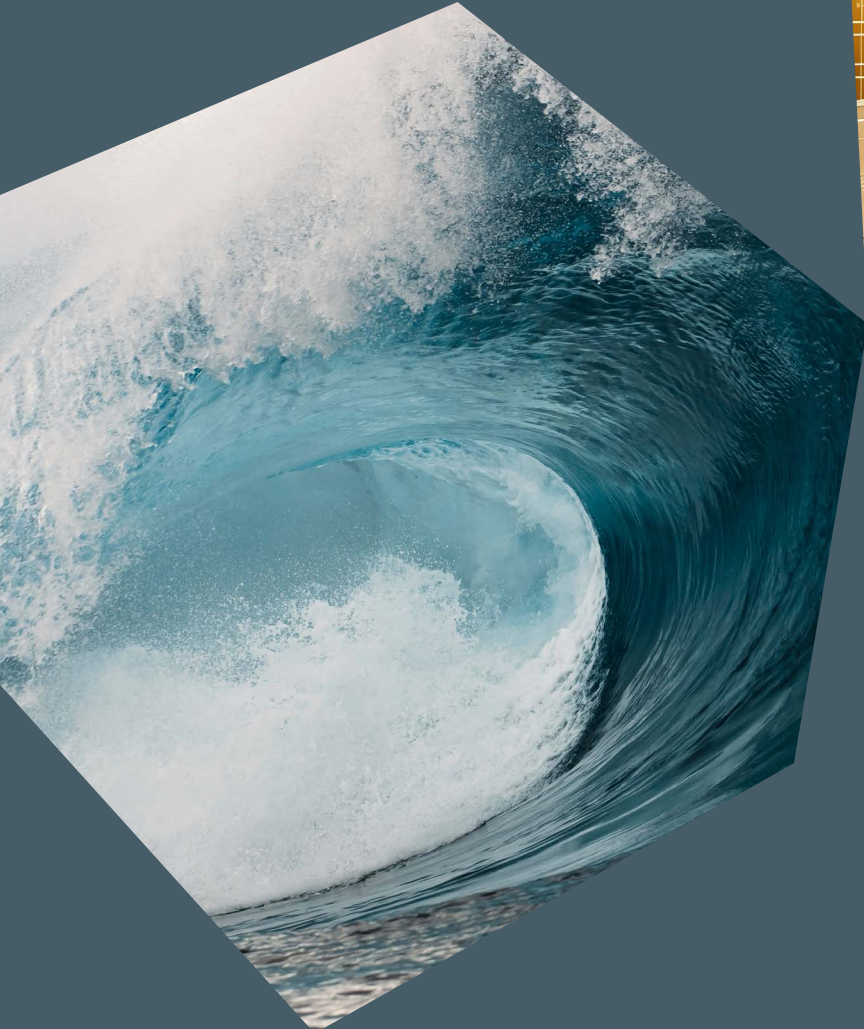


Catching *the wave*

→ *Seizing the opportunities of the
sustainability transformation*



World Business
Council
for Sustainable
Development

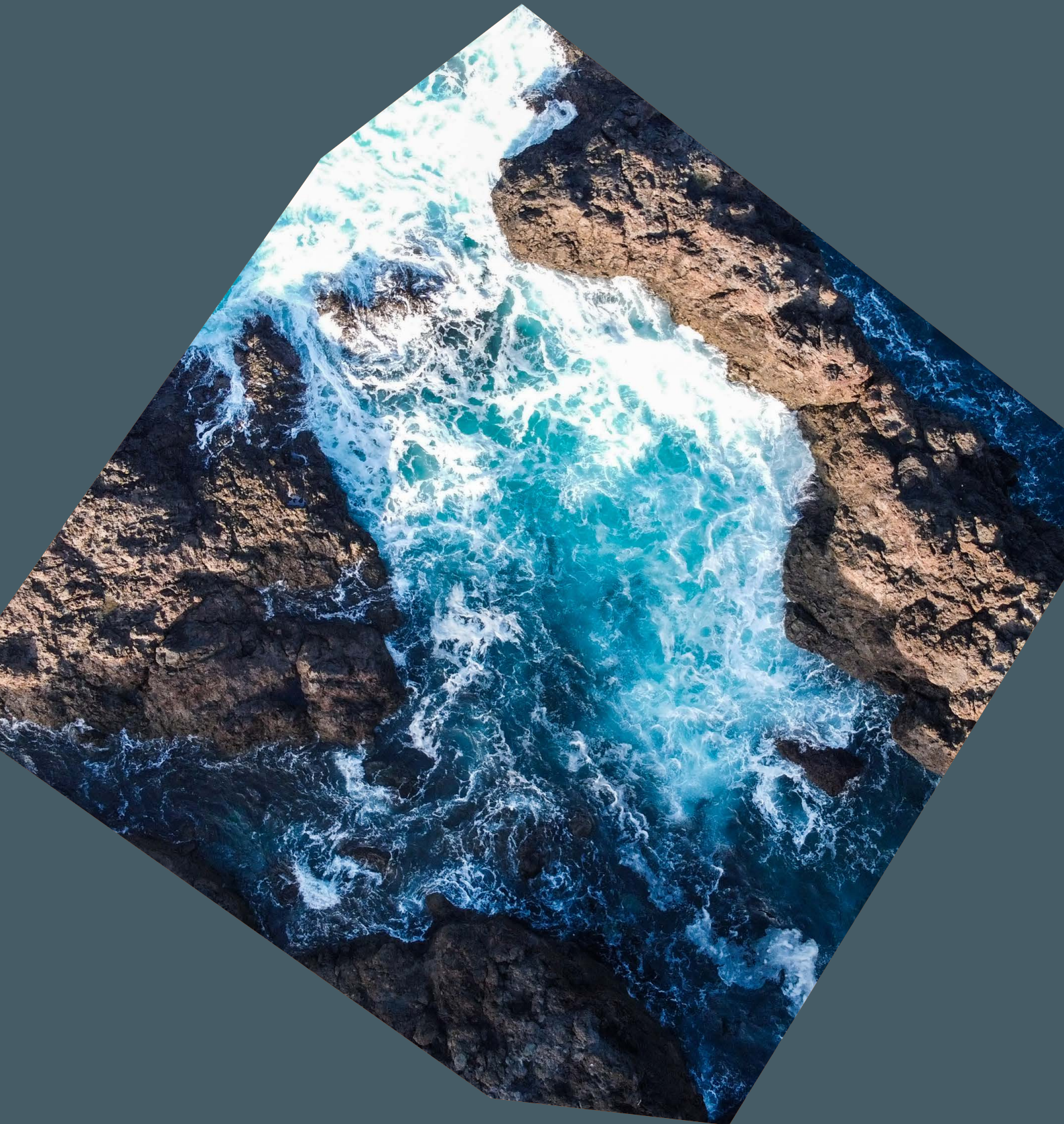


ERM
SUSTAINABILITY
INSTITUTE

Contents

Foreword	03	03. Waves of disruption – <i>Thriving during transformation</i>	28
Executive Summary	05	3.1 System transformations trigger waves of disruption and opportunity	29
Introduction: <i>Facing the ambition – action gap</i>	11	3.2 We have been here before: The digital revolution	31
01. Navigating multiple truths – <i>Being at ease with ambiguity</i>	14	3.3 Here we are again: The sustainability transformation	32
1.1 Truth pair 1: Ecosystem stress vs possible reversal	16	3.4 Lessons from the winners of the digital revolution	33
1.2 Truth pair 2: Polycrisis vs emerging solutions	18	04. Seizing opportunity – <i>Navigating transformation successfully</i>	34
1.3 Truth pair 3: Complacency trap vs sustainability action premium	20	4.1 FACE IT: Leadership & Governance	38
1.4 Truth pair 4: Innovation hurdle vs open culture imperative	22	4.2 MAP IT: Strategy & Planning	41
02. Running into roadblocks – <i>What holds companies back?</i>	23	4.3 DO IT: Progress & Commercialization	43
2.1 Barrier 1: Focus on short-term performance	25	4.4 SHAPE IT: Networks & Engagement	46
2.2 Barrier 2: Persistent “sustainability-as-a-cost” mindset	26	4.5 CONNECT IT: Continuity & Tenacity	49
2.3 Barrier 3: Insufficient sustainability-related skills and awareness	27	05. In the field – <i>User guide for applying the framework</i>	51
		5.1 Option 1: Getting the lay of the land	53
		5.2 Option 2: Building Capacity	54
		5.3 Option 3: Joining Forces	55
		Appendix	56

Foreword



Foreword

“Change is faster than ever, but will never again be this slow.”

Justin Trudeau, Prime Minister of Canada

The world is changing – environmentally, socially, economically. The only uncertainties are the pace and direction of that change, and whether societies will find pathways to long-term sustainability and prosperity or instead settle for increasing volatility and accelerating decline.

***Catching the Wave* takes a practical look at how companies can best navigate the messy but unprecedented shift toward sustainability that is taking place throughout the business community and its value chains. It draws on the real perspectives of business and sustainability executives in leading global businesses across all sectors and geographies, who are right now working to “catch the wave” of sustainability transformation and safeguard their companies’ future success.**

Transitions are very rarely smooth, and the sustainability transformation is perhaps the most difficult that global societies have faced. Seemingly contradictory truths and deep uncertainties must be factored into short-, medium-, and long-term plans. Like previous transitions – the ongoing digital transformation is a good example – significant value is at risk, and enormous value can be created.

Catching the Wave offers indispensable, experience-based guidance for any business executive responsible for navigating our changing world successfully. It lays out the multiple truths that companies must contend with, the barriers that hold companies back from transitioning their business models and capitalizing on the opportunities of a sustainable future, and the lessons that can be drawn from past disruptions and that can help boards to assess current business risks and opportunities more accurately.

For companies that are committed to addressing the challenges we face and seizing the opportunities of the sustainability transformation, the guidance in this report synthesizes the insights, successes, and observations of business and sustainability leaders into five areas of focus: *Leadership & Governance; Strategy & Planning; Progress & Commercialization; Networks & Engagement; and Continuity & Tenacity*. Within each, internal changemakers are provided with a set of immediately implementable and practical actions that can help identify and overcome barriers to change, expose material risks, capture new value, and future-proof the enterprise.

Catching the Wave is set against the context of WBCSD’s Vision 2050: Time to Transform, which offers a shared vision of a world in which over 9 billion can live well within planetary boundaries by 2050. While Vision 2050 offers a comprehensive framework for business action to bring about a sustainable world in the future, *Catching the Wave* identifies the immediate steps that companies can take to set themselves up for meeting their medium- and long-term sustainability ambitions and commitments. It also complements and underpins the wider WBCSD CEO Guide to Corporate Performance and Accountability launched at COP28 that lays out a pathway to overcoming the misalignment of incentives and decision-useful information to align investor valuation and capital allocation with corporate sustainability performance.

We would like to deeply thank the business and sustainability leaders who gave their time and shared their insights to help produce this guidance. We hope *Catching the Wave* offers you useful and practical internal guidance on how to take steps toward strengthening your company’s ability to successfully navigate, perform, and seize the opportunities of the sustainability transformation. This is a living resource: the guidance will deepen and grow with the experiences of those who use it – we welcome all feedback to support its future iterations.



Dominic Waughray
*Executive Vice
President at WBCSD*



Sabine Hoefnagel
*Global Leader of
Sustainability and
Risk at ERM*

Executive *Summary*



Executive Summary

The sustainability transformation is gathering steam. Many multinational companies recognize the increasing strategic importance of sustainability and are proactively assessing operational risks and seizing commercial opportunities. Long-term ambitions to reach net zero, become nature-positive, and improve social outcomes have been set out. However, the short-term actions being taken to achieve long-term sustainability goals often fall short, and companies struggle to imagine the new markets the transformation will bring. Why?

WBCSD and ERM undertook a dialogue to discover what is holding companies back and the practical steps that can be taken to drive immediate, decisive action aligned with long-term sustainability ambition and market success. This involved a series of frank, in-depth interviews and active engagements with over 130 global business executives and sustainability experts about what needs to be unlocked within business operations and in the mindsets of senior leaders to drive change. In *Catching the Wave*, we lay out our findings and present a set of actions that can help companies both successfully navigate this period of sustainability transformation and accelerate the rate at which it unfolds.



Key messages

1. Companies must work with multiple truths to navigate the sustainability transformation successfully. Yes, the threat of social and environmental crises amplifying into one intertwined polycrisis is real, but solutions are charging ahead exponentially. Yes, it is tempting for companies to downplay the scale of the sustainability shift, but those that recognize and embrace it are poised to win. Companies need to weigh simultaneous truths to fully understand the situation and develop a successful approach to seizing the opportunities (and managing the risks) of the sustainability transformation.
2. Companies must be honest about internal barriers to successfully integrating sustainability, focusing on three in particular: short-term focus, sustainability-as-a-cost mindset, and sustainability skills and awareness gaps. Furthermore, existing external barriers should not be used as excuses for inaction. There is considerable commercial value to gain when companies face the organization's internal hurdles: doing so makes companies more effective in pushing and seeking collaborations to lift the most persistent external barriers.
3. Companies should neither underestimate nor get overwhelmed by the waves of disruption the sustainability shift brings now or in the future. Systemic transformations are tough to navigate but follow similar patterns, and most organizations have been through at least one before. The ongoing digital transformation is a good example: it has radically altered business – operations, markets, business models – and society. The companies and sectors that embraced the digital revolution and dared to experiment and radically innovate came out stronger. Many that played it safe languished or disappeared. The sustainability transformation will not be any kinder to reluctant movers.
4. All companies are learning on the go with the sustainability transformation; no off-the-shelf blueprint for action exists. However, by looking closely at companies that have partially integrated sustainability successfully and how companies have navigated systemic upheavals in the past, the outlines of an approach to unlock action and commercial value emerge. Based on in-depth interviews and extensive desk research, the sustainability transformation framework presented in *Catching the Wave* (see Chapter 4) reflects the best available practical knowledge and experiences about what has worked for companies in the advanced stages of integrating sustainability and explains how to translate this into commercial success, operational efficiency, and resilience.
5. In conversations with companies that tested the framework during its development, we learned that our sustainability transformation framework offers various entry points and works across whole companies and value chains. It can, among other things, help solve thorny issues that arise during strategy development, guide integration, product, and marketing decisions, help companies spot opportunities to manage people better, and improve collaboration with suppliers and peers.

Navigating multiple truths - *Being at ease with ambiguity*

To get into the right mindset to successfully transition from today's reality to tomorrow's, business leaders must learn to navigate multiple, simultaneous truths.

01

→ **The best available science states we are running out of time to mitigate the worst effects of climate change and nature loss**

→ **We underestimate how quickly climate and natural systems can bounce back if we give them the opportunity**

02

→ **The threat of social and economic consequences merging into a polycrisis is real and increasing**

→ **Many technological and commercial solutions to these threats are charging ahead exponentially**

03

→ **Underestimating accelerating commercial risk and opportunity, many companies delay urgent action**

→ **Companies that imagine and create business models for an altered future are most likely to thrive**

04

→ **Many corporate leaders struggle to foster a culture of innovation and experimentation**

→ **Leaders that incentivize creativity and exploration lay the foundations for breakthrough success**

Running into roadblocks - *What holds companies back?*

Gaining a deep understanding of the barriers holding companies back and learning what it would take to overcome them was the first thing we explored in our research. Although many interviewees see systemic barriers as a drag on their company's sustainability progress, the majority point to organizational barriers as the more persistent challenge. The various internal barriers mentioned were connected by a single theme: the difficulty of fully digesting that the world is heading into a tumultuous period of transformational change. Three barriers stood out.

Barrier 1:

Focus on short-term performance

→ Most corporate incentives are aligned with short-term profits, constraining the business case for medium-term transformation as well as sufficient investment in long-term resilience. The incomplete integration of sustainability risks and externalized costs in lending decisions leads to misallocated capital and the underfunding of viable sustainability investments.

Barrier 2:

Persistent "sustainability-as-a-cost" mindset

→ Many corporate leaders struggle to imagine how their companies can realize the sustainability transformation's commercial potential and use it for competitive differentiation and advantage.

Barrier 3:

Insufficient sustainability-related skills and awareness

→ Sustainability's operationalization is slowed by a shortage of staff at all levels who have the right skills and awareness, including most C-suites and boards.

Waves of disruption - *Thriving during transformation*

Why do system transformations feel so overwhelming, especially for incumbent companies? And what lessons can companies draw from the digital revolution? System transformations happen when major socio-economic trends and breakthrough innovations amplify each other, triggering waves of disruption. As societies and companies digest these changes, many parts of the status quo are uprooted, and new technologies, policies, regulations, and supply chain shifts appear along with socio-economic upheaval and the creation of new markets.

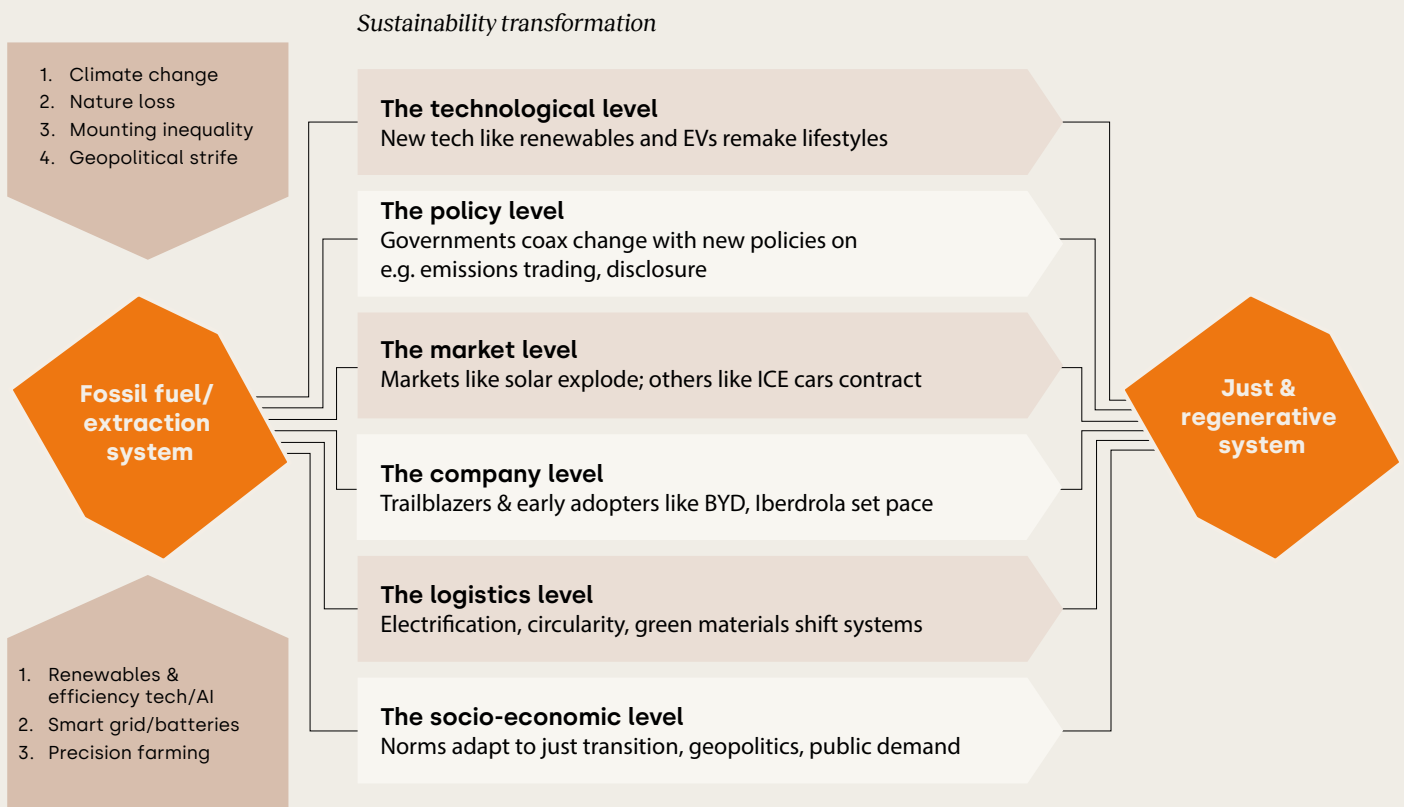
We have been here before: the digital revolution

Today, we can barely remember how the world functioned before the digital transformation. It upended and is still upending previously dominant business models. What set the winners apart was not superior knowledge but adaptation and action. They understood that imagining and trying to seize new commercial opportunities was their best defense.

Here we are again: the sustainability transformation

The sustainability transformation is already significantly affecting operations, resources, supply chains, and consumer preferences. Many sustainability-linked markets will soon pass the trillion-dollar mark in value, and increasing pressure from investors, stakeholders, and regulators will keep creating fresh commercial opportunities. However, like with the digital revolution, it is up to companies to seize them.

Next up, sustainability



Seizing opportunity - Navigating transformation successfully

Navigating the sustainability transformation will be challenging and complex, no matter how necessary and how great the potential commercial upsides are. The sustainability transformation framework developed and presented in *Catching the Wave* offers practical guidance in five focus areas: leadership and governance, strategy and planning, progress and commercialization, networks and engagement, and continuity and tenacity. We refer to these elements as Face It, Map It, Do It, Shape It, and Connect It.

The five focus areas are not sequential; companies must continuously invest in, revisit, calibrate, and align them. Different companies are at different stages of implementation and/or will choose different entry points as the right place to begin. No matter where they start, companies must eventually take and link actions in all five areas to successfully absorb sustainability into their organizational fabric, fully seize its commercial potential, and build resilience to inevitable business disruptions.

See Chapter 4 for the full sustainability transformation framework of categories and action recommendations plus accompanying case studies.

FACE IT: Leadership & Governance

Boost the sustainability mindset of senior leadership and develop a quantified business case that enables deep integration of sustainability into the company's overall strategy.

MAP IT: Strategy & Planning

Make sustainability the foundation of the strategy and planning cycle and integrate sustainability decisively into all decisions and operations.

DO IT: Progress & Commercialization

Capitalize on sustainability as an innovation engine to develop new markets, future-proof profits, and seize operational impact opportunities.

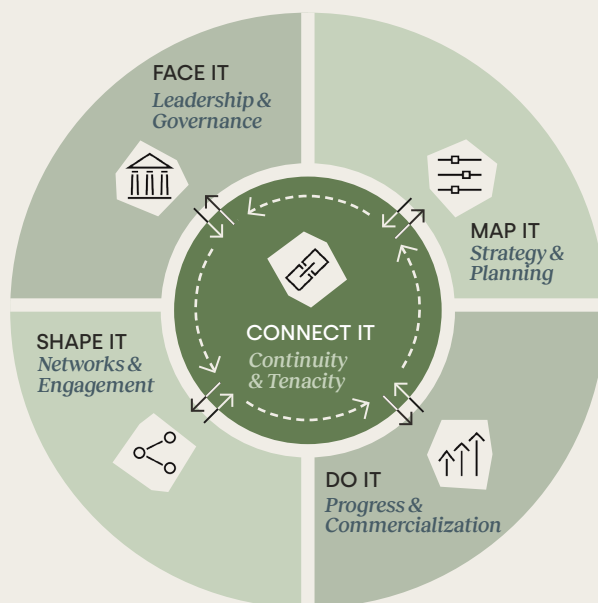
SHAPE IT: Networks & Engagement

Drive action by joining forces with suppliers, competitors, and other stakeholders, and build trust by nurturing relationships, communicating authentically, and being open to new ways of working.

