Net Zero Playbook for Consumer Industries

November 2022

accenture | The Consumer Goods FORUM | RACE TO ZERO

This is not a report on the state of decarbonization in consumer industries.

It is a set of solutions.

There is no shortage of voices declaiming the perils of climate change or the lack of meaningful action from industry. While we agree that the case for urgent transformation must be made loud and clear, the purpose of this guide is to help companies in consumer industries move toward practical, actionable solutions.

Decarbonization is essential for earth's survival. The approximately $35.2T consumer industries[1] contribute 30-35% of global emissions.[2] Therefore, decarbonizing these industries can contribute massively to bending the trajectory toward net zero. The industry is far-reaching, significantly influencing the ways in which individuals live, eat, work and play.

But this is not solely a social and environmental imperative; it is a massive value-creation opportunity. Companies that pursue decarbonization will be building resilient value chains, innovating at the business and product level, staying ahead of coming legislation, managing costs and ensuring their brands stay relevant for decades to come.

The case for action could not be clearer. But **where** should consumer companies start? **Where** can greatest impact be had? **Which** technologies can be deployed? **How** can companies engage in pre-competitive, collective action?

1. Accenture analysis of GlobalData and Insider Intelligence, Spotlight on total global retail: Brick-and-mortar returns with a vengeance, February 2022.
2. Consumer industries account for approximately 33% of global emissions. Source: Top FMCGs in race to keep up with conscious consumers – CDP.

Based on Accenture analysis across consumer industries and interviews with leaders in those industries, we have selected four Impact Areas and one cross-cutting enabler with the greatest decarbonization potential. In each Impact Area, we have set out practical, key interventions that will accelerate decarbonization.

Traveling this path will not be easy. Fundamental systemic and organizational change is needed to address this massive challenge.

However, new technologies, collaborative frameworks, a growing spectrum of competitively priced low-carbon solutions, sustainable business models, an ongoing wave of favorable legislation and rising consumer demand make the conditions for change more encouraging than ever.

This playbook provides consumer industry executives with:

1. Four Impact Areas and one enabler that provide the greatest potential for decarbonization.

2. Practical interventions and key enablers to accelerate progress in each Impact Area.

How to use this playbook

This playbook can be (but doesn't need to be) read sequentially.

It starts with an overview of the urgent need for change, the role consumer industries can play and the opportunities available for decarbonization and value creation.

From there, it is structured around Supplier Enablement and the four Impact Areas, each with three to five practical interventions for companies to consider. These interventions have been developed with the goal of informing and helping individuals make decisions on how to develop their net zero roadmaps. The interventions provide a menu of options; some may be more applicable to your business than others.

This playbook is intended as a companion to the **Consumer Goods Forum (CGF) Carbon Solutions Hub**. We encourage you to dive deeper into the case studies on the Hub, which are conveniently organized around the same Impact Areas.

Supplier Enablement

Sustainable Agriculture

Consumer Use

Plastics and Packaging

Transport and Logistics

Introduction

from the UN High Level Climate Champions

In the run up to COP27, the groundswell in climate ambition among non-state actors gives reason for renewed optimism. Today, over 13,000 companies, cities, investors and others are aligned to credible, science-based Race to Zero targets. However, commitments alone will not bring us to a 1.5°C world, and the increasingly urgent climate crisis has brought us to an inflection point; if we are to reach the goals of the Paris Agreement, these commitments must be translated to decisive action on a global scale in this critical decade of delivery. At the same time, there is widespread recognition that, for many non-state actors, the path to net zero—and halving emissions by 2030—is not clear, particularly within consumer industries. Interventions, solutions and approaches are often complex, diverse and not easily understood.

As an Accelerator of the Race to Zero, the Consumer Goods Forum (CGF)—supported by Accenture—has and will continue to play a pivotal role in working to galvanize and support consumer companies across the world to drive systems transformation within the real economy. Indeed, consumer industries have an outsized impact owing to their position at the critical intersection of water, energy, plastics, land use, agriculture and more. There is therefore the opportunity to create truly sustainable value, but more importantly, the responsibility to drive large-scale, cross-sector change and reshape the way these industries interact with nature.

A net zero world thus depends on mobilizing consumer industries and taking the tangible actions needed to get there. As we accelerate progress against interim mitigation targets and turn our attention to COP27, the release of this Net Zero Playbook as a guide to implementing the green transition is a welcome step toward the creation of a resilient, zero-carbon future by 2050 at the latest.

Already today, approximately 40% of the world's population is highly vulnerable to climate change[3] and the science could not be clearer: this is no longer a distant threat but happening now. We encourage you to use this guide to accelerate your company's action plans, identify opportunities for investment and find ways to collaborate through the CGF.

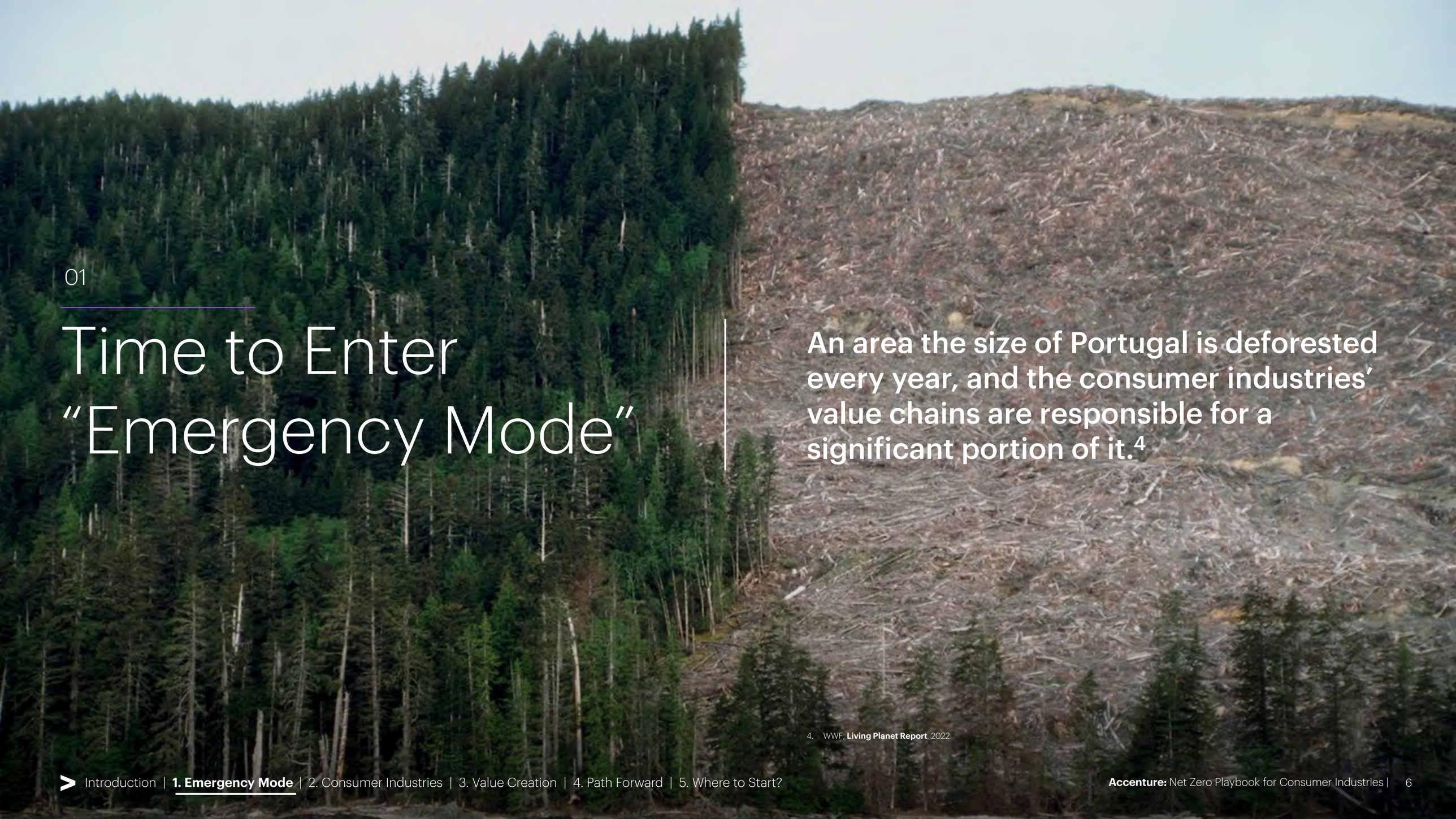
Mahmoud Mohieldin

Nigel Topping

Mahmoud Mohieldin
UN Climate Change High-Level Champion for Egypt, COP27

Nigel Topping
UN Climate Change High-Level Champion for the UK, COP26

3. IPCC Sixth Assessment Report: Climate Change 2022 found 3.3B-3.6B people, approximately 40% of world's population, is "highly vulnerable" to climate change.



01

Time to Enter "Emergency Mode"

An area the size of Portugal is deforested every year, and the consumer industries' value chains are responsible for a significant portion of it.[4]

4. WWF, **Living Planet Report**, 2022.

In January 2022, UN Secretary General António Guterres sounded the alarm about the dire state of Earth's climate. The world has no choice but to enter "emergency mode," he said, because without "an avalanche of action" in 2022, humanity has no hope of meeting the Paris Climate Accord goal of limiting global temperature rise to 1.5 degrees Celsius above pre-industrial levels.[5]

Startling as Guterres's comments were, they did not overstate the problem. If we don't take drastic action to limit global temperature increases now, scientists predict that up to 99% of the world's coral reefs could soon disappear[6] and an extra 4.9 million people will die from extreme heat every year.[7] By 2050, climate change is expected to create up to 200 million "climate refugees"—people who are driven from their homes due to changing temperatures and water levels.[8] Animal species have seen an unprecedented 69% average decline in species populations since 1970,[9] throwing Earth's ecosystem into disarray.

These facts lay bare a simple truth: It is well past time that we accept the urgency of this potentially catastrophic situation—and the significant role the consumer industries have played in contributing to it.

There can no longer be any doubt that the world needs the consumer industries to act now. An area the size of Portugal is deforested every year, and the consumer industries' value chains are responsible for a significant portion of it.[10] Fourteen percent of deforestation is driven by the importing of beef, vegetable oils, cocoa, coffee and paper to the world's richest countries.[11] This is just one example of the many ways in which the production of consumer goods has for too long come at the expense of our environment.

The important questions now are: what can the consumer industries do today to help address this problem? And how can we each grasp the opportunity to transform business models, build resilience and stay relevant in a world in upheaval?

4.9m

people will die from extreme heat every year

Animal species are experiencing

69%

average population decline since 1970

99%

of the world's coral reefs could soon disappear

5. United Nations, UN chief calls for action to put out '5-alarm global fire', January 2022.
6. United Nations Environment Programme, Why are coral reefs dying?, November 2021.
7. The Guardian, The climate disaster is here, October, 2021.
8. Friends of the Earth, Climate refugees, June 2017.
9. WWF, Living Planet Report, 2022.
10. WWF, Living Planet Report, 2022.
11. Our World in Data, Forest Transitions: why do we lose then regain forests?

