2024

The *Post-Plastic* Economy

A NEW FRONTIER FOR A THRIVING TOMORROW

— Who We Are

PUBLISHER: PlasticFree and FS

LEAD AUTHOR:
Emma Grace Bailey - Partner and Head of Content, PlasticFree

AUTHORS:
Jenna Guarascio - Head of Content & Innovation, FS
Jordan Lewis - Culture Senior Strategist, FS
Nia Silva - Materials Director, FS
Rachael Gentner - Active Director, FS

DESIGNER:
Justine Robin - L'Intuitive Studio

CONTRIBUTORS:
Danny Goldstein - Community Manager, FS
Ellinor Ahlberg - Marketing Manager, FS
Emma Pouffier - Partner & COO, PlasticFree
Frede Magnussen - Co-founder, PlasticFree
Jaye Anna Mize - VP, Partnership, FS
Lilly Berelovich - Co-founder and CCO, FS
Patrick Keogh - Partner, PlasticFree
Sian Sutherland -Co-founder and CEO, PlasticFree

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ABOUT PLASTICFREE

PlasticFree is building for a post-plastic economy. Launched in January 2023, PlasticFree.com is the world's first design tool for the future - bringing thousands of scalable solutions and daily intelligence on circular design, next-gen materials, and systems of tomorrow.

Everything we do empowers the global creative industry to challenge the status quo. We think beyond swapping out plastic for another material, and instead focus on the solutions that will drive transformational, sustainable change at the brand, industry, and supply-chain level.

Today we are in 23 countries, and are proud to be the trusted authority for CPG brands, designers, and consultants to drive change.
We always want to hear from the world's changemakers. Connect with us at hello@plasticfree.com / @createplasticfree.com

ABOUT FS

FS is the creative futures agency that empowers curious creators to navigate through the noise and chart a path to a thriving business.

Our global perspective and understanding of the hidden drivers of human behavior allows us to track macro movements and interpret early signals that determine future consumer desires and expectations.

For over 24 years, FS has been a leading force in foresight intelligence and informed design inspiration. We service clients in over 50 countries across Fashion, Accessories, Home Decor, Beauty, Wellness and other consumer-facing markets.

Learn more about us at fashionsnoops.com or connect with us at hello@fashionsnoops.com / @fashionsnoops.com

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—Introduction

We are entering the post-plastic era.

A future liberated from the shackles of plastic dependency— where environmental stewardship converges with economic prosperity and societal wellbeing.

As 2024 unfolds against a backdrop of ongoing Global Plastic Treaty negotiations, increasingly stark evidence connecting plastic to a catastrophic human health crisis, and intensifying environmental turmoil, the imperative for decisive action has never been more important.

Yet fewer than 100 years ago, things looked very different.

The advent of plastic— or fossil fuels in solid form— catapulted us into the giddy, hyper-consumptive world we now live. It broke the system, pivoting us away from a restorative culture of take-make-reuse-repair-share to a linear one of take-make-waste-take again. A throwaway culture by design.

Delivering a level of protection, convenience, and affordability we had never seen before, plastic quickly won us over. In under 30 years, it went from being seen as a valuable commodity to a disposable one, reframed as a material so easy to make and discard that we don't need to worry about caring for it.

As a result, plastic has become the go-to material across industries.

40% of it is used to make the packaging we consume and discard each day. Over two-thirds (69%) of the fibres used in fashion are synthetic. **More than half of the world's plastic has been created since the early 2000s.**

The consequences of this homogenous reliance are far-reaching— our planet is now contaminated with plastic chemicals, microplastics, and plastic waste, while the production of these materials is projected to consume one-fifth of the Earth's remaining carbon budget in the near future.

This brilliant, yet toxic and indestructible material has also made its way into our bodies; our blood, our brains, and our poo, contributing to increasingly severe health issues such as cancer and heart disease.

And it's only getting worse. The amount of plastic headed for our oceans is expected to triple by 2040. Petrochemical products are set to make up 45% of growth for oil and gas mining industries by the same date, and according to the Plastic Health Council, we're yet to see the full extent of the impact it will have on our health.

—We are entering the post-plastic era

We can't go on like this. And despite what we're told, recycling isn't the answer. We've been trying to reuse plastic for 50 years, but only 9% of it has ever been given a second life. Instead, we must go back to the drawing board and use our collective creative power to finally innovate beyond the plastic perimeter.

The good news is a post-plastic future is already on the horizon, speeding towards us with the same excitement we once experienced for the material itself. And it's being spearheaded by an avalanche of plastic legislation. From charges on plastic production and waste management, to bans on plastic chemicals and single-use varieties, the regulatory landscape is shifting its position on plastic and business must take note.

IN THIS REPORT, PlasticFree and FS come together to strategically support businesses in the transition to the post-plastic economy

And it is an economy - abound with revenue generating opportunities that will future-proof your bottom line, while mitigating the multitude of risks posed by plastic's continued use.

To make the transition easier, **we explore how we can reconcile our need for plastic's protection, convenience, and affordability** with the burning imperative to reduce our reliance on petrochemicals.

The takeaway? We can still turn a profit, deliver on peak performance, and make life as streamlined as possible— *without plastic.*

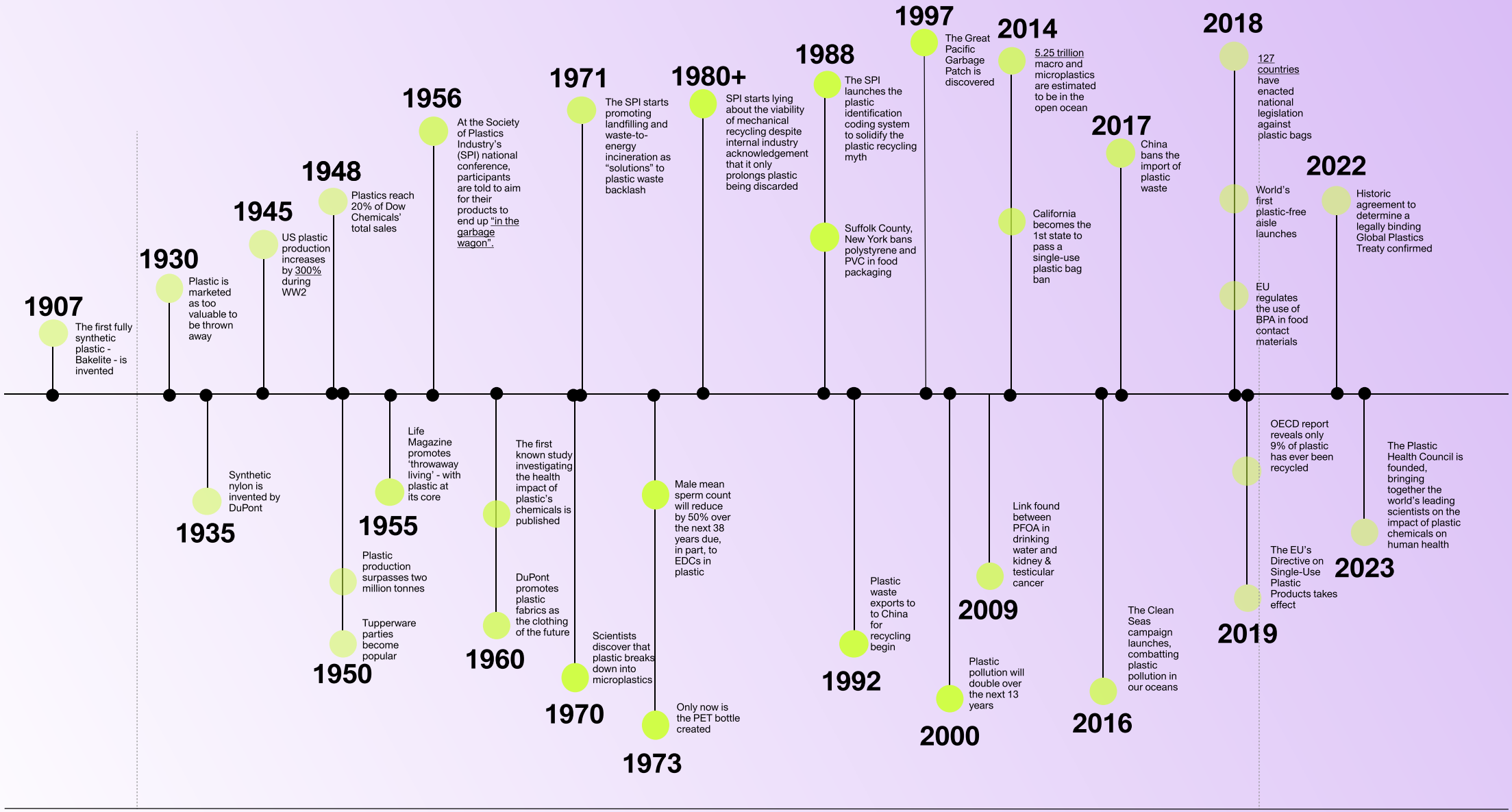
As we stand on the precipice of this new dawn, we have the opportunity to change the world, either by what we do, or what we fail to do. Failing to act isn't just a nail in the coffin for the future of humanity, it's the beginning-of-the-end for business as we know it.

It's time to step up to the challenge and change the way we live for the better.

“This is a siren call, a rallying cry to the entire creative industry empowering them to rethink systems and materials.”

— Sian Sutherland, co-founder and CEO of A Plastic Planet and PlasticFree

THE PLASTIC TIMELINE



SECOND INDUSTRIAL REVOLUTION
(1870 - 1920)

THE AGE OF PLASTICS

DIGITAL REVOLUTION
(1975 - 2021)

Plastic is last century's material

If you're reading this report, you're probably already aware of the plastic problem. But while plastic waste floating in oceans gets all the air time, the pervasiveness of our addiction to this fossil-fuel substance runs much deeper.

Before we dive into the prosperous plastic-free future ahead of us, **let's remind ourselves of why action is so desperately needed.**

1. Plastic is fossil fuel in solid form

Plastic is the fossil-fuel industry's plan B. And just like the impact of fossil-fuel extraction for energy, extracting fossil-fuels for plastic is devastating the planet.

If the plastics industry was a country, **it would be the 5th largest emitter of CO2 in the world**, trumping all countries bar the US, China, India, and Russia.

Five tonnes of CO2 are released into the atmosphere for every one tonne of plastic produced, and by 2040, the plastics industry is projected to take 19% of the world's carbon budget. That's almost eight times the impact of the entire aviation industry.

The share of the 1.5°C CARBON BUDGET that will be taken up by the PLASTICS INDUSTRY alone...

19%

5

TONNES

of CO2 is EMITTED per ONE tonne of plastic

The mass of plastics humans have made is greater that the overall mass of all terrestrial and marine animals combined.

2. Plastic is everywhere

Plastic production isn't slowing down. **The total mass of plastics humans have made is now more than double the overall mass of all terrestrial and marine animals combined.**

And it's only getting worse, with plastic production set to treble by 2060 under business as usual. All of this plastic is and will remain on the planet - unless it's incinerated.