CONNECT IT: Continuity & Tenacity

Nurture transformation by continuously and comprehensively integrating sustainability across the whole organization.

Navigating the sustainability transformation



In the field - User guide for applying the framework

Conversations with pilot companies taught us that the framework offers at least three key benefits.

- The framework's practical guidance helps companies assess their sustainability integration and performance maturity level in a structured way.
- The framework is versatile and works for different levels, teams, and areas inside businesses. Its interlocking categories offer a coherent way of continuously integrating and recalibrating sustainability decisions and actions.
- Depending on factors like sector, process, region, etc., teams can customize the actions under Face It, Map It, Do It, Shape It, and Connect It to help them take stock of the situation and determine priorities.

See chapter 5 for several use cases and suggested ways to leverage the framework.



Our in-depth interviews with senior business leaders and other research made clear that offense is the best defense when preparing a company for a new future. Businesses cannot stop system transformation; seizing emerging commercial opportunities is the best way to come out on top. Boldness will define winners in the sustainability transformation.

Introduction: *Facing the ambition - action gap*



Introduction:

Facing the ambition-action gap

WBCSD's Vision 2050: Time to Transform sets a "shared vision of a world in which more than 9 billion are able to live well, within planetary boundaries, by 2050." Companies that prosper commercially and sustainably are vital to bringing about this Vision. Leading companies are already combining commercial success with sustainability impact. And as sustainability impacts and opportunities accelerate globally, no company can afford to ignore the need to navigate inevitable transformation.

Businesses have come a long way. Most multinational companies recognize the strategic importance of sustainability to their long-term commercial future. They are facing the daunting challenge of proactively assessing commercial opportunities and operational risks. They have set long-term ambitions to reach net zero, become nature-positive, and improve social outcomes. However, progress towards Vision 2050 is still not moving fast enough: private sector short-term actions to achieve long-term sustainability goals are still falling short. Why?

WBCSD and ERM undertook a dialogue in 2023 to discover what is holding companies back and what practical steps they can take to drive immediate, decisive action aligned with long-term sustainability ambition and market success. This involved a series of frank, in-depth interviews and active engagements with over 130 global business executives and sustainability experts about what needs to be unlocked within their operations and in the mindsets of their senior business leaders to drive change (also see About the report).

A picture emerged of companies working hard to integrate sustainability thinking and operationalize it within their commercial strategy. But at the same time, these companies are:

- constrained by short-term financial pressure, accountability, and incentive models
- navigating sustainability challenges under often insufficient regulatory guidance and/or misaligned government policies, and while facing lack of capital access and significant geopolitical volatility
- confronting regional variations in sustainability maturity
- waiting for many crucial technologies to reach full commercial scale
- downplaying the formidable risks of inaction despite the vast commercial potential on offer

Commercial offense is the best defense

Most members of the business community know and believe that sustainability transformation is necessary and inevitable. But many are trying to keep the status quo ticking along even as they prepare for future transformation. Many businesses have not yet decided if or how they will shape the sustainability transformation, or be shaped by it; if they will promote innovation to break into new markets, and accelerate sustainable outcomes for the world while boosting the commercial resilience of their company, or if they will focus on compliance and follow in the wake of commercial trailblazers, hoping that it will be enough to weather the storm.

Our conversations with senior business leaders and sustainability practitioners convinced us that most companies want to be in the leader and shaper category but face headwinds that limit momentum and progress at scale. Our interactions and in-depth research revealed several key barriers that keep companies from accelerating the actions required to navigate the sustainability transformation and proactively identify and seize the commercial opportunities it creates.

What we learned gave us the confidence to compile this practical guidance for unlocking immediate action. It is designed to help companies understand the full range of actions needed to shift mindsets and, ultimately, business strategies from value extraction to sustainable value generation aligned with long-term commercial resilience. The recommendations outline what successful sustainability business leaders believe is the best approach to navigating the accelerating sustainability transformation (See Chapter 4).

The business leaders interviewed made clear that "offense is the best defense" when preparing a company for a new future. Businesses cannot stop system transformation; seizing emerging commercial opportunities is the best way to come out on top, while watching the transformation unfold is less so. The recent, and still ongoing, digital transformation created and is creating spectacular opportunities. Still many incumbent companies underestimated the profound impact of the digital revolution. The winners so far boldly embraced it, imagined its direction, and leveraged innovation to grow new markets, create value, and make their businesses more resilient. The same boldness will define winners in the sustainability transformation.

About the report

This report is based on in-depth interviews with 50 senior global business leaders and sustainability practitioners and active engagements with 80 global business executives at WBCSD meetings, NYC Climate Week, and COP28 in Dubai. The interactions covered a wide range of sectors, regions, and roles to ensure many perspectives were considered (see Figure 1). We also scanned numerous reports and academic articles and incorporated insights from a selection of global surveys.

Our goal was to better understand:

- The barriers that prevent companies from decisively translating long-term goals on climate, nature, and equity into the short- and medium-term actions necessary to advance sustainability and seize new value-creation opportunities.
- The right solutions to overcome persistent barriers and create a mindset focused on imagination and identifying commercial opportunities and breakthrough innovations.
- The short-to-medium-term actions that will unlock progress on climate, nature, and equity and open new value-creation opportunities for companies.

The report is split into five parts:

Part one lays out the current tensions facing business and society: the world is dangerously close to critical environmental and societal shocks, but we also underestimate how close we are to avoiding these through the scaling of exponential technological and commercial developments.

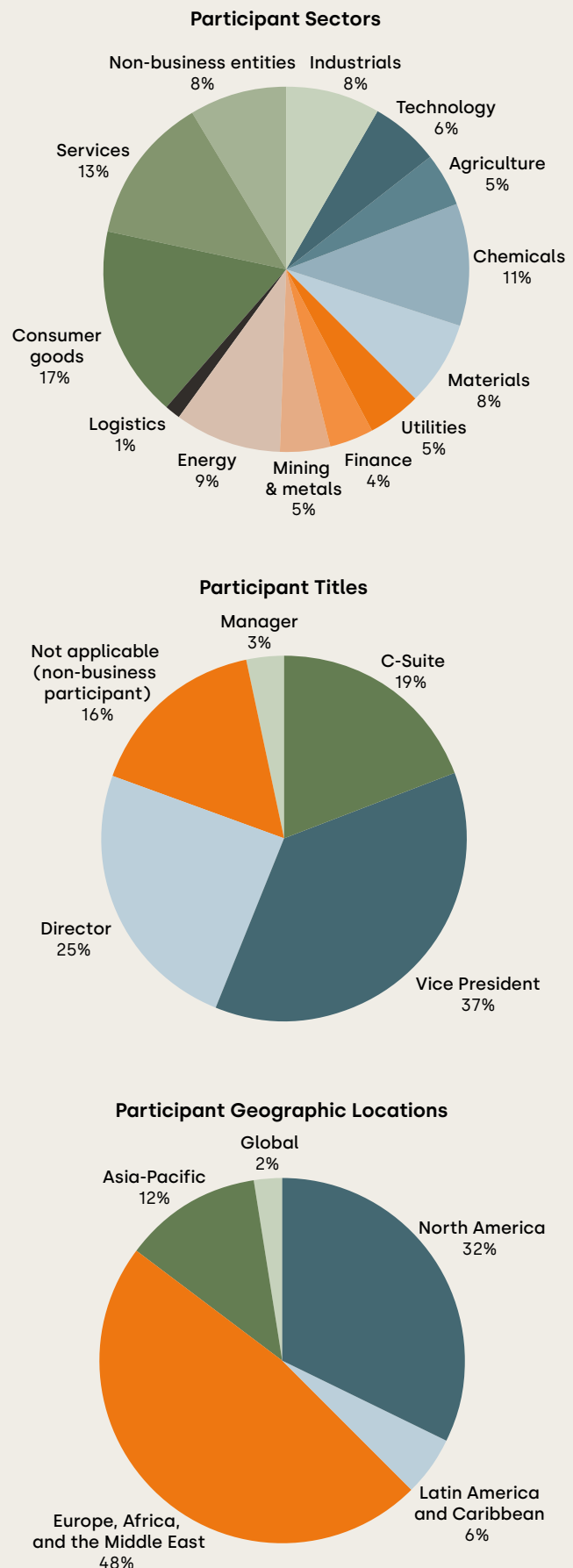
Part two lists the main internal barriers keeping companies from recognizing the inevitable transformation of the status quo that they are experiencing and decisively anticipating its disruptions and commercial potential.

Part three illustrates the commercial urgency and opportunity of the sustainability transformation by examining past market disruptions.

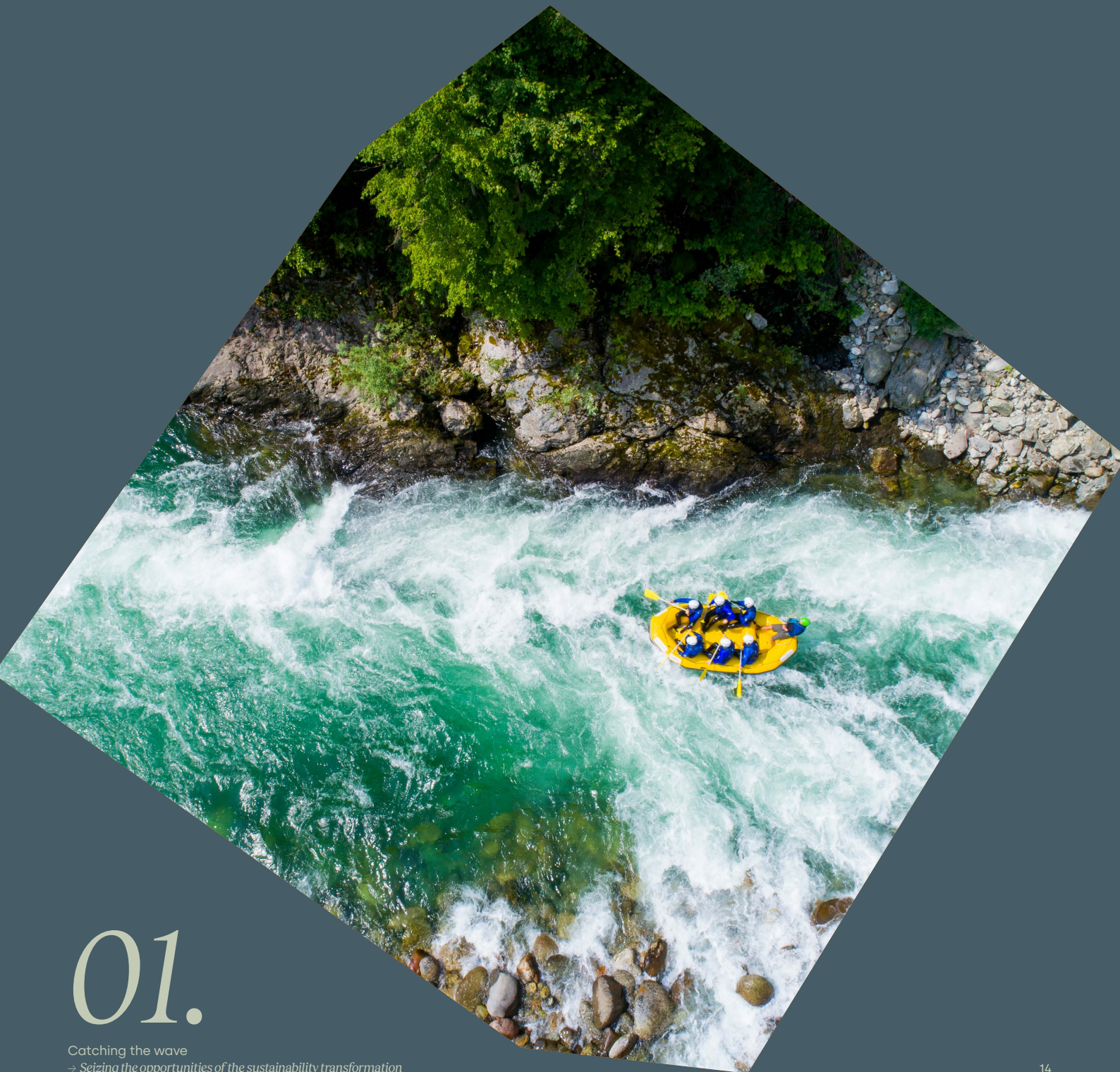
Part four presents a framework for navigating the sustainability transformation that can be implemented immediately, boosting company-wide awareness of and participation in short- to medium-term actions that simultaneously accelerate progress on sustainability and create business value.

Part five offers examples of how this report's guidance can be deployed, providing case studies of how three companies have started to apply it.

Figure 1: Regional, sector, and role breakdown of senior leaders consulted for this report



Navigating multiple truths *- Being at ease with ambiguity*



01.

Catching the wave
→ Seizing the opportunities of the sustainability transformation

Navigating multiple truths

- *Being at ease with ambiguity*

“The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time and still retain the ability to function.”

F. Scott Fitzgerald

It is unlikely that American writer Scott Fitzgerald had sustainability in mind with his quote. Still, this is precisely what companies must do to survive and thrive during this tumultuous period of sustainability transformation: recognize and navigate multiple truths simultaneously.

Recognizing, internalizing, and acting on diverse facts rationally takes effort. Still, it is the only way forward for companies to navigate the sustainability transformation and successfully transition from today's reality to the reality of tomorrow. Business leaders must face at least four pairs of simultaneous truths.

Acknowledging these truths puts companies in the right mindset to face the sustainability transformation accelerating around them and turn it into an opportunity to strengthen commercial resilience and profitability. Below, we explore each truth more deeply.

01

→ **The best available science states we are running out of time to stay within planetary boundaries**

→ **We underestimate how quickly climate and natural systems can bounce back if we give them the opportunity**

02

→ **The threat of social and economic consequences merging into a polycrisis is real and increasing**

→ **Many technological and commercial solutions to these threats are charging ahead exponentially**

03

→ **Underestimating accelerating commercial risk and opportunity, many companies delay urgent action**

→ **Companies that imagine and create business models for an altered future are most likely to thrive**

04

→ **Many corporate leaders struggle to foster a culture of innovation and experimentation**

→ **Leaders that incentivize creativity and exploration lay the foundations for breakthrough success**

Acknowledge that the climate and global ecosystems are under tremendous stress but recognize their critical decline can also be reversed.

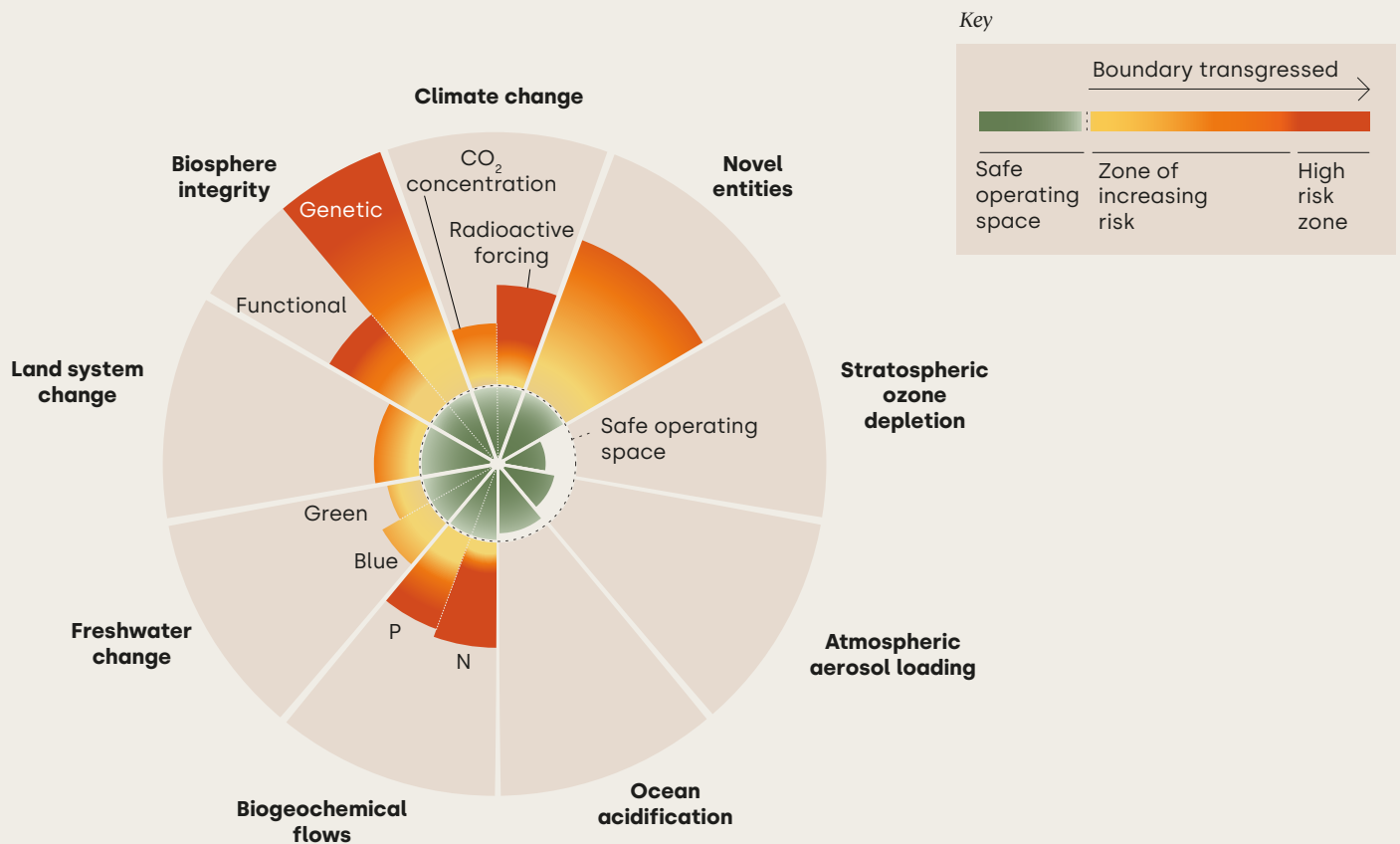
The best available science states we are running out of time to stay within planetary boundaries.

- It will take radical steps to limit global warming to the 1.5°C target agreed upon in Paris.
- Six out of the nine planetary boundaries have been pushed beyond safe limits. Disregarding those boundaries has put at least one in ten animal and plant species at risk of extinction, possibly one in five, and has reduced the productivity of a quarter of the planet's surface.
- Already disadvantaged regions and communities bear the brunt of the negative climate and nature impacts such as extreme weather and biodiversity loss.
- Current climate change alone will likely push more than 100 million people into poverty by 2030.

We underestimate how quickly climate and natural systems can bounce back if we give them the opportunity.

- The world has made considerable progress since it agreed since the Paris Climate Agreement, reducing the projected temperature rise in 2100 by more than 1°C since 2015.
- Ecosystem restoration is surging. More than 100 million hectares globally are currently being rewilded or restored, creating millions of jobs and improving the climate resilience and livelihoods of local communities.
- The landmark 2022 UN Global Biodiversity Framework, adopted by 196 countries, will accelerate further increases in ecosystem restoration.
- The world has shown before that it can quickly improve seemingly intractable inequities if it wants to. In the three decades prior to 2019, 1.3 billion people were lifted out of extreme poverty.

Figure 2: Pushing boundaries



Source: ScienceAdvances (2023). [Earth beyond six of nine planetary boundaries](#)

True

- Six of nine planetary boundaries have been crossed, from global warming to the biosphere and deforestation, from pollutants and plastic to nitrogen cycles and freshwater, while pressure in all boundary processes is increasing.¹
- To limit warming to 1.5°C, the world needs to reduce emissions by 43 percent from 2019 levels by 2030 and 84 percent from 2019 levels by 2050. All current Nationally Determined Contributions (NDCs) combined put the world on a 2.8°C trajectory.²
- In 2019, around one million animal and plant species were threatened with extinction, many within decades. Land degradation had reduced the productivity of 23 percent of the global land surface, and up to \$577 billion in annual global crops were at risk from pollinator loss.³
- 2023 research found that almost a quarter of European flora and fauna are candidates for extinction. Extrapolated to a global scale, this would mean 2 million animal and plant species are under threat, not 1 million.⁴
- In 2023, 3.3 to 3.6 billion people were deemed highly vulnerable to climate change. Climate impacts are predicted to disproportionately affect Indigenous Peoples, small farmers, and low-income households. Between 2010 and 2020, human mortality from floods, droughts, and storms was 15 times higher in highly vulnerable regions.⁵ Climate will drive 100 million additional people into poverty by 2030.⁶

Also true

- Before the Paris Climate Agreement, the world was expected to heat up around 4°C by the end of the century, an outcome widely seen as catastrophic. Today, the forecast is for 2.8°C of warming, representing considerable and rapid progress.⁷
- Over 100 million hectares in 70 countries are currently being rewilded (rewilding is the reintroduction of lost species to accelerate biodiversity improvement). In 2022, a further 15 million hectares in 18 countries were going through active ecosystem restoration in close collaboration with local communities, creating 12 million jobs and sequestering 145 Megatons of CO₂.⁸
- In 2022, 196 countries signed the Kunming-Montreal Global Biodiversity Framework (GBF). Signatories need to ensure that by 2030, at least 30 percent of degraded terrestrial, inland water, marine, and coastal ecosystems are under effective restoration and at least 30 percent of terrestrial and inland water areas and marine and coastal areas are conserved and managed.⁹
- In 2019, 1.3 billion fewer people lived below the International Poverty Line of \$2.15 per day today than in 1990. On average, the number declined by 47 million every year, or 130,000 people each day.¹⁰



Understand that many consequences are triggered by climate change and destabilized ecosystems including the real possibility they will reinforce each other, but solutions capable of tackling those risks are emerging at breakneck speed.

The threat of social and economic consequences merging into a polycrisis is real and increasing.

- The world is at a new level of risk of interconnected crises merging due to the overlap of stresses from nature depletion, global warming, food scarcity, migration, growing inequality, and polarization.
- A confluence of crises is already visible, for example, the strong correlations between extreme weather risks and the occurrence of extreme poverty, refugee flows, and political instability.
- Although geopolitical conflict and supply chain disruptions draw most corporate attention, weather events already cause hundreds of billions in annual economic damage, most of it uninsured.

Many technological and commercial solutions to these threats are charging ahead exponentially.

- The sustainability transformation is following the same S-curve—from slow to exponential adoption—as previous transformations like digital, creating new, multibillion-dollar markets in the process. EVs, solar, and wind are leading the way, while other technologies are on the brink of going mainstream.
- Underused mitigation techniques that simultaneously reduce GHG emissions and improve ecosystems (e.g., regenerative agriculture and natural climate solutions) are accelerating.
- Increasing consumer demand for sustainable products, combined with a wave of sustainability and disclosure regulation, coupled with growing legal and community pressure, make the strategic integration of sustainability a commercial imperative.