02

The World Needs Consumer Industries to Act

Although no single industry is responsible for the climate change dilemma, there can be no question that consumer companies—if only by virtue of their size and impact—are a significant contributing factor. With approximately $35.2T in annual revenues,[12] consumer industries, across direct and indirect scopes, contribute an estimated 30-35% of global emissions.[13] If the consumer industries were a country, they would be by far the biggest emitter of GHGs.[14]

Consumer industries account for approximately

33%

of global emissions

12. Accenture analysis of GlobalData and Insider Intelligence, Spotlight on total global retail: Brick-and-mortar returns with a vengeance, February 2022.
13. Consumer industries account for approximately 33% of global emissions. Source: Top FMCGs in race to keep up with conscious consumers – CDP.
14. World Resources Institute, This interactive chart shows changes in the world's top 10 emitters, December 2020.

Commitments are the foundation...

To their credit, consumer companies around the world are increasingly committing to ambitious decarbonization goals. The 2021 UNGC-Accenture CEO Study found that 78% of consumer goods and retail companies now have climate targets of varying degrees of maturity. The study also found that 81% of CEOs surveyed say they are already developing new sustainable products and services.[15]

The industry has also made aggressive commitments to Race to Zero which mobilizes a coalition of leading net-zero initiatives, representing 11,309 non-State actors including 8,307 companies, 595 financial institutions, 1,136 cities, 52 states and regions, 1,125 educational institutions and 65 healthcare institutions (as of September 2022). These 'real economy' actors join the largest-ever alliance committed to achieving net zero carbon emissions by 2050 at the latest. The proportion of the CGF Board in the Race to Zero increased from 22% at the inception of CGF's Race to Zero taskforce to 52% at COP26, the UN climate change conference held in Glasgow in November 2021.[16]

At a sectoral level, this amounted to an additional $913 billion of consumer-sector revenue aligning to a net zero future, meaning more companies than ever are making bold commitments around emissions cuts, deforestation and land use.[17] These commitments are underpinned by new initiatives on green investment projects, technology enablement and environmental, social and governance (ESG) disclosures.

We encourage you to use this guide to accelerate your company's action plans, identify opportunities for investment and find ways to collaborate through the CGF.

52%

of CGF Board member companies had committed to the Race to Zero by COP26

15. United Nations Global Compact – Accenture CEO Study on Sustainability, 2021.
16. Accenture analysis.
17. Accenture analysis.

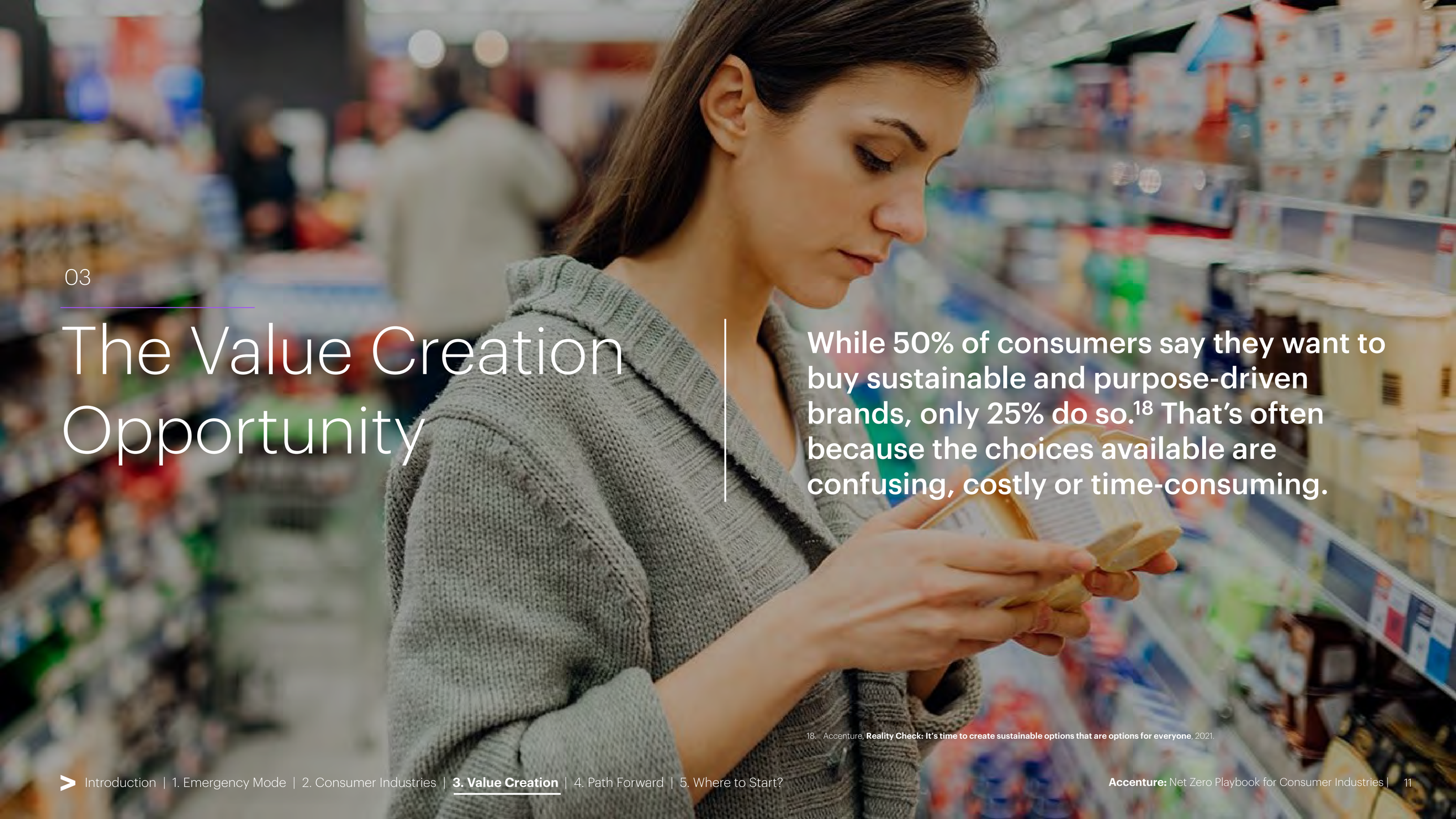
...but now is the time for ***action***

For companies that have made the commitment, the next step is to follow and deliver on these promises. From land-use to food and packaging waste to transportation, consumer sectors exert strong influence and drive outsized impact on the net zero transition.

Hence, even the ambitious commitments at COP26 leave significant room for leaders to emerge and shape the future of the industry. These commitments must now translate into meaningful action.

Looking toward COP27

The global picture going into COP27 looks markedly different. The gathering will naturally focus on progress and delivery against commitments made at COP26. But with consumer goods and retail firms facing evolving regulatory landscape and geopolitical pressures, COP27 will present an opportunity to supercharge the clean energy transition and galvanize buy-in for multilateral action. At COP27, consumer companies should also turn their attention to the specific challenges facing the Global South by focusing on pressing topics such as food security, loss and damage, climate financing, collective supplier enablement and accelerated technology adoption.



03

The Value Creation Opportunity

While 50% of consumers say they want to buy sustainable and purpose-driven brands, only 25% do so.[18] That's often because the choices available are confusing, costly or time-consuming.

18. Accenture, **Reality Check: It's time to create sustainable options that are options for everyone**, 2021.

Aggressively tackling the climate challenge carries a wealth of benefits for consumer companies. By taking a leadership position on carbon reduction now, companies can transform themselves into resilient, future-ready businesses designed to prosper in the decades to come, when sustainable operations will have an even greater impact on consumer relevance, profitability and resilience.

We see opportunities for value creation in four broad areas:

Consumer relevance

People increasingly demand brands that align with their values. Making sustainable options desirable, understandable, easy and affordable will increase relevance and build stronger consumer relationships.

Resilient business and operating models

Sustainable business models can drive innovation, strengthen supply chains and mitigate natural, geopolitical and economic shocks.

Energy and carbon efficiency

Making investments in efficient operations and management (such as energy monitoring, logistics optimization and fleet electrification) today will provide costs savings in years to come.

Risk management and the right to operate

A broad range of risks should be balanced (financial, community, consumer, etc.). Investment decisions today can protect against future shocks and ensure the company protects its right to operate. This includes increasing demand and growing investor expectations for compliance with ESG disclosure requirements.

While these opportunities are neither easy nor quickly accomplished, they have the potential for long-term value creation and are achievable for those with the will to take decisive action.

Consumer relevance

Consumers *want* to live more sustainably. Accenture research shows that 38% of consumers feeling budget pressures are buying reusable / refillable products more now, and 30% are buying second-hand items more.[19] And sales of products marketed as sustainable grew 2.7x faster than products not marketed as sustainable and achieved a 6-YR compound annual growth rate of 7.3% vs. 2.8% for its conventional counterparts.[20]

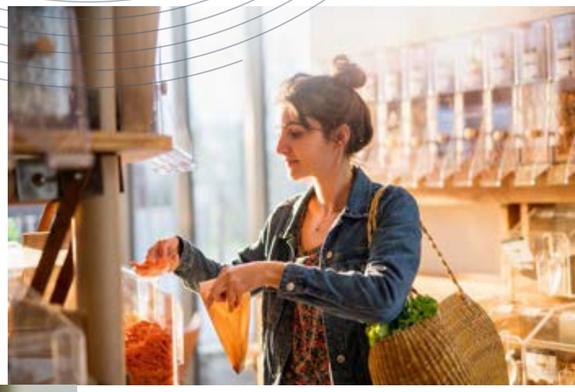
But there remains a consumer "say-do gap." While 50% of consumers say they want to buy sustainable and purpose-driven brands, only 25% do so.[21] That's often because the choices available are confusing, costly or time-consuming. This means exploring radically different models of consumption that can drive adoption at scale because they easily fit within consumers' day-to-day lives.

Providing easy-to-understand, verifiable information can help engage consumers and aid decision making. Brands and retailers can go further and provide information that will influence consumers toward more sustainable choices and educate and incentivize them to use and dispose of products sustainably.

However, the climate solution cannot rely solely on consumers and their willingness to make eco-friendly buying decisions. To effect the large-scale change required, consumer companies must innovate products, services and business models that make low-carbon choices easy, attractive and affordable.

38%

of consumers feeling budget pressures are now buying reusable/ refillable products



30%

are buying second-hand items more

Products marked as sustainable grew

2.7x

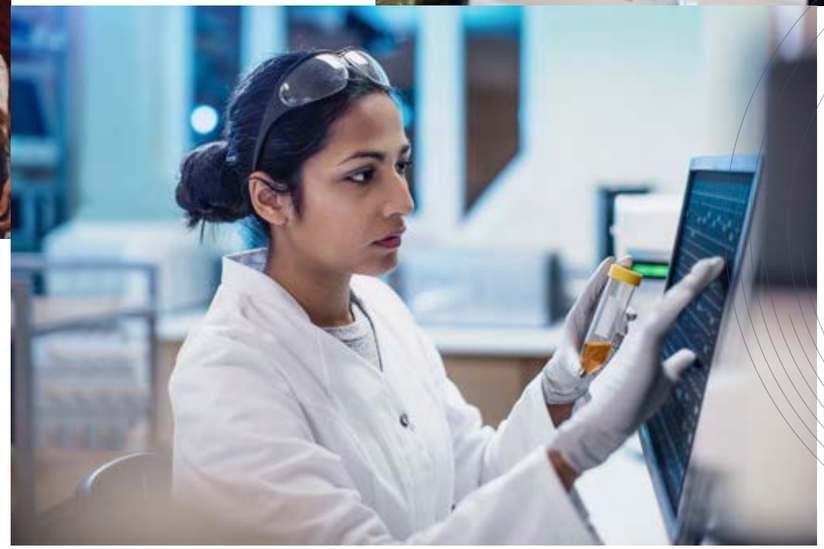
faster than products not marked as sustainable

19. Accenture Q2 Consumer Pulse Survey: 7th-15th Feb 2022.
20. NYU Stern, Sustainable Market Share Index™, 2021.
21. Accenture, Reality Check: It's time to create sustainable options that are options for everyone, 2021.