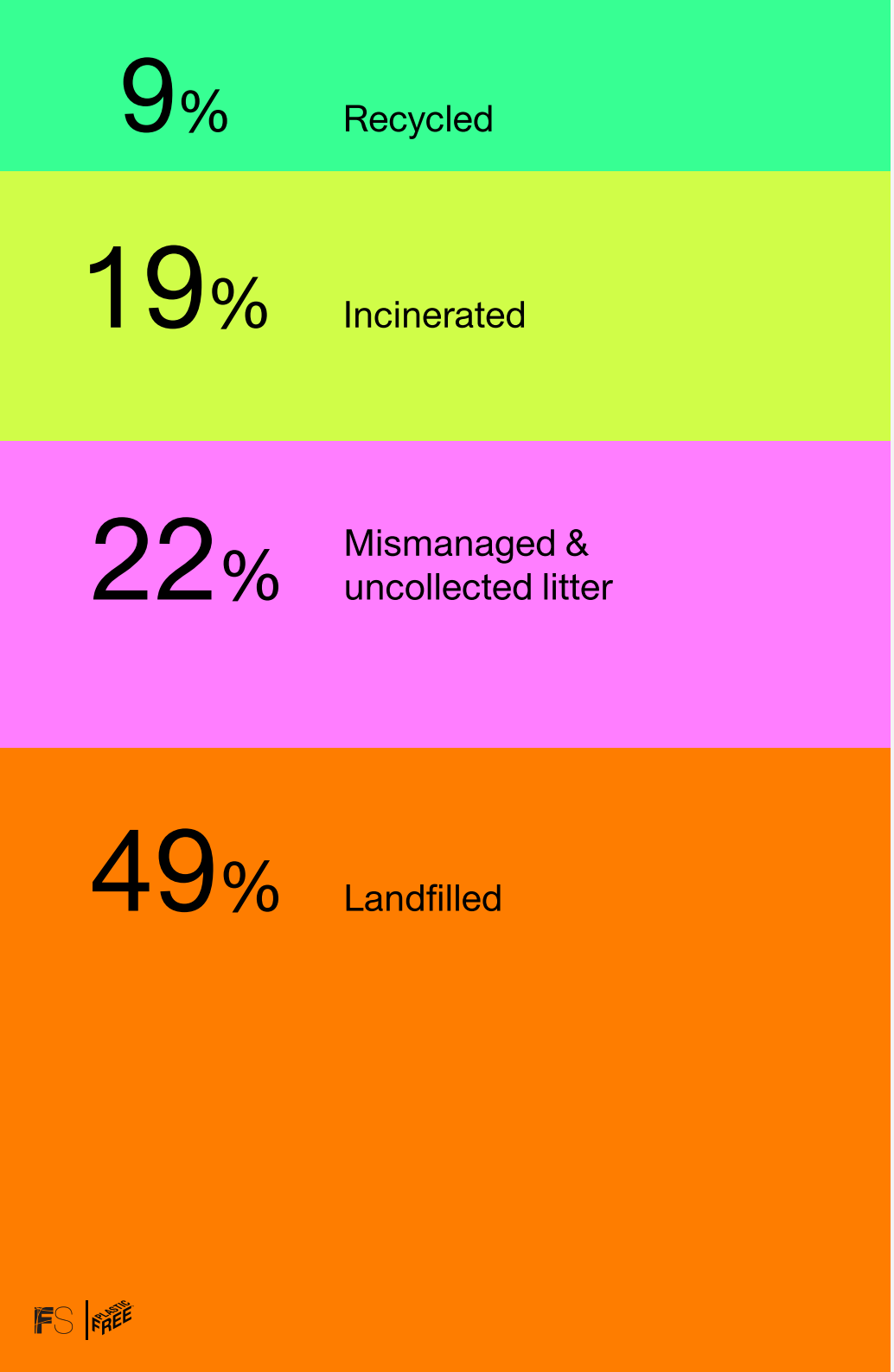
And it's not just the plastic we can see. Plastic and its particles have now permeated every inch of the planet and our bodies.

14 million tonnes of microplastics are sitting on the ocean floor.

Microplastics have been found in our lungs, our brains, our blood. They're in the food we eat, the water we drink, and the air we breath.

Plastic is even in our weather.

At the recent Global Plastics Treaty negotiations in Ottawa, approximately 242 kilograms of microplastics fell on the city in one day.



While we use plastic to create convenient, on-the-go, throwaway products, that plastic never really disappears.

Even after decades of development, we still can't recycle more than 9% of the plastic we put in the bin.

This isn't news to the plastics industry.

Despite what we've been told, recycling plastic doesn't work because it was never meant to be recycled.

In fact, it's purposefully designed to be hard to break down.

Made from polymer chains and additive chemicals, plastic's popularity comes from its resilience and longevity - attempting to recycle it goes against its reason for existing.

Pushing the recycling narrative, however, has given the industry free-rein to ramp up production and put the responsibility of waste management on the end consumer.

3. Recycling won't solve the problem

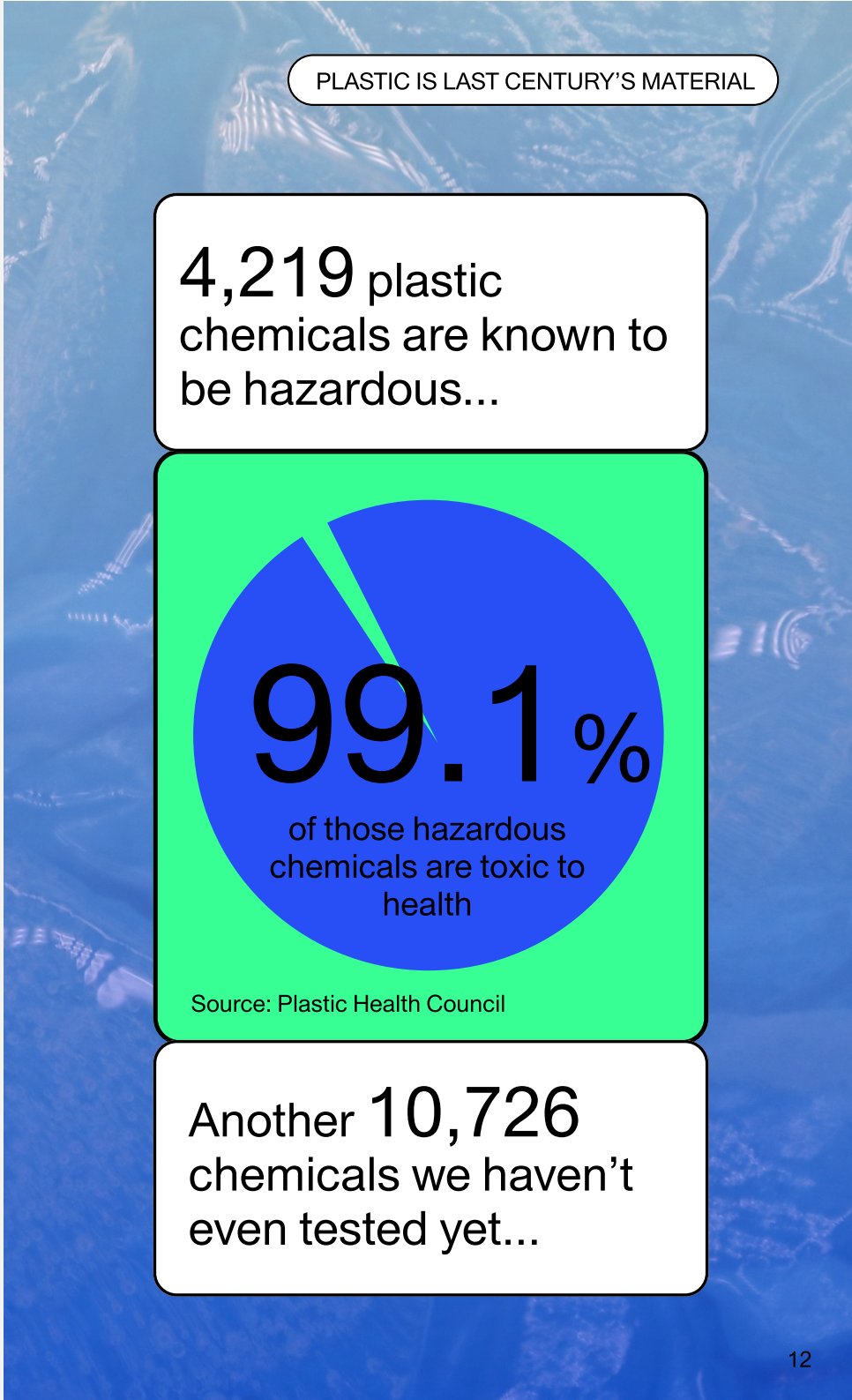
4. The alarm bell on plastic & health has been ringing for decades

Even if we could recycle our way out of the crisis, it wouldn't solve the bigger (almost invisible) problem. We are now seeing near-weekly reports emerge, linking plastic and its chemicals to increasingly severe health concerns.

Over 16,000 substances are used to make plastic, and more than 4,000 of those are known to be hazardous to human health.

Another 10,726 chemicals haven't even been tested yet.

These chemicals - including endocrine-disrupting 'forever chemicals' (PFAS) - are linked to increases in cancers, heart disease, infertility, and immune diseases. When we recycle plastics these chemicals compound up - making recycled plastic even more toxic than virgin material.



5. We've been sold false solutions for too long

As the plastic-free movement gains momentum, 'silver-bullet' solutions that claim to tackle the issue of plastic waste have been backed by the plastics industry.

Far from being viable, these are distractions to allow the continued production of virgin plastics at a greater and greater speed.

Ocean plastic is one such 'solution', claimed to be made from fishing nets and plastic bottles rescued from the ocean. **In reality, 'ocean plastic' is a misleading term.**

Most often the rescued plastic is 'ocean-bound plastic' - meaning that it could make its way to the ocean at some point.

Bioplastics are another 'solution' to interrogate. Celebrated for being 'biobased, biodegradable, or both', **bioplastics can still be made from fossil-fuels.**

When they're not - derived from corn and sugar cane - they're chemically modified to become structurally identical to petroleum plastic. Causing all the same problems as previously mentioned.

If all the impacts of fossil-fuel plastics weren't enough to stop its use, then the deluge of plastic regulation in the works certainly will.

By 2025, the UN's legally binding Global Plastics Treaty will be in force, applicable to all 175 nations currently involved in its negotiations. While we are yet to know the final outcome, the fourth, and most recent negotiating session spotlighted a ban on the use of hazardous chemicals and a 'global plastic pollution fee'.

National policies are already leading the way. Between 2012 and 2022, **731 new plastic pollution policies came into effect worldwide.**

A study into emerging packaging regulations found that 83% of global legal measures related to sustainable packaging focus on plastic.

SAP states there are at least 450 Extended Producer Responsibility (EPR) regulations in place to date, meaning brands are responsible for funding the processing of their post-consumer waste.

Regulation focuses on every single stage of plastic's lifecycle—from regulations on PFAS additives in fashion and food packaging to bans on single-use packaging for fruit, veg and condiments.