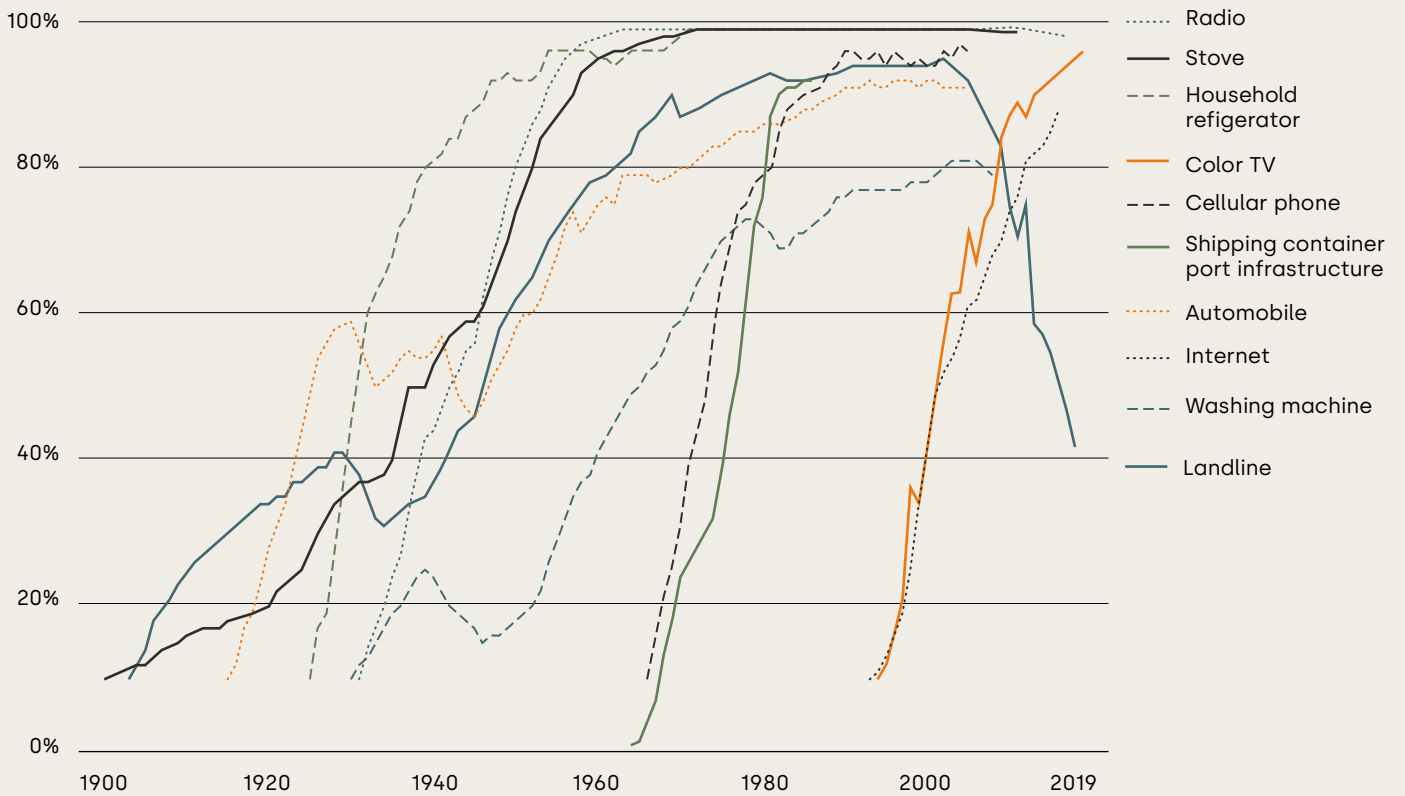
True

- Fourteen of the 25 most vulnerable countries to climate change were mired in conflict as of 2022,¹¹ while 61 million people were internally displaced by armed conflict and violence, and another 33 million people were displaced by natural disasters.¹²
- In 2022, 1.8 billion people were directly exposed to floods. Of these, 89 percent live in low- and middle-income countries, and 50 percent live on less than \$5.50 a day.¹³
- Economic losses from natural disasters were estimated at \$313 billion in 2022. Just 42 percent of those losses were covered by insurance.¹⁴
- In 2022, at least \$15.5 billion in company assets were stranded due to water stress; seven in ten companies sharing data with CDP report they are exposed to water risk with a potential damage value of \$225 billion.¹⁵

Also true

- Between 2018 and 2022, the compound annual growth rate (CAGR) of retail products making ESG claims was 1.7 percentage points higher than regular products in the U.S.¹⁶
- The markets for green hydrogen, green ammonia, and green steel are projected to grow by 2100 percent, 13,500 percent, and 141,000 percent, respectively, between 2023 and 2032.^{17, 18, 19}
- The value of the global voluntary carbon market reached \$2 billion in 2021 and could be worth between \$10-40 billion per year by 2030, with two-thirds of this investment being channelled into natural climate solutions, potentially delivering 10-12 percent of the mitigation needed by 2030.²⁰

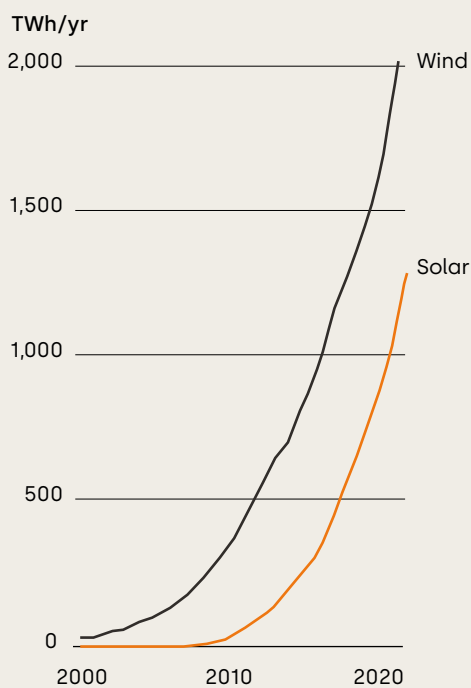
Figure 3: Long live the S-curve



Source: Rocky Mountain Institute (2023). X-Change: Electricity. [On Track for Net Zero](#)

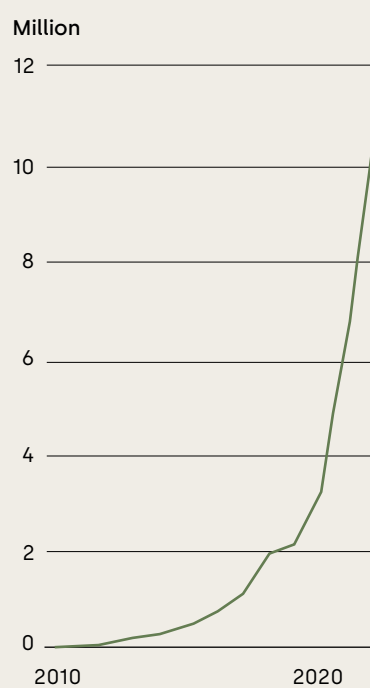
Figure 4: Reaching for the stars

Annual solar & wind generation



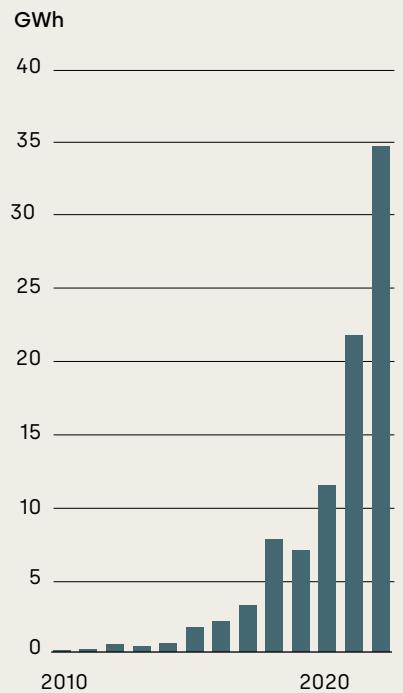
Wind: **15% CAGR**, Solar: **29% CAGR**

Annual EV sales



58% CAGR

Annual battery storage sales



54% CAGR

Source: Rocky Mountain Institute (2023). [The Energy Transition in Five Charts and Not Too Many Numbers](#)

Factor in the impact of macro realities at the company level: resist the natural human inclination to downplay drastic environmental, social and economic consequences while reluctantly adapting to them. Instead, recognize that avoiding such outcomes and embracing solutions with huge potential is the best commercial strategy.

Underestimating accelerating commercial risk and opportunity, many companies delay urgent action.

- Many companies and industries treat sustainability as a compliance or risk management issue, seeing it as a cost of doing business rather than a commercial opportunity.
- Companies with compliance mindsets underestimate the sustainability transformation, thinking that minimal efforts on sustainability and minor tweaks to the existing business model will be sufficient to safeguard commercial success.
- Reluctant companies overlook potentially existential risks as well as the commercial and operational opportunities to be found beyond compliance, ignoring the growing urgency to integrate sustainability-based resilience into all business operations.

Companies that imagine and create business models for an altered future are most likely to thrive.

- The shift from a fossil fuel-based economy to a net-zero economy will take historic levels of investment akin to the reconstruction of Europe after World War II, creating vast demand for new products and services.
- As in previous transformations, the winners will be disruptive newcomers and adaptive incumbents that boldly imagine a different future and novel commercial opportunities before they fully materialize.
- Adaptive winners realize that proactively seeking out new commercial opportunities bolsters business continuity in times of rapid change.

True

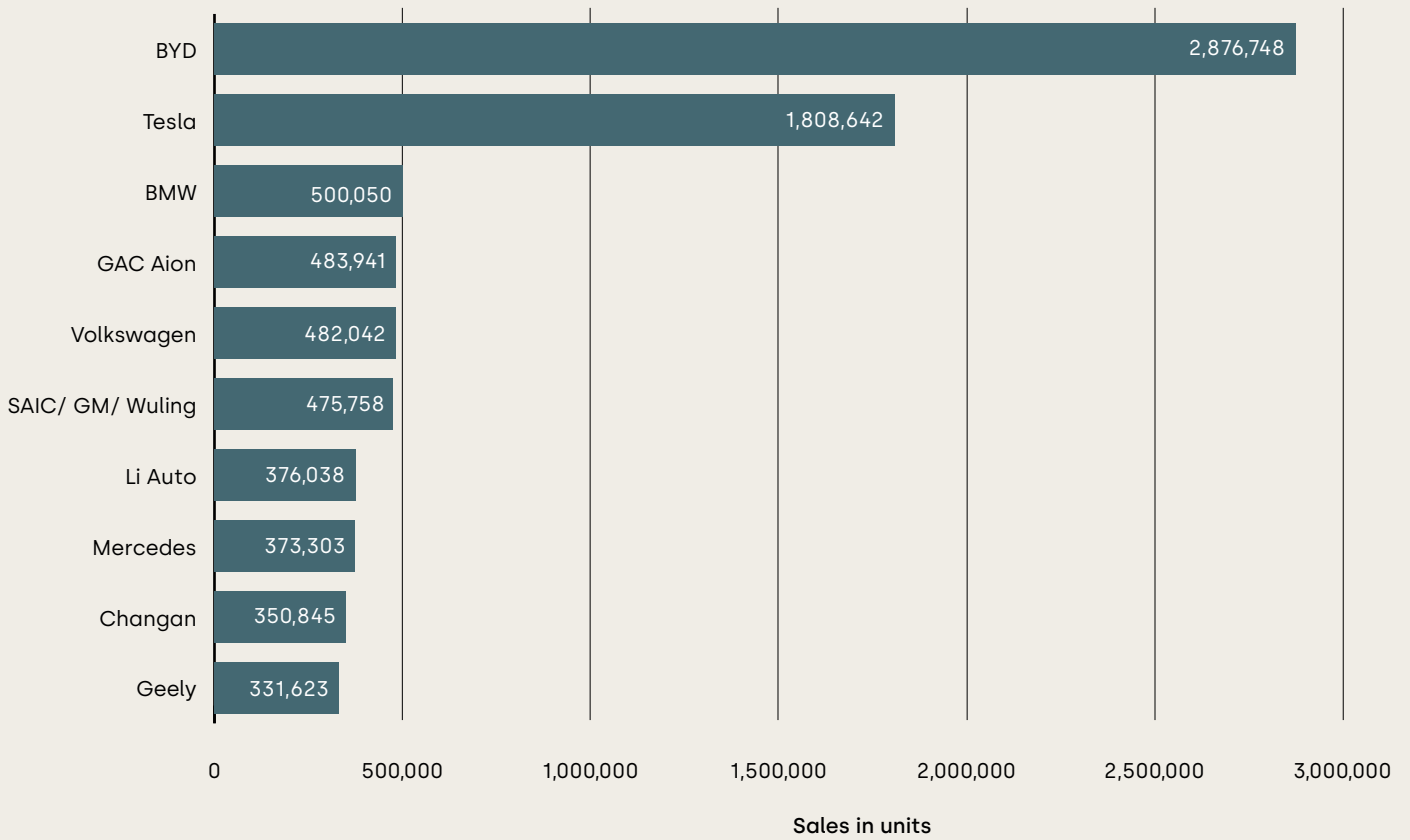
- In 2022, only one in five executives at large global companies believed that the business case for sustainability was clear. In contrast, 53 percent said they believe that sustainability initiatives are a financial burden their companies must bear to do business.²¹
- In 2022, less than half (49 percent) of global executives said their company has a defined list of sustainability initiatives for the next three years. Meanwhile, just over a third (37 percent) said their company is redesigning its operating model to respond to sustainability pressures.²²

Also true

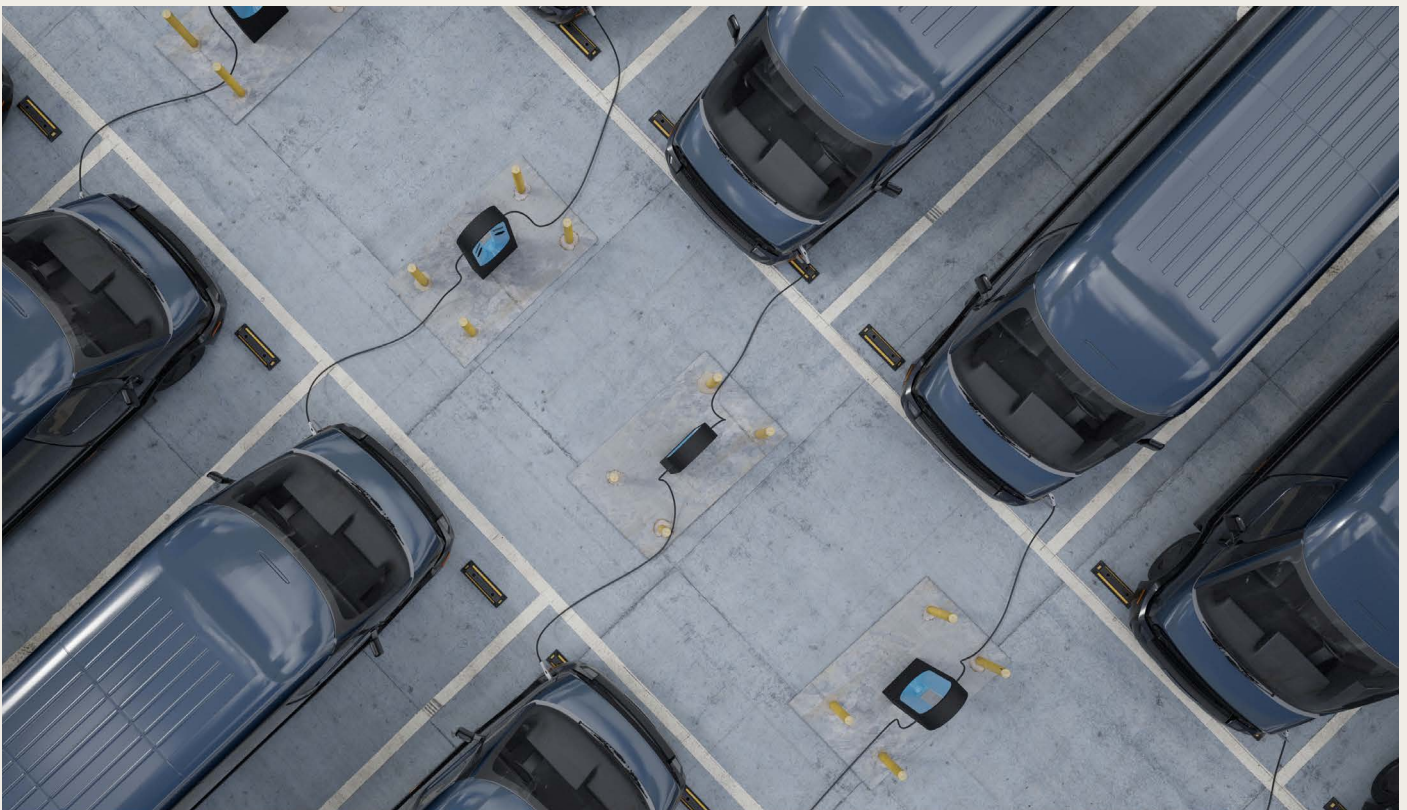
- Estimates on the capital needed to achieve net zero 2050 goals range from \$100 trillion to more than \$275 trillion.²³
- First mover advantage counts. For example, global EV sales jumped from 320,000 in 2014 to 14 million in 2023. EV frontrunners Tesla (U.S.) and BYD (China) held a combined 33 percent global market share. Three in ten EVs sold worldwide are from a major Chinese brand.^{24,25}
- From 2020 to 2021, based on a sample of 700 large companies in 12 countries, the 11 percent most advanced in sustainability realized 83 percent higher revenue-per employee compared to the average. The 26 percent least advanced were 13 percent below the average.²⁶

Figure 5: Plug in early

Global plug-in electric car sales in 2023



Source: Statista (2024). Estimated plug-in electric vehicle sales worldwide in 2023, by brand



Appreciate companies must take risks to avoid risks. It is hard to make bold innovation and experimentation flourish, but it is also key to seizing the commercial opportunities of the sustainability transformation. An open innovative culture takes hold when senior leaders trigger, encourage, and support the energy and creativity within the entire organization.

Many corporate leaders struggle to foster a culture of innovation and experimentation.

- A radically altered future depends on sweeping product and business model innovation. Companies with risk-averse leaders are much less likely to support an innovative culture, with employees fearing adverse effects on their careers if proposed innovations fail.
- Risk intolerance leads to an overfocus on incremental innovation of core products and services at the cost of the radical innovation needed to bolster business continuity during transformative change.

Leaders that incentivize creativity and exploration lay the foundations for breakthrough success.

- Innovative companies that encourage new products, creativity, and curiosity have been shown to improve their business resilience as well as increase shareholder returns.
- Most of the world's most innovative companies have a CEO who believes in, and vocally encourages, a culture of open innovation and bold experimentation.
- Leaders that successfully bring new commercial opportunities to market have the ability to stick to their beliefs and anticipate and prepare for internal and external pushback.

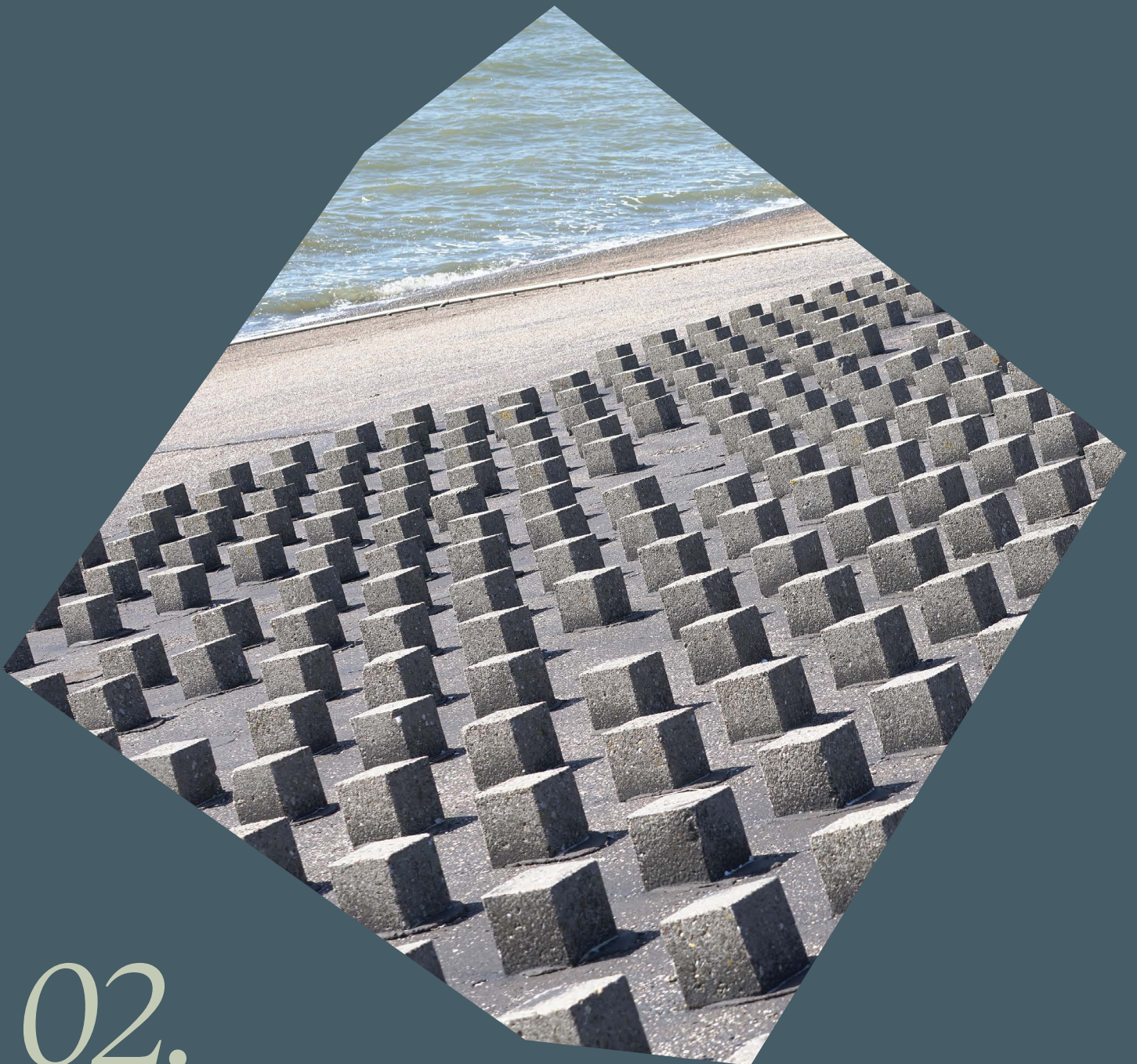
True

- According to a 2022 global survey on innovation, fear of criticism, fear of uncertainty, and fear of hurting one's career are significant barriers to innovation. Employees at average or below-average innovative companies were two to four times more likely to be held back by one of these fears than those working for the 20 percent most innovative companies.²⁷
- In a 2023 survey of U.S. business and IT executives, 75 percent said improving existing products and services will produce the best ROI. Among this group, only 6 percent believe their company should get involved in breakthrough innovation to create new markets, compared to 55 percent of respondents at the most innovative companies. The latter group ranks sustainability as one of the top two drivers of innovation.²⁸

Also true

- An imaginative CEO fanning an innovative culture and framing radical innovation as business critical is an important asset: in 2022, the CEO was the catalyst at eight out of ten top innovators in the S&P 500, compared to 17 percent at averagely innovative companies.²⁹
- Relentless focus on innovation pays off. Between 2005 and 2023, the 50 most innovative companies globally have outpaced the broader market in shareholder returns by an average of 3.3 percentage points per year. Eighty percent of this group was also ranked as the top climate & sustainability innovators in a survey of global peers.³⁰
- In a 2022 global survey on innovation, employees of top innovators were 11 times more likely than those at other organizations to say that their organizations incentivize risk-taking and five times more likely to report encouragement of experimentation.³¹
- A 2023 survey of companies in the S&P Global 1200 index showed that the 25 percent most innovative companies in the index were at the forefront of both ESG innovation and digital and AI maturity. The group was responsible for \$9.3 trillion, or nearly half, of the index's value creation between 2018 and 2023.³²

Running into roadblocks – *What holds companies back?*



02.

