toxic waste battle with Italy" (February 2022).
[60] The National News, "Tunisians hail successful campaign to return illegal waste to Italy" (February 2022). Available online: https://www.thenationalnews.com/mena/tunisia/2022/02/21/tunisians-hail-successful-campaign-to-return-illegal-waste-to-italy/.
[61] Ibid.
[62] Il Post, "Migliaia di tonnellate di rifiuti esportati illegalmente in Tunisia sono tornati in Italia" (February 2022). Available online: https://www.ilpost.it/2022/02/21/rifiuti-esportati-tunisia-salerno/.