6. Regulation is finally coming for plastic

731

new plastic pollution policies came into effect between 2012 and 2022.

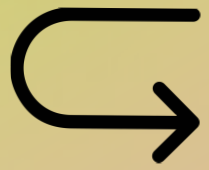
OVER THE NEXT DECADE OUR RELATIONSHIP WITH PLASTIC WILL BECOME UNRECOGNISABLE.

DON’T GET LEFT BEHIND.


Welcome to
the Post-Plastic
Economy

PART 1

—The Financial Imperative

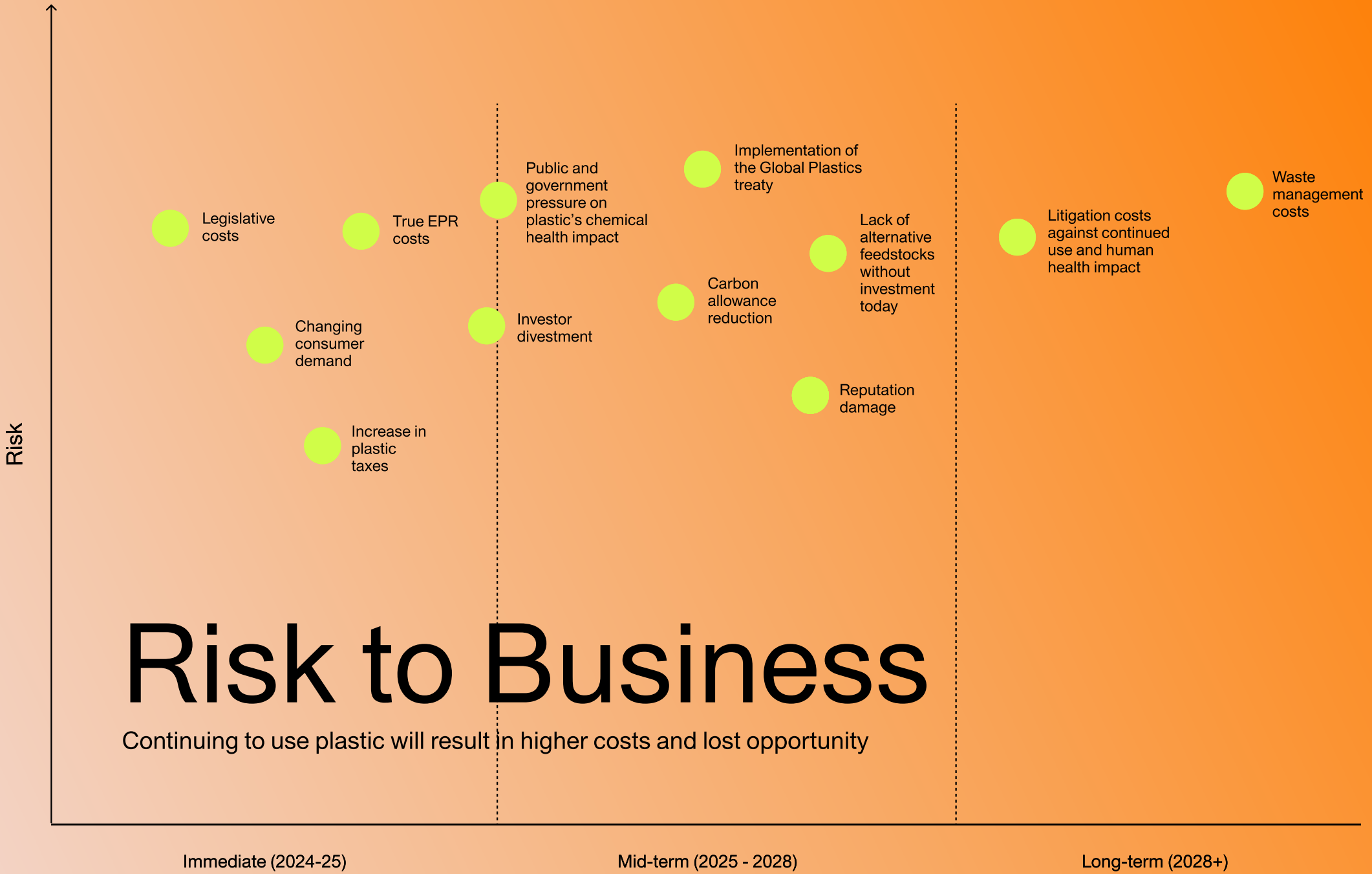


Today, we use 1.7 x the amount of resources each year that the Earth can naturally regenerate in that same year.

We are striving for continued growth on a planet with immovable boundaries. Fossil-fuel extraction underpins this system, and with it plastic production.

This is a problem because Earth's resources are finite.

Continuing in this way is a risk to business, from financial penalties on pollution and carbon emissions to missed revenue opportunities from consumers looking for healthier, planet-friendly alternatives.



Risk to Business

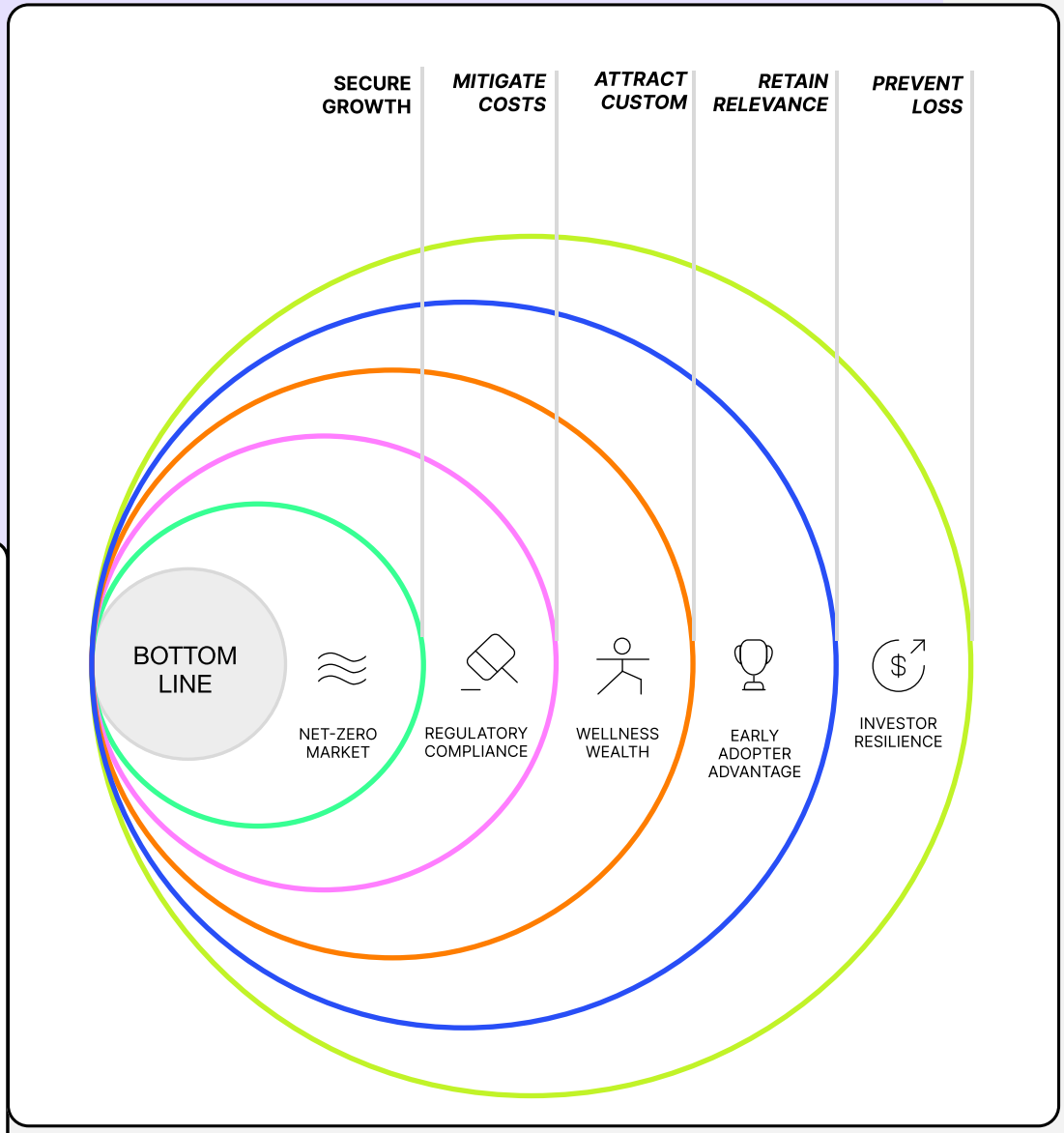
Continuing to use plastic will result in higher costs and lost opportunity

THE PLASTIC-FREE MOVEMENT IS A FULL-FLEDGE ECONOMIC SHIFT, REPRESENTING NOT ONLY VALUE SAVING OPPORTUNITIES BUT VALUE CAPTURING ONES TOO.

— 5 ways going plastic-free will future-proof your bottom line

Proactively transitioning away from plastic is a strategic move to maintain profitability and competitiveness in a changing market.

Discover five ways a plastic-free future will help you to gain competitive edge and expand your market share.



— Net-Zero Market

The booming net-zero market is a lucrative revenue-generating opportunity — eradicating plastic is the key to unlocking it. **Made from fossil fuels, plastic currently accounts for 7% of global greenhouse gas emissions.** Under BAU, this will increase to 19% of the world's carbon budget by 2040. Achieving net-zero is impossible if plastic goes unchecked. Companies that proactively transition away from plastic now will be ideally positioned to capitalise on the surging demand.

RISKS OF INACTION

— **Carbon legislation is increasing globally.** The EU's Carbon Border Adjustment Mechanism puts a price on carbon emissions associated with imported goods. Making plastic is carbon intensive, with 90% of the material's carbon impact coming from the production stage.

— Companies operating in EU member states are already subject to the EU Emission Trading System, which stipulates an annual carbon allowance for companies. **The allowance is reducing at a higher rate every year,** meaning companies have fewer and fewer carbon emissions they are legally allowed to contribute.

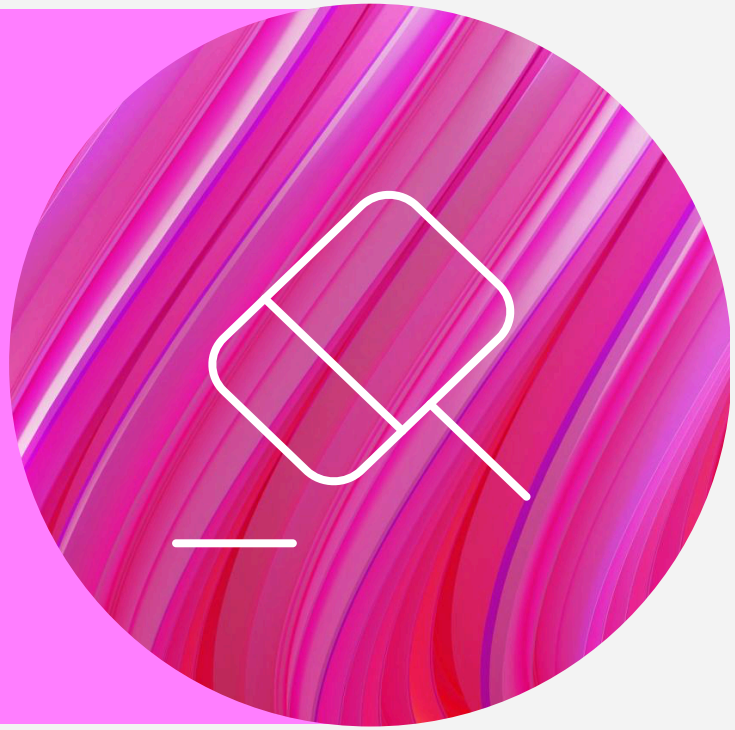
OPPORTUNITIES

— Brands that secure lower-carbon-impact materials now will capture **an average 6% profit uplift after five years.** This equates to an average of $100 million over the full time period.