Catching the wave
→ Seizing the opportunities of the sustainability transformation

Running into roadblocks

– *What holds companies back?*

We have passed the point when the impacts and opportunities of transformation are things to be managed in the future. The sustainability transformation is here—now—and companies must take action to navigate its challenges and seize its commercial potential. Incumbent companies that move too slowly risk losing out. There are no guarantees for today's vested interests or yesterday's leaders.

Confronted with this situation, many companies still struggle to act with the urgency and enthusiasm required. Business as usual and straightforward compliance form an insufficient response and put future profits and long-term stability at risk. Many companies grasp this reality and have set long-term ambitions. However, translating these goals into appropriate short- and medium-term actions remains a major challenge. Why are companies not doing more to prepare for and leverage the transformation, even when they see it coming?

Gaining a deep understanding of the barriers holding companies back and learning what it would take to overcome them was the first question explored in our research and in-depth interviews. We asked interviewees what, in their experience, were the main obstacles keeping companies from taking immediate, decisive action to fully integrate sustainability and implement transition plans to pre-empt risks and capture the opportunities of transformation.

While we considered both organizational and systemic barriers companies face, this section focuses only on those within a company's control. The reason we emphasize internal barriers here is twofold.

1. Although many interviewees see systemic barriers as a drag on sustainability progress (for example, government policies fail to strike the right balance between forceful regulation and generous incentives), the majority pointed to organizational barriers as a more persistent challenge.
2. Overcoming internal barriers can have a substantial indirect effect on systemic barriers – once a company is convinced of the strategic importance of integrating sustainability, it will be more motivated to push to lift systemic barriers. If senior executives are still ambivalent, corporate lobbying efforts to improve sustainability policies are often ineffective (or even obstructive). For example, in 2022, 90 percent of S&P 100 companies identified climate change as a material risk. Yet just 50 percent lobbied for climate policies in line with 1.5°C in the three preceding years, while 30 percent lobbied against them.³³

The many organizational barriers that emerged from research and interviews varied, but a single common theme connects them: the difficulty of fully digesting that the world is heading into a tumultuous period of transformational change. We explore three barriers that interviewees referenced most often and with most emphasis in greater depth below.



Barrier 1:

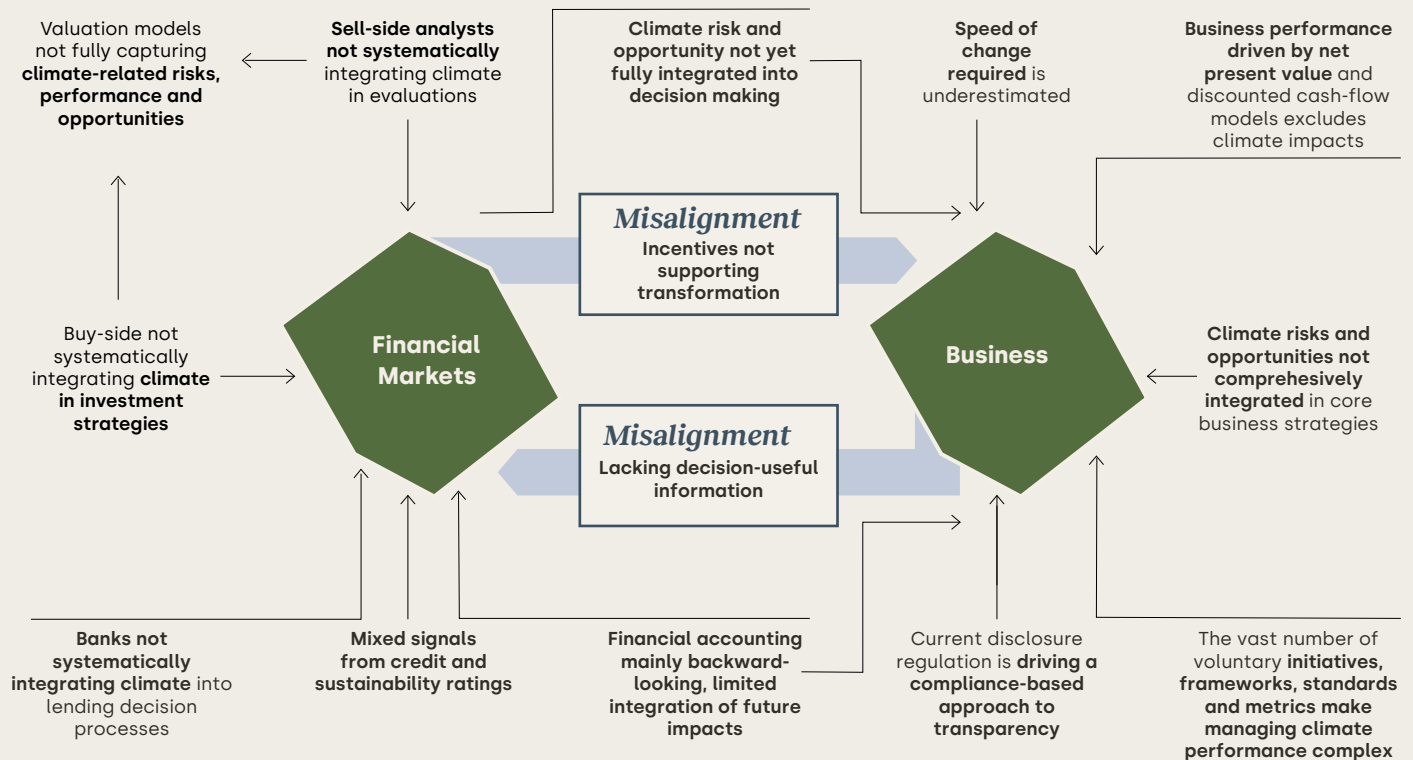
Focus on short-term performance

Most corporate incentives are aligned with short-term profits, constraining the business case for medium-term transformation as well as sufficient investment in long-term resilience. Incomplete integration of sustainability risks and externalized costs in lending decisions leads to misallocated capital and the underfunding of viable sustainability investments.

- A predominant focus on the short-term still guides most decision-making – not just in business but also in finance, politics, and society overall. Companies still struggle to see the urgency of taking immediate (sustainability) actions to create commercial value and long-term resilience, limiting the budget and capacity that is allocated to navigating transformation successfully.
 - A critical factor holding back progress is that performance incentives for senior executives and operational managers are mostly tied to short-term financial goals. As of 2022, just a quarter of S&P 500 companies linked a proportion of executive compensation to environmental performance goals, and the bar for a sustainability-related bonus is often too low to make a material difference.^{34, 35} This is a missed opportunity. Many interviewees stressed that well-structured and widespread financial incentives tied to sustainability performance have been and will be instrumental for progress within their companies.
 - Publicly listed companies are also affected by the short-term outlook of many of their investors and lenders. Although companies increasingly stress the importance of all stakeholders, the capital markets' focus on shareholder returns is still often the focus when it is time for the company to make decisions. And while investors also state that sustainability is crucial, they continue to focus on short-term financial results. For example, eight out of ten U.S. shareholders will not accept any short-term revenue loss in return for solid sustainability performance.³⁶
 - The short-term stance taken by many investors makes it harder for companies to justify investments in sustainability-driven opportunities with unclear immediate or medium-term returns. For example, many incumbent auto-manufacturers were slow to make large-scale investments in EVs because demand seemed too small. For the same reason, companies struggle to make significant decarbonization investments that improve long-term resilience but increase short-term costs. Since these costs often cannot be passed on to customers, investors do not reward such investments.
- Banks also barely reward sustainability performance: they insufficiently integrate sustainability risks or the full climate, environmental, and social costs of business operations in lending decisions. This gives projects with negative sustainability impacts a cost of capital advantage over viable, sustainable projects. For example, since 2010, European and U.S. oil companies have paid virtually no premium for loans for new fossil fuel projects compared to loans for less polluting projects.³⁷ This is despite sustainable lending pledges by financial sector initiatives such as the Glasgow Financial Alliance for Net Zero (GFANZ).³⁸
 - For sustainability investments to accelerate, it is vital that markets appropriately reward sustainability ("true value") performance. WBCSD's CEO Guide to the Climate-related Corporate Performance and Accountability System (CPAS) explores this mismatch in further detail, exploring a comprehensive approach to align investor valuation and capital allocation with corporate sustainability performance.³⁹



Figure 6: Misaligned incentives and information



Source: World Business Council for Sustainable Development (2023). [Climate-related Corporate Performance and Accountability System \(CPAS\)](#)

Barrier 2:

Persistent “sustainability-as-a-cost” mindset

Many corporate leaders struggle to imagine how their companies can realize the sustainability transformation’s commercial potential and use it for competitive differentiation and advantage.

- Corporate senior leadership still has difficulty seeing the sustainability transformation’s economic opportunities and fails to recognize its strategic importance for product and market development. Board members, who play a vital role in pressing the C-suite on long-term sustainability goals, often have limited ability to do so, due to their own insufficient sustainability engagement and knowledge. When senior leaders believe that sustainability lacks commercial value, it is viewed primarily as a cost of doing business forced upon the company by regulation and societal pressure.
- Insufficient confidence in the commercial opportunities of sustainability at senior corporate leadership levels can squander commercial potential in various ways: commercial successes related to sustainability fail to be acknowledged, scaled, and more

widely applied; viable business cases, including ones that would deliver revenue within years, have trouble getting a green light; cost mindsets block the development of a deeper understanding of the different ways sustainability can create value (e.g., as a driver of revenue growth, reduced costs, or increased customer satisfaction).

- Just 1 in 5 global executives believes the business case for sustainability is clear.⁴⁰ When companies do attempt to commercialize sustainability, those efforts are often quite fragile. For example, in 2022, 59 percent of US CEOs have considered pausing sustainability efforts due to ESG backlash.⁴¹ And yet, the new markets like those for solar, sustainable food, and EVs alone will be worth over \$4 trillion combined within ten years, while the green finance market is projected to hit \$29 trillion in 2032.^{42,43,44,45}

Barrier 3:

Insufficient sustainability-related skills and awareness

Sustainability's operationalization is slowed by a shortage of staff at all levels who have the right skills and awareness, including most C-suites and boards.

- Knowledge gaps on sustainability are widespread throughout many companies, from senior leadership to the people on the ground who need to operationalize corporate sustainability strategies, targets, and plans.
- Sustainability skills are increasingly necessary for jobs at every level, yet just one in eight employees globally have one or more sustainability skills to apply.⁴⁶ Training and upskilling operational staff and managers, as well as hiring more staff with the right skills, are overdue across many organizations. Internal traction and investment depend heavily on senior leadership's full and vocal embrace of sustainability's strategic value.
- Senior leadership at many companies appears to be "not quite there yet", with boards lagging most: just 42 percent of U.S. board directors believe sustainability risks impact company performance, and only 31 percent say they understand those very well.⁴⁷ Closing the competence and awareness gap needs to start with structured efforts to engage corporate executives and board members, for instance through bespoke education and mentoring; recruiting leaders with solid sustainability skills; and formalizing sustainability's strategic importance by creating specialized committees and board-approved policies.

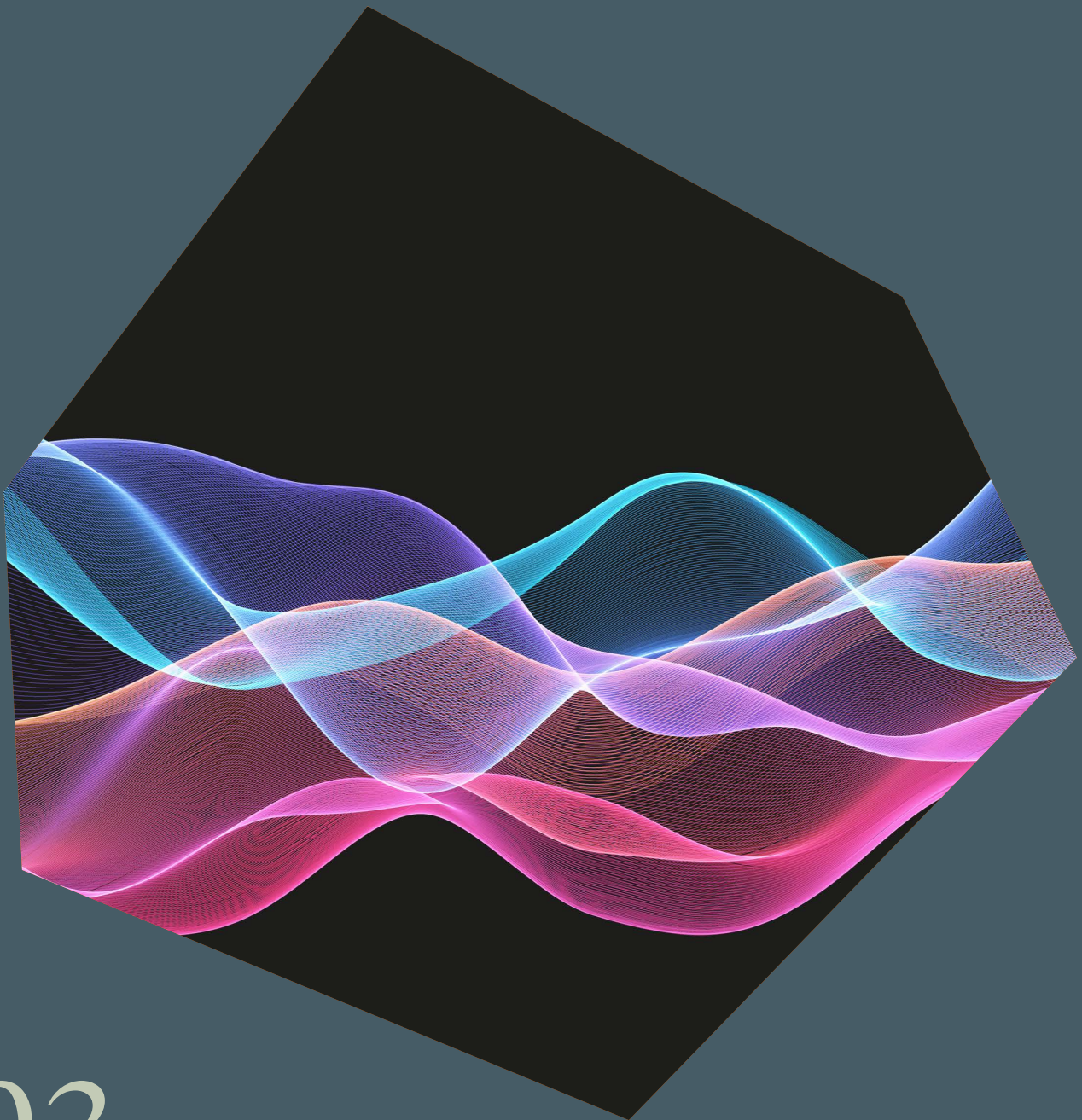
- Senior leaders are crucial to getting the ball rolling, but to promote change throughout the organization, operational staff must also be encouraged to think and behave differently. Without this, change can get stuck in the layers of middle management. Engagement, communication, and awareness across the entire organization are crucial to building adequate company-wide sustainability capacity. Much work remains to be done. Job postings asking for sustainability skills are growing 8 percent annually, while the availability of people with sustainability skills to fill those roles is estimated to be growing just 6 percent yearly.⁴⁸

Sticky internal barriers at companies are to be expected. It is hard to recognize you are in the middle of a transformation, and even when a company is aware, past experiences do not always reveal a viable pathway to navigate the current change. Success depends on an organization's ability to be hyper-alert to the present and factor in multiple conflicting realities to imagine future risks and opportunities. It also depends on involving the entire organization, giving local teams autonomy to flag and act on risks, identify and pursue commercial opportunities, and optimize performance aligned with corporate goals.

As this section illustrates, the required mindset to face the disruptions of the sustainability transformation has not sufficiently taken root. The reason why companies find this challenging is also clear: a focus on short-term performance drives them to see sustainability as a compliance exercise, instead of an enormous opportunity to improve prosperity and business resilience by riding the wave of inevitable sustainability transformation



Waves of disruption – *Thriving during transformation*



03.

Catching the wave
→ Seizing the opportunities of the sustainability transformation

Waves of disruption

- Thriving during transformation

Ernest Hemingway once wrote that bankruptcy happens "gradually and then suddenly." The same is true for system transformations. They do not neatly announce themselves. They start slowly, before steeply accelerating and then suddenly, a new system is established – by which time it can be too late for companies to seize the opportunities that were on offer.

This section explores how system transformations work and why they can feel overwhelming, especially for incumbent companies. We also analyze the digital transformation as an example of a recent (and still ongoing) system transformation and consider what lessons can be drawn from companies that successfully navigated it by imagining and seizing its commercial opportunities.

System transformations trigger waves of disruption and opportunity

System transformations happen when major socio-economic trends and breakthrough innovations amplify each other, propagating waves of disruption that pose ample opportunities and equally big challenges for companies. As societies react to these disruptions, many parts of the status quo are uprooted, delivering new technologies, policies, regulations, and supply chain shifts, as well as socio-economic upheaval and the creation of new markets.

Another essential characteristic of system transformation is that it often happens in spurts as multiple innovations build on each other. The digital transformation, which we will discuss below, is a prime example. It has moved from computers to software, the Internet, wireless, smartphones, the cloud, and artificial intelligence, deeply impacting businesses and markets at every stage.

Figure 7: Everything, everywhere, all at once

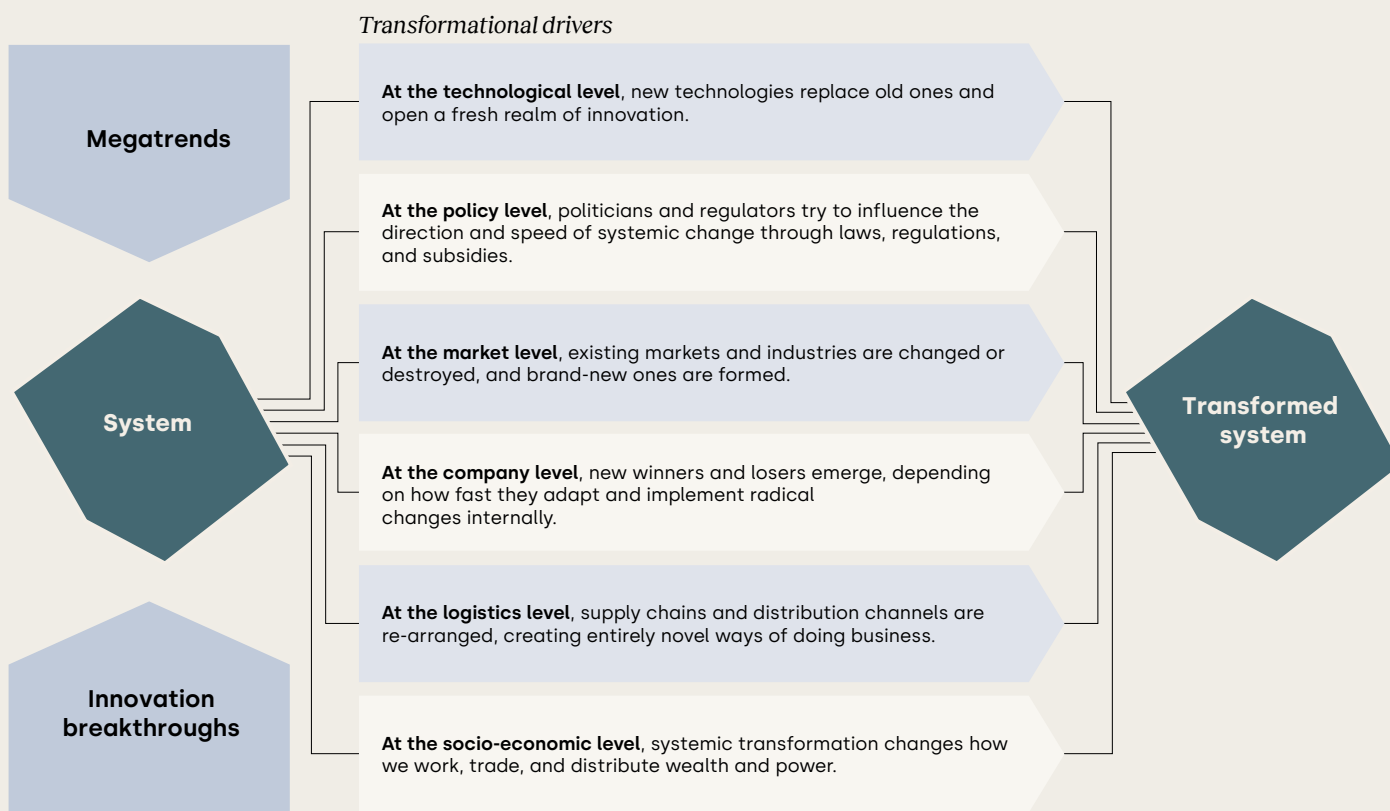


Figure 8: Catching the next wave



Source: African Journal of Science, Technology, Innovation and Development (2019). [Innovation and entrepreneurship framework within the Middle East and North Africa region](#)

We have been here before: the digital revolution

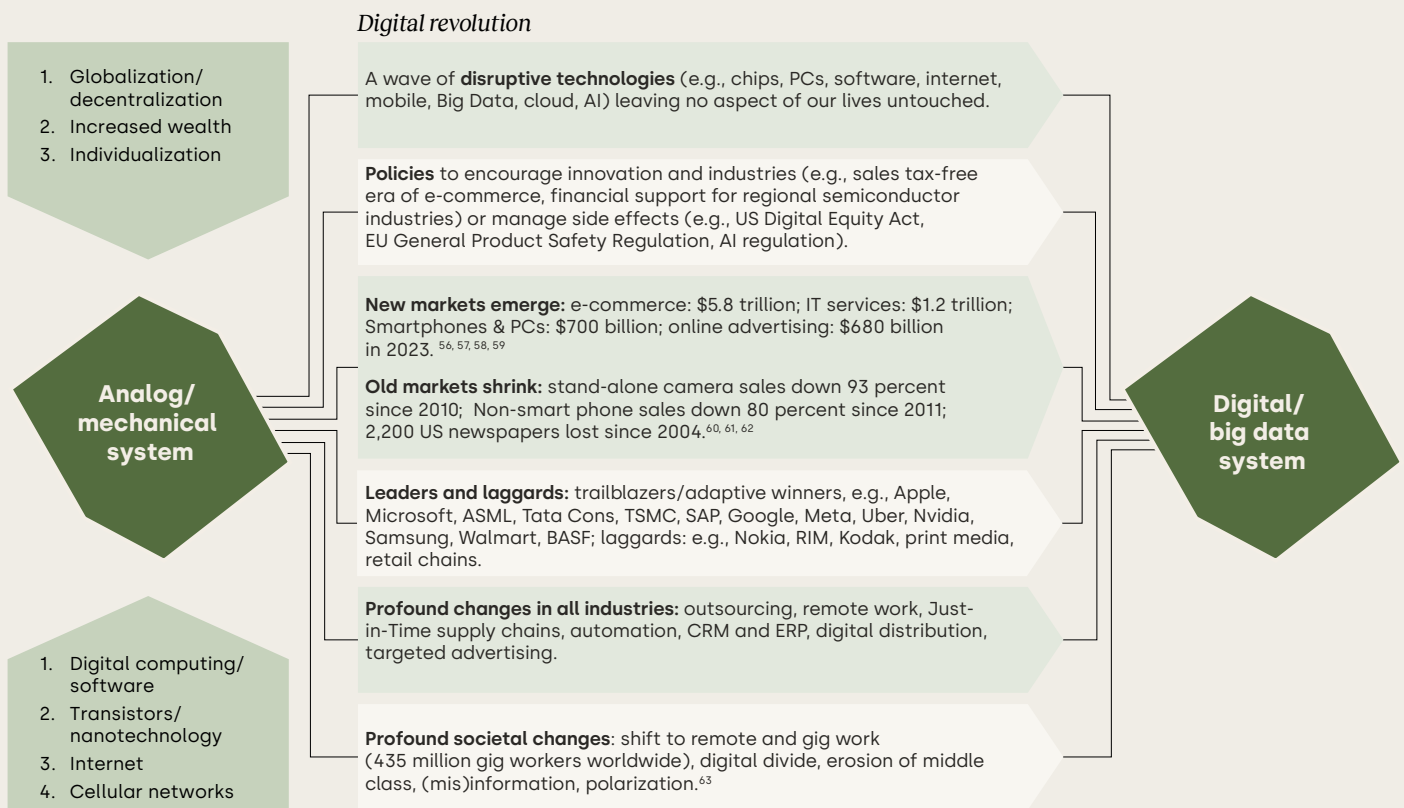
Today, we can barely remember how the world functioned before digital transformation. We saw some business giants evaporate while scrappy innovators created new markets overnight. We saw incumbent companies seize new opportunities by moving and innovating fast.