Resilient business and operating models

Geopolitical and global health upheavals have exposed a lack of resilience across consumer companies' value chains. Meanwhile, pandemic restrictions and changing consumer behavior have spurred a wave of digital transformation, pushing these companies to emphasize digital commerce and supply chain resilience.

Decarbonization presents consumer companies with an opportunity to embrace and invest in sustainable business and operating models (e.g., circular, regenerative) that provide greater resilience against seismic natural, geopolitical and economic events. Embracing these models also presents a rare opportunity to drive R&D (e.g., product and portfolio innovation), supercharge the clean energy transition and accelerate multilateral climate action.



Energy and carbon efficiency

Destabilizing forces, including the Russian invasion of Ukraine and the lingering effects of the Covid-19 pandemic, have made the imperative for energy efficiency more urgent than ever. Energy efficiency in consumer industries is estimated to represent up to $50B in energy cost savings across the value chain every year. Making investments in efficient operations today will establish companies as leaders in the field and provide costs savings in years to come.

Key technologies in which consumer companies should consider investing include fleet electrification, digital manufacturing, logistics-optimization tools, low-emissions alternative fuels and energy-efficient systems and monitoring.

Risk management and right to operate

Carbon taxes—also known as carbon pricing—are increasingly becoming a reality in countries around the world. And many large, industrialized countries that don't levy them now are likely to in the near future. For companies that are forced to pay carbon taxes, emissions have a direct impact on P&L. Rather than wait for these taxes to be broadly instituted, consumer companies would be wise to begin incorporating carbon considerations (such as internal carbon pricing) into decision-making today.

Additionally, the elevation of ESG reporting, coupled with the convergence of standardized ESG disclosures and mandatory reporting legislation, facilitates a crucial step for the net zero transition in the sector.

Forward-looking organizations will integrate financial and ESG reporting as soon as possible to tell a more comprehensive story about the drivers behind their success and to provide stakeholders with a clearer understanding of how sustainability contributes to profitability.

While taking such steps now may result in additional short-term expense, the cost of waiting until carbon taxes are mandated will be far greater and may cause companies to miss out on the opportunity to build a resilient, future-ready business.

04

The Path Forward

Reaching net zero for an approximately $35.2T global industry[22] is a generational challenge. For consumer industries, decarbonization is highly complex and will require significant capital expenditure, coordination across fragmented value chains and deft navigation of competing strategic priorities.

While it may not be easy, it is undoubtedly possible.

22. Accenture analysis of GlobalData and Insider Intelligence, **Spotlight on total global retail: Brick-and-mortar returns with a vengeance**, February 2022.

The broader landscape is more favorable to system-wide change than ever before. The incentive for urgent action, at scale and across the industry, is clear. New technologies are increasingly feasible, and costs are dropping. The frameworks for collaboration are more mature, and the number of companies involved in effective coalitions is growing fast. Investors are demanding change. And the power of public policy to put the industry on track to avoid the worst effects of climate change is strengthening.

We see **two broad areas** where consumer industries need to look:

1. Collaborate for system-wide change

To address the challenges and realize the value opportunity, consumer companies need to work together. The system-wide changes needed are simply not possible without cross-industry cooperation—particularly focusing on pre-competitive collaboration.

Unlike more consolidated industries, such as the energy market, the consumer industries are accountable to a wide array of decision makers, from consumers themselves to upstream commodities suppliers, which can number in the thousands.

- Brands and retailers must work closely with suppliers to identify what suppliers are doing right, as well as ascertain areas for improvement that can help move the needle on abatement.
- Pledges should be set in lockstep with a broad coalition of organizations. Plans should incorporate collective action milestones and the sharing of best practices to overcome the multi-stakeholder nature of consumer industries.
- Collaboration to align cross-industry priorities and market demand can stimulate investment at scale for critical sustainability technologies. An example is the First Movers Coalition, which seeks to scale the technology needed to enable emissions reductions by bringing together inventors, industry users and government, and leveraging the collective purchasing power of companies to send clear demand signals. The Consumer Goods Forum's Coalitions of Action help members align to shared, topic-specific commitments and take advantage of relevant opportunities offered by purpose-driven business models. For example, the CGF Coalition of Action on Food Waste aims to accelerate its environmental, social and economic impact by leading a global commitment to halve food loss and waste by 2030.

We see **two broad areas** where consumer industries need to look:

2. Embrace new technologies

Companies can now accelerate collective action by investing in new technologies such as green cloud, supplier hubs, climate analytics, enterprise resource planning (ERP) and finance tools. The extent of their impact will ultimately depend on the industry's willingness to adopt and deploy them.

- Technologies now exist that can be embedded to provide transparency throughout a consumer company's entire value chain, from planning and investment to sourcing and manufacturing to sales and consumption.
- Once the right priorities are set and activated, new technologies can be applied to operations to reduce direct and indirect emissions. While these are often sector-specific, major examples include the use of biochar in agricultural activities, new energy sources and efficiencies within transportation and refrigeration and carbon capture at manufacturing locations.

Decarbonization pain points

The CGF's Race to Zero Taskforce has worked closely over the past year with multinational consumer goods and retail companies to identify gaps in net zero action plans. These collaborations have revealed valuable insights into the challenges these businesses are facing.

Based on a 2021 CGF member survey, decarbonization pain points included:

Fragmented value chains

Scope 3 emissions can account for 80–90% of consumer company emissions. But these are not easily determined, which makes them difficult to curb.[23] Driving supplier decarbonization in supply chains can be slow, as is the process of embedding sustainability priorities holistically within an organization. Due to these challenges, partnering to drive execution on net zero efforts is essential to achieving meaningful impact.

Competing leadership priorities

The taskforce determined this factor to be the strongest internal obstacle to implementing sustainability. This underscores the reality that sustainability plans need to be backed by a strong business case, with buy-in and sponsorship from top leadership, and aligned with the organization's non-ESG goals.

High capital expenses for technology

Though there are now many kinds of technology that help drive decarbonization across the consumer company value chain, most require significant capital investments, and return on those investments may not be realized in the short or medium term. Other technologies hold promise (sustainable aviation fuel, for example), but are not scaled or ready for prime time, which means companies must make plans while living with a certain level of ambiguity.

Difficulty in measuring ESG data across the value chain

The complexity of carbon measurement is particularly problematic for consumer industries, which are structurally different from many other industries because of their expansive product portfolios and vast value chains.

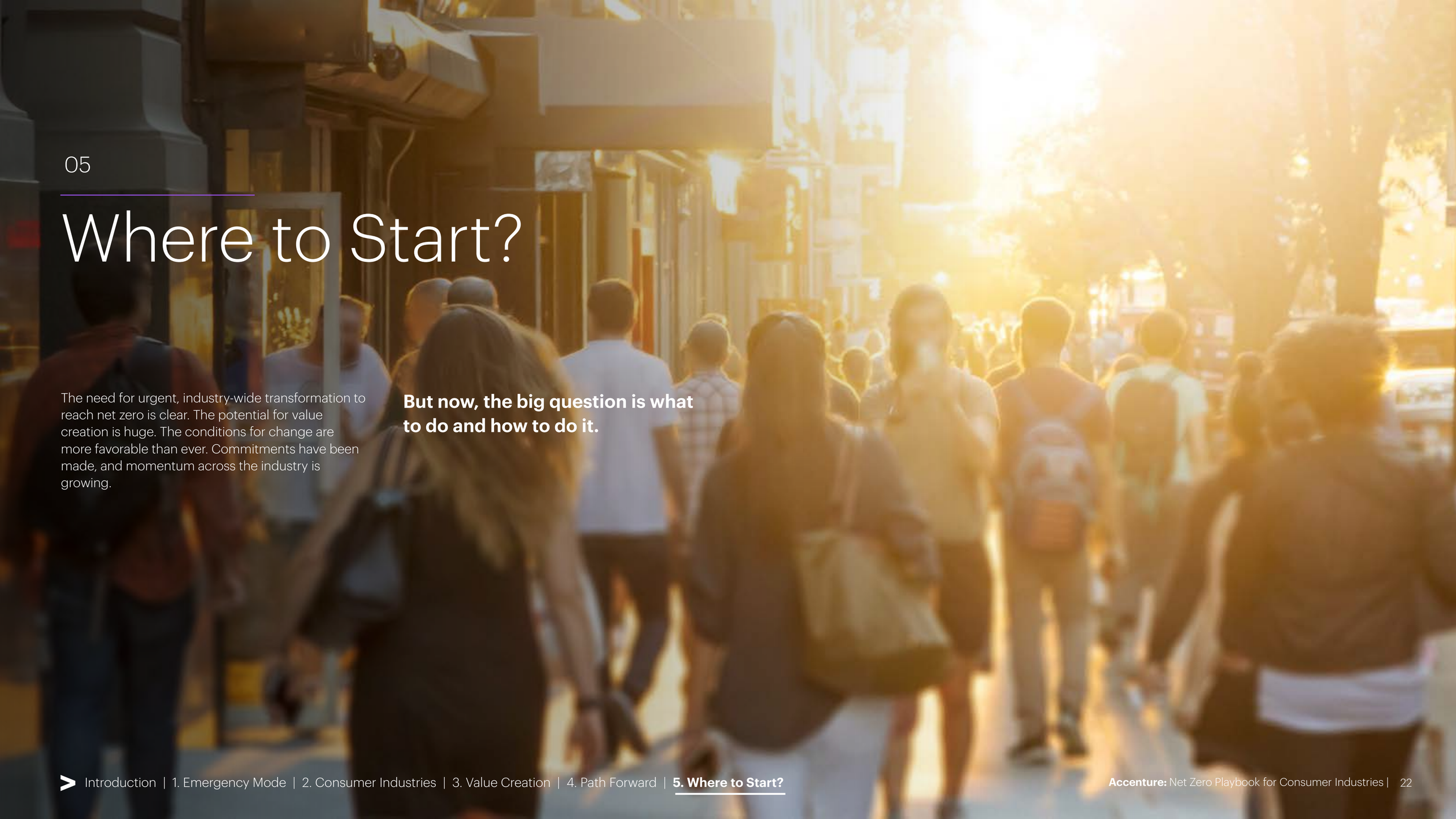
23. WRAP, A consistent measure for Scope 3 emissions for the food and drink industry is coming, February 2022.

05

Where to Start?