— **88% of consumers are ready to pay a premium for products that are manufactured with net-zero emissions.** Respondents to this survey say they are willing to pay at least a 0.4% green premium.

— Regulatory Compliance

Regulation is coming for plastic. Over 60 countries have introduced bans and levies on plastic packaging and single-use waste, while the legally binding Global Plastics Treaty is set to come into force in 2025. Designing out plastic will mitigate growing legislative financial risk, avoiding the bottom line impact of complying with national and international taxes, end-of-life management mandates, and future fines for non-compliance.



RISKS OF INACTION

— Continuing to use plastic presents a $100 billion annual financial risk to businesses by 2040 if "governments require them to cover waste management…and recyclability". This is equivalent to 25% of turnover in low-margin businesses.

—Litigation cases for non-compliance are increasing, with **US plastic litigation costs to 2030 expected to exceed $20 billion.** Last year, environmental law charity ClientEarth took global food and beverage brand Danone to court for inadequately addressing the risks related to its plastic pollution under French law.

OPPORTUNITIES

— Reducing or removing plastic at the product design phase will reduce financial compliance risk. **Investment costs in a "new plastics economy" are expected to be less than the current investment trajectory**, at $65 billion per year to 2040, as opposed to $113 billion.

— Adapting to upcoming Extended Producer Responsibility (EPR) policies by designing packaging for reuse in the home could lead to **80-90% packaging savings and 25-50% packaging cost savings**, offering incentives for both businesses and consumers.

— Wellness Wealth

In a post-covid world, health remains a top priority across the consumer landscape, and awareness of plastic's health risks are rising. Over 3,500 studies now demonstrate the undeniable impact of plastic chemicals on the body, including pervasive, endocrine-disrupting 'forever chemicals' (PFAS).
Shifting from shareholder to stakeholder value by reacting to plastic's devastating health impacts will see business reap the rewards afforded by the growing wellness market.

RISKS OF INACTION

— **Brands that continue to use plastic are at reputational risk from the emerging health implications of its chemicals.** Successful litigation cases, such as the state-lead lawsuits against PFAS manufacturer 3M, are impacting the safety perceptions of plastic. 3M has so far paid USD 10.3 billion in settlement costs.

—In 2018, **the healthcare and economic costs of endocrine-disrupting chemicals in plastics were calculated to be in excess of USD 250 billion.** This equates to the annual pay of more than 300 million registered state nurses, almost the size of the entire registered nurse workforce in the US.

OPPORTUNITIES

— **The global wellness market is worth more than USD 1.5trillion, with annual growth of 5 -10%.** Consumers are prioritising health more than ever, with 42% citing it as a top priority in the last 12 months. The plastic-free movement is a health movement.

— Plastic plays a part in all wellness markets from fitness clothing and yoga mats to health food packaging. The wellbeing properties of these products will quickly decline as consumers become wary of plastic's impact. **Plastic-free brands should market the health benefits associated with its absence.**

— Early Adopter Advantage

Plastic is the lowest rated material for perceived sustainability among consumers, and 56% of them see reducing plastic use as the number one way to positively impact the environment. Investment in plastic alternatives will capitalise on growing consumer appetite for low-carbon, plastic-free products, with short-term costs outweighed by the available long-term gains.

RISKS OF INACTION

— **The top three feelings consumers experience when buying a product in plastic are: guilt, annoyance, and frustration.** Continued plastic use - especially when it's unnecessary - serves to further alienate this growing consumer cohort.

— **Brands touting the use of recycled plastic in a bid to appeal to this group are being exposed for misleading claims.** Two environmental groups have issued a legal complaint against Coca-Cola, Nestle and Danone for claiming bottles are either made from '100% recycled' content or are '100% recyclable."

OPPORTUNITIES

— **Appeal to the early-adopter consumer market by becoming a plastic-free brand.** This consumer group offers a two-tier value proposition: they purchase quickly, and they're more likely to promote the product through their sphere of influence.

— Actively publicising your mission to reduce and/or eliminate plastic is key. In the five years to 2023, **products making ESG-related claims accounted for 56% of all growth**, with a 28% cumulative growth compared to 20% for brands with no such claims.

— Investor Resilience

Top-down investor pressure against plastic is ramping up. As of March 2024, 1,500 institutions representing more than USD 40 trillion in assets had pledged to stop investing in fossil fuel companies. The message is clear - act now or face ever increasing pressure to comply. Future-proof supply chains and financial capital by divesting from fossil fuel plastics and investing in regenerative futures.

RISKS OF INACTION

— In May 2023, **a coalition of 185 investors with USD 10 trillion in assets called for "urgent action"** from "intensive users of plastic packaging"**.** The letter, aimed at FMCG and grocery retail sectors stated that "intensive production and use of plastics is causing untold damage to the health of people and planet."

— The activist investors stated concern that companies that do not proactively address the risks of taxation, EPR, reputational damage, and increased raw material costs by reducing their dependence on single-use plastics **may face higher costs or lose business opportunity, putting long-term value and investment returns at risk.**

OPPORTUNITIES

— 77% of individual investors globally are planning to invest in companies or funds that aim to balance market-rate financial returns with positive social and environmental impact, with **54% saying they will boost their allocations to sustainable investments in the next year.**

— Investors' top four sustainability investing issues are climate action (15%), healthcare (13%), water solutions (11%) and the circular economy (11%), all of which plastic-free design contributes to. **Removing plastic would support the improvement of and/or mitigation of all the above areas.**

— 4 Strategic Actions

1.

— Invest in a full and robust traceability system

to understand your materials' true impacts. Explain CO2 equivalent savings to the end consumer, navigating accusations of greenwashing.

— Develop a global plastics legislation tracker to stay ahead of impending change.

Pair this with the development of rigorous impact data sets for every product, so you know if and when they will be at threat from regulation.

2.

3.

— Adopt a 'start clean, stay clean, end well' material philosophy throughout your entire supply chain,

challenging all suppliers to comply. Improve consumer trust by increasing transparency of the chemicals used in all products and materials.

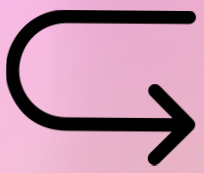
— Avoid greenwashing traps by backing all claims with third-party verified data.

Offer rewards and incentives for early-adopter consumers that engage with your plastic-free offering.

4.

PART 2

—The Design Revolution



Everything begins with design.

And plastic has become the designers go-to material of choice. With its ability to protect and perform, to the convenience and value it affords us, its race to the top in the last 50 years is of no surprise.

But are these properties unique to plastic?

Here, PlasticFree and FS boldly tackle this question head-on.

Diving deep into the three core benefits of plastic — **protection, convenience, and affordability** — we demonstrate that these properties are not exclusive to this fossil-fuel material.

In fact, with a shift in mindset and a commitment to innovation, we can actually achieve the same (or even better) results, transitioning your brand from extractive to regenerative.

THE FUTURE YOU'VE BEEN WAITING FOR IS ALREADY HERE. IT'S TIME TO REWRITE THE DESIGN PLAYBOOK.

↪ Protection

Plastic has long been relied upon to provide protection — from the water repellent properties of Gore-Tex to its oxygen barrier capabilities in the fight for freshness. It's the go-to material to mitigate health and safety risks across the board.

But is it always the best material for the job, and **what happens when the world wakes up to the fact we actually need protecting from plastic itself?**

Where We Are Now

— **There's no denying that plastic has been extraordinarily good at protecting us** and our products for decades. It stops bacteria growth in water-based formulas, it's durable enough to not break on impact, and it wraps us up warm when braving the elements.

— The issue is, in using plastic to protect our products we've unknowingly spread plastic chemicals into our food, our water, our soils and our bodies. And **now we need protecting from plastic itself.**

— According to Dr Terry Collins, who's been studying the impact of endocrine disrupting chemicals in plastic on the human body for years, "the most shocking effect is that we're going sterile at a dizzying rate." Because **plastic chemicals are leaching into the food we eat, whilst we're trying to protect it.**

— Speaking of food, conclusive research from WRAP has shown that wrapping a cucumber, potato or apple in plastic does nothing to extend its shelf life. And in some cases does the exact opposite. **Plastic isn't as necessary for protection as we've grown to believe.**

The Future of Protection

Moving away from plastic doesn't mean we relinquish our need for protection - but how we create protection is set to look very different as we find new ways to prevent waste, exposure and breakages completely toxin-free.

Protecting ourselves in the future will be grounded in nature's existing systems, prioritise prevention over cure, and champion the building blocks of Earth's structural matter to deliver strength without synthetics.

Discover 5 strategies for protective design *without plastic*

Mover

1. NATURAL PROTECTION

A growing desire to return to and align ourselves with the natural world has inspired a newfound appreciation for the protective properties nature can provide. Natural fibres such as wool are inherently adept at thermoregulation, moisture-wicking, and providing anti-bacterial properties, so much so that Swiss outdoor sportswear brand **Mover** opted to swap all plastic for natural materials to create its high-performance all-weather gear.

Most recently, **Mover** has collaborated with **SAILGP** to create the world's first plastic-free onshore technical sportswear line, made entirely from cotton, wool and alpaca fibre. The offshore equivalent will launch next year.

Breakthroughs like this are possible thanks to material pioneers such as **NFW** from the US, whose CLARUS technology naturally lengthens and strengthens natural fibres, achieving the utility of synthetics without the chemicals.

Alpaca fibre is being optimised by Peruvian outdoor brand **Paka** too. The brand's open-source Pakafill insulation fibre is made from 100% alpaca wool and has been field tested at 17,913 feet altitude.

More recent innovations focus on 100% plant-based fur, including **Flur** from Ecopel and **Savian** from BioFluff — faux fur designed to mimic the properties of animal fur without causing harm.

Natural materials have the potential to provide protection in other ways too, as is the case with **The Kelpon**, a tampon made entirely from seaweed. Vyld, the German purpose-for-profit company behind the development, has completed a seven figure funding round.

As consumers increasingly seek natural, healthier alternatives to petrochemical staples, unlocking the inbuilt performance credentials of natural fibres will be key.

Data Dive

100

GIGATONS

The amount of cellulose that nature produces every year. Because of its abundance, plant matter is the only material that can scale to replace plastic.