Sustainability conversations today often closely echo early digital discussions then. Statements like "Digital is for the tech teams only. It will not affect how my customers interact" and "Nobody wants to buy a fridge online or go to university in a remote classroom" sound surprisingly similar to remarks that are still being made today, like "Nobody wants to pay a premium for green products" or "Sustainability is for public relations and public affairs teams."

The digital transformation created massive opportunities that upended previously dominant business models, for instance online advertising's decimation of the traditional print industry's revenue model. What set the winners apart was not (or at least not only) knowledge: it was that they did not wait. They understood that their best defense was imagining and trying to seize new commercial opportunities.

The digital transformation's lessons also underscore how important it is that companies constantly nurture their imaginative, innovative spirit. Many companies that were successful, even trailblazers, in early waves of the digital revolution became complacent and lost their market leadership because they didn't continue to innovate rapidly. Yahoo, an internet giant in the late nineties, is a good example. It misjudged the commercial value of search, did not buy Google for mere billions when it had the chance, and was eventually snapped up for \$5 billion by Verizon in 2017.⁴⁹ Verizon sold Yahoo four years later, together with AOL, incurring a 50% loss.

Figure 9: Let's get digital!



Here we are again: the sustainability transformation

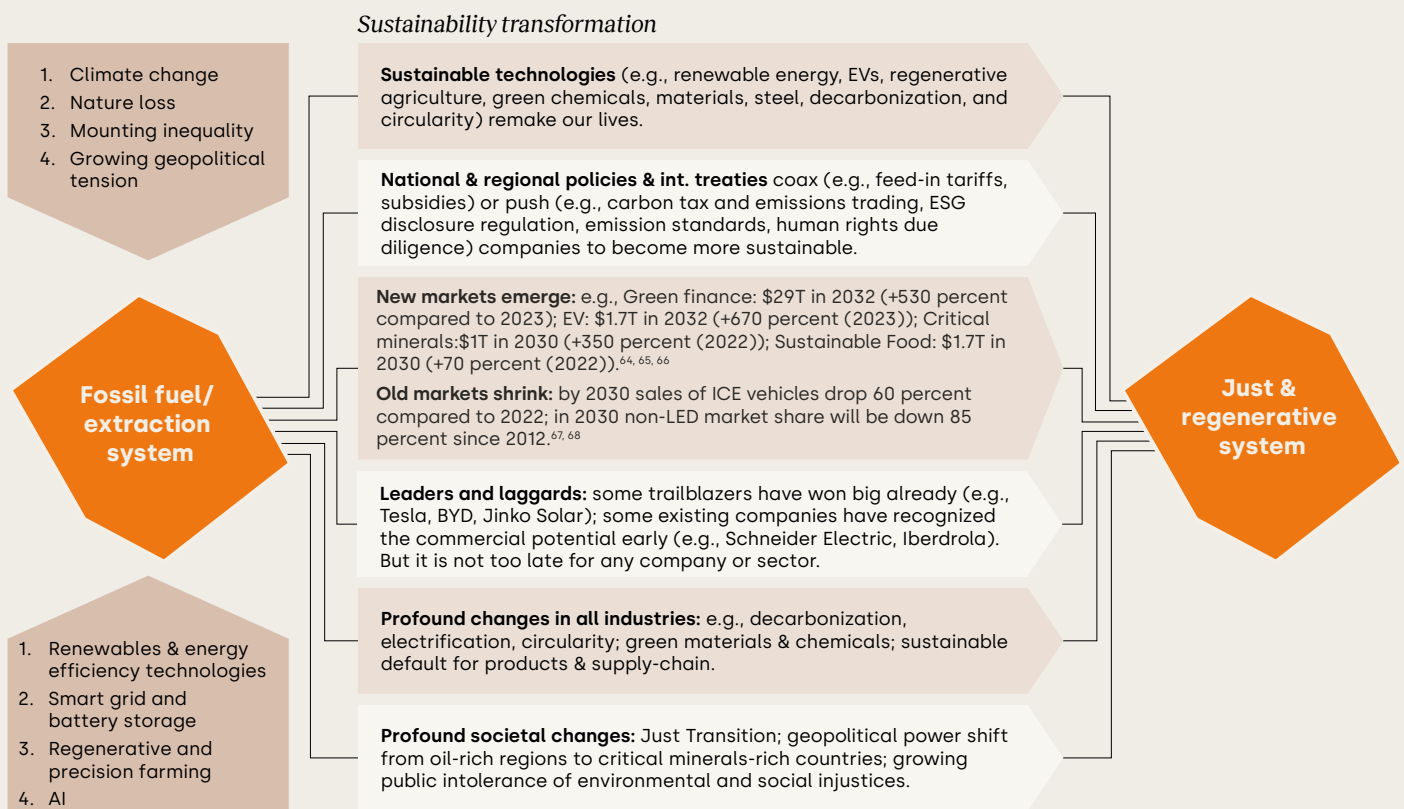
The sustainability transformation is already significantly affecting how companies operate, what (reused) resources, infrastructure, and supply chains they need, and what consumers want and expect.

In 2023, global green finance exceeded \$5 trillion and is projected to grow sixfold by 2032.⁵⁰ Many sustainability-linked markets, like EVs, sustainable food, energy efficiency devices, and critical minerals, will pass the trillion-dollar mark within ten years, and many others are about to take off.^{51,52,53,54}

Pressure from investors, stakeholders, and regulators, as well as incentives encouraging sustainability investment, will likely continue to ramp up, creating fresh commercial opportunities. Nonetheless, the investment gaps remain significant. Estimates on the capital needed to achieve net zero 2050 goals range from \$100 trillion to more than \$275 trillion.⁵⁵

One of the challenges with the sustainability transformation, is that the timeline is not organic – due to its existential nature, we need to make the transformation happen as quickly as possible. Companies have immense power to set the pace of the transformation, but incredible commercial opportunities exist on such an accelerated timeline.

Figure 10: Gathering Momentum



Lessons from the winners of the digital revolution

As we face the unfolding sustainability transformation, what can we learn from the companies that successfully adapted to the digital revolution, seized its commercial opportunities, and strengthened their organizational resilience? We identify five areas of continuous focus that the winners adopted, constantly revisiting and calibrating their choices: they faced transformation head-on, mapped it into strategy and planning, operationalized new thinking quickly, shaped their networks to enable delivery, and connected what they were learning to their innovation processes.

- **Facing transformation head on.** Microsoft is a prime example: the software giant had cashed in on past innovations for decades. Then, a new CEO reawakened its culture of curiosity, sparking the company's rise as a leader in cloud computing services, gaming, and artificial intelligence.
- **Mapping transformation into strategy and planning.** Look at Samsung, which decided that innovative design, not imitation, was its future. It relentlessly integrated design into training, capacity building, targets, and incentives, reinventing itself as the world's largest smartphone and memory chip producer. In the process, they engaged senior leaders and the middle managers who needed to deliver the change.
- **Operationalizing new thinking quickly and taking the action needed.** Faced with digital, Walmart deployed high-quality management talent and developed the skills necessary to seize new market opportunities. The company developed, acquired, and ran multiple online and omnichannel projects to master e-commerce while leveraging its store network. They displayed an agile governance mindset, addressed roadblocks quickly, and drove cross-functional, fail-fast-and-learn behavior. They tracked their progress and adjusted. Today, they have one of the world's biggest online operations, and their success is fueled by their omnichannel approach.

- **Shaping networks to enable delivery.** Leaders like BASF understood no company can crack the challenges of transformation alone. To take control of its own future, it digitized its R&D capabilities, collaborating closely with research institutes and start-ups with deep knowledge of AI and machine learning to accelerate the discovery and commercial development of new chemicals.
- **Connecting experience to innovation.** Take Tata Consultancy Services (TCS), which moved product development into an innovation ecosystem involving venture capitalists, universities, clients, and start-ups to help staff learn and innovate better. These connections re-made TCS's culture and ultimately generated a stream of new services from software, to outsourcing, and AI.

These digital winners show that boldly imagining how a system transformation will evolve, and the new opportunities it will bring, is the best way to ensure business continuity and success. The future starts today: decisive, immediate action on future sustainability and commercial goals is paramount to emerge from the sustainability transformation as an adaptive winner. In Part 4 we take the lessons of the digital transformation, and offer practical guidance to companies that can be used to structure the process of navigating the sustainability transformation confidently, at the same time as accelerating it.



Seizing opportunity – Navigating transformation successfully



04.

Catching the wave
→ Seizing the opportunities of the sustainability transformation

Seizing opportunity

- Navigating transformation successfully

Navigating the sustainability transformation will be grueling and complex, no matter how necessary and how great the commercial upsides are. Since all companies are somewhere on the learning curve, no off-the-shelf blueprint exists that can just be adopted. But there is also no time to wait for one; urgent action is already long overdue.

However, by looking closely at companies that have successfully integrated sustainability (albeit partially) and at how companies have navigated enormous upheavals in the past, the outlines of a practical approach emerge, which we lay out below. It is based on the extensive input gained from in-depth interviews with business leaders and sustainability experts, as well as learnings from desk research and global surveys.

This guide to navigating the sustainability transformation consists of five focus areas: leadership and governance, strategy and planning, progress and commercialization, networks and engagement, and continuity and tenacity. We have called these elements Face It, Map It, Do It, Shape It, and Connect It.

FACE IT: Leadership & Governance

Boost the sustainability mindset of senior leadership and develop a quantified business case that enables deep integration of sustainability into the company's overall strategy.

MAP IT: Strategy & Planning

Make sustainability the foundation of the strategy and planning cycle and integrate sustainability decisively into all decisions and operations.

DO IT: Progress & Commercialization

Capitalize on sustainability as an innovation engine to develop new markets, future-proof profits, and seize operational impact opportunities.

SHAPE IT: Networks & Engagement

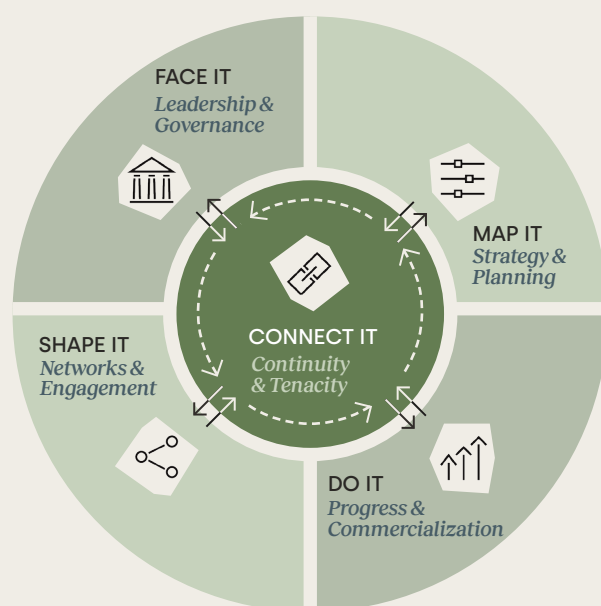
Drive action by joining forces with suppliers, competitors, and other stakeholders, and build trust by nurturing relationships, communicating authentically, and being open to new ways of working.

CONNECT IT: Continuity & Tenacity

Nurture transformation by continuously and comprehensively integrating sustainability across the whole organization.

These five focus areas are not sequential. They are areas companies must invest in, revisit, calibrate, and align continuously. Different companies are at various stages of integrating and operationalizing sustainability and will need to make decisions tailored to their organization, deciding which aspects to address first. This process is further influenced by specific factors, including industry, region, and company DNA.

Figure 11: Navigating the sustainability transformation



Region influences companies' sustainability priorities and pace of change

The sustainability transformation is taking place worldwide. However, the interviews and research underpinning this report made clear that the areas of focus and the speed of change emphasized by businesses vary significantly from region to region.

In the eyes of business leaders

The results of a recent ERM survey on sustainability integration (done independent of Catching the Wave research) demonstrate these regional variations. Conducted November-December 2023, the survey received 1,500 responses from corporate executives and managers from 19 countries. Twenty-six percent of respondents were C-suite and board members, while 74 percent were managers and operational staff. A third (34 percent) of respondents worked for companies with 10,000 or fewer employees, 53 percent for companies with between 10,000 and 100,000 employees, and 13 percent for companies with over 100,000 employees.

Some regions, like the European Union and parts of Asia-Pacific, rely heavily on regulation to promote sustainability effort and improve performance. In other regions, including South America and Africa, sustainability-related regulation is relatively light. Economic development status is also a factor: more advanced economies can afford generous incentives to stimulate things like investment in renewables, while the low-risk profiles of these countries keep the cost of capital for sustainability projects lower than in emerging markets.

Differences in the degree of sustainability impacts experienced are another driver influencing company decisions and actions. South America, Africa, and Asia-Pacific are at the forefront of extreme weather and nature loss: Responses to the ERM survey show that companies in these regions are more focused on nature and biodiversity than companies in Europe and North America and that they also see them as equally important to decarbonization. Meanwhile, equity and social issues are by far the leading themes in Europe and North America.

See Figure 11 for more detail on how sustainability priorities and engagement vary by region, and Figure 12 for how respondents viewed corporate progress in different regions.

Figure 11: How involved is your company in sustainability initiatives?

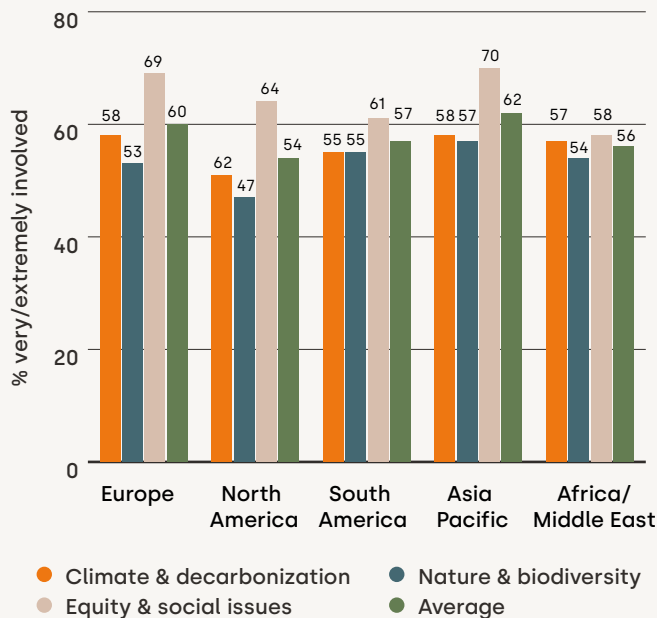
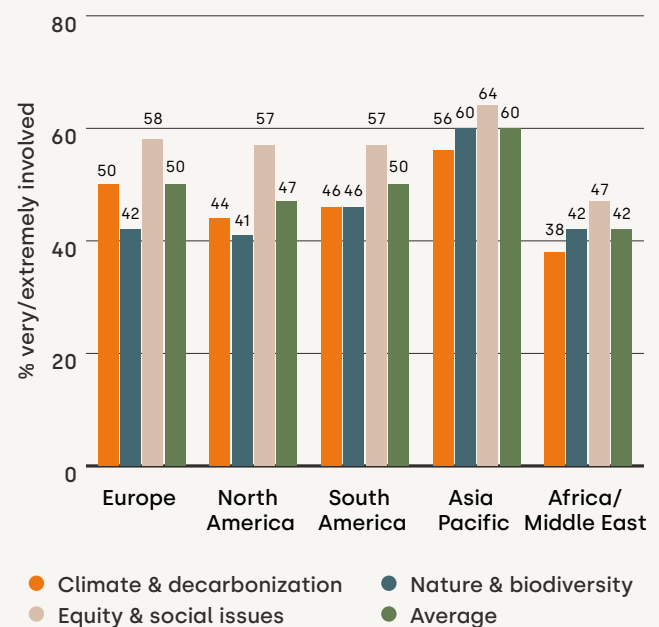


Figure 12: How much progress is your company making on sustainability initiatives?



Region influences sustainability speed and emphasis *continued*

Anecdotal evidence points in the same direction

In some emerging markets – India, China, Indonesia, and Brazil – accelerating the sustainability transition may have domestic political upside, especially for garnering support among urban and younger voters. Investments and innovations that improve water and air quality, or that help address climate change impacts such as floods and droughts, are welcomed, especially when matched with job creation and a sense of national pride.

Maintaining access to markets in advanced economies provides large export-dependent companies in emerging markets with a further incentive for adopting global sustainability best practices. Access to the EU market, for example, is increasingly subject to sustainability-related regulations such as the new carbon border adjustment mechanism (CBAM).

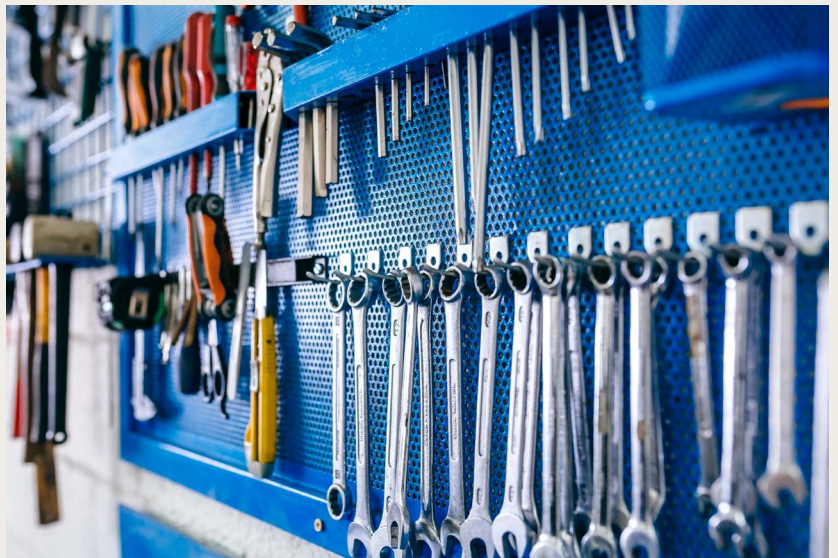
In other words, there are signals that there is a more positive and growth-orientated agenda for sustainability transformation among leading companies in emerging markets. In more advanced economies, there is caution at board and executive levels in many larger companies and in the investor community. Those senior corporate leaders and some investors see competitive risks and costs associated with regulation and compliance that may put too much emphasis on reporting and disclosure instead of action and impact. In these markets there is a desire to promote more business-to-business and public-private efforts to promote sustainability innovation.

Taken together, we can see that the application of the guidance in the Catching the Wave sustainable transformation framework, and the language used to apply the frameworks' focus areas internally at a company, may need to vary given the market jurisdiction in which it is being applied.

No matter where they begin however, companies must eventually take and link repeated action in all five areas to successfully absorb sustainability into their organizational fabric, fully seize its commercial potential, and build resilience to inevitable disruptions.

This framework does not claim to be comprehensive or entirely new; we have been able to create it thanks to the companies already pursuing some or several of the recommended focus and action areas. It therefore reflects the best available practical knowledge and experiences about what works for companies in the more advanced stages of integrating sustainability and how to apply it. It draws on how they are translating that integration into commercial success, operational efficiency, and resilience. In short, this practical guidance can assist companies as they navigate the changes of the sustainability transformation and help them seize its opportunities more quickly.

Below, we explore the five focus areas and the action recommendations that apply within each of them. In Part 5, we provide more direction on how the guidance can be deployed and how three pilot companies are testing it today.





FACE IT *Leadership & Governance*

Boost the sustainability mindset of senior leadership and develop a quantified business case that enables deep integration of sustainability into the company's overall strategy.

Close any awareness gaps that prevent senior leadership from fully digesting the strategic and competitive necessity of the sustainability transformation through education and explicitly connect it to personal interests, relationships, and experiences.

- Assess the sustainability-related competence and awareness gaps of the board and executive leadership and devise a bespoke plan to address these. Set up a revolving sustainability training program for board members and senior executives, defining the minimum annual time-investment required.
- Share compelling stories of how strategic implementation of sustainability has translated into positive business cases, focusing on the role of sustainability in the value creation process.
- Leverage the personal life experiences of board members and executive leadership to create an emotional entry point for creating understanding of the consequences of climate change, nature loss, and inequity.
- Connect senior executives with external sustainability professionals who can serve as regular mentors and sounding boards.