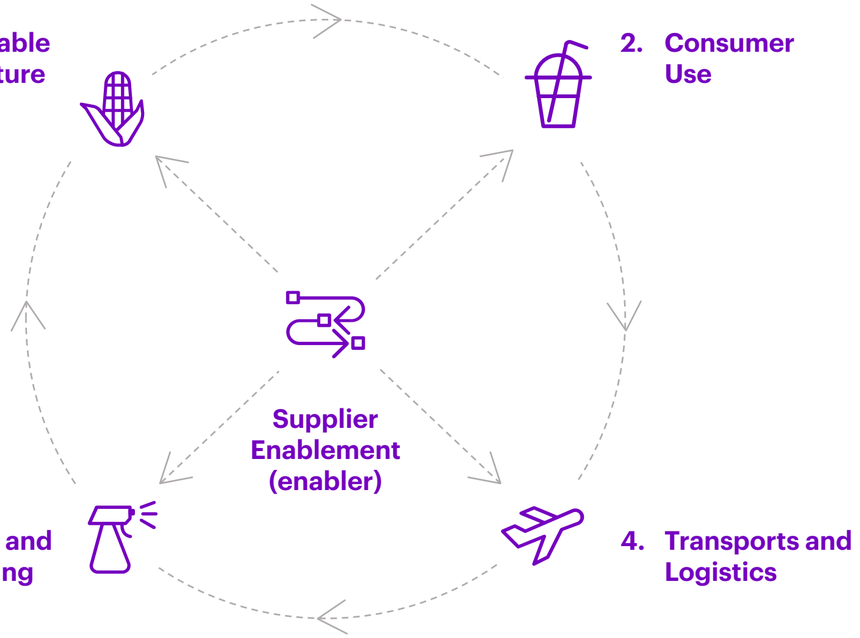
The need for urgent, industry-wide transformation to reach net zero is clear. The potential for value creation is huge. The conditions for change are more favorable than ever. Commitments have been made, and momentum across the industry is growing.

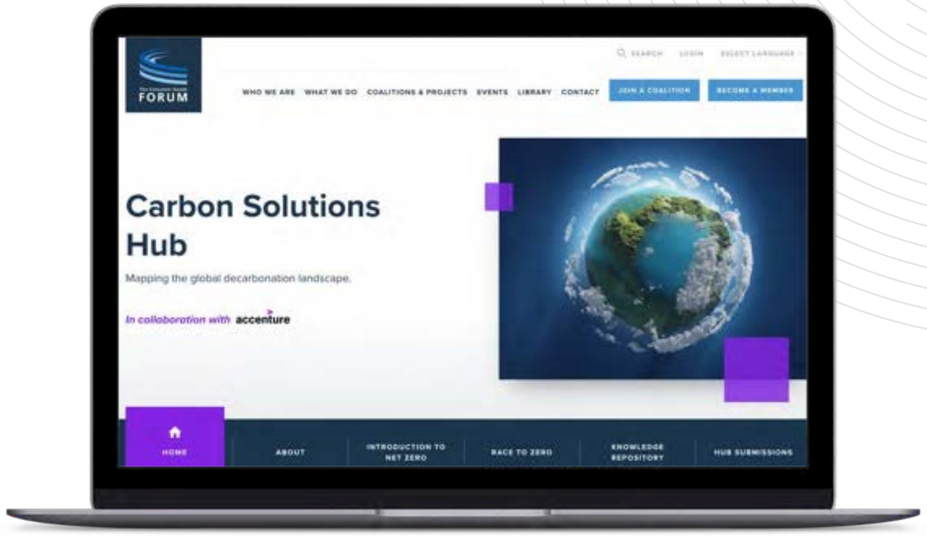
But now, the big question is what to do and how to do it.



The following pages provide practical steps that consumer companies can take to reduce their carbon footprint and help the industry achieve net zero in time to avert a global climate disaster.

We have identified **four Impact Areas and one enabler** with the greatest potential to reduce carbon emissions (ordered by largest potential carbon impact):





For each area, we have selected three to five key interventions, based on their significant contributions to global industry emissions, as well as the novel and beneficial interventions that exist in these areas. For each, we included the key technologies and collaborative steps that will be needed to implement them.

Let the following pages serve as a constant reference and a resource on your path to decarbonization. Likewise, the CGF Carbon Solutions Hub is organized around the same four Impact Areas.

Though the challenge is massive and complex, there exists within the consumer goods industry more than enough creativity, influence and innovative firepower to overcome this challenge. We offer this playbook in the hope that it will serve as a guide for our industry to emerge from this moment stronger and better prepared for a more sustainable future.

How were the Impact Areas and interventions designed?

Impact Areas

The four Impact Areas were selected based on extensive research across CGF member companies and interviews that Accenture conducted with sustainability-sector leaders and subject matter experts (SMEs). Public case studies and research were also drawn upon to add additional context and perspective.

- **CGF 'Race to Zero: Our COP26 Ambition Survey'** responses clearly identified these as the most challenging decarbonization areas for consumer companies.[24]
- **Approximately 40 bilateral engagements with C-Suite/sustainability leadership at CPGs and retailers** identified these as the top focus areas for companies, the largest emissions buckets and the biggest decarbonization challenges.
- **Analysis of CDP data from leading CPGs** showed that these areas comprise the largest scope 3 emissions buckets (i.e., five greatest areas of opportunity for mitigation).[25]
- **These areas mirror the five prioritized levers in the Carbon Solutions Hub**, allowing for consistent brand messaging and easy-to-follow references.

The Interventions

- Each Impact Area sets out the priority interventions that consumer goods companies can take to reduce their emissions and address their most complex sustainability challenges.
- Each area is targeted at medium and large companies operating in the food, beverage, agribusiness, homecare, health, beauty, pet and retail sectors.
- This is not a complete list of all the interventions that companies must take to progress their journey to net zero. Instead, it is a carefully curated selection aimed at showing what is possible with a focus on collaboration, technology and innovation.
- However, one size does not fit all for consumer goods companies looking to make a difference. For example, food and beverage companies will be impacted by their agricultural footprint more than other consumer industry segments and may therefore place a higher priority on sustainable agriculture interventions.
- These interventions do not need to be undertaken in order. We encourage readers to start by focusing on the areas that make the most sense for their business in the short term then proceed to the others as circumstances allow.

Glossary

- **Investment.** The size of capex required to bring the intervention into operation (ranges based on large CPG / Retailer with revenues of over $1bn). Low = under $1M; Med = $1-10M = High: $10+M.
- **Complexity.** The extent to which specialist technologies and expertise need to be accessed to deploy the intervention. Low = <1 year; Med = 1 to 5 years; High = >5 years.
- **Timescale**. The extent to which the intervention could be actioned immediately or, if not, how long the lead time would be given factors such as technology maturity or the need to build facilities. Low = <1 year; Med = 1 to 5 years; High: >5 years.
- **Carbon Impact.** The indicative emissions savings potential across an impact area should the intervention be scaled (based on Accenture analysis). Low = 0-10%; Med = 10-20%; High = 20+%.

24. Accenture + Consumer Goods Forum survey of 32 respondents from across the FMGC and Retail sector, June 2021.
25. Accenture analysis of public CDP data.

Impact Areas to Accelerate the Race to Zero

Impact Areas

Enabler

Impact Area	Indicative Carbon Impact	Interventions	Investment	Complexity	Timescale	Carbon Impact[29]
Sustainable Agriculture	~26-40%[26]	Alternative proteins	●●●●	●●●●●	●●●●●	
		Regenerative agriculture	●●●	●●●	●●●	
		Deforestation-free production	●●	●●●	●	
		Controlled environment agriculture	●●●●	●●●●	●●●●	
		Precision agriculture	●●●●	●●●	●	
Consumer Use	~20-22%[27]	Carbon labelling	●●●●	●●●●	●●●	
		Circular consumer models	●●●●●	●●●●●	●●●	
		Refill models	●●●●	●●●	●	
		Influencing consumer behaviour	●●●●	●●●	●●●	
Plastics and Packaging	~12-16%[28]	Packaging material innovation	●●●●	●●●●●	●●●●	
		Recycled plastic integration, sourcing / procurement	●●●	●●●	●●	
		Recycling, reuse and takeback programs	●●●	●●●	●	
		Biodegradable and compostable packaging	●●●	●●	●●	
Transport and Logistics	~10-11%[27]	Fleet electrification	●●●●	●●	●●●	
		Sustainable last-mile delivery	●●●●	●●●	●●●	
		Low emissions alternative fuels	●●●●●	●●●●	●●●●	
		Sustainable fleet management and efficient trucks	●●●	●●●	●●	
		Reverse logistics	●●●	●●●	●●●	
Supplier Enablement		Collaborative supplier data model	●●	●●●●●	●●●	
		Supplier engagement, education and training	●●●	●●	●●	
		Green financing	●●●●	●●	●●●	

26. Average emissions from Sustainability reports across 4 representative CPG companies. Numbers have been reduced proportionally to account for emissions from manufactured inputs and other material, beyond just agriculture emissions. Range has been sense-checked against EXIOBASE outputs for a Bev manufacturer from the Accenture research team.
27. Average emissions from CDP data across a set of 10-20 representative CPG companies.
28. Average emissions from Sustainability reports across 4 representative CPG companies.
29. Low-Med-High indicators are derived from Accenture Analysis for the "Sustainability Accelerator", as well as from SME validation. Note, a 'full bar' in the final column does not translate to total elimination of carbon/zero carbon emissions.

● = Low ●● = Low-Medium ●●● = Medium
●●●● = Medium-High ●●●●● = High

Conclusion

Achieving net zero in time to avert global disaster will be the defining mission of industry in the 21st Century. For the consumer industries, it is not just a moral imperative, but an unprecedented opportunity to future-proof operations and create long-term value. Failure to embrace this challenge will doom even the most entrenched players to irrelevance, whereas those who place this challenge at the heart of their business will realize a competitive advantage that will carry them well into the future.

Consumer companies that embrace this challenge are committing to substantial systemic and organizational change. Our industry's contribution to the ongoing climate disaster is simply too large to be able to significantly reduce the impact through marginal changes and half-measures, however well-intentioned. Instead, we must reimagine every aspect of our operations and value chain with an eye toward decarbonization.

However, as this guide has made clear, the technologies, frameworks, low-carbon options and operational models now exist to make this journey possible for any organization with the will to see it through—and the ambition to realize its benefits. Net zero is achievable for consumer companies in the decades to come; the question is which companies will be prescient and ambitious enough to seize the generational value-creation opportunity it presents.

This playbook was developed to help any consumer company to begin to significantly reduce its carbon footprint across its entire value chain. We encourage organizations to refer to it, along with the CGF Carbon Solutions Hub, frequently throughout their journey. More than a guide to first steps, it is intended as a long-term companion on a challenging but highly rewarding path. The CGF Carbon Solutions Hub is intended to be a living repository, and future resources may be published as technologies and other developments dictate.

As we have seen, the stakes are now simply too high, and the value-creation opportunities too great, to delay action. Each and every consumer company can accelerate their journey by making a net zero pledge and defining the specific steps to achieve their goals. We hope that this guide will long help inform and inspire your own company's Race to Net Zero.

How to join the RACE TO ZERO

Race to Zero is the UN-backed global campaign rallying non-state actors across the global economy to take rigorous and immediate action to halve global emissions by 2030 and deliver a healthier, fairer zero-carbon world by 2050. Led by the UN Climate Change High-Level Champions, Nigel Topping (UK, COP26) and Dr. Mahmoud Mohieldin (Egypt, COP27), all members are committed to the same overarching goal: reducing emissions across all scopes swiftly and fairly in line with the Paris Agreement, with transparent action plans and robust near-term targets.

Race to Zero is an umbrella campaign that aggregates several Net Zero Partner initiatives, including the Science Based Targets initiative (SBTi) Business Ambition for 1.5°C, The Climate Pledge and B Corporation. Individual organizations from across the world and of all sizes are invited to join the race by applying to one of the partner initiatives. For consumer goods manufacturers and retailers, the most common partners are the aforementioned three.

Members joining the Race to Zero campaign must meet a minimum set of procedural criteria known as the "Five Ps." These criteria are strengthened on an annual basis, and it is the role of the partners to ensure that their signatories subscribe to them.