NFW

Paka

2. WELLNESS WEAR

In 2021, synthetic fibres made up 64% of the total global fibre production for the apparel industry. Many of these items are made with forever chemicals (PFAS), hazardous substances that create properties such as water resistance, but which linger in the environment for decades, making their way into our water systems and our bodies. These chemicals are linked to fertility issues, cancers, and thyroid concerns.

While synthetic fibres are actively causing us harm, natural alternatives imbued with nature's medicine can do the opposite, providing physical benefits while performing like plastic.

Aizome from Japan offers bedding and sleepwear dyed with anti-inflammatory and analgesic plants such as indigo and sumac.

For centuries, Samurai warriors would dye their clothing with indigo to prevent infected wounds. Aizome's textiles actively support skin recovery while you sleep.

At Berlin brand **GUPPYFRIEND**, PU insoles have purposefully been redesigned in kenaf, cotton, natural latex and linen to reduce the health risk associated with wearing PU alternatives. PU naturally breaks down when in contact with moisture — present in a humid shoe environment — so toxic chemicals are added to reduce degradation, which seep into the skin as we walk.

With the wellness market only growing, currently worth $1.8trillion, tapping into the health properties of plastic-free products presents a unique audience-engagement opportunity.

Aizome Wastecare

Aizome Wastecare

"We're not inventing a new product, people are familiar with insoles. The new thing is that we need to raise more awareness about microplastics and chemicals."

Alexander Nolte
— Co-founder, GUPPYFRIEND

3. SAFETY IN STRUCTURE

Plastic is durable. Made from polymer chains and additive chemicals, plastic's popularity comes from its resilience and longevity.

But why do we use something that lasts forever to protect something that doesn't?

UK packaging supplier **FlexiHex** has re-engineered cardboard to create an expandable honeycomb structure that protects products in transit. This nature-inspired solution can be dropped from four metres high without impact.

Paperfoam Plus aims to replace some of the most resilient EPS packaging. Made from industrial potato starch, cellulose, water, and a "unique" premix, the versatile packaging material comes in thicknesses up to 5mm and has been drop-tested up to 5kg.

It is certified home compostable, and biodegrades into organic matter.

In textiles, where plastic is again used for durability, innovative structural solutions are coming to the fore.

Vollebak's Sashiko range has replaced plastic strength with the strength of one million meta-aramid stitches. These high-strength stitches are traditionally used in Japan to create strong repairs. Applying them to the entire garment improves durability from the start.

NuDown from the US has swapped synthetic clothing insulation for air, which is pumped into dynamic structural chambers housed inside the garment. Temperature can be variated by up to 40 degrees Fahrenheit, just with the adding or removal or air.

Vollebak

Data Dive

Paperfoam is truly scalable, typically accepting orders with a minimum quantity of 25,000 units

4. SHELF LIFE LONGEVITY

The long-held belief that wrapping natural food in a synthetic substance helps elongate its life isn't always true. Even when plastic is required to protect a product from degradation — think liquid moisturisers and bottles of milk — the shelf life could be further improved upon by redesigning the product itself, not just the packaging.

JOI from the US is a prime example. The brand creates single ingredient plant-milk concentrates in glass jars, which transform into homemade alt-milks by adding water at home. The product can remain unrefrigerated for up to 18 months without going bad.

A similar strategy can be applied to skincare. New York-based **Onélogy** sells potent skincare serums in small, freeze-dried tablets, activated at home with a drop of water. They come sealed in aluminium blister packs and remain fresh for up to 10 years if unopened, well past the industry 12 month average.

When it comes to reducing fresh food waste, emerging solutions are taking inspiration from nature itself. **Saveggy** from Sweden is working with cucumber and tomato producer **Odlarna** to scale its plant-based edible coating for fresh fruit and veg. Similar to the well known **Apeel** coating, Saveggy's spray-on solution can triple or quadruple shelf life, usurping plastic's credentials.

Joi

Onélogy

"You can repeatedly use it without the fear that it's going to go bad. [It's] one less thing to worry about."

Hector Gutierrez
— CEO, Joi

Neoplants

Gush Paints

5. SELF PROTECTION

While many, if not all products can be redesigned without the toxification of fossil fuels, the fact remains that consumers need, and are increasingly seeking ways, to protect themselves from the current status quo.

Brands stand to benefit by acknowledging and answering this call, with the climate adaptation market forecasted at $2 trillion by 2026.

A number of brands are capitalising on the the issue of indoor air quality. **Neoplants** has created an intelligent, bio-engineered air-purifying plant that absorbs harmful VOCs from the atmosphere, converting them into water, sugars, and amino acids.

Gush Paints from Singapore offers one plastic-free paint that is air-purifying, anti-moulding, and anti-bacterial, transforming the home into a passive purifier and deodoriser.

The paint is said to remove 99% of toxic VOCs, such as formaldehyde and benzene, after 24 hours.

Water safety is another concern, with awareness growing about the presence of forever chemicals and microplastics in drinking water.

According to Precedence Research, the global water purifier market will triple in size by 2032, valuing $120 billion.

Noa is a water filtration system that can be retrofitted to existing sinks, while **BE WTR** uses ultra-fine filtration to sieve out chlorine, rust, and microplastics.

— Material Spotlight: BioPuff

What is BioPuff®?

BioPuff® from Ponda is a **100% plant-based insulation fibre set to challenge both goose down and synthetic alternatives.** The innovative lightweight material is made from a regenerative crop called typha latifolia, a plant the company is using to rebuild damaged wetlands in partnership with farmers and conservation groups.

How does it protect?

BioPuff's fibre cluster structure generates highly-insulating air pockets, referred to as loft. The material's high-loft is lightweight, making it suitable for a range of garments. It has also been tested against established synthetic, animal-based and plant-based fibre fills and was found to have **one of the warmest fill-to-weight ratios on the market, while being naturally water repellent.**

What makes BioPuff® better than plastic?

In addition to providing natural warmth, this biomaterial keeps a focus on the future thanks to the practice of paludiculture, or marsh-farming, which regenerates natural peatlands, bogs, and fens. **This is important because wetlands hold 40% of the world's soil carbon, and without regeneration it will escape into the atmosphere.**

CO2 — One jacket's worth of BioPuff abates 40kg of carbon

Land — 10 mt2 of land is regenerated for every single garment use of BioPuff

— Legislation to Know

California SAFER clothes & textiles ACT

Starting in 2025, the manufacturing, distribution and selling of any new textile article containing regulated PFAS will be banned. Manufacturers will be required to use the least toxic alternative and to provide retailers with certificates of compliance.

PFAS: New Zealand

(EPA) is banning the use of per- and polyfluoroalkyl substances in cosmetic products from 2027. PFAS are used in products such as nail varnish and lipstick. The EPA said this is a precautionary measure to ensure all cosmetic products are safe for use.

EU REACH: Annex VXII

The EU's REACH regulation, that controls the use of hazardous chemicals, was updated in 2023 to include the intentional addition of microplastics to products. It covers all synthetic particles below five millimetres.

— Key Takeways

Nature perfected protection long ago.

Work with material scientists to borrow this knowledge from the natural world and apply it to the future of product design.

The plastic packaging required for high-water-content products can harbour bacterial growth, which reduces shelf life.

Defend and extend your products with concentrated, solid, or powdered formulations that can be mixed with water at the point of use.

Products that are damaged in transit are a logistical, financial, and environmental disaster, so protection will always be a priority.

Explore innovative box structures and natural materials that can provide equal or superior protection during transit, minimising the need for plastic packaging while ensuring product safety.

↪ Convenience

The explosion of plastic in the 1950s broke the system. Before plastic emerged, we valued natural resources, made things with them, repaired them, shared them, and easily reused them. **Plastic taught us to take, make, and throw away.**

This ‘curse of convenience’ has only worsened with plastic’s increased production. With life more fast-paced than ever, plastic has become the crutch upon which we rely. But what might be convenient in the moment, is a huge inconvenience for our systems and our planet for many years to come.

Where We Are Now

— **Without plastic we wouldn't have many of the easy, on-the-go solutions to modern life that we enjoy today** - from pre-packaged sandwiches and bags of crisps, to beauty samples and disposable razors.

— **But we've relied on plastic for too long, using a material that lasts forever for temporary products.** In the UK alone, the average household throws away 66 pieces of plastic packaging every week. The average useful lifespan of a piece of plastic packaging is a matter of minutes.

— In the textiles industry, plastic has spearheaded the boom in pollutive, exploitative ultra-fast fashion, so much so that **consumers today wear clothes 36% fewer times than they did 15 years ago.**

— **Single-use sachets and wet wipes are some of the first convenient plastic products to face up to legislation.** And it's needed. 72 kilometres worth of tiny sauce sachets are created every year, enough to travel between Earth and the moon 189 times. Unless they've been incinerated, all of those sachets are still on the planet today.

The Future of Convenience

Cutting ties with plastic won't send us back to pre-war times, quite the opposite in fact, as we align our need for convenience with nature's systems and ensure that temporary products only have a temporary impact.

The convenience of the (near) future will be grounded in universal, easily accessible systems of repair, reuse and repurpose, ensuring our lives retain their efficiency without the emissions.

Discover 5 strategies for waste-free convenience

Gaeastar

1. SINGLE USE-FULNESS

The world is addicted to the convenience of single-use plastic, which makes up roughly half of the plastic manufactured today. Eschewing this level of convenience isn't going to win over the consumer, but innovative solutions are emerging that deliver on-demand without the impact.

US-based **GaeaStar** is targeting the wastefulness of the takeaway industry with its range of clay vessels. Made from clay, water, and salt, the geo-neutral coffee cups and bowls can be simply crushed and scattered on the Earth after use, where they have no impact on the environment. The idea, however, is for them to be used time and time again.

With a million plastic bottles brought to the market every minute, Swedish start-up **Blue Ocean Closures'** drop-in moulded fibre screw caps are a much needed solution in the fight against plastic.

Made from cellulose fibres, they're fully recyclable in the paper waste stream and are suitable for bottles and, more recently, aseptically packaged products. The company recently launched its first commercial product in partnership with supplement brand **Great Earth**.

Earthshot Prize winner **Notpla** from the UK excels in replacing single-use plastic with seaweed, offering a full range of disappearing packaging solutions, from energy gel pods to rigid takeaway cutlery. Plastic sachet replacements are also on the rise. Global beauty brand **Elemis** has partnered with Cambridge's **Xampla** to develop single-use sample sachets from a biofilm made from the brand's own ingredient waste.

Single-use products made from natural materials means they harmlessly decompose - ensuring the product's lifespan matches the time it takes to break down.

Data Dive

500

BILLION

More than 500 billion plastic bags were produced last year - equating to one million a minute. Most of these have a working life of a few minutes

EARTH DAY

Notpla

2. BYOW

The concept of BYOW (bring your own water) design is not only reducing plastic use across industries, it's improving on the convenience and accessibility of certain product categories too.