Incorporate sustainability considerations and perspectives in senior decision-making structures and investor selection to offset systemic bias towards short-term financial results and discounting of planetary boundaries.

- Set a substantial target for the percentage of board members and senior executives skilled in sustainability. Make a C-suite executive responsible for stakeholder engagements on sustainability and integrating engagement outcomes into corporate strategy and target setting.
- Form a sustainability board committee, which includes a substantial percentage of sustainability experts, and a sustainability executive committee to ensure senior buy-in, operational input, fresh perspectives, and cross-industry sharing. Set a meetings-per-year target for each committee.
- Compose a diverse board and executive leadership team (gender, age, ethnicity) to avoid insularity and group thinking and ensure a broader understanding of the world.
- Explore possibilities for choosing investors that view the integration of sustainability as vital for the company's long-term commercial success and will judge the company's strategy and actions accordingly.



Update and implement a corporate performance and accountability system that integrates risk and opportunity assessment, target setting, transition planning, measurement, and disclosure to provide a unified structure for sustainability performance management.

- Anchor sustainability into strategic and business planning, weighing its risks and opportunities.
- Set overarching operational and commercial goals on climate, nature, and equity aligned with the best available science and data, including all environmental and social costs, to push a shift from short-term value extraction to long-term value creation. Wherever possible, use trusted science-based tools.
- Activate a transition plan that breaks down long-term operational and commercial targets on climate, nature, and equity into intermediate 1-year, 5-year, and 10-year targets, including how much the company will spend on CAPEX and R&D investments to secure sufficient progress.

- Keep meticulous track of positive financial and non-financial contributions resulting from strategic integration of sustainability and the business cases that drive them. Few things will inspire and spread sustainability action faster than proven commercial success.
- Build, enforce, and continuously improve a detailed accounting system with high-quality metrics for corporate carbon, nature, and equity performance, including state-of-the-art digital infrastructure that can deliver such data. Implement rigorous accounting and third-party assurance to guide internal action and support credible external reporting.

FACE IT:

Evidence of progress and work to be done

- In 2022, only 31 percent of U.S. public company board directors said they understand ESG risks very well, while 42 percent believed ESG risks impact company performance.⁶⁹
- In 2023, 83 percent of directors at public and private companies agreed that knowledge of ESG is critical, however, less than half rated themselves as having "advanced" or "expert" level ESG knowledge.⁷⁰
- In 2021, only 21 percent of Fortune 100 board members had expertise in the S part of ESG.⁷¹
- In 2022, 72 percent of newly appointed board directors at S&P 500 companies were from underrepresented groups, including women, underrepresented racial or ethnic groups, and members of the LGBTQ+ communities.⁷²
- Between 2018 and 2023, the share of female directors at S&P 500 companies increased from 23 to 32 percent and the share of racially/ethnically diverse directors increased from 20 to 25 percent.⁷³
- In 2021, 90 percent of companies participating in the S&P Global Corporate Sustainability Assessment had committed to human rights; 74 percent had implemented actual human rights due diligence processes.⁷⁴
- Chief Diversity Officer (CDO) hires accelerated in the U.S. In 2022, 53 percent of Fortune 500 companies had a CDO or equivalent role, but turnover is high. 60 percent of CDOs holding that position in 2018 had quit four years later.⁷⁵
- In 2022, 73 percent of US company board directors of large companies (>\$10B revenue) had discussed climate change, while 27 percent of board directors of small-to-medium size companies (<\$1B revenue) had done the same.⁷⁶
- Only 41 percent of companies disclosing to CDP as of 2022 are reporting on any of their supply chain emissions despite their impact significantly outsizing (11.4x) direct emissions.⁷⁷
- In 2023, only 16 percent of companies have assessed biodiversity's impact on their supply chains and 20 percent on their own operations.⁷⁸
- In 2023, 53 percent of Russell 1000 companies disclose a supplier diversity policy, however, only 22 percent disclose their spending with diverse suppliers.⁷⁹

Case Study DBS	Case Study Microsoft
<p>Profile: Financial company based in Singapore; 2023 revenue S\$19.6 billion (USD\$14.5 billion) Topic: Sustainability management and oversight Actions: Face It, Map It</p> <p>DBS recognizes that effective sustainability governance is key to its ability to ensure resiliency and create long-term value for the business. The bank's Board, which has ultimate responsibility for its sustainability strategy, established a dedicated Board Sustainability Committee (BSC) in 2022 to oversee DBS' sustainability strategy.⁸⁰ The BSC meets quarterly to discuss sustainability efforts at the bank and external sustainability trends that may affect them.</p> <p>Oversight does not stop at the BSC. DBS also involves the Board's Audit and Risk Management committees in oversight activities, including sustainability disclosure and climate-related risk management. Further down the governance structure, DBS also established a Group Sustainability Council, which oversees the execution sustainability efforts across its business functions, and Local Sustainability Councils, which oversee sustainability efforts across its operating geographies.</p> <p>In addition to integrating sustainability into its governance structures, DBS has integrated it into its financing process. Its Responsible Financing Framework outlines the steps it takes to ensure its financing activities minimize ESG-related credit and reputational risks and support clients who want to invest in ESG-related risk management.⁸¹ Central to these efforts is the bank's ESG Risk Questionnaire, which client relationship managers use to evaluate a client's ESG risks and opportunities and assess their needs for low carbon transition financing support. The questionnaire generates an overall ESG score, which DBS uses for various applications.⁸² For example, during a credit approval process, DBS will either approve a client if its ESG risk is deemed satisfactory or require enhanced due diligence to determine if the client's ESG risk mitigation is sufficient to proceed. If mitigation is deemed insufficient, DBS will decline the application and, in certain cases, reassess the overall client relationship.</p>	<p>Profile: Technology company based in the United States; 2023 revenue USD\$211.9 billion Topic: Sustainability education Actions: Face It, Map It</p> <p>Without a workforce educated on and equipped with the skills to foster sustainability action, companies' sustainability ambitions are likely to fall short of their goals. Microsoft recognizes the need for green education and upskilling both within its own workforce and those across other industries.</p> <p>Internally, the technology company's employees self-organized into a volunteer-led Sustainability Connected Community (SCC), whose goal is to "make sustainability a part of everybody's job."⁸³ The SCC and its over 9,000 participating employees pursue actions across a diverse range of sustainability issues from office waste management to working to protect and preserve indigenous languages and ensuring environmental justice. The company also has an all-employee sustainability training effort, Sustainability in Action, role-specific trainings, and an "Employee's Guide to Sustainability" that provides crowd-sourced recommendations for integrating sustainability into employees' work responsibilities.</p> <p>Microsoft is bolstering sustainability training externally as well. Its LinkedIn Learning platform offers trainings to build workers' sustainability-related skills across topics ranging from sustainability innovation, sustainability in cloud strategy, sustainable supply chains, and technology and sustainability. The platform also enables job seekers to better connect with sustainability-related jobs through a green jobs collection for employers to post green jobs in one easy to access space.⁸⁴ Microsoft also supports learning and development via its Microsoft Sustainability Learning Center, which provides learning resources for various sustainability topics, including energy management, infrastructure management, sustainable operations, and water management.⁸⁵</p>



Make sustainability the foundation of the strategy and planning cycle and integrate sustainability decisively into all decisions and operations.

Embed sustainability considerations in the entire planning and risk-management cycle and apply them to every product, personnel, investment, and commercial decision.

- Conduct a rigorous double materiality assessment, including extensive stakeholder engagement, to identify existing and future sustainability risks, opportunities, and impacts throughout the value chain. Determine the strategic and business implications of the assessment output and integrate findings into the enterprise risk management framework and decision-making processes.
- Thoroughly review the costs and opportunities of both action and inaction while building a strategic business rationale for transformation-supporting investments.
- Develop and enforce eco-design and circularity principles for new and existing products and processes throughout the value chain to maximize resource efficiency and minimize waste.
- Adopt and mandate board-approved policies for nature and biodiversity, equity, and human rights to elevate related ambitions and impact to the same level as decarbonization. Expand and strengthen policies related to other sustainability themes (e.g., decarbonization, pollution, waste, Diversity, Equity, and Inclusion).

Create a granular ecosystem of specific targets, detailed data and hands-on monitoring, using internal pricing to reflect unaccounted-for climate, nature, and equity dependencies and impacts.

- Integrate sustainability metrics into the performance dashboards of key leaders across the business so that sustainability becomes an integral part of the day-to-day steering of the organization.
- Make operational teams responsible for sustainability performance by setting binding business unit-level targets and, if needed, splitting them into site-, country-, or region-specific targets. Evaluate progress towards interim targets at least every six months and recalibrate as required.

- Deploy focused data collection mechanisms throughout the value chain, e.g., by weighing local contexts when setting regional equity targets, or investing in granular energy and water metering to gather real-time data across operations.
- Implement an internal carbon price, using a credible social cost of carbon metric, to illustrate the actual total costs of operational decisions and speed up the business case for decarbonization. Charge internal carbon price-based fees and use proceeds to help finance sustainability projects. Leverage the lessons learned and begin implementing internal nature and equity prices without delay.

Roll out career-critical personal incentives (e.g., bonuses, promotions) tied to sustainability performance at every level, and integrate sustainability considerations into short-term and long-term decision-making.

- Tie a substantial percentage of short-term and long-term compensation to environmental and social metrics for critical employees, from board members and executive leaders to operational teams.
- Create independent and binding oversight to ensure compensation of critical employees is substantially and rigorously tied to sustainability performance.

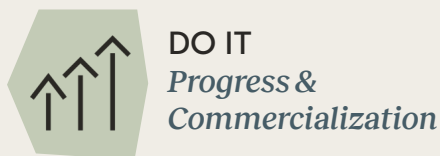
Close sustainability knowledge gaps and systematically educate and inspire operational staff, providing them with the skills needed to operationalize sustainability targets and objectives.

- Continuously train operational staff on sustainability to achieve buy-in and provide the essential skills and qualities needed to operationalize sustainability goals. Diversify curriculums, reflecting differences in functional roles and sustainability readiness.
- Build an internal culture (reinforced by metrics, incentives, and vocal advocacy from senior leadership) that highlights sustainability as a business imperative to ensure future competitiveness.
- Leverage succession planning for internal leaders as a strategic tool to achieve specific sustainability objectives and evolve leadership to embrace sustainability as a strategic opportunity.

MAP IT: Evidence of progress and work to be done

- In 2023, only 13 percent of executives said that sustainability was deeply embedded in their companies' cultural DNA, while 49 percent said it was moderately embedded and 37 percent said it was slightly embedded.⁸⁶
- In a survey of 4,700 people in nine major economies, 63 percent of respondents felt that different skills would be required for their company to execute on its ESG ambition or strategy. Yet only 45 percent of non-managers said their employer offers reskilling and upskilling opportunities.⁸⁷
- While 85 percent of organizations across 16 countries and 9 sectors place a high strategic level of importance on sustainability goal achievement, just 16 percent have integrated sustainability into their strategies and data.⁸⁸
- In 2022, 20 percent of over 5,000 global companies disclosing climate-related information used an internal carbon price compared to 17 percent in 2021.⁸⁹
- In 2021, the estimated externalized costs of global transport and electricity systems amounted to \$25 trillion a year, equal to 28 percent of global gross domestic product.⁹⁰
- In 2023, 75.8 percent of S&P 500 companies integrated at least one ESG metric in executive compensation plans, compared to 66.5 percent in 2021.⁹¹
- In 2023, 78 percent of 50 large European companies had a carbon target tied to executive pay, but only 14 percent of those executive targets are significant, transparent, and clearly linked to the company's carbon strategy. Yet, despite decarbonization rates that mostly fail to align with long-term targets, the pay-out rate averaged 90 percent.⁹²

Case Study BASF	Case Study Pepsi
<p>Profile: Chemical company based in Germany; 2023 revenue €69.8 billion (USD\$74.7 billion) Topic: Sustainability solution development Actions: Map It, Do It</p> <p>BASF's entire business is orientated around sustainability. After all, its corporate purpose is to "create chemistry for a sustainable future."⁹³ The chemicals company uses three pillars to define how it works to realize this purpose: "sourcing and producing responsibly, acting as a fair and reliable partner, connecting creative minds to find the best solutions for market needs."</p> <p>Although all three are equally important, the last pillar on finding solutions is essential to BASF's ability to transform its business to one that will create lasting sustainable value. This is where the company's Sustainable Solution Steering (TripleS) comes in.⁹⁴ The program aims to increase the sales of what BASF calls Sustainable-Future Solutions or those that generate environmental and social benefits without compromising on profitable business, from 41.4 percent of total sales in 2023 to 50 percent in 2030. It uses two steps to evaluate potential solutions. First, it identifies what it calls "significant sustainability deficits" in solutions based on hazard potential, regulatory trends, and its value chain's sustainability ambitions. Second, it then confirms that the solution contributes to sustainability value creation by evaluating its impact across nine sustainability categories (e.g., climate change & energy, resource efficiency, circular economy, etc.).</p> <p>From this analysis, BASF then classifies solutions as either Pioneers, which positively contribute to sustainability above current market standards, or Contributors, which positively contribute to sustainability at current market standards. The company has also begun to retroactively assess its existing product portfolio using TripleS and classifying them as Standard (no sustainability contribution), Monitored (sustainability risk in next 2-5 years), and Challenged (sustainability risk in 2 years or less).</p>	<p>Profile: Retail company based in the United States; 2023 revenue USD\$91.5 billion Topic: Decoupling emissions from business growth Actions: Map It, Do It</p> <p>PepsiCo recognizes that climate change poses significant risks to its business and is focused on reducing its greenhouse gas (GHG) emissions as it moves toward net zero emissions by 2040. As part of its decarbonization strategy, PepsiCo is working to decouple its GHG emissions from its business growth to address its climate impacts and help develop more resilient and sustainable food systems.</p> <p>This decoupling is complex, requiring PepsiCo to pursue multiple levers simultaneously starting with its PepsiCo Positive (pep+) initiative. pep+ calls for an end-to-end transformation of the company's business by ingraining sustainability into everything they do.⁹⁵ For climate, PepsiCo mapped three 2030 targets (75 percent Scope 1 and 2 reductions, 40 percent Scope 3 reductions, and 40 percent Scope 1, 2, and 3 reductions) to guide its transformation and identified the enablers and catalyzers needed to achieve them (e.g., policy incentives, renewable energy-capable grids, widely-available low carbon fuels, and energy efficient and low carbon manufacturing technologies and processes at scale).⁹⁶</p> <p>Beyond pep+, PepsiCo charted its known opportunities for emissions reductions, along with the timeframes for these reductions. Going further, the company plotted the cost intensities associated with achieving these reductions to ensure it is acting on its lower cost opportunities first, before developing more creative solutions to reduce the higher cost alternatives, whether through partnerships, technological advances, etc. Taken together, these actions will help PepsiCo accelerate GHG emissions reductions, while enabling its business to continue to grow in a sustainability-focused manner.</p>



Capitalize on sustainability as an innovation engine to develop new markets, future-proof profits, and seize operational impact opportunities.

Embed sustainability considerations into short-term financial planning cycles and long-term growth plans, including decisions on R&D, M&A, CAPEX, and OPEX, to capture cost and resource efficiencies and harness sustainability's potential for technological and commercial innovation.

- Establish R&D, business development, and M&A targets and budgets in line with the long-term strategic sustainability value and risks.
- Set substantial targets for sustainability-aligned OPEX and CAPEX and consistently apply an internal carbon price alongside nature and equity metrics to ensure consideration of environmental and social costs in investment decisions.
- Implement a sustainable innovation mechanism, possibly partially funded with internal carbon fees, to create an independent finance flow for experimental projects that business units can draw from.
- Utilize sustainability-linked financial instruments (e.g., bonds and loans) to tie financial incentives and metrics to sustainable progress in return for access to lower cost of capital in the form of lower rates. Make the case to banks and investors that they should fully integrate sustainability risks in their lending/investment practices.

Scrutinize sustainability trends (regulatory, consumer, technological, etc.) to identify opportunities for potential cost savings, new products and new markets.

- Build awareness and cultivate internalization that the sustainability transition is a once-in-a-lifetime commercial opportunity. Since the commercial potential of sustainability touches on all business functions (e.g., finance, operations, sales, R&D) this needs to be a cross-company effort.
- Integrate sustainability trend analysis into commercial and product development strategies to proactively identify new market opportunities (e.g., car emission standards and low-carbon tax breaks boosting EV growth), focus R&D efforts, and modify existing products and expertise to respond to them competitively.
- Encourage new, more sustainable product acceptance across business units and allocate sufficient marketing budget and capacity for these products to give them a fair chance of success.

Implement a no-excuse approach to eliminating direct emissions and proactively solving carbon hotspots in value chains.

- Set energy efficiency (≥ 4 percent reduction annually by 2030) and renewable energy goals (tripled by 2030) for existing operations and new investments (goals aligned with International Energy Agency 1.5°C scenario). Combine these goals with binding performance metrics and incentives for operational staff.
- Fully electrify transport and switch to 100 percent renewable electricity for Scopes 1 and 2 by generating green electricity or entering into Power Purchase Agreements (PPAs) or Virtual-PPAs (VPPAs). Take full responsibility for eliminating direct emissions of operations (e.g., eliminating methane leakage in the fossil fuel industry).
- Identify Scope 3 carbon impact hotspots, invest in better data quality and internal carbon pricing, and commit to reactive and proactive mitigation actions.
- Proactively vet suppliers and operational regions on carbon impact. Actively engage with them to lower their emissions and help them overcome climate risks. Compensate for Scope 3 emissions by investing in high-quality natural climate solutions (NCS) that combine carbon removal with nature preservation and socioeconomic benefits. Advocate for broader acceptance of high-quality, high-integrity NCS as credible science-based solutions.

Implement a similar no-excuse approach to addressing negative impacts on nature and equity, acknowledging that they are as urgent as decarbonization and are often directly linked.

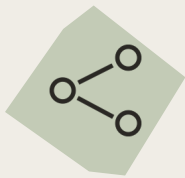
- Set annual planetary boundaries-aligned water and resource-efficiency goals for existing operations and new investments. Combine these with binding performance metrics and achievement incentives for operational staff.
- Operationalize the UN Guiding Principles on Business and Human Rights, including the implementation of a robust due diligence process for human rights. Explore opportunities to address mounting inequality throughout the value chain in line with the recommendations of the [Business Commission to Tackle Inequality](#).⁹⁷
- Set material nature positive-aligned goals for existing operations and new investments and combine these with binding performance metrics and achievement incentives for operational staff. Compensate for value-chain nature impact with high-quality, high-integrity natural climate and nature-based solutions.
- Identify non-carbon-related value chain hot spots impacting nature (e.g., plastics, forever chemicals, water pollution) by investing in data quality and internal pricing- mechanisms. Commit to reactive and proactive actions to mitigate these impacts.
- Actively engage with local stakeholders during production site analysis to understand the local context and identify opportunities to combine operational needs with community needs (e.g., flood protection, clean water, local supplier procurement).

DO IT:

Evidence of progress and work to be done

- In 2023, 57 percent of leaders of Fortune 1000 companies were increasing their investments in sustainable solutions and clean technology. The principal drivers were investor demand (40 percent) and new revenue potential (39 percent).⁹⁸
- Global sales of new EVs must grow 25 percent annually between 2023 and 2030 and reach 65 percent by 2030 to achieve net zero by 2050.⁹⁹
- ESG performance of brands (ethical, humane, environmentally sound) is one of the top three considerations of consumers according to a 2023 survey. Many consumers 'divest' from unsustainable brands; 33 percent of U.S. Generation Z consumers say they'd boycott a brand with bad labor practices.¹⁰⁰
- Products with ESG-related claims averaged 28 percent cumulative growth between 2019 and 2023 compared to 20 percent that did not have a claim.¹⁰¹
- In a study of over 23,000 global consumers, half said sustainability is among their top four criteria when making a purchasing decision.¹⁰²
- Companies who are keen ESG adopters experience profit growth of 9.1 percent compared to the 4.5 percent profit growth of ESG laggards.¹⁰³
- In 2023, U.S. consumers were willing to pay an 11 percent premium for sustainable products, but sustainable brands ask for a 28 percent premium on average.¹⁰⁴
- 75 percent of methane emissions from fossil fuel operations can be reduced at low to no cost, taking out three gigatons CO₂-eq emissions annually, or 7 percent of 2022 global energy-related greenhouse gas emissions. Still, energy sector methane emissions remained near a record high in 2023.^{105, 106}
- Global energy efficiency needs to improve by 4 percent each year until 2030 to achieve net zero by 2050, taking out ten gigatons of CO₂ emissions annually by 2030, or 24 percent of 2022 global energy-related greenhouse gas emissions.¹⁰⁷
- The transition to clean energy is expected to generate 13.3 million new jobs globally by 2030. This will be partly offset by the loss of 3 million jobs due to the energy transition, resulting in a net job shift of an additional 10.3 million.¹⁰⁸
- In 2023, 15 percent of global farmland was managed using regenerative agriculture practices. To achieve the Paris Goal of halting global warming at 1.5°C, this needs to reach 40 percent by 2030.¹⁰⁹
- Sixty percent of 75 large global agri-food companies include regenerative agriculture in their sustainability strategies, but only 33 percent have quantified targets.¹¹⁰
- Farmers who implement regenerative agriculture practices will see profit declines over the first few years. However, in the long-term regenerative agriculture practices are likely to result in up to 120 percent higher profitability and a 15 to 25 percent return on investment over a decade.¹¹¹

Case Study JSS Swire Pacific	Case Study BMW Group
<p>Profile: Diversified conglomerate based in Hong Kong ; 2023 revenue HK\$94.8 billion (USD\$12.3 billion) Topic: Sustainability project financing Actions: Do it, Shape It</p> <p>Projects to improve sustainability performance do not always meet a company's normal funding requirements due to factors such as longer payback periods and/or reliance on unproven technologies. Recognizing this challenge, JSS Swire Pacific established its sustainable development fund (SD fund) to help ensure potential sustainability innovations are given the opportunity to succeed.</p> <p>The SD fund makes up to HK\$100 million available annually to Swire Pacific's operating companies "to accelerate and scale-up projects that will have an impact on the group's sustainability performance, but would not otherwise receive funding through regular channels." Here is how it works. A Swire Pacific operating company issues a problem statement to Cleantech Group who sources potential solutions from interested companies.¹¹² Working together with the operating company, they then select a potential solution provider from a shortlist of candidates using an established criteria to determine whether to provide the project funding. Criteria considered include the applicability of the solution to the problem it is designed to address, its potential sustainability impact, and its differentiation from solutions currently in use. The selected company then develops a concept note for approval and funding.</p> <p>One real life example of the SD fund comes from the Taikoo Li Sanlitun shopping center in Beijing where Swire Pacific installed energy efficient direct current microgrids for air conditioning distribution created by a company supported by the fund.¹¹³</p>	<p>Profile: Automotive company based in Germany; 2023 revenue €155 billion (USD\$165.9 billion) Topic: Sustainability integration Actions: Map It, Do It</p> <p>At many companies, sustainability stands alone, with little crossover with other business functions across the organization. While many of these companies value sustainability, their siloing of it is limiting sustainability's ability to transform the business.</p> <p>BMW Group has done the opposite by integrating sustainability into its overall business strategy, highlighted by its BMW Group Strategy.¹¹⁴ Organized into four parts (Position; Direction; Strategic approach; and Collaboration), the strategy provides the foundation for the company's "market-oriented focus on profitability, growth and sustainability". Starting with Position and Direction, these two elements define BMW Group's goal to develop first-class individual mobility that contributes to sustainable development and the factors that drive these objectives. The Strategic approach takes these two elements and connects them to the issues like electromobility and digitalization that will define its business and sustainability success going forward. Lastly, Collaboration outlines how BMW Group will achieve its strategic ambitions by enabling its employees and external partners to achieve their full potential.</p> <p>The company's annual BMW Group Report underlines how its business and sustainability strategies are one in the same by combining its annual and sustainability reports into one.¹¹⁵ Integrated thinking is paying off for BMW in the electric vehicle (EV) space. Its assembly of EVs on the same lines as their internal combustion engine (ICE) counterparts and that look similar to ICE vehicles was once derided as inefficient. However, after finishing second only to Tesla in luxury EV sales in 2023, that is no longer the case.¹¹⁶ BMW Group's success can at least be partially traced to its integrated strategy, which enabled it to pivot its business to consumer demands for more sustainable EVs and make a profit, something other large legacy car manufacturers have struggled to do.</p>



SHAPE IT *Networks & Engagement*

Drive action by joining forces with suppliers, competitors, and other stakeholders, and build trust by nurturing relationships, communicating authentically, and being open to new ways of working.