This playbook not only seeks to highlight the need for consumer companies to **commit** to net zero emissions and the value-creation opportunity therein, but to illustratively guide companies on formulating a **plan** for decarbonization interventions upon which they can **proceed** to drive emissions reductions across the value chain.

Pledge

Pledge to reach (net)-zero as soon as possible and set an interim target for your fair share of 50% reduction by 2030.

Plan

Within 12 months of joining, explain what actions will be taken for achieving both interim and longer-term pledges.

Proceed

Take immediate, meaningful action consistent with the short- and long-term targets specified.

Publish

Report progress annually by publishing against your targets on a public platform.

Persuade

Align external policy and engagement to Race to Zero and advocate for peers to align goals to 1.5°C.

Interventions

This section sets out the priority interventions that consumer companies can implement to reduce their emissions through Supplier Enablement and across four Impact Areas. These are designed for, and are most relevant to, medium and large companies operating in the food, beverage, agribusiness, homecare, health, beauty, pet and retail sectors. **This is not an exhaustive list of all interventions** that companies can and must take to progress their journey to net zero. Instead, it is a curated selection of interventions aimed at showcasing what is possible with a focus on industry collaboration, technology and innovation.

To develop this section, case studies were collected from Consumer Goods Forum (CGF) member companies, Accenture subject matter experts and sustainability-sector expert interviews, in addition to public case studies and research. **The interventions in each Impact Area** were selected based on their ability to make a significant impact toward emission reduction, as well as emerging or novel interventions in each Impact Area.

Of course, one size does not fit all for consumer companies. For example, food and beverage companies will be impacted in a greater way by their agriculture footprint than other consumer industry segments and may therefore prioritize sustainable agriculture interventions more highly. However, this information should provide valuable insights for companies aiming to reduce their environmental impact.

Impact Area 1

Sustainable Agriculture

Conventional farming is a major driver of deforestation and emits vast quantities of greenhouse gases (GHGs) into the atmosphere, contributing to climate change. This is in addition to other large-scale environmental problems, such as soil degradation, groundwater contamination and biodiversity loss. For many consumer goods manufacturers and retailers, particularly for those in the food and beverage sectors, agriculture is the largest emissions bucket, constituting on average approximately 26-40%[30] of companies' total emissions. Agriculture is therefore an essential area for consumer companies to tackle and drive sustainability within.

Sustainable agriculture means farming in ways that meets peoples' need for food without degrading the natural environment, accelerating climate change and ultimately reducing the productivity of the planet's natural capital. Several emerging nature-based and technological solutions present opportunities to improve farming efficiency, reduce pressure on land and inputs, and even the possibility to turn farming from a major source of emissions into net carbon sinks.

Customers are expected to continue to demand higher ethical and environmental standards from consumer industries. Sustainable agriculture is therefore a huge opportunity for farmers and companies to future proof their supply chain, work with sustainably sourced ingredients and even improve the nutritional value of their products.

30. Average emissions from Sustainability reports across 4 representative CPG companies. Numbers have been reduced proportionally to account for emissions from manufactured inputs and other material, beyond just agriculture emissions. Range has been sense-checked against EXIOBASE outputs for a Bev manufacturer from the Accenture research team.

Alternative proteins

What this is...

The alternative protein market covers three methods for reducing our dependence on conventionally farmed animals. These alternatives, at various stages of development, are plant-based, fermentation-enabled (microbial, precision, biomass) and animal-cell-based (cultivated, cell-cultured). Scaling these solutions is critical to lessening the environmental impact of our food system, as 90+% of meat consumption must be replaced by 2050 to meet climate goals.[31] However, meat consumption is still increasing.

Why it matters

Alternative proteins are expected to grow significantly in the coming years, and companies should act now to build a strong footing. Moreover, alternative proteins can help to mitigate climate impact, reduce land intensity, and feed more people with fewer resources than is possible through conventional livestock protein production.

Challenges

Mass consumer adoption will require investment to optimize taste, texture, quality, convenience and price so products can compete with conventional proteins. Another challenge is efficient resource use—particularly with cultured meats that feed on sugars and grow in labs using a lot of energy. The regulation of alternative proteins should be considered with cultured meats, particularly those not yet approved for commercial sale.

31. Accenture analysis.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Explore teaming up with innovative startups, academic institutions and other partners for access to talent and resources.
- Develop data-driven consumer insights and market intelligence to drive mass consumer adoption and behavior change.
- Invest in R&D, experiment with alternative protein technologies and run pilots to help acclimatize consumers to new foods (not forgetting eggs, dairy and other animal products beyond meat).
- Although plant-based proteins are a natural starting point, animal-cell-based proteins, being biologically the same as meat, may offer the biggest potential for adoption and impact once the technology matures.

Enablers

- Building partnerships with food-tech startups, universities and research labs to develop products and IP.
- Developing relationships with regulators and consumers to understand taste, willingness to pay and other preferences.

Case studies

- Kroger expands range of plant-based meat and dairy alternatives
- Hormel and The Better Meat Co. to commercialize meat alternative ingredient
- ADM invests $300M for new Alternative Protein Innovation Center

Regenerative agriculture

What this is...

Regenerative agriculture is a system of farming practices that promotes sustainable intensification, enhancing yields by restoring soil health, promoting biodiversity and minimizing reliance on synthetic inputs. The goal is to restore ecosystems to enable production for generations and protect farmer livelihoods. Companies can support farmers to test, adopt and scale best practices that lead to improved climate resilience and better farm economics.

Why it matters

Intensive conventional agriculture degrades soil quality and disrupts ecosystems, leaving farmers dependent on inputs (such as herbicides, fertilizers and antibiotics) to maintain crop yields and livestock production. By working with nature, regenerative agriculture has been shown to improve yields and animal welfare, increase nutritional value, improve food taste, reduce water and fuel usage, and increase resilience to pests, disease and extreme weather. Moreover, the production of crops and use of protection products is often carbon intensive; avoiding use of these products also reduces emissions for agricultural businesses.

Challenges

Although regenerative agriculture can improve yields and resilience in the long term, farmers may experience a short-term drop in output and profitability while practices are trialed and their business models shift. This transition period is a barrier for many farmers, meaning consumer industries play a critical role in providing the research, training, financial support and incentives necessary for farmers to make the transition.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Engage partner organizations, regenerative agriculture experts and local partners—such as input providers and local agronomists—who can advise on regenerative approaches and transitions, as well as educate suppliers and design customized farmer incentives.
- Engage organizations that are providing low-cost early warning systems and sensors that enable quicker decision making and measure outcomes to verify effectiveness and adjust season to season.
- Identify farmers who are already regenerative or transitioning and engage them as advisors to help other farmers learn and begin the journey.

Enablers

- A core group of suppliers that are incentivized and bought into the concept.
- Establishing model farm(s) to share best practices and insights.
- Investment in expertise, pilot programs and measurement capabilities.

Case studies

- Guinness 40 farm regenerative agriculture pilot
- Cargill's carbon sequestration program, RegenConnect, compensates farmers for adopting regenerative agriculture practices

> Interventions

Deforestation-free production

What this is...

Commodity-driven deforestation is the act of clearing forestland for commercial or agricultural use, and is common within consumer companies' supply chains.

Deforestation is often driven by pressures on land productivity and economic pressures on farmers' livelihoods. Therefore, the output of existing farmland must increase while decreasing the inputs needed. This is known as sustainable intensification. Forested land should be recognized as "productive" to account for its true economic value. Companies, governments and institutional investors can help farmers and landowners access capital through green finance mechanisms, such as ecosystem services payments.

Why it matters

Agriculture is the primary driver of deforestation and other land-use conversion across the world, contributing to significant GHG emissions and biodiversity loss. The destruction of forest for new farmland is unsustainable, which is why companies are looking at how to trace and verify that land conversion isn't occurring in their supply chains. Indeed, companies that can prove their products are deforestation-free stand to benefit from an enhanced brand and are likely to stay ahead of anti-deforestation legislation.

Challenges

Consumer companies must monitor agricultural supply chains to eliminate deforestation. Identifying suppliers beyond the first tier can be a challenge, especially for agricultural commodities that are often sold through intermediary or informal traders. Companies can leverage new technologies and work with suppliers and locally based community groups to understand where ingredients are sourced and conduct independent monitoring of deforestation and land-conversion rates in those regions.

Carbon impact

Investment

Complexity

Timescale

> Interventions

How to get started

- Join the CGF Forest Positive Coalition of Action, which is creating roadmaps for individual commodities to guide the transformation needed to implement and practice forest-positive production.
- Join existing schemes for commodities such as palm oil, cocoa and rubber (e.g., Rainforest Alliance) to learn best practices and design programs throughout your supply chain.
- Run site visits and consider using technologies to work with farmers to ensure incentives promote sustainable management of natural ecosystems.

Enablers

- Working with Tier 1 suppliers and brokers to map agricultural sourcing regions across the value chain.
- Partnering with groups like the CGF to support agricultural partner engagement and certification standards.

Case studies

- Nestlé lays out action plan to help end deforestation and restore forests in the cocoa supply chain
- Unilever uses satellite imagery to monitor for deforestation in palm oil sourcing regions

Controlled environment agriculture (CEA)

What this is...

Controlled Environment Agriculture (CEA) is a form of producing crops under closed loop indoor environments, sometimes in vertically stacked racks, also known as vertical farming. CEA has the potential to improve yields with completely managed conditions, protected from weather hazards and using fewer natural resources and chemicals. Moreover, the controlled environment opens the possibility for a wide variety of crops to be grown to order, potentially with higher quality and nutritional value.

Consumer companies investing in CEA can better manage supply chains, find new growth areas, meet sustainability goals and enable greater traceability.

Why it matters

Compared to traditional agriculture, CEA has the potential to be more sustainable by using less water. Some forms of CEA, like vertical farming, also have higher yields and use significantly less farmland, minimize the use of chemicals, limit the propensity of food-borne illness, reduce waste and better manage supply chains by growing closer to food processing plants and populations.

Challenges

Although CEA brings many environmental benefits, growing more crops year-round and using artificial lighting can be energy intensive. Moreover, there is a need for more diversity in the crops produced under these conditions (i.e., outside of commonly farmed leafy greens and herbs) to help make CEA more attractive. As renewable energy prices drop and relevant R&D expands, CEA has the potential to thrive.

Carbon impact

Investment

Complexity

Timescale

How to get started

- More can be done by investing in R&D, working with a combination of CEA seed breeders and farms to uncover ingredients that make it affordable.
- Companies can also balance risk and reward by participating in consortiums that bring many players in the food supply chain together.

Enablers

- Renewable energy, which can lower the cost of production.
- Strategic R&D that can uncover sustainable products that don't currently exist.

Case studies

- A new beer from Goose Island UK uses AeroFarms hydroponics to grow its hops

Precision agriculture

What this is...

Precision agriculture is the use of analytics to extract insights and make data-informed farming decisions. Data inputs can include drone imagery, satellite imagery, weather forecasts, farm operating data, market data and in-field sensors, to name a few. For example, drones or satellites that monitor crop stress over large areas and capture imagery from wavelengths outside the visible spectrum can help farmers identify crop health issues early, enabling preventative action. Crucially, turning data into actionable insights and delivering them in a user-friendly way is key to farmer adoption.

Why it matters

By answering questions such as when to plant, irrigate and harvest a crop, precision agriculture can help farmers improve productivity per acre by reducing waste and using inputs more efficiently.