Take the beauty industry as an example, an early-adopter of the waterless design movement. Products such as **ReMI**'s moisturiser stones packaged in ceramic from Australia, **Ecoalf**'s powdered wellness collection packaged in aluminium, and **Attitude**'s solid sunscreen packaged in paper, can all be taken in hand luggage without second thought. No 100ml restrictions apply.

In the home-care space, the rise of tablet-based cleaning products, which are mixed with water at the point of use, are a great space saver for increasingly smaller living spaces. **Grove Collaborative**, a clean cleaning pioneer, expanded into over 5,700 brick-and-mortar stores in the US last year, with partnerships with Kroger, Costco, and Hannaford.

The brand's cleaning concentrates are a large part of the product mix.

In the beverage market, concentrated flavoured drink tablets such as **Plink!** from the UK and **Waterdrop** from Austria are marketed as a quick and convenient way to keep healthily hydrated on-the-go. The coffee industry is moving into this space too with the launch of **No Normal Coffee**. Hailing from Switzerland, No Normal Coffee is coffee paste in an aluminium tube. Launching in June, the paste is designed to be mixed with hot water when exploring the great outdoors, and one 100 gram tube makes 20 cups of coffee.

It's easy to think that waterless design is a new concept, but it's been around for decades. Tea and coffee are prime examples. In many cases the chemistry and technology already exists to turn a water-based product waterless. Brands just need to invest in storytelling to successfully convey the benefits.

Plink!'s flavour tablets dissolve in water in 180 seconds and use 99% less material than canned and bottled beverages.

Plink!

3. SIMPLE SYSTEMS

Our current linear system of “take-make-waste” is no longer viable. We’re taking from a planet that’s running out of resources to give. Businesses that act now to keep essential company stock in use for longer will future-proof their supply chain, creating systems of consumption that prioritise reuse.

But these systems need to be simple. Simple to use and simple to quantify, with as little consumer behaviour change required as possible.

UK-based **Reposit** is leading the charge. A revolutionary prefilled packaging system, the scheme relies on the cooperation and collaboration of major brands, packaging suppliers and retailers. With a range of “one-size-fits-all” standardised packs, the system requires customers to drop-off their empty bottles at readily available hubs around the country.

From there they are cleaned, returned to the brands to be refilled and placed back on the shelf. The system has already launched, and expanded, in M&S.

Other brands are taking the effort out of reuse too. **Nona Source** in France, for example, sells existing deadstock fabrics to brands via a one-stop shop, while healthcare company Cabinet has launched **Cabinet Rx**, a refillable mail-order prescription service, and has recently launched into Target in the US to make the process even easier.

A report by **Greenpeace Philippines** proves the economic efficacy of refillables. The “Kuha sa Tingi” pilot saw a reported 15% increase in store profits, and an average saving of 201% for consumers thanks to offering easily accessible refills for everyday household products.

Cabinet Health

Data Dive

When asked whether they would return packaging, nearly 100% of consumers claim they would likely or very likely do so

ELLEN MACARTHUR FOUNDATION

4. BARRIER-FREE DESIGN

For both consumers and the FMCG industry, plastic-free solutions need to be drop-in replacements for existing plastic-based products to facilitate uptake. Products and materials that require investment in new machinery won't win, but those designed with universality in mind will.

On the material front, California-based **Sway** is one to watch. This seaweed material innovator is growing fast, launching both drop-in thermoplastic seaweed resin pellets, and customisable stock boxes with seaweed windows in the first three months of 2024.

Traceless from Germany is similar, a single-use plastic alternative made from natural polymers sourced from agricultural waste. It can be converted by the plastic, converting and packaging industry on standard machinery.

For consumers, universal design ensures the long-term use of plastic-free products. Where some brands require customers to purchase specific parts directly from them, others are optimising convenience by ensuring refills and replacements are easily accessible.

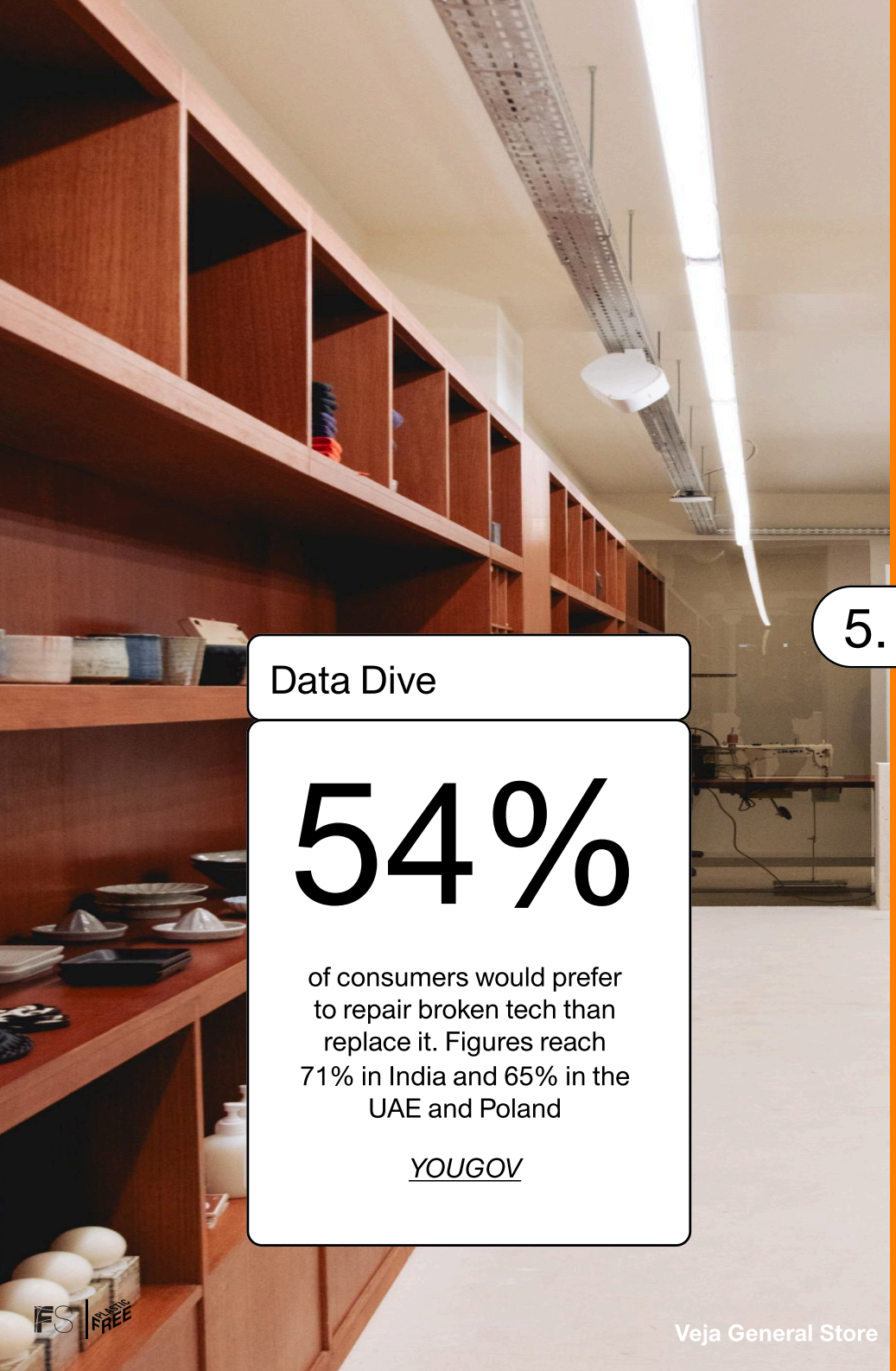
Hailing from the US, **Leaf Shave** is a prime example, whose all-metal razor is compatible with any standard safety razor. Personal care brand **Wild** has made nationwide accessibility to refills a key part of its strategy, recently launching into 750 Tesco stores, making its total UK retail footprint 3,500 stores.

Wild

Sway

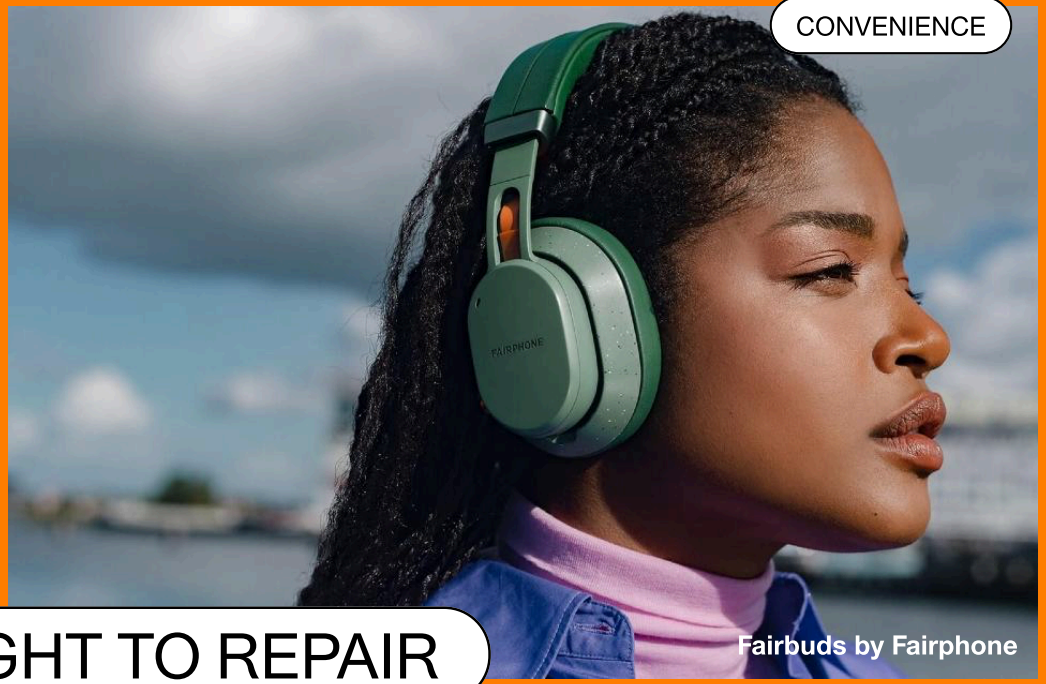
"If you want to work with plastic manufacturers... you cannot alienate them from the beginning."

Julia Marsh
— CEO and co-founder, Sway



Veja General Store

CONVENIENCE



Fairbuds by Fairphone

5. RIGHT TO REPAIR

Data Dive

54%

of consumers would prefer to repair broken tech than replace it. Figures reach 71% in India and 65% in the UAE and Poland

YOUGOV

To reduce the amount of resources we use, we need to make it easier for consumers to care for them. It's no longer convenient to repair the products we buy, with built-in obsolescence contributing to at least 50 million tonnes of e-waste annually.

Rising 'right to repair' legislation, however, is enforcing a new design ethos across the board, one that promotes easy disassembly, cost-effective upgrades, and the valuing of extracted materials for human use.

There are multi-level access points for brands to consider. Dutch electronics manufacturer **Fairphone** is a long-term pioneer of designing for disassembly. Known for its modular phones, the brand's latest model is future-proofed until 2031 and has fewer attachment points and screws to further improve on the convenience of the spare part replacement process.