Embrace unprecedented collaboration with suppliers, competitors, and other relevant stakeholders, acknowledging that no company can successfully navigate and solve the biggest sustainability challenges alone.

- Develop partnerships with sector peers to tackle challenges with shared suppliers, e.g., data and knowledge sharing, human rights due diligence, investments in upskilling, and streamlining language and sustainability KPI expectations.
- Initiate green industrial hubs with sector peers and government actors to pool capacity and resources for crucial sustainable investments too large for any company to undertake alone, e.g., green hydrogen infrastructure, local circular systems, and sustainable sourcing capacity.
- Invest in suppliers to accelerate supply chain sustainability while locking in prices and quality of supply, e.g., through co-investing in energy- and resource-efficient production or facilitating benefits out of reach for individual suppliers, such as access to cheap capital or renewable VPPAs.
- Engage in multi-stakeholder collaborations (with NGOs, governments, investors, labor unions, suppliers, clients, etc.), to develop and implement widely-supported sector standards for sustainable practices, e.g., the Global Reporting Initiative sector standards.

Assemble deep networks with expert sustainability partners to build internal capacity and increase access to talent.

- Forge close partnerships with universities and colleges to develop future sustainability-skilled talent and upskill or reskill the current workforce at all levels to develop sustainability maturity and expertise.
- Initiate an internal "buddy system", pairing sustainability and operational professionals so they can better understand each other's goals, motivations, challenges, and realities.
- Invest in translating the growing body of sustainability jargon, standards, and frameworks into clear language that the company's operational staff can understand and implement.

Build trust with stakeholders by developing genuine relationships, understanding local context, and reporting transparently and rigorously on sustainability impacts and performance.

- Comply swiftly and proactively with mandatory and industry-standard disclosure frameworks. Prevent backtracking on commitments – delaying compliance will cause reputational harm and is increasingly subject to fines and penalties. Similarly, avoid greenwashing by anchoring sustainability claims about products and services in solid, independently verified evidence.
- Engage extensively with stakeholders to manage risks and de-risk controversial projects and investments.
- Build relationships with NGOs and local communities to boost awareness of local context and bridge skill gaps on topics such as biodiversity or indigenous people's rights.
- Recognize responsibility for negative environmental, social, and other adverse impacts, and clearly communicate plans to address these.
- Continuously enhance goals and metrics based on the latest science and data, including fully accounting for Scope 3 emissions. Consistently break down goals into intermediate targets so stakeholders can verify the company's plan to get there. Communicate ambitions, progress, and independently vetted results in clear and assurable formats.

Join forces with others to advocate for the (legal, regulatory, market, industry, financial) standards, frameworks and tools essential for the private sector's sustainability progress, but outside its direct control.

- Engage deeply with governmental and regulatory bodies to fully understand the rationale and direction of sustainability regulations and laws and constructively influence them in good faith at an early stage.
- Communicate authentically the positive role business can play in the energy transition and how the company is transforming to minimize its negative impacts. Be honest about the policies or instruments necessary to accelerate progress but outside corporate control.
- Advocate with other companies or stakeholders for government action to accelerate the sustainability transformation (e.g., carbon price, investment incentives, forceful but predictable regulation, public funds allocated to de-risking private capital flows, etc.), using corporate scale and reputation to multiply impact.
- Be consistent and transparent. Public sustainability proclamations and lobbying efforts that compete will erode credibility.

SHAPE IT:

Evidence of progress and work to be done

- In 2022, 85 percent of companies in the EU said a lack of the right skills is impeding investments, including in sustainability.¹¹⁷
- Only 2.7 percent of senior business executives believe that their organizations have the green skills necessary to accelerate their sustainability initiatives.¹¹⁸
- In 2023, 53 percent of board directors at U.S. public companies said that a board member beyond the CEO met with shareholders over the course of the year.¹¹⁹
- In 2023, despite reporting increasing trust in business, 50 percent of global respondents to the Edelman Trust Barometer also said companies must do more to address climate change and inequality.¹²⁰
- A carbon tax of at least 50-100tCO₂ is needed globally by 2030 to achieve the Paris Agreement's goals, a price level which is much higher than current pricing schemes already in place.¹²¹
- 93 percent of US companies make net zero claims, yet 58 percent of US companies are either insufficiently supportive of climate policies needed to meet the Paris Agreement target of 1.5° C warming or their lobbying efforts actively contradict those policies.¹²²
- Only 11 companies in the S&P 100 publicly supported the U.S. Inflation Reduction Act in 2022, while a still low 19 additional companies publicly called on Congress to pass aggressive climate policy in 2021 and 2022.¹²³

Case Study Suzano	Case Study Nutrien
<p>Profile: Pulp and paper company based in Brazil; 2023 revenue BRL39.7 billion (USD\$8.2 billion) Topic: Sustainability innovation Actions: Do It, Shape It</p> <p>Suzano's business is innovation. The Brazilian company is the largest pulp manufacturer in the world and at the center of the drive toward sustainable and renewable nature-based products. Key to its ability to deliver these products is the company's Innovation Strategy, which combines sustainability with innovative solutions to some of the world's most urgent challenges.¹²⁴ Centered around the concept of Innovability, or innovating in a sustainable way, Suzano's strategy is broken into three parts: Process Innovation; Product Innovation; and Open Innovation.</p> <p>Process Innovation¹²⁵</p> <ul style="list-style-type: none"> → Concept: Developing new sustainable solutions for the processes that Suzano uses to farm eucalyptus, harvest raw materials, process products, and manage logistics. → Results example: Uses black liquor, one of the byproducts of its pulp processing, to generate renewable energy that powers 90 percent of its industrial processes. <p>Product Innovation¹²⁶</p> <ul style="list-style-type: none"> → Concept: Developing renewable products that are sustainable replacements for plastics and other petroleum-based products and move the world closer toward a bioeconomy. → Results example: Produces a refined cellulose pulp known as Microfibrillated cellulose (MFC) that can be used as an input for textile fibers. The production of these recyclable and biodegradable fibers emits 72 percent less carbon and consumes 99 percent less water than cotton. <p>Open Innovation¹²⁷</p> <ul style="list-style-type: none"> → Concept: Partnering with startups and stakeholders to develop and implement sustainable innovations that boost the bioeconomy, while also encouraging internal innovation by promoting experimentation and the proposal of new ideas. → Results example: Since 2019, Suzano's venture capital arm, Suzano Ventures, has connected with more than 500 startups and engaged in more than 130 proofs of concept for innovative ideas that build the future of the bioeconomy. 	<p>Profile: Agricultural company based in Canada; 2023 revenue USD\$29.1 billion Topic: Sustainability management Actions: Do It, Shape It</p> <p>The biodiversity and climate impacts associated with food production are significant with agriculture using approximately 38 percent of the Earth's land and the food value chain accounting for over one-third of global greenhouse gas (GHG) emissions.^{128,129} In particular, reducing GHG emissions is challenging for Nutrien given that 70 percent of its emissions are Scope 3 emissions generated by its customers who use their products on farms. Still, there are ways to make progress.</p> <p>Nutrien works with nearly half a million farmers to understand their day-to-day realities and develop actions to help them lower their emissions impacts. These efforts are highlighted by its Sustainable Acres Program, which aims to enable farmers "to adopt sustainable and productive agricultural products and practices on 75 million acres globally, by 2030."¹³⁰ Nutrien pairs this program with its digital agronomic forecast tool Agrible to measure baselines and assess the success of sustainable product and practice adoption at farms and helps farmers identify the environmental and economic value of these interventions.¹³¹</p> <p>Another critical Nutrien initiative is its Carbon Program, which aims to empower farmers "to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts, by 2030."¹³² Core to these efforts is Nutrien's incentivization of agricultural practices that support the creation of carbon offsets or insets. The program has already been a success. In 2023 alone, it enabled emissions reductions and removals in upwards of 1,500 tons of CO₂e on close to 900,000 acres in North America.</p>



CONNECT IT *Continuity & Tenacity*

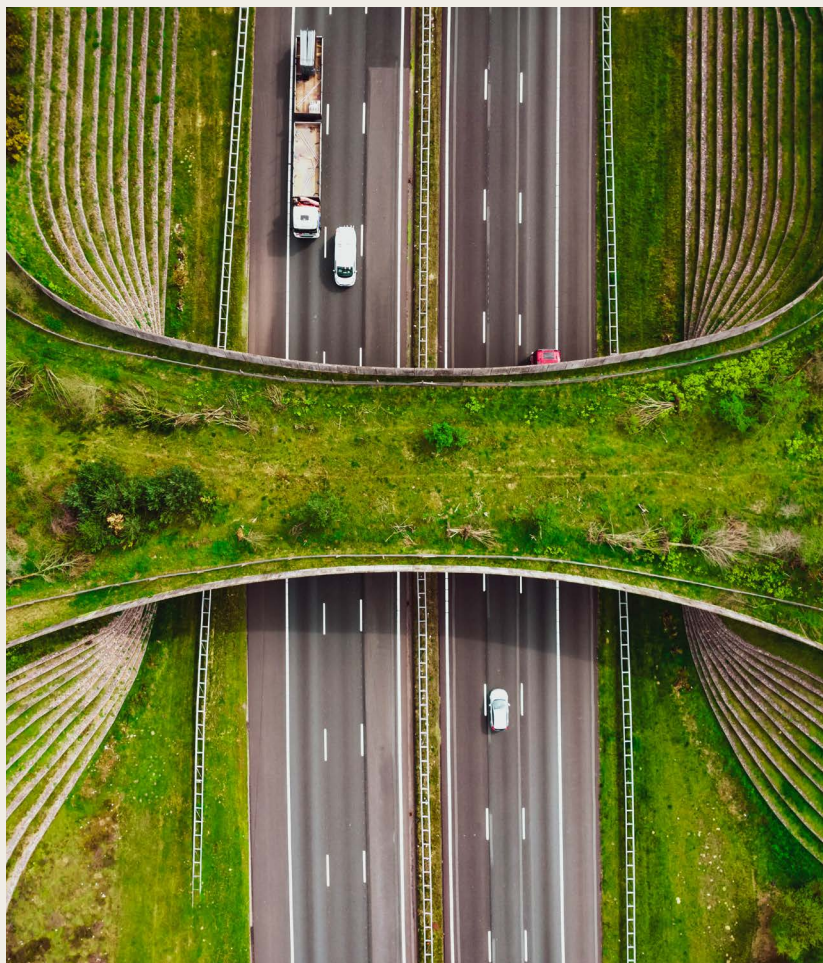
Nurture transformation by continuously and comprehensively integrating sustainability across the whole organization.

Continuously invest in, revisit, calibrate, and connect actions under Face It, Map It, Do It, Shape It, and Connect It to sustainably transform the company and secure its long-term commercial future.

Rigorously review and enforce the company's performance and accountability system through learning, revising, interacting, and providing support at all levels inside and outside the company to ensure deep change continuously moves forward.

Anticipate internal resistance and strong undercurrents pulling priorities towards short-term financial results and unsustainable low-cost models coupled with a tendency to discount negative impacts. Proactively generate creative solutions to overcome these and other systemic challenges.

Insist on an open, collaborative culture that embraces experimentation to fully harness creative energy and sustainable commitment within and outside the company.



CONNECT IT: *Evidence of progress and work to be done*

- In 2019, 82 percent of top executives believed long-term strategic planning would improve value creation potential, but just 30 percent had reported a time horizon that exceeded three years.¹³³
- In 2022, 59 percent of U.S. CEOs said they considered pausing or reconsidering sustainability efforts due to ESG backlash.¹³⁴
- However, in 2023, 71 percent of U.S. CEOs reported that ESG backlash is not affecting their sustainability investments.¹³⁵
- In 2023, global dividends reached a record \$1.66 trillion, up 5 percent from 2022. Meanwhile, global renewable energy investment in 2023 followed far behind at \$623 billion.^{136, 137}
- In 2023, 55 percent of 380 large global companies in 10 different industries made specific, measurable circularity commitments. Executives expect the revenue share from circular products and services to grow 30 percent from 2021.¹³⁸
- The global circularity gap is growing; just 7.2 percent of materials in existing products are reused as secondary inputs for new products, down from 9.1 percent in 2018. This means the world almost exclusively relies on new (virgin) materials.¹³⁹
- Without a steep increase in the circular use of secondary materials, the extraction of virgin materials is expected to rise to between 170 and 184 billion tons annually, 68 to 82 percent more than in 2021.¹⁴⁰
- Rising material consumption has real impact, with material handling and use contributing up to 70 percent of global greenhouse gas emissions and extraction and use causing more than 90 percent of global biodiversity loss and water stress.¹⁴¹

Case Study Walmart	Case Study PETRONAS
<p>Profile: Retail company based in the United States; 2023 revenue USD\$611 billion Topic: Natural resource regeneration Actions: Connect It</p> <p>Walmart aspires to be a regenerative company that places “nature and humanity at the center” of its business practices. This total transformation connects almost every aspect of the retailer’s business together to accelerate broad sustainability progress. Set back in 2020, Walmart’s regenerative goal (to help protect, more sustainably manage, or restore at least 50 million acres of land and 1 million square miles of ocean by 2030) was born out of a recognition that many of the products the company sells come from nature or from ingredients derived from nature.</p> <p>In the time since, the company has developed a comprehensive strategy to achieve its goal.¹⁴² Starting with governance, its Board’s Nominating and Governance Committee oversees its nature-related management and how it is integrated into its overall ESG approach. What nature-related issues Walmart prioritizes for management were determined by assessing the company’s nature-related dependencies, impacts, risks, and opportunities. When it comes to management itself, Walmart sets product sourcing expectations via its nature-related policies and position statements on forests, seafood, sustainable row crops, and pollinator health. It also uses science-based certifications and standards to validate sustainable practices adopted by its value chain partners, along with tracing and validation tools to confirm where commodities come from and if unsustainable practices were used to produce them.</p> <p>Walmart is also shaping how its value chain approaches nature-related management by encouraging partners to pursue ambitious nature-focused action and report on their progress through its Project Gigaton platform.¹⁴³ Additionally, it provides value chain partners with resources and best practice examples to help them improve their nature-related management. Walmart’s regenerative pursuit has been a success so far. In FY23, it had already protected, sustainably managed, or restored more than 30 million acres of land, more than halfway to its 50 million acres by 2030 goal and exceeded its 1-million-acre 2030 goal for ocean protection by 400,000 acres.</p>	<p>Profile: Energy company based in Malaysia; 2023 revenue RM343.6 billion (USD\$72.4 billion) Topic: Internal sustainability prioritization Actions: Face It, Map It, Do It</p> <p>A few years ago, PETRONAS’ senior leaders decided that sustainability should be a leading business imperative, recognizing that a sustainable transformation will be essential to its long-term competitiveness. However, to achieve this fundamental shift in the business, the company had to convince everyone at the company of its necessity. It used two simultaneous initiatives to do so.</p> <p>First, it initiated a company-wide project to develop its Pathway to Net Zero Carbon Emissions 2050. Rather than use an external firm to support development, Petronas opted for an internal route specifically to nurture support for its sustainability efforts, with the thought that the more internal teams are involved, the more likely they will be to recognize the importance of this work. Second, the company pursued comprehensive sustainability education to fuel company-wide capacity building. It has been widely successful so far, training over 30,000 employees, from Board members to plant managers, on sustainability.¹⁴⁴ In addition to direct training, PETRONAS holds quarterly engagements for its Board and C-suite where leading sustainability thinkers conduct deep dives into different topics to help these leaders internalize the importance of sustainability to the business. Further, it conducts targeted programs to upskill its operational managers on what sustainability means to their work and how their decisions contribute to the company’s progress.</p> <p>The success of these initiatives is readily apparent as Petronas has developed concrete plans to achieve net zero emissions and committed to allocate approximately 20 percent of its capital expenditures over five years (2022-2026) to decarbonization and clean energy solutions.¹⁴⁵</p>

In the field

- User guide for applying the framework



05.

Catching the wave
→ Seizing the opportunities of the sustainability transformation

In the field

– User guide for applying the framework

The sustainability industry has created countless frameworks, tools, and guidance, most designed to accelerate the sustainability transformation. Not all succeed. To ensure that the sustainability transformation framework presented in *Catching the Wave* has rapid impact, this section outlines some ways companies can quickly engage with its guidance.

In conversations with pilot companies, we learned this framework offers a broad range of entry points. It can be used to solve thorny issues that arise during strategy development. It can guide integration, product, and marketing decisions. It can help companies spot opportunities to better manage people.

Three key benefits have already emerged:

1. The transformation framework's practical guidance helps companies assess their current maturity level on sustainability integration and performance in a structured way. The framework is not theoretical – it is built on the views and experiences of people doing similar work at leading companies. A review of activities against its recommended actions gives companies a realistic picture of their strengths and weaknesses and the priority actions required to integrate sustainability and navigate transformation.
2. The framework is versatile. Its interlocking categories offer a coherent way of continuously integrating and recalibrating sustainability decisions and actions. It can be applied at different levels – from C-Suite to operational management to the factory floor – and to different areas – from sales and product development to training, circularity, and supply chain management. No matter how macro or micro the decision that needs to be made, routing it through one or more of the framework's five focus areas will firmly align it with sustainability's strategic importance.
3. The five categories operate as guiding principles, not dictates. They are deliberately broad to offer companies working with them ample flexibility. The recommended actions under the five categories in this report are tailored to the company level. But depending on the sector, process, or part of the business in focus, teams can customize the actions under Face It, Map It, Do It, Shape It, and Connect It to help them take stock of the situation and determine priorities.

Below, we explore three ways the framework can be used drawn from the experiences of three companies that helped develop the transformation framework and that are testing it to assess and improve their sustainability efforts. While all three use cases are still in progress, the early results are encouraging. Please note, these are examples, rather than an exhaustive list. Thanks to its versatility, there are many other ways the framework can help companies face sustainability-related challenges and seize opportunities.

- **Getting the lay of the land:** Using the framework as a company-wide sustainability maturity checklist to identify areas for improvement and prioritize actions.
- **Building Capacity:** Using the recommended actions to shape and guide internal engagement, sustainability awareness/skills gap assessment, and education program development for teams across the organization.
- **Joining Forces:** Using the guidance to develop and flesh out cross-sector partnerships to overcome sustainability challenges that can only be tackled through value chain collaboration.



The guidance and examples presented in Part 5 and throughout this report are not exhaustive, but they illustrate the versatility of the *Catching the Wave* sustainability transformation framework and its potential to guide and accelerate corporate decisions and actions as companies navigate the risks and opportunities created by the sustainability transformation. Additional resources designed to help companies on their sustainability journey can be found in Appendix I, which includes a selection of tools that WBCSD has produced that companies can use to advance their key ambitions in ways that deliver increasingly positive impacts and greater resilience.

Option 1: Getting the lay of the land

Sustainability affects many corporate areas and functions, and new guidelines and regulations are introduced with dizzying frequency. Without a structured approach for identifying and prioritizing actions, it can be impossible to keep track. This opens the door to ad hoc approaches that are as exhausting as they are insufficient, leading many organizations to primarily focus on compliance while overlooking commercial opportunity.

Using the sustainability transformation framework to compare its recommended actions against current corporate activities allows a company to create a structured snapshot of the current situation, which can then shape an improved company-wide approach to integrate and operationalize sustainability. It helps companies:

- Assess the major gaps compared to what advanced companies and experts think is required to integrate sustainability and successfully seize the commercial opportunities of the sustainability transformation. It also identifies what companies are already doing right.
- Analyze patterns and identify structural and strategic shortfalls hindering the integration of sustainability.
- Communicate the state of sustainability integration in a structured way to all levels of the company.
- Agree on a sustainability-aligned foundation for strategy discussions, setting priorities, modifying goals, and developing detailed action plans (e.g., training, capacity building, and investments).
- Create a baseline for assessing progress and revisiting and calibrating strategy over time.



Option 2: Building Capacity

From the CEO to the factory floor, people throughout the organization must internalize the strategic, commercial, and operational necessity of integrating sustainability.

This means that every employee needs to have an appropriate level of sustainability skills and awareness. Generic sustainability training will not accomplish this: different business functions—e.g., sales, operations, or legal—and different issues—e.g., circularity, human rights, or product development—require very different sustainability skills. Expertise and awareness among teams and individuals often varies wildly.

Companies need a sophisticated ecosystem for internal engagement that considers differences in awareness, motivation, and skill levels. In building such a system, the framework can help companies:

- Assess and rate awareness and skill maturity of staff at all levels and across business functions.
- Map the main reasons/sources of resistance employees do not engage with sustainability and/or overlook its potential.
- Prioritize the individuals and teams with the most significant skill and awareness gaps, set goals for improvement, and plan how to achieve them.
- Design bespoke approaches (e.g., educational programs, expert coaching, tailored incentives, and KPIs) that fit the culture/motivation drivers/communication styles of priority target audiences, to build the right skills and awareness level throughout the organization.
- Understand the need for cross-organizational collaboration and establish effective systems and structures (e.g., cross-functional teams, tailored collaboration incentives) that enhance it.
- Create a baseline for assessing progress and revisiting and calibrating skills and awareness goals over time.

USE CASE, LYONDELLBASELL: *Scaling Circular Plastics*

Background and context

The chemical industry is evolving. Driven by rising commercial demand and regulation, sustainable solutions are top of mind as companies transform their business models to make them more sustainable. Circular plastics are at the center of this trend. In 2022, the world produced 3 million tons of recycled and renewable polymers, a number expected to rise to 10 million tons by 2030.¹⁴⁶ Despite this growth, 2030 demand is projected to exceed supply by 5 million tons. Addressing this gap presents significant commercial opportunity. Between 2019 and 2023, margins for advanced (chemical) plastic recycling methods increased from \$1,000 per metric ton to \$2,000 per metric ton.¹⁴⁷ With these margins expected to continue, LyondellBasell (LYB) is determined to apply its history of technology leadership and leading sustainability ambitions to add business value by scaling sustainable solutions for commercial plastics.