Challenges

Precision agriculture's variable performance across different crop types and landscapes can lead to inaccurate farmer recommendations in terms of treating stress or when to harvest. Care must be taken to ensure data is of good quality and properly cleaned. Bespoke solutions are usually required for each farm's unique crop mix and soil types. As tech providers collect more data, we can expect more accurate plug-and-play solutions.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Understand the end-to-end food supply chain, especially key farm activities and post-harvest transfer to find best use cases for precision agriculture.
- Segment farmers and supply chains to ensure appropriate agtech solutions are integrated into the right supply chains.
- Leverage farm insights and partner with existing precision agtech solutions, such as satellite and imagery providers, and use them to pilot ideas that drive solutions.

Enablers

- Agtech solutions that bring the right technology and solutions providers together based on geography, scale and crop type.
- Identifying the regulatory or sustainability requirements to inform and drive necessary financing.

Case studies

- General Mills partners with Regrow Agriculture to monitor agriculture at scale
- Arable and Bayer partner to accelerate agriculture's digital transformation using field-level sensing and monitoring platform

Impact Area 2

Consumer Use

Decarbonizing consumer use spans the “downstream” use and post-use of goods and services, as well as consumer purchasing decisions. Scope 3 emissions—such as those from at-home refrigeration or the electricity used to power washing machines—can be difficult to quantify and address. However, approximately 20-22% of consumer goods manufacturers' and retailers' emissions can be of the scope 3 variety.[32]

Across research studies, consumers consistently express a desire to make sustainable choices, but it can be hard in real life. According to Accenture research, while 50% of consumers say they want to buy sustainably, only 25% actually do. Consumer companies have a huge opportunity to close this “say-do” gap by making sustainable choices visible and desirable, and making responsible product use enjoyable and convenient.

32. Average emissions from CDP data across a set of 10-20 representative CPG companies.

Carbon labeling

What this is...

Product carbon labels provide information to consumers on the end-to-end value-chain emissions associated with a particular product. The labels also can be a powerful tool to showcase the sustainability credentials of a particular product and can help consumers quantify the climate impact of their purchasing decisions.

Why it matters

Consumer attitudes are shifting; the Carbon Trust found that two-thirds of consumers support the idea of a recognizable carbon label to demonstrate that products have been made with a commitment to measuring and reducing their carbon footprint. If done right, carbon labels could enable easier comparison between products and allow consumers to phase out high-carbon choices from their lives.

Challenges

The complexity of carbon labeling lies in collecting and aggregating data from across owned and external operations—which may include thousands of suppliers—to provide a complete and transparent picture. Collecting, managing and stitching together this data landscape can be daunting but demonstrates why ecosystem collaboration is essential. It is not yet proven, however, that carbon labelling would change consumer behavior in the real world.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Companies should collaborate to understand if, and how, carbon labeling would influence consumers' real-world decisions. Taking lessons from nutrition labelling could be a good place to start.
- Standardization of consistent, simple, easy to understand labeling—which also calls for cross-industry collaboration.
- Manufacturers must gather and integrate granular primary data from the whole value chain across a highly diverse technology landscape. Companies should explore collaborative supplier data models to gain the emissions visibility necessary to ascertain product carbon footprints.
- As market "gatekeepers," retailers can incentivize their suppliers to develop, standardize and use carbon labels.
- Engage policymakers to introduce clear standards, incentives and regulations.

Enablers

- Technology such as lifecycle assessment tools, emissions factors data and collaborative data models.
- Collaborations with third-party partners such as the Carbon Trust, as well as auditing services.

Case studies

- Walmart launches 'Built for Better' to help consumers shop with purpose
- Quorn unveils carbon footprint labeling on product packaging
- My emissions product carbon labeling: The Consumer Goods Forum

Circular consumer models

What this is...

Designing products for a circular economy means avoiding waste and taking steps to regenerate natural systems. In the use phase of a product, the objective is not only to "close the loop," but also to create products that are affordable, easy to use and desirable.

Designers can minimize waste by eliminating unnecessary packaging or "dematerializing." They can design durable products, develop formulations from waste streams and create products that are easy for consumers to reuse, refill or recycle. Packaging should be designed for recovery, made of mono materials or easy to disassemble, and ideally using materials that don't degrade when recycled.

Why it matters

At the consumer use phase, businesses can explore revenue growth from brand differentiation and market share, price premiums, growth in alternative products and new business models such as subscription and second-use markets.

Challenges

In certain cases—and for specific circular models—more action, effort and behavior change is demanded of the consumer. This can often take a long time and must be considered alongside the intervention's appraisal and expenditure requirements. So, circular models must go through thorough assessments to conclude whether they are expected to be sustainable, as consumer participation or adoption is not guaranteed.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Ensure the business model and service design takes a user-first perspective—prioritize consumer testing, co-creation and prototyping to maximize adoption and compliance among consumers.
- Focus on service design and innovation, product design that incorporates repairability and modularity, and explore new revenue models like second-use markets.
- Collaborate with producers and manufacturers on standardized modular parts and remanufacturing machinery.
- Effective marketing and communication can help consumers become comfortable with new ways of consumption as they transition to circular products.

Enablers

- Collaboration with experts in and outside the industry.
- Consumer insight to understand evolving demands and how to drive behavior change.
- Working with reverse logistics partners to design for material recovery.

Case studies

- Dove launches its first refillable deodorant | Unilever
- Kellogg's launches beer made with rejected cornflakes - The Drinks Business

Refill models

What this is...

Extending the useful life of packaging, by refilling in-store or at home, is an emerging model within consumer goods—particularly in the household and personal-care categories. These solutions are an important first step for companies to move away from linear and carbon-intensive systems of "take, make, waste," and toward a circular economy.

There are several models that allow packaging to be reused and refilled—including in-store refills, at-home concentrates and pouches, and return and restock (the "milkman" model). Durable, beautiful packaging plays a valuable role in ensuring the product can be refilled many times and enhances the consumer experience.

Why it matters

According to the Ellen MacArthur Foundation, replacing 20% of global plastic packaging with reusable models presents a $10B opportunity for consumer industries.[33]

Models that extend the life of packaging can help accelerate companies' carbon agendas by avoiding emissions associated with the procurement of plastics and packaging, and by reducing downstream waste. Moreover, refill models respond to consumers' concerns around wasteful consumption, and may increase brand desirability and loyalty.

Challenges

Not all refill models reduce net carbon emissions. Sometimes, upstream carbon savings are cancelled out by downstream behavior. For example, if a durable container is used once or only a few times, the net impact may be negative or negligible. Companies should therefore conduct a complete lifecycle analysis of different refill models prior to implementation.

33. Ellen MacArthur Foundation, Plastics and the circular economy.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Collaborate with ecosystem partners to drive the new behaviors needed to encourage participation. This may include peers, vendors and suppliers (they can, for example, share cleaning facilities or standardize packaging for refills).
- Focus on service innovation, product design and consumer experiences that make refill models desirable and convenient. Find ways to make product use more appealing than "traditional" alternatives (for example, dry refills for refillable surface sprays save space in cupboards).
- Adopt a systems approach up and down the value chain, and leverage innovators to solve complex supply chain challenges.
- Ensure that refilling mechanisms are easy to use and widely available.

Enablers

- Working with low-carbon reverse logistics partners to ensure carbon savings generated are not offset by closing the circular loop.
- Collaborating with reusable packaging and circular service providers.

Case studies

- The Body Shop product refill stations
- Algramo refillable product stations
- Australasian recycling label program
- Unilever Reuse. Refill. Rethink.

Influencing consumer behavior

What this is...

Companies must make customers aware of sustainable options that are comparable on price, performance, quality, taste and convenience. Education on product use is critical—for example, how to use a laundry product to minimize water and energy use.

Retailers play a critical role in shaping sustainable choices and influencing consumer behavior. In physical stores, range and merchandising decisions can nudge consumers toward low-carbon products, and visual merchandising can provide product-use guidance. E-commerce offers greater opportunities to shift behaviors; carbon credentials can be displayed, sustainable options can be elevated in search rankings and shopping carts can be evaluated for carbon impact.

Why it matters

Product use and end-of-life accounts for 20-22% of overall CPG emissions.[34] Therefore, ensuring consumers choose sustainable options—and positively influencing how they use, reuse and dispose of or return products—holds significant potential for positive carbon impact and creating more sustainable consumer behaviors. If designed in the right way, new products and services can actually enrich the customer experience, drive demand and ensure long-term adoption.

Challenges

The "say-do" gap[35] between intent and action requires that marketers tap into both the consumer desire to be more sustainable as well as more traditional consumer needs, such as convenience or saving money. Activating demand for, and shaping the use of, lower-carbon products will be just as important as the products themselves.

34. Average emissions from CDP data across a set of 10-20 representative CPG companies
35. Accenture, Reality check: It's time to create sustainable options that are options for everyone, December 2021.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Understand how products fit in consumers' lives; people have habits that are hard to break, and new usage patterns must fit their lives.
- Choose the right adoption levers; sustainability, like value for money or convenience, can be an important consideration. Not every sustainable product needs to be marketed as "green."
- Marketing can help ease consumers into new patterns of consumption, such as the transition to circular products and product-as-a-service models, which require additional consumer action at the end-of-use phase.
- Map out required ecosystem collaboration with local municipalities, governments and others to create the required infrastructure to make consumer behavior feasible.

Enablers

- Education campaigns—by brands, retailers, governments, influencers and media.
- Collaboration across industries, such as utilities that help consumers save energy through smart-product usage.

Case studies

- Ariel consumer engagement campaign to decarbonize laundry | Procter & Gamble

Plastics and Packaging

Plastics and packaging can be key drivers of GHG emissions, especially where virgin plastics are used or where the packaging ends up in landfills (where it breaks down into micro-plastics), incineration centers or the ocean. Given 527 million FMCG products are sold daily,[36] this can constitute a significant portion of consumer companies' emissions, with analysis suggesting plastics and packaging can account for 12-16% of consumer companies' total emissions.[37]

There are actions that companies can take to reduce these emissions, including switching to more sustainable materials (e.g., recycled plastics/rPET, HDPE and novel bio-based materials like seaweed and mycelium); incorporating sustainable design principles (e.g., design for disassembly, reusable packaging or mono-material designs); and improving consistent labelling for consumers to easily distinguish recyclables from non-recyclables.

36. GlobalData.
37. Average emissions from Sustainability reports across four representative CPG companies.

Packaging material innovation

What this is...

Packaging material innovation has two threads:

1. Exploring sustainable material alternatives; for example, replace non-recyclable plastics with recyclable counterparts, use renewable feedstocks and bio-derived materials and increase post-consumer recycled plastic content in the packaging material.
2. Eliminating unnecessary packaging and reducing necessary packaging, and directly eliminating materials that aren't needed (including designing "packaging free" products). This includes rethinking and redesigning "necessary" packaging with material innovations that reduce the amount of material needed.

However, some of the best packaging innovations are the simplest, such as removing superfluous materials such as films, sleeves, tear-offs and other cosmetic options.

Why it matters

Substituting fossil-fuel-based materials with renewable and bio-derived materials—or elimination of excess or unnecessary packaging by rethinking how packaging is made and used—can reduce waste as well as protect and even enhance the consumer experience. This also can have positive knock-on effects. For example, creating a lightweight version can reduce the transportation and logistics footprint.