On the fibre front, **Resortec's** Smart Stitch dissolvable thread makes disassembly 5x faster—allowing products to be recycled without losing each component's value. In retail, brand agnostic repair shops are emerging, with French footwear brand **Veja** the latest to offer repair services on the high street. The brand's newly opened **General Store** in Paris offers cobbling and tailoring services, and is open seven days a week.

While this shift in mindset supports consumer economics, businesses benefit too. UK department store **Selfridges**, for example, is on track to have 45% of transactions come from circular goods and services by 2030, including a new permanent repair hub in partnership with **Sojo**.

— Product Spotlight: K-Rounds

What are K-Rounds?

Designed by American beverage brand Keurig Dr Pepper, in partnership with technology innovators Delica Switzerland, **K-Rounds** is a packaging-free, waste-free capsule coffee system. Reimagining the polluting, multi-material coffee pods currently dominating the market, **K-Rounds are compressed pucks of coffee wrapped in a home compostable shell of cellulose and starch sourced from algae.** The only caveat, you need a special Keurig coffee maker to use them.

How do they retain convenience without plastic?

Coffee pods are wasteful, generating 576,000 metric tons of plastic and aluminium capsule waste every year. K-Rounds provide the same on-demand drinking experience but without the waste. The leftover coffee, and it's marine-based wrapper, can be composted just like coffee grounds, with Keurig working towards compostable certification ahead of the full-scale K-Round launch in 2025.

What is its impact?

Keurig plans to begin beta-testing of K-Rounds in autumn 2024, gathering feedback from retailers and coffee partners to refine the product before a wider consumer launch. The pucks are said to be shelf-stable for up to six months when left unopened. 30 days once opened. The company is working on secondary packaging materials with added barrier properties to extend this further. **Considering the number of Keurig capsule cups produced in 2014 could circle the earth 12 times, this capsule-free movement is set to drastically reduce the company's waste.**

— Legislation to Know

EU Packaging and Packaging Waste REGULATION

The European Parliament has provisionally agreed on a set of new regulations to reduce plastic packaging waste. These include mandating deposit return schemes (DRS), restricting single-use plastic packaging on fruit and veg, and eradicating single-use plastic sachets.

US: Fair Repair ACT

The US Fair Repair Act requires original equipment manufacturers (OEM) to make diagnostic maintenance and repair equipment available to independent repair providers. If an OEM has made an express warranty for digital electronic equipment with a wholesale price of $100 or more, the OEM must provide such items at an equitable price and convenience of delivery to enable the repair within the warranty period.

Circular Economy ACTION PLAN

The European Commission has adopted ‘right to repair’ measures under its Circular Economy Action Plan. It will enable technically repairable products to remain in use beyond the legal guarantee by bolstering the repair sector. Similar laws can be found in the U.S, UK, & France.

— Key Takeways

No one needs forever packaging for a temporary product.

Adopt an anti-packaging mindset that prioritises refill and reuse while minimising excess and unnecessary packaging wherever possible.

Planned obsolescence results in long-term problems.

Reject short-term thinking and design for permanence, investing in repair programmes and buy-back incentives that make it easy for consumers to hold onto products. Benefit from new revenue streams as a result.

Most consumers will have to adapt to the future of shopping.

Pair the launch of new systems with extensive, accessible communication. Simple, user-friendly language, universal tracking systems, and partnerships with retailers are key for instilling confidence.

↪ Affordability

For decades, one argument has been a brick wall blocking the way to a world without plastic - “but it’s cheap”. And it is, due to multi-level subsidisation along the entire value chain, spanning everything from fossil fuel feedstocks to chemical plants.

Unsurprisingly, brands find saying no to such a cheap and versatile material difficult, even as evidence of the social and environmental dangers of plastic stack up. **But the clock is ticking on the “cheap” claim** — with everything from regulation and litigation to behavioural change set to rock plastic’s position as a cheap first-choice material.

Where We Are Now

— **The oil industry is betting big on plastics, with the material expected to account for 45% of total oil demand growth**, becoming the largest single driver. The industry is expected to spend $400 billion on new plants and equipment, with plastics forecasted to be worth more than $750 billion by 2027.

— Recycling plastic isn't a viable economic solution for the plastics industry. It costs money to collect, sort, and clean it. It costs even more to develop the infrastructure to recycle it, and once it's been reused the first time, it can't easily be reused again.

— Throwing plastic away after just one use is economically costly. 95% of plastic packaging is discarded after a short first-use cycle, equating to $80-120 billion of value lost annually.

— While its production isn't yet regulated, plastic policy is appearing throughout the value chain, targeting everything from design through to its end-of-life. **If businesses are expected to cover waste management and recyclability, the annual financial risk is $100 billion.**

The Future of Affordability

As plastic becomes more expensive, investment will be placed elsewhere, into next-gen materials and systems that are set to revolutionise the way we live.

To retain the affordability we've become accustomed to, brands will join forces to spearhead a material revolution, supported by regenerative, cyclical systems that pay back more than we put in. Future perceptions of value will shift, prioritising purpose over profit, while new revenue streams emerge when we start to look at things a little differently.

Discover 5 strategies that are extracting value from a post-plastic economy

Rimowa

1. A STORY WITHIN

Economic pressures have forced many consumers to cut costs and buy secondhand, but the one-of-a-kind nature and unique stories behind these items have transformed the definition of value.

Quality, distinction, and heritage are resonating with younger generations as they seek an elevated version of consumption in a sea of fast fashion and cheap materials. In fact, 56% of Gen Z and Millennials would forgo the latest trends in favour of a one-of-a-kind look.

Last year, resale platform **Vestiaire Collective** announced that the sales of its items in “fair” and “good” condition - the brand’s lowest quality categories - had increased 13% globally, with an increasing desire to value the heritage and history of an item touted as a driver.

German luxury luggage brand **Rimowa** is tapping into this movement with the launch of its **Re-Crafted program**; a collection of used and worn luggage items that proudly bear the dents and scratches accumulated over time. The brand even preserves previous users’ stickers so the item literally retells its travels.

UK-based apparel brand **Toast** has a similar take on the value of secondhand. Its **Renewed line** offers bespoke, hand-repaired items that were damaged or returned. The company’s team of six dedicated repair artists consider the fabric, colour, and texture of each garment before deciding on a unique repair strategy. No two pieces are the same and the value is increased as a result.

Creating future heirlooms, and facilitating the ongoing life of well-loved items, imbues products with a sense of time-tested quality, and a value that can’t be found on the hamster wheel of trend cycles.

Data Dive

56%

of Gen Z and Millennials would forgo the latest trends in favour of a one-of-a-kind look

THREDUP

Toast Renewed

2. WASTE VALORISATION

There's value in waste. Both manufacturing waste and the 2.12 billion tonnes of consumer waste generated every year.

This value is two-fold. Firstly, we spend an estimated $205 billion a year on solid waste management alone, a cost expected to increase to $375 billion by 2025.

Secondly, this waste has untapped value itself, with $10 billion worth of precious metals discarded every year, and $750 billion lost through food waste. This is bad business. The future of smart sourcing requires leveraging new technologies and partnerships to turn trash into treasure.

While reducing waste throughout the value chain should be the first port of call, there's growth to be found in repurposing what is wasted too.

Global tea brand **Lipton** has partnered with Californian bio-based polymer experts **Mi Terro** to develop edible, dissolvable, plastic-free tea pods for on-the-go use. The solution? Polysaccharides extracted from potato peel waste and cellulose from the byproduct of paper production.

After a successful first year, Oregon-based ice cream brand **Salt & Straw** brought back its Upcycled Food Series for a second time this spring, featuring a range of flavours made from locally sourced food waste such as whey, rescued bananas, and spent beer brewing grain.

Unsold stock can also be of value, with fashion brand Diesel bucking the trend of burning out-of-season items by repurposing them into its new **Diesel x LEE** 'DIESELOVES Lee' jean collection.

"We're seeing more and more that waste is the commodity of the future. When it becomes a commodity, when all of a sudden it's called something else, we can trade it."

John Knight
— strategy and sustainability expert, PA Consulting

PLIANT (R) by NFW

3. REGENERATIVE GROWTH

Whether you work in fashion, food, or beauty, you rely on the land for your product. But our soil is in a dire state. According to the WEF, there may not be enough viable soil left in 50 years to grow the food we need to feed the world. It's caused by human activity, from deforestation and fossil fuel extraction to mono-cropping and the unregulated use of agrochemicals. And while these have been prioritised to make a profit in the past, doing the opposite needs to be prioritised to make a profit in the future.

Regenerative practices are key to the future of economic growth.

Soil underpins value chains, and $44 trillion of global economic value is "moderately or highly dependent on nature and its services."

NFW knows this, supporting the implementation of Wanakset regenerative rubber farming methods in Thailand to future-proof its supply chain. NFW materials like MIRUM and PLIANT can safely be returned to the Earth at the end of their useful lives in durable goods, further supporting a soil positive future.

Starbucks is also looking ahead, investing in the development of six climate resilient coffee trees that have been given to farmers free of charge to preserve the future of the crop.

Brazilian organic sugar supplier **The Balbo Group** leads the way in proving the business case for regenerative investment. The company has adopted a "whole ecosystem" approach to its sugarcane farming, implementing regenerative agricultural practices such as replacing harmful chemical fertilisers and switching to natural pest and disease management. Land productivity has increased by 20%.

Data Dive

30%

Regenerative agriculture has been shown to increase farmers' profit margins by up to 30%.

BAIN

MIRUM (R) by NFW

4. COMMUNICATING VALUE

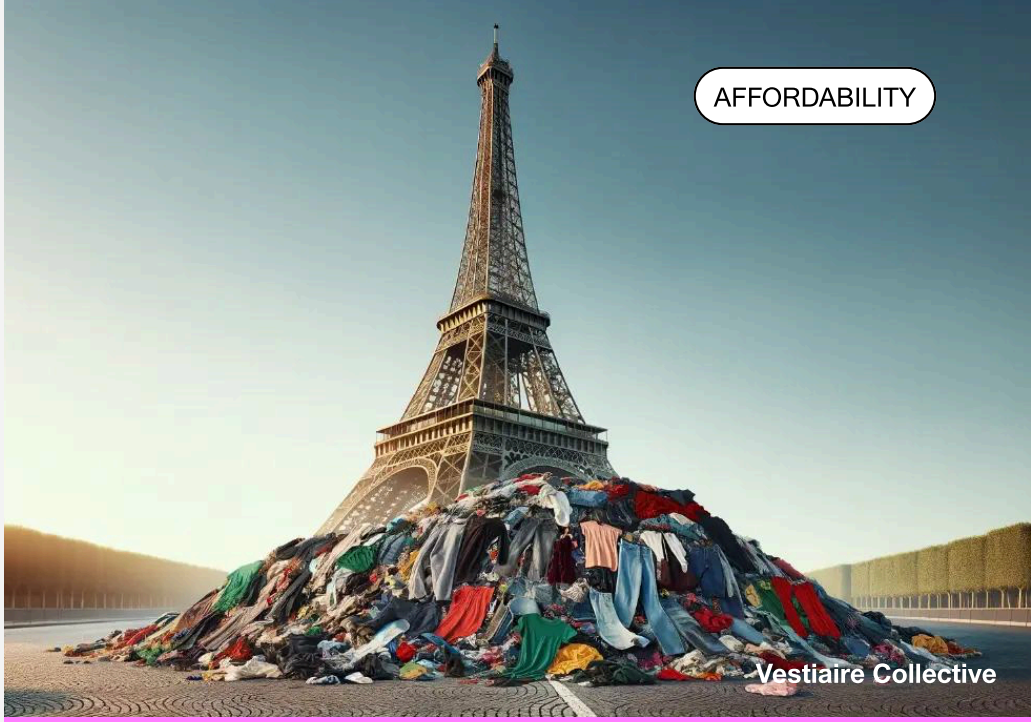
Emerging global consumer markets and an increasingly conscientious customer base mean that the value equation is becoming much more diverse. Crafting a targeted value message will be vital in connecting with tomorrow's consumers in this hyper-niche environment.