Challenges

Packaging material innovation sometimes requires redesign of the underlying product, which can necessitate significant capital expenditure. For example, moving from liquid to solid products in homecare means packaging of any type is no longer a strict requirement.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Work with suppliers to innovate on necessary packaging (such as edible, dissolvable and usable coatings on fresh products to extend shelf life and reduce wastage), or explore biobased or biodegradable versions of traditional plastic materials. Many suppliers are starting to offer more sustainable versions of their existing packaging products, such as Graphic Packaging's EnviroClip.
- Identify products that can be transitioned to plastic-free packaging. For example, replace Styrofoam with mycelium packaging, or replace rigid plastic with paperboard.
- For companies investing in their own in-house R&D innovation, remove unnecessary packaging such as wrappers on multi-buy products, including tear-offs and unnecessary plastic films.

Enablers

- Broader agreement between producers, retailers and policymakers on what packaging is acceptable and safe to remove.
- High availability of materials innovations from packaging suppliers that meet volume needs.

Case studies

- Nestle remove bottle cap tear-offs and unnecessary lids
- Walmart introduces bread bag that saves 5m pounds of packaging annually
- Carlsberg launches Snap Pack glue technology to reduce multi-can packaging waste

Recycled plastic integration, sourcing / procurement

What this is...

Recycled plastic integration involves using recycled plastics in place of or mixed with virgin (new) plastics across the supply chain. However, producers may benefit from making an informed choice about ideal applications. For example, B2B packaging makes up 7-10% of the total plastic packaging market[38] and is less sensitive to certain materials requirements than food-grade properties or appearance—hence the use of recycled plastics may be easier to implement in this area.

That said, consumer behavior studies indicate that recycled plastics are appealing, and there is a halo effect associated with purchasing products that make their recycled content known.

Why it matters

By using recycled plastic content in packaging, emissions and overall wastage are reduced by avoiding the need to produce fossil-fuel-based virgin plastics and incorporating post-consumer materials back into the supply chain.

Challenges

Integrating recycled plastics requires changes to the packaging supply chain. Recycled plastics have different properties to virgin plastics, so packaging designers need to take account of variations such as coloration and material strength. Producers need to work closely with packaging suppliers to secure recycled materials in sufficient quantities and at the right cost, as post-consumer recycled plastics can be more expensive than virgin plastic.

38. The Consumer Goods Forum's Plastic Waste Coalition of Action, The Golden Design Rules, March 2022.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Engage with packaging and materials suppliers on options for adopting recycled plastics packaging.
- Assess the financial implications of incorporating recycled or PCR plastics, keeping consumer sentiment and regulatory compliance in mind.

Enablers

- New recycling technologies that create high-quality post-consumer recycled (PCR) plastics (e.g., Purecycle).
- Legislation that permits use of food-safe recycled plastics.
- Supply chain capacity to offer plastics with sufficient PCR content.

Case studies

- Unilever: Chilled retail tray that looks no different to consumers but is made of 100% recycled plastic
- Procter & Gamble signs deal for recycled plastic supply

Recycling, reuse and takeback programs

What this is...

Some companies are creating reuse and recycling programs. For example, Best Buy has an in-store e-waste recycling program and cosmetics brand Kiehl's offers a complimentary gift for every ten full-sized Kiehl's containers returned. Reusable packaging is defined as a vessel that has a use lifespan of ten times or more. It can be collected by producers or their supply chain partners, then cleaned, refilled and resold.

Companies should work with their suppliers to ensure packaging is repurposed back into their supply chains, maximizing closed-loop circularity. Companies should also prepare for regulatory actions that could require them to implement takeback programs.

Why it matters

The current take-make-waste model is unsustainable, energy intensive and takes up critical space in landfills. Recycling promotes environmental sustainability by removing raw material input and redirecting waste output in the economic system. Recycling also saves energy and non-renewable natural resources, and increases economic security by tapping a domestic source of materials.

Challenges

Improper recycling "hygiene" can compromise programs and incur additional costs. For example, non-recyclable materials such as liquids or plastic bags can contaminate and compromise recycling materials and machinery. Education on what can and cannot be recycled is therefore key. Another challenge is ensuring that products are designed for easy consumer disassembly so that individual materials can be separated and recycled in their correct streams.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Offer clear, on-pack labeling with recycling instructions for consumers.
- Design packaging supply chain to adopt reused and recycled packaging.
- Pilot recycling collection stations for the most waste-generating packaging in the largest opportunity locations.
- Advocate for public infrastructure required for more specialized collection and for new materials.
- Select products that might be suitable for reusable formats (such as higher-value liquids).

Enablers

- Regulation and legislation for recycling systems (such as onsite collection of separated recycling).
- Transparent, accurate reporting and monitoring of recycling systems.
- Cleaning and refilling capabilities embedded in the manufacturing process.

Case studies

- Nestlé Philippines plastic collection points
- Ecolab and Loop partner with retailers for reusable packaging collection
- Coca-Cola aims for 25% of all beverages to be sold in refillable/returnable formats by 2030

Biodegradable and compostable packaging

What this is...

Biodegradable packaging is defined as any packaging that will disintegrate in the presence of microorganisms under favorable environmental conditions (factors include light, moisture, temperature and oxygen). Compostable plastics are a subset of biodegradable plastics that are made up of organic matter and can decompose under home or industrial composting conditions. This includes materials like beeswax, seaweed, plant- or animal-derived edible coatings, as well as cellulose, paper and other organic matter. For packaging that can't be eliminated, improving biodegradability is another appealing emissions- and waste-reduction option.

Why it matters

Utilizing and incorporating biodegradable packaging has the benefit of eliminating long-term waste from non-degradable materials, provided they are biodegraded in the right facilities.

Challenges

Currently, the material properties of biodegradable packaging are more restrictive than conventional packaging, requiring producers to be thoughtful and selective with where the material is applied. Not all "biodegradable" packaging can be biodegraded by consumers, however, which could create skepticism for brands using these particular materials. Additionally, industrial composting infrastructure is still maturing.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Identify packaging that could be easily composted or biodegraded, such as packaging for produce bags and fresh foods.
- Work with packaging partners to identify and implement biodegradable packaging solutions, and ensure packaging has clear disposal instructions.
- Ensure biodegradable packaging complies with ASTM/ISO testing protocols for home compost or industrial compost.

Enablers

- Products suitable for biodegradable packaging.
- Suppliers and partners offering reusable or biodegradable packaging.
- Industrial composting infrastructure to biodegrade bioplastics effectively.
- Guidance and standards around what constitutes biodegradable, compostable or decomposable.

Case studies

- Biopak launches '1m less plastic straws' campaign with the Coca-Cola Company

Transportation and Logistics

Transportation and Logistics can account for approximately 10-11.5% of a consumer company's overall greenhouse gas emissions.[39]

There are several ways to reduce carbon emissions within transportation and logistics. For example, shortening supply chains by manufacturing products closer to where the products will be used can reduce distances that products need to be transported. Transportation efficiencies can be improved by reducing the number of trips that vehicles make with empty or partially empty cargo hulls. Emissions also can be reduced by choosing more efficient forms of transportation, for example, by shipping via train rather than by air. Finally, transportation can be made less polluting by choosing lower-carbon energy sources. Examples of this include renewable fuels and fleet electrification.

39. Average emissions from CDP data across a set of 10-20 representative CPG companies.

Fleet electrification

What this is...

Fleet electrification involves the transition of fleet vehicles toward zero-emission electric vehicles (EV) and associated fleet management solutions. While EVs are currently more expensive than traditional internal combustion engines (ICE), the EV industry has seen tremendous growth and electric vehicles have already demonstrated annual cost savings for early adopters.[40] This is true, in part, because electricity is a less costly energy source for transportation compared to fuels. Electric vehicles also have fewer moving drivetrain parts, which contributes to less mechanical wear and lower operating and maintenance costs when compared to equivalent ICE vehicles.

Why it matters

Globally, transportation accounts for approximately 14% of global greenhouse gas emissions.[41] These emissions are the result of burning fossil fuels—primarily gasoline and diesel fuels—in vehicles equipped with internal combustion engines.

Challenges

Challenges include infrastructure constraints such as the distribution and availability of chargers. EVs also require a new IT ecosystem that enables their operations and is seamlessly integrated within the existing IT landscape.

40. Fleet Europe, Global Fleet Survey 2021: EVs are top of mind for global fleet managers, October 2021.
41. World Resources Institute, Everything you need to know about the fastest-growing source of global emissions: transport, October 2019.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Identify all forms of transportation used throughout a company's value chain. Build use cases where electric vehicles make economic and operational sense.
- Partner with industry experts in fleet electrification to ensure that the transition is not disruptive to business performance.
- Plan ahead. Installing EV chargers requires engineering, permitting and coordination with electric utilities. Electric vehicles and chargers are also subject to long lead times.

Enablers

- Fleet telemetric data to identify where electrification makes sense.
- Governmental rebates and incentives to offset CAPEX investments.
- Electric utilities with fleet electrification programs to help drive the transition.

Case studies

- Müller to grow its UK milk delivery EV fleet to over 500 by adding 160 additional vehicles
- AB InBev rolls out 200 electric trucks in Bavaria

Sustainable last-mile delivery

What this is...

Sustainable “last mile” refers to reducing emissions in the final stage of delivery with alternative points of origin and destination, modes of transport and business models.

Alternative points of origin and destination involves rethinking the endpoints of the last mile. Fulfillment centers can be placed closer to end customers and destinations can be changed (such as utilizing in-store locations, collection hubs and lockers). Alternative modes of transportation include bicycles, personal transport and electric delivery vehicles.

New business-model opportunities include refill and takeback programs, which can be combined with sustainable delivery methods and local delivery solutions (such as self-employment delivery networks).

Why it matters

The last mile accounts for 53% of all shipping costs[42] and is expected to be responsible for a 32% increase in emissions[43] from urban delivery traffic by 2030, according to the World Economic Forum.

Challenges

Customer expectations, speed of delivery and delivery costs must be considered when designing last-mile delivery programs.

42. Insider Intelligence, The challenges of last mile delivery logistics and the tech solutions cutting costs in the final mile, April 2022.
43. World Economic Forum, The future of the last-mile ecosystem, January 2020.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Offer customers alternative delivery destinations such as in-store, lockers and collection hubs to better batch last-mile deliveries.
- Work with local delivery providers that use carbon-free delivery methods.
- Move fulfilment centers closer to customers or use local retail locations to supplement the fulfilment footprint.

Enablers

- Control over last-mile planning, either via contract flexibility with delivery partners or in-house logistics.
- Legislation in key locations that permits alternative urban delivery methods such as self-employment networks.

Case studies

- IKEA to roll out EV delivery for all in-home furniture orders by 2025
- Best Buy local fulfilment warehouses

Low-emissions alternative fuels

What this is...

Low-emission alternative fuels (also called low-carbon fuels) refer mostly to hydrogen, biofuels and synthetic fuels. Hydrogen powers fuel-cell electric vehicles (FCEV), for which water vapor is the only tailpipe emission. Hydrogen is commonly referred to as being either "green," where it is produced by splitting water into hydrogen and oxygen using renewable electricity, or "blue," where natural gas is split into hydrogen and CO^2. The resulting CO^2 is then captured and stored or reused in industry. However, hydrogen is less efficient than batteries for storing energy, with an overall efficiency of 22% compared to 73% for battery EVs.[44]

Why it matters

Chemically, biofuels are like traditional fossil fuels. However, these can produce fewer net-carbon emissions because they draw carbon out of the atmosphere, such as from photosynthesis in plants (biofuels) and, potentially, direct air capture for synthetic fuels. Low-carbon fuels have some operational advantages over electric vehicles. The most significant advantage is fast refueling, which can make alternative fuels more suitable for vehicles that must remain operational throughout the day.

Challenges

Although biofuels generally work with the existing fossil-fuel infrastructure and vehicles, adoption is driven by the availability of hydrogen manufacturing and refueling stations, which is presently insufficient in most locations. Careful consideration also must be taken for potential land and water use disbenefits[45] caused by a diversion of crops typically used for human and animal feed to biofuels.

44. Forbes, Why are we still talking about hydrogen?, February 2021.
45. United States Environmental Protection Agency, Economics of biofuels.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Jointly invest in promising technologies like biofuel, hydrogen infrastructure and FCEVs alongside industry peers or distributors.
- Procure biofuel for use in existing internal combustion engine vehicles—currently, synthetic fuels are prohibitively expensive for 100% adoption, but can be blended with other fuels such as biofuel and fossil fuels to reduce overall carbon impact.

Enablers

- Relationships with fleet carriers and third-party logistics players to facilitate collaboration on low-carbon transportation.
- Relationships with biofuel producers to help scale procurement of biofuel.

Case studies

- JCB adds Toyota FCEV with 400-mile range to its fleet
- Glenfiddich converts whisky waste into biogas for trucks
- Royal Mail adds 29 biogas HGVs to delivery fleet

Sustainable fleet management and efficient trucks

What this is...

Sustainable fleet management includes the efficient operations of corporate fleets in order to reduce costs and greenhouse gas emissions. Efficient operations include optimizing material and product flows, purchasing right-sized vehicles, buying fuel-efficient vehicles, combining trips, reducing "empty" trips, shortening trips and implementing one or more mechanical efficiency upgrades. These can include low-rolling resistance tires, maintaining tires, reducing idling, adding devices to reduce aerodynamic drag, maintaining vehicles, limiting driving speeds and using adaptive or predictive cruise control.

Why it matters

Trucking produces the most greenhouse gas emissions within the freight industry, with road freight accounting for 29% of global transport sector emissions.[46]

Challenges

Challenges to sustainable management include lack of human resources and dedicated operating capital to implement and manage the sustainable fleet-management program.

46. International Energy Agency, Transport sector CO^2 emissions by mode in the sustainable development scenario, 2000-2030, January 2022.

Carbon impact

Investment

Complexity

Timescale

How to get started

- Identify core product lines and locations, then map out supply chain transportation paths to identify inefficiencies.
- Prioritize high-cost and high-emission processes to prioritize fleet-management practices.
- For US-based operations, consider joining the EPA SmartWay® program.
- Switch transportation methods to low-emission alternatives, such as rail in place of trucks.

Enablers

- Strategic partnerships with logistics providers with ambitious carbon-reduction targets.
- Ecosystem partners with experience in developing end-to-end logistics optimization roadmaps.

Case studies

- P&G x Dow Chemical route optimization
- US EPA Smartway

Reverse logistics

What this is...

Reverse logistics is when goods are sent back up the supply chain from the consumer, such as for a return, repair or as part of a circularity program. With takeback schemes, companies can recover products and turn them into new ones.

Companies must choose whether to collect products from consumers themselves or via partners. In most cases, reverse logistics will be partially outsourced. Customer returns can be avoided by ensuring that products have clear descriptions and that no damaged products are delivered. Additionally, over-purchasing by consumers should be discouraged because adding returns to the product lifecycle creates additional emissions.

Why it matters

Recovering and reusing products can be cheaper than manufacturing new ones and can support waste and emissions reductions as part of a closed-loop supply chain. Increasingly, companies are becoming legally required to offer product repairs and takeback schemes, especially in the categories of electronics, appliances and packaging.

Challenges

On occasion, the carbon savings generated from bringing the product back into the value chain can be outweighed by the emissions created from the processes needed to recover the product, making the net impact negligible or even negative. It is therefore important for companies to conduct materiality assessments to confirm the viability of product recovery and ensure that the overall impact is net positive.

Carbon impact

Investment

Complexity

Timescale

> Interventions

How to get started

- Designate local collection points, such as in-store drop-offs. Alternatively, provide consumers with pre-paid postage labels for low-carbon carriers wherever returns may be necessary– inclusive of exchanges, refunds, repairs, refills and end-of-life takeback programs that help moderate emissions.
- Set up a reverse-flow recovery system that can sort products or containers for the next stage in their lifecycle. For example, a system should be able to decide efficiently if it can be resold as-is, needs repair or can be recycled.

Enablers

- Strong relationships with logistics partners to bring products back into the value chain; efficient reverse logistics relies on collaboration.
- Market demand for products and materials recovered into the value chain.

Case studies

- IKEA buyback & resell
- Patagonia take-back program
- Sainsbury's flexible plastic collection and recycling scheme rolls out to over 500 stores

Supplier Enablement

Scope 3 emissions are those that come from activities outside of a company's direct control. These can either be upstream (e.g., sourcing of ingredients) or downstream (e.g., home refrigeration of products by consumers). In total, these emissions can constitute more than 90% of a consumer company's carbon footprint.[47]

Supplier enablement considers the upstream contribution to a company's scope 3 emissions, particularly those associated with purchased goods and services. These interventions highlight ways for consumer industries to "enable" suppliers to address their own emissions—hence "supplier enablement."

Working closely with suppliers is one way for brands and retailers to identify what suppliers are doing right, as well as highlight areas for improvement that can help move the needle on decarbonization. Consequently, the first step toward achieving deep supplier emissions reductions is to understand the source and impact of the emissions across a company's supplier network. With hotspots identified, companies can work collaboratively with suppliers to set targets; bring together the expertise, tools and other resources needed to accelerate net-zero transformations; and unlock funding for transformative initiatives. Consumer industries cannot achieve net zero without suppliers driving emissions reductions through efficiency improvements, renewable alternatives and more.

47. CDP, Fast moving consumers, February 2019.

Collaborative supplier data model

What this is...

As mentioned above, the majority of many consumer companies' greenhouse gas emissions are driven by scope 3 value-chain emissions. Addressing these emissions requires extensive collaboration with suppliers, meaning companies need to drive ecosystem-wide changes to achieve deep decarbonization and net zero. A collaborative supplier data model brings together suppliers and partners through industry coalitions to collect and aggregate emissions data, which provides a more accurate and complete picture of product carbon footprints.

Why it matters

Consumer companies can benefit from improved visibility of total supplier emissions, in terms of attracting more innovative partners and suppliers, as well as sustainability-minded consumers.

Challenges

One challenge to overcome is incentivizing suppliers to set targets and share emissions data. This might be solved via commercial agreements that set clear guarantees for the provision of data. For example, purchase orders for suppliers can include requests for input into a supplier data model. Finally, companies can support programs that establish simple, clear and affordable sector data-sharing platforms with suppliers.

Investment

Complexity

Timescale

How to get started

- Segment suppliers to understand the different support needed for each group.
- Confirm that reporting requirements are made simple and understandable for smaller suppliers, yet aspirational enough to drive alignment. It is important to begin engaging suppliers early and create a compelling incentive structure.
- Confirm any data collected is accurate (e.g., actual emissions at source/origin vs. product category estimates only), standardized and compatible with other inputs, including reporting functionality with financial or product management systems.
- Design a decentralized data-sharing model, with data ownership remaining in the hands of each contributor; explore data elements that could be shared in a pre-competitive manner.

Enablers

- Visibility and standardized reporting of supplier emissions and the ability to clean and share data.
- An emerging tech ecosystem with large ERPs , such as Microsoft, SAP or Salesforce developing tools.

Case studies

- Accenture Sustainability Accelerator
- Pact Group – providing our customers with sustainability data

Supplier engagement, education and training

What this is...

Engaging and enabling suppliers may come in the form of training and education (such as upskilling around specific ESG topics), or sharing resources (like IKEA's renewable program to lend expertise to suppliers that have never purchased renewables), and peer best practices and insights. This process can help build consensus on common terminology and approaches on reducing emissions. However, the overarching goal is to ensure suppliers have their own roadmaps and are sufficiently equipped to drive the requisite reductions to reach a zero-carbon future.

Why it matters

Given the scale of the "scope 3 challenge," there is industry-wide recognition that companies cannot reach net zero alone. Effectively pursuing sustainability requires engaging and enabling suppliers so they can build and improve their own decarbonization programs.

Challenges

There is an extremely diverse range of consumer industry suppliers in terms of size, sustainability maturity and level of ambition. Some may already have the capabilities and funding necessary to reduce emissions and accelerate the journey toward lower carbon operations. Others, however, may be at a lower maturity level. Therefore, approaches must be tailored to different supplier segments.

Investment

Complexity

Timescale

How to get started

- Companies should seek a granular understanding of their supplier network and tiering/profiles (e.g., maturity level, starting point and available funding), as well as common supplier challenges that are preventing progress.
- Deploy surveys or questionnaires to collect information (on targets, in-flight initiatives, challenges and more) while investing in platforms to onboard and upskill suppliers. With this improved understanding, companies can move to greater alignment and collaboration with suppliers to work toward mutual goals.

Enablers

- Learning and development platforms/capabilities (such as peer sharing and tailored webinars) that facilitate hands-on engagement with suppliers instead of annual reporting requirements.
- Sharing pre-competitive data (see Collaborative Supplier Data Model).

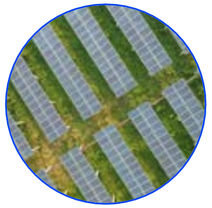
Case studies

- Nestlé shared value program
- Supplier leadership on climate transition collaborative
- Unilever – working with suppliers
- Walmart Gigaton – Giga Guru support program

Green financing

What this is...

Green financing involves increasing access to capital to achieve sustainability goals, typically in one of two ways. For example, consumer companies can provide suppliers with access to finance via direct transactions (i.e., providing capital to a supplier in exchange for equity, debt or materials) for green initiatives. Indirect financing, by contrast, is a partnership that provides suppliers better access to finance from the wider market for ESG projects. An example is an advance market commitment—a legal agreement to fulfill a purchase if a sustainability KPI is reached. This can lower borrowing costs or increase the value of the supplier's business.



Why it matters

In addition to financial institutions and banks, consumer companies can help enable suppliers to finance their transition toward low- and zero-carbon production. By closing the CAPEX gaps needed to kickstart carbon reduction interventions, suppliers can accelerate their progress—a necessary step for consumer companies' net-zero journeys given that 90% of their emissions can lie outside their own operations.[48]

Challenges

Long lead times for decarbonization projects can complicate financing from traditional avenues. Common appraisal methods, including payback period and net present value, will often result in these projects appearing less attractive than alternatives. Moreover, direct financing of companies' suppliers can present ROI issues due to limited leverage. A potential solution is enabling collaboration and better financing terms through consortiums and similar mechanisms.

48. CDP, Fast moving consumers, February 2019.

Investment

Complexity

Timescale

How to get started

- Prioritize areas where investments and innovative solutions would make a difference.
- Understand investment criteria and ESG screening approaches.
- Explore or establish a green bond and set an investment strategy.

Enablers

- Visibility of scope 3 emissions to understand pain points across the value chain.
- Relationships with banks, certifiers and other bodies to issue innovative finance products, including green bonds and loans.

Case studies

- Mondelez issues CPG industry's largest green bond ever
- Coca Cola green bond issuance in Latin America

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