A number of strategies are emerging, with the two-pronged benefit of highlighting the consumer savings afforded when consumption is minimised. Last year, global mayonnaise brand **Hellmanns** tapped into the rise of frugality with the launch of its "Between 2 Slices" campaign, spotlighting the cost-saving benefits of eating, not throwing away holiday leftovers.

Other companies are using communication strategies to reinforce the value of the planet's finite resources in the production of our everyday products.

Australian winery **Ampersand Estates** has launched Tomorrow's Vintage Shiraz 2040, 2080, and 2100. Each year's bottle is only partially filled to represent future projections of wine production. The 2040 bottle, for example, is 86% full because just 86% of wine-growing regions are projected to be usable by that date. The wine is paired with an official Conservation Agreement, which can be signed by scanning the bottle.

In addition to marketing strategies, companies are also communicating value through strategic business decisions. 82% of Gen Z consumers consider resale value at the point of sale, and platforms like **Vestiaire Collective** are redefining the value of fast fashion by banning the resale of brands such as H&M, Zara, and Abercrombie & Fitch.



After Vestiaire's announcement, 92% of impacted buyers stayed with the brand, and 88% of sellers.

Exposing the True Cost of Fast Fashion
— Vestiaire Collective

Haeckels

5. MADE TO ORDER

Sales are key to the value equation, but what about unsold merchandise? With an estimated value of 5.7 billion euros in the luxury apparel industry alone, excess inventory is a problem, and strategies to mitigate overproduction are gaining increased attention as a future boost for the bottom line.

New York-based **Project DXM** is an open-sourced apparel platform, allowing customers to place on-demand orders directly with factories across the globe within 60 seconds. This emerging technology promises to radically reduce returns and excess inventory for major brands.

With the mission of zero-waste production, British beauty brand **Haeckels** created an entire "grown-to-order" production method with the launch of its Bio Restore Membrane eye mask in 2020.

The mask, grown from agar, was only put into production once a customer ordered it, taking three weeks to grow, with a tracking system afforded to customers to better understand the process, and therefore value, of its production. The initial success of the product allowed the brand to invest in scaled production, and Haeckels has adopted this 'test and trial' launch method for future products.

Finely-tuned products such as performance gear are also getting a personalised treatment, like **BMW**'s 3D-printed bobsled footwear that improves function and eliminates production waste.

Data Dive

€3.2

BILLION

The value of excess inventory held by luxury fashion's biggest groups has grown to billions of dollars over the last decade, reaching €3.2 billion at LVMH and €1.5 billion at Kering last year.

BOF

Haeckels

— Brand Spotlight: Benim Denim

What is Benim Denim?

Benim Denim has already shut down. On purpose. Founded in 2022, the company was created with the sole intention of using up a 170cm roll of deadstock denim, sourced from the since disbanded Renewcell. **Once the material was gone, the brand was gone, leaving a legacy of conscious, long-lasting, timeless wardrobe staples in its wake.**

How do they redefine affordability?

To use the words of Renewcell's previous Head of Communications, **"Benim Denim subversively connects 'hype marketing' tactics to the abstract but very real physical constraints of climate and environment. No Planet B — No Drop B."** By strongly demonstrating its commitment to resource efficiency, and advocating for a fashion industry that doesn't need to create collections for the sake of it, Benim Denim proves that value can be found in less.

What is their impact?

Benim Denim's impact is environmentally minimal. The denim used was made with 40% of Renewcell's Circulose, a viscose made from regenerated cellulose sourced from recycled textiles. The two-piece collection was designed and produced just 265 kilometres from Renewcell's factory in a bid to prioritise localised production. The exclusive nature of the collection also ensures long-term consideration for, and valuing of, the items.

— Legislation to Know

EU Green Claim DIRECTIVE

The EU has voted to outlaw the use of terms such as ‘environmentally friendly’, ‘natural’, ‘biodegradable’, ‘climate neutral’, and ‘eco’ without quantifiable evidence, and has introduced a complete ban on using carbon offsetting schemes to substantiate such claims. The ban starts in 2026.

EU Ban on DESTRUCTION of Returned of Unsold Garments

EU policymakers have agreed to the inclusion of a ban on the destruction of unsold or returned textiles and footwear within the bloc’s EcoDesign Regulation. Small and micro-brands are expected to be exempt, with mid-size brands given six years to comply.

EU Ecodesign for Sustainable Products Regulation

Set to replace the existing Ecodesign Directive, the proposed new ESPR will lay out a wide range of requirements for any product manufactured or sold in the region. These include product durability, reusability, upgradability and reparability, the use of recycled content, and Digital Product Passports.

— Key Takeways

Embracing complex values is key.

From product design to messaging, catering to increasingly complex preferences will help your brand connect with tomorrow's global consumer.
Understand what value means to them rather than pushing a singular agenda.

Without high functioning natural processes, your business won't survive.

Embed regeneration into every facet of your supply chain, harnessing its truly circular, diverse, and symbiotic processes to future-proof your systems for years to come.

It's time to scale smarter.

Consider the financial downsides of waste and excess inventory while scaling your business. Reduce overproduction and raw material sourcing to realise additional benefits. When waste does occur, analyse if new revenue streams could be created.

IN THE POST-PLASTIC ECONOMY, THOSE WHO HAVE THE COURAGE TO REDESIGN THE FABRIC OF OUR WORLD WILL BE THE ARCHITECTS OF A PROSPEROUS FUTURE — ONE WHERE PROFIT AND PLANET ARE NOT MUTUALLY EXCLUSIVE, BUT INEXTRICABLY LINKED.

— Cheat Sheet

This page serves as your beacon of clarity. Explore 10 pivotal principles to keep top of mind as you move forward into a plastic-free future.

SET YOURSELF UP FOR SUCCESS	BE A DESIGNER OF THE FUTURE
Switch from short-term action to long-term strategy, mitigating the risks posed by the climate crisis today, not tomorrow	Think beyond the systems of today. Advocate for circularity at every touch point, and always ask, what is this product's end of life?
Don't fall foul to legislation. Prepare yourself for the avalanche coming down the line with embedded tracking and evaluation tools	Think regeneratively, not sustainably. The former will push us into a thriving, abundant future, the latter will maintain the status quo
Data is key - ensure you know the impact of your products from cradle-to-grave, and push suppliers to do the same	Embed value within the product, not just its price point. Consumers are looking to connect on a deeper level, so design for permanence and write the stories of the future.
Hold yourself to account with an external governance board of climate and plastics experts. You'll be grateful for the guidance	Don't go it alone. True change will only happen if we solve the biggest challenges together. Competition has no place in the fight for our future
Be honest - about everything, even where you might fall short. Your customer is unforgiving and becoming more so by the day	Act with urgency. The solutions to today's biggest problems already exist. We must match the speed of new possibilities with the speed of real transition

— Work with us

As we stand at the brink of this next chapter, the question that emerges is not whether we can afford to change, but whether we can afford not to.

We understand the daunting nature of this task, which is why **PlasticFree and FS have united to offer a collaborative advisory offering to support your journey.**

From comprehensive assessments to actionable plans, we'll help you future-proof your business.

To learn more about our Post-Plastic Economy offering, contact us at:

— hello@plasticfree.com

— hello@fashionsnoops.com

— Glossary of Terms

Know the terms that will shape the future

b

— Biodegradable

Biodegradable is defined as “able to decay naturally and in a way that is not harmful.” However, the word is regularly used to describe products that do not degrade into harmless or benign end-products. “Biodegradable plastic” is a perfect case in point.

— Biodiversity

Biodiversity, also called biological diversity, refers to the variety of life found in a place on Earth or, often, the total variety of life on Earth. A common measure of this variety, called species richness, is the count of species in an area.

d

— Doughnut Economics

A radical and new economic model created by Kate Raworth based on planetary and social boundaries. Instead of our current model of unsustainable growth, which is using our limited natural resources at breakneck speed, doughnut economics ensures everything, and everyone thrives.

e

— End of Life

A product’s end of life refers to where it should – or will – end up when its life is over.

The language used to describe a product’s end-of-life has been made intentionally confusing. For example, “recyclable” means it is theoretically possible to recycle the product, but only if you get it to a specialist facility.

The end-of-life of a product needs to become part of the project brief while the product is being designed — not as an after-thought.

g

— Greenhushing

The practice of keeping quiet about environmental goals and initiatives. It involves deliberately choosing not to publicise targets and company data, or under-reporting activities to avoid scrutiny and reputational damage. It can also be seen as an attempt to appear falsely sustainable and mislead consumers about a product or brand's climate credentials.

i

— Insetting

Reducing greenhouse gas (GHG) emissions that are directly associated with the value chain that a company operates within. It often involves bespoke interventions that have a direct impact on the company's operations and outcomes. This is distinct from offsetting, which is the financing of existing and separate projects elsewhere to compensate for a company's GHG emissions.

l

— Localisation

Localisation is the process of adapting the content, or products, and services to specific local markets. Localised supply chains refer to sourcing all materials for a product, building, restaurant and so on from the local area, reducing the carbon impact of the final product.

n

— Nutrient-Based Packaging

A packaging solution made from nutrients – plant molecules that are abundant in nature – which can be returned to nature after its useful life and used as food by the soil ecosystem, not poison. Using nutrient-rich materials for packaging is the ultimate signifier of zero waste, allowing packs to go back into nature's infinite cycle of life, regenerating the soil for the next living thing.

r

— Regenerative

According to the Oxford English Dictionary, to be regenerated is to be "re-born; brought again into existence; or formed anew" or to be "restored to a better state".

The world is often used in relation to agriculture where "regenerative production" provides food and materials in such a way that supports positive outcomes for nature, including healthy and stable soils, improved local biodiversity and improved air and water quality.

s

— System Change

Systems change is the idea of addressing the causes, rather than the symptoms, of a societal issue by taking a fully holistic or "systemic" view.

Systemic change is requires adjustments or transformations to the policies, practices, power dynamics, social norms or mindsets that underlie the societal issue at stake. It often involves the collaboration of a diverse set of players and can take place on a local, national or global level.

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