Applying the sustainability transformation framework

LYB's actions to scale sustainable solutions are an illustration of the sustainability transformation framework.

FACE IT: In 2022, the company's senior leaders approved plans to create a business segment centered on producing and marketing recycled and renewable-based polymers, based on the view that these polymers are critical to enabling the energy transition, minimizing waste and greenhouse gas emissions, and feeding the world's growing population. Developing this view and setting the ambition for the business segment provides an example of the Face It part of the framework.

MAP IT: In October 2022, LYB launched its Circular and Low Carbon Solutions business and shared its strategy for this new business during its 2023 Capital Markets Day.¹⁴⁸ This launch came after developing a guiding circular plastics strategy. This strategy is built on creating a suite of sustainable solutions across multiple recycling processes, providing customers with these solutions and capturing premiums, and establishing hubs for addressing the full life cycle of recycled polymers.

DO IT: Technologies like LYB's *MoReTec* advanced recycling solution are essential to the Do It part of the framework. This innovative process to convert post-consumer mixed and hard-to-recycle plastic waste into feedstock for new plastics has notable sustainability advantages, including reduced energy consumption, improved yield, and comparable quality to fossil-based feedstocks. LYB's integrated hubs are also critical. The company is integrating new advanced sorting, mechanical recycling, and advanced recycling assets at its Cologne and Houston 'cracker' sites (these are industrial facilities that convert hydrocarbons into plastic feedstocks) to create hubs that address the full life cycle of recycled polymers. With this integration, LYB will leverage the operational scale of its existing assets to reduce costs and capture more value from plastic waste.

SHAPE IT: Beyond the technology and hub components, the success of LYB's circular plastics strategy will rely on working with its stakeholders. Some of this work is already underway. For example, in March 2023, it signed a letter of intent with EEW Energy from Waste to explore a partnership to remove plastics from waste streams bound for incineration at EEW plants and use them as a feedstock for mechanical and advanced recycling.¹⁴⁹ Successful partnerships like this will help LYB convince customers and investors of the economic and technical viability of circular plastics, two groups that are vital to the future of its Circular and Low Carbon Solutions business because of the commercial demand and capital they provide. The test for LYB going forward is to master the Shape It part of the framework to keep investors and other stakeholders on board as they scale this part of their business.

CONNECT IT: LYB also has work to do in the Connect It area as well. The company will need to reinforce and refresh its circular plastics strategy and scale demonstrative value-add projects. Again, its *MoReTec* advanced recycling solution highlights this commitment. In November 2023, LYB decided to build its first industrial scale demonstration plant for the technology at its Wesseling, Germany site.¹⁵⁰ When complete, the plant will have an annual capacity of 50,000 tons per year. LYB aims to develop more projects like this in the coming years to scale its circular plastics capacity, a goal which depends on shaping conditions in the chemicals industry, with policymakers, and, critically, with customers that make this possible.

Option 3: Joining Forces

Complete sustainability integration requires unprecedented collaboration with competitors and suppliers and intense coordination with other stakeholders, such as government agencies, research institutions, and local communities. For example, large food companies know that scaling up regenerative agriculture is impossible without a joint approach to better engage a fractured and complex value chain consisting of millions of farmers in many different countries.

The developing hydrogen economy provides another example. Although it holds great promise, the many starkly different industries involved, the costs of new infrastructure, and fragmented regulation make intense collaboration paramount. Companies must collaborate with each other, policymakers, and government agencies to build momentum. Other sectors, like the automobile, clothing, and electronics industries, have discovered that addressing human rights issues in their shared supply base can only be achieved if they do it together.

Unprecedented collaboration is complex and requires a level of integration—of procedures, inter-company teams, data systems, priorities, goals, metrics, etc.—that competitors within sectors are unaccustomed to and may find uncomfortable. Setting up intense value chain collaborations without tightly structured processes can run into trouble quickly. The guidance in this report helps companies:

- Assess whether leadership is sufficiently aware and supportive of investing in a value chain partnership and build a compelling case explaining the urgent rationale for it.
- Map the cultural/organizational differences and approaches among competitors in preparation for drafting the shared principles and goals for partnership.
- Understand which suppliers and other stakeholders need to be involved and what the different tiers of collaboration/integration should be.
- Scope the reach of the initiatives and the necessary alignment of competitors and suppliers (e.g., system integration, joint procedures, targets, metrics, and incentive structures).
- Determine the roles, budget, capacity, and collaborative structures required to execute a successful partnership and design needed procedures, training, and team structures.
- Create a baseline for assessing progress and revisiting and calibrating goals, principles, and priorities over time.

USE CASE, NESTLÉ: *Regenerative Agriculture and Radical Collaboration*

Background and context

Nestlé has a long history of improving agricultural practices in ways that connect its social and environmental actions. For example, its Rural Development Framework (launched in 2014) outlined eight areas where the company believed it could positively impact rural development by creating shared economic, environmental, and social value for local communities and shareholders alike.¹⁵¹ This was superseded by the company's Responsible Sourcing Standard.¹⁵²

This focus deepened in 2020 when Nestlé adopted its regenerative agriculture strategy.¹⁵³ This continues to put farmers at the center and is focused on improving soil health, biodiversity, livestock management, and water management. It is also key to the company's climate strategy and achieving net zero emissions by 2050 at the latest.

For all Nestlé's strategy and ambition, the transition to regenerative agriculture practices is a systemic challenge that no one organization in any sector can solve alone. Collaboration with value chain partners, including suppliers and peers, will be central to success. The food sector faces a choice: develop a regenerative agriculture approach that works for all stakeholders or risk the system failing for everyone involved as farm and supply chain resiliency decreases.

Using the sustainability transformation framework

The sustainability transformation framework is well aligned with Nestlé's past actions in the regenerative agriculture space and helps frame the actions it will pursue going forward.

FACE IT: As with other sustainability initiatives, Nestlé's leadership quickly embraced regenerative agriculture once they grasped why it is so critical to the long-term resilience of the business.

MAP IT: With leadership support secured, the company developed a comprehensive strategy for implementing regenerative agriculture practices throughout its value chain.

DO IT: Next, Nestlé began to implement its regenerative agriculture strategy through a focus on: soil health; biodiversity; water security and quality; diverse cropping systems and livestock integration; GHG emissions reduction; and collective and landscape actions.

SHAPE IT: The success of Nestlé's regenerative agriculture efforts depends on collaborating with suppliers and peers, listening to experts, and adapting to shifting market structures, whether they be legal, regulatory, etc. Many companies are pursuing regenerative agriculture but, when they act individually or on a farm-by-farm basis, the impact is limited. Inconsistent requests from buyers create challenges for farmers. Companies need to engage beyond their own supply chains to complement other's efforts and ensure consistency in definitions and metrics. For example, the work of SAI Platform and Regen10 is essential in delivering this consistency.^{154, 155} Such collective action will improve Nestlé's regenerative agriculture transition while also positively impacting farmers' livelihoods and local communities.

CONNECT IT: Nestlé must continuously reinforce and deepen the knowledge of its internal teams, value chain partners, peers, and even competitors. While it still has work to do in the regenerative agriculture space, Nestlé is committed to making regenerative efforts a successful part of its sustainability transformation. The company must continue to assess and strengthen its underlying strategy as well as adjusting related efforts and investments based on learning over time. As it does, it must share what it is doing to encourage other organizations to take part and further amplify impact.

Nestlé is a resilient company in a sector that faces an increasingly complicated set of environmental, social, and economic challenges. On its own, Nestlé cannot drive a systemic regenerative agriculture transition, but in collaboration with others, it is better positioned to find solutions and scale up adoption of regenerative practices.

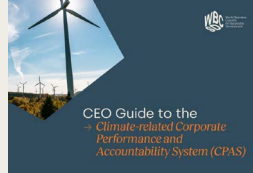
Appendix I: Supporting WBCSD Resources

The following WBCSD reports are available to support companies in driving action at each stage of our transformation framework.

FACE IT: Leadership & Governance



[Vision 2050: Time to Transform](#)



[CEO Guide to the Climate-related Corporate Performance and Accountability System \(CPAS\)](#)



[Driving Sustainability from the Boardroom](#)



[Preparer Forum for Sustainability Disclosure](#)



[The Case for Beyond-Value-Chain Actions](#)

MAP IT: Strategy & Planning



[The Climate Drive](#)



[Roadmaps to Nature Positive: Foundations for all businesses](#)



[Tackling inequality: An agenda for business action](#)



[Practical Guide for Companies to Create a Business Case for Sustainability](#)



[Integrated Performance Management Framework](#)



[Circular Transition Indicators](#)



[Applying Enterprise Risk Management to ESG Risks](#)



[WBCSD Academy](#)

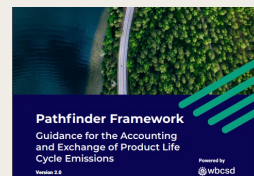
DO IT: Progress & Commercialization



[Macrotrends & Disruptions shaping 2020-2030](#)



[Climate-related Financial Impact Guide](#)



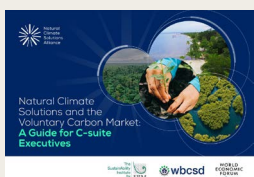
[PACT Pathfinder Framework](#)



[Removing Carbon Responsibly](#)



[Guidance on Avoided Emissions](#)



[Natural Climate Solutions and the Voluntary Carbon Market](#)



[The Plant-forward Opportunity](#)

Catching the wave
→ Seizing the opportunities of the sustainability transformation

Endnotes

- 1 Katherine Richardson et al. (2023). Earth beyond six of nine planetary boundaries. *Sciences Advances*, 9, 37. Retrieved from: <https://www.stockholmresilience.org/research/research-news/2023-09-13-all-planetary-boundaries-mapped-out-for-the-first-time-six-of-nine-crossed.html>
- 2 IPCC (2023). AR6 Synthesis Report: Climate Change 2023. Retrieved from: <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>
- 3 United Nations Sustainable Development (2023). UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'. Retrieved from: <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>
- 4 Plos One (2023) A multi-taxon analysis of European Red Lists reveals major threats to biodiversity. Retrieved from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0293083>
- 5 IPCC (2023). AR6 Synthesis Report: Climate Change 2023. Retrieved from: <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>
- 6 World Bank (2020), Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030. Retrieved from: <https://documents1.worldbank.org/curated/en/706751601388457990/pdf/Revised-Estimates-of-the-Impact-of-Climate-Change-on-Extreme-Poverty-by-2030.pdf>
- 7 Plumer, B. & Popvich, N. (2021). Yes, There Has Been Progress on Climate. No, It's Not Nearly Enough. *The New York Times*. Retrieved from: <https://www.nytimes.com/interactive/2021/10/25/climate/world-climate-pledges-cop26.html>
- 8 Explorer.Land (2023). Global Rewilding Alliance. Retrieved from: <https://explorer.land/x/organization/gra/>
- 9 Kunming-Montreal Global Biodiversity Framework (2022), retrieved from: <https://www.cbd.int/gbf>
- 10 Our World in Data (2019). Poverty. Retrieved from: <https://ourworldindata.org/poverty?insight=global-extreme-poverty-declined-substantially-over-the-last-generation#key-insights>
- 11 International Committee of the Red Cross (2020). Seven things you need to know about climate change and conflict. Retrieved from: <https://www.icrc.org/en/document/climate-change-and-conflict>
- 12 International Displacement Monitoring Center (2023). Internal displacement and food security. Retrieved from: https://api.internal-displacement.org/sites/default/files/publications/documents/IDMC_GRID_2023_Global_Report_on_Internal_Displacement_LR.pdf
- 13 Rentschler, J. et al. (2022). Flood risk already affects 1.81 billion people. Climate change and unplanned urbanization could worsen exposure. *The World Bank* Retrieved from: <https://blogs.worldbank.org/en/climatechange/flood-risk-already-affects-181-billion-people-climate-change-and-unplanned>
- 14 AON (2023). Weather, Climate and Catastrophe Insight. Retrieved from: <https://www.aon.com/weather-climate-catastrophe/index.aspx>
- 15 CDP (2022). High and Dry: How Water Issues Are Stranding Assets. Retrieved from: <https://www.cdp.net/en/research/global-reports/high-and-dry-how-water-issues-are-stranding-assets>
- 16 McKinsey (2023). Consumers care about sustainability—and back it up with their wallets. Retrieved from: <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-care-about-sustainability-and-back-it-up-with-their-wallets>
- 17 Precedence Research (2024). Green Hydrogen Market - Global Industry Analysis, Size, Share, Growth, Trends, Regional Outlook, and Forecast 2024 – 2033. Retrieved from: <https://www.precedenceresearch.com/green-hydrogen-market>
- 18 Precedence Research (2023). Green Ammonia Market - Global Industry Analysis, Size, Share, Growth, Trends, Regional Outlook, and Forecast 2023-2032. Retrieved from: <https://www.precedenceresearch.com/green-ammonia-market>
- 19 Precedence Research (2023). Green Steel Market - Global Industry Analysis, Size, Share, Growth, Trends, Regional Outlook, and Forecast 2023-2032. Retrieved from: <https://www.precedenceresearch.com/green-steel-market>
- 20 World Economic Forum (2023). Why we need an 'everything, everywhere, all at once' approach for financing nature. Retrieved from: <https://www.weforum.org/agenda/2023/03/ipcc-report-natural-climate-solutions-for-financing-nature/>

- 21 Capgemini Research Institute (2022). A world in balance: Why sustainability ambition is not translating to action. Retrieved from: <https://www.capgemini.com/insights/research-library/sustainability-trends/>
- 22 Capgemini Research Institute (2022). A world in balance: Why sustainability ambition is not translating to action. Retrieved from: <https://www.capgemini.com/insights/research-library/sustainability-trends/>
- 23 Bank of America Securities (2023). The \$275 trillion business opportunity. Retrieved from: <https://business.bofa.com/en-us/content/sustainable-energy-transition.html>
- 24 Statista (2024). Plug-in electric vehicle sales worldwide by brand 2023. Retrieved from: <https://www.statista.com/statistics/977407/global-sales-of-plugin-electric-vehicles-by-brand/>
- 25 Irle, R. (2024). Global EV Sales for 2023. EV Volumes. Retrieved from: <https://ev-volumes.com/news/ev/global-ev-sales-for-2023/>
- 26 Capgemini Research Institute (2022). A world in balance: Why sustainability ambition is not translating to action. Retrieved from: <https://www.capgemini.com/insights/research-library/sustainability-trends/>
- 27 McKinsey & Company (2022). Fear factor: Overcoming human barriers to innovation. Retrieved from: <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/fear-factor-overcoming-human-barriers-to-innovation>
- 28 NTT Data (2023). Innovation Index 2023. Retrieved from: <https://us.nttdata.com/en/-/media/content-hub/ch-gated/1300596-Innovation-Index-POV.pdf>
- 29 McKinsey & Company (2022). Fear factor: Overcoming human barriers to innovation. Retrieved from: <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/fear-factor-overcoming-human-barriers-to-innovation>
- 30 Boston Consulting Group (2023). Most Innovative Companies 2023: Reaching New Heights in Uncertain Times. Retrieved from: https://media-publications.bcg.com/BCG_Most-Innovative-Companies-2023_Reaching-New-Heights-in-Uncertain-Times_May-2023.pdf
- 31 McKinsey & Company (2022). Fear factor: Overcoming human barriers to innovation. Retrieved from: <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/fear-factor-overcoming-human-barriers-to-innovation>
- 32 Boston Consulting Group (2023). The New Blueprint for Corporate Performance. Retrieved from: <https://www.bcg.com/publications/2023/the-new-blueprint-for-corporate-performance>
- 33 Meyers, E. (2022). Companies often don't match climate talk and lobbying, study says. Roll Call Retrieved from: <https://rollcall.com/2022/11/03/companies-often-dont-match-climate-talk-and-lobbying-study-says/>
- 34 The Conference Board (2022). More Companies are Linking Executive Pay to ESG Performance. Retrieved from: <https://www.conference-board.org/press/Exec-Comp-ESG>
- 35 Mooney, A. (2023). European bosses hit easy targets for 'green' bonuses, pay report shows. The Financial Times. Retrieved from: <https://www.ft.com/content/86e33cd0-ed20-41c9-be06-c8e46c28c275>
- 36 PwC (2021). ESG Investor Survey: The economic realities of ESG. Retrieved from: <https://www.pwc.com/gx/en/services/audit-assurance/corporate-reporting/esg-investor-survey.html>
- 37 Johnston, I. (2023). Oil and gas firms face virtually no extra borrowing costs, S&P finds. The Financial Times. Retrieved from: <https://www.ft.com/content/830e3ae6-0c3c-4da9-87e7-4ff72aa3e249>
- 38 Glasgow Financial Alliance for Net Zero (n.d.). Glasgow Financial Alliance for Net Zero. Retrieved from: <https://www.gfanzero.com/>
- 39 WBCSD (2023), Guide to the CPAS. Retrieved from: <https://www.wbcd.org/Programs/Redefining-Value/Corporate-Performance-and-Accountability-System-CPAS>
- 40 Capgemini Research Institute (2022). Most business leaders see environmental sustainability as a costly obligation rather than an investment in the future. Retrieved from: <https://www.capgemini.com/news/press-releases/most-business-leaders-see-environmental-sustainability-as-a-costly-obligation-rather-than-an-investment-in-the-future/>
- 41 Bergeron, P. (2022). KPMG Survey Shows Most CEOs to Put ESG on Pause. Globe Street. Retrieved from: <https://www.globest.com/2022/10/06/kpmg-survey-shows-most-ceos-to-put-esg-on-pause/?slreturn=20240303153936>
- 42 Precedence Research (2023). Solar Energy Systems by Market. Retrieved from: <https://www.precedenceresearch.com/solar-energy-systems-market>
- 43 Introspective Market Research (2023). Sustainable Food Market Size By Product Type. Retrieved from: <https://introspectivemarketresearch.com/reports/sustainable-food-market/>
- 44 Precedence Research (2023). Electric Vehicle Market. Retrieved from: <https://www.precedenceresearch.com/electric-vehicle-market>

- 45 Precedence Research (2023). Sustainable Finance Market. Retrieved from: <https://www.precedenceresearch.com/sustainable-finance-market>
- 46 LinkedIn Economic Graph (2022). Global Green Skills Report 2022. Retrieved from: <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/global-green-skills-report-pdf/li-green-economy-report-2022.pdf>
- 47 PwC (2023). 2023 Annual Corporate Directors Survey. Retrieved from: <https://www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html>
- 48 LinkedIn Economic Graph (2022). Global Green Skills Report 2022. Retrieved from: <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/global-green-skills-report-pdf/li-green-economy-report-2022.pdf>
- 49 Stewart, E. (2023). Why did Yahoo Fail? The Rise and Fall of a Dot-Com Tech Giant. Enterprise Management 360. Retrieved from: <https://em360tech.com/tech-article/why-did-yahoo-fail>
- 50 Precedence Research (2023). Sustainable Finance Market Size. Retrieved from: <https://www.precedenceresearch.com/sustainable-finance-market>
- 51 Precedence Research (2023). Electric Vehicle Market. Retrieved from: <https://www.precedenceresearch.com/electric-vehicle-market>
- 52 Introspective Market Research (2023). Sustainable Food Market Size By Product Type. Retrieved from: <https://introspectivemarketresearch.com/reports/sustainable-food-market/>
- 53 Emergen Research (2021). Energy Efficient Devices Market By Applications. Retrieved from: <https://www.emergenresearch.com/industry-report/energy-efficient-devices-market>
- 54 International Energy Agency (2023). Critical Minerals Market Review 2023. Retrieved from: <https://balkangreenenergynews.com/iea-demand-for-critical-minerals-to-spike-3-5-times-by-2030/>
- 55 Bank of America Securities (2023). The \$275 trillion business opportunity. Retrieved from: <https://business.bofa.com/en-us/content/sustainable-energy-transition.html>
- 56 Chevalier, S (2024). Retail e-commerce sales worldwide from 2014 to 2027. Statista. Retrieved from: <https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/>
- 57 Statista Market Insights (2023). IT Services – Worldwide. Retrieved from: <https://www.statista.com/outlook/tmo/it-services/worldwide>
- 58 Statista Market Insights (2023). Devices – Worldwide. Retrieved from: <https://www.statista.com/outlook/tmo/devices/worldwide>
- 59 Statista Market Insights (2024). Digital advertising worldwide Retrieved from: <https://www.statista.com/outlook/dmo/digital-advertising/worldwide>
- 60 Richter, F. (2023). Smartphones Wipe Out Decades of Camera Industry Growth. Statista. Retrieved from: <https://www.statista.com/chart/15524/worldwide-camera-shipments/>
- 61 SellCell (2024). How many mobile phones are sold each year? Retrieved from: <https://www.sellcell.com/how-many-mobile-phones-are-sold-each-year/>
- 62 Hussman School of Journalism and Media (2020). News deserts and ghost newspapers: Will local news survive. Retrieved from: <https://www.usnewsdeserts.com/reports/news-deserts-and-ghost-newspapers-will-local-news-survive/>
- 63 Hussein, F. (2023). Online gig work is growing rapidly, but workers lack job protections, a World Bank report says. AP News. Retrieved from: <https://apnews.com/article/online-gig-workers-labor-employment-world-bank-40b81a789fd5f0fb366e83f0223d832f>
- 64 Precedence Research (2023). Sustainable Finance Market - Global Industry Analysis, Size, Share, Growth, Trends, Regional Outlook, and Forecast 2023-2032. Retrieved from: <https://www.precedenceresearch.com/sustainable-finance-market>
- 65 Precedence Research (2023). Electric Vehicle Market - Global Industry Analysis, Size, Share, Growth, Trends, Regional Outlook, and Forecast 2024 – 2033. Retrieved from: <https://www.precedenceresearch.com/electric-vehicle-market>
- 66 Introspective Market Research (2023). Sustainable Food Market Size By Product Type, And Region Global Market Analysis and Forecast, 2022-2030. Retrieved from: <https://introspectivemarketresearch.com/reports/sustainable-food-market/>
- 67 BloombergNEF (2024). Electric Vehicle Outlook 2023. Retrieved from: https://assets.bbhub.io/professional/sites/24/2431510_BNEFElectricVehicleOutlook2023_ExecSummary.pdf
- 68 Thourmundsson, B. (2023). LED penetration rate of the global lighting market based on sales from 2012 to 2030. Retrieved from: <https://www.statista.com/statistics/246030/estimated-led-penetration-of-the-global-lighting-market/>

- 69 PwC (2023). 2023 Annual Corporate Directors Survey. Retrieved from: <https://www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html>
- 70 WSJ Pro Sustainable Business (2023). Sustainability and the Board: Survey Results. Retrieved from: https://s.wsj.net/public/resources/documents/Pro_SB_NACD_Survey_Report_2023.pdf
- 71 Whelan, T. (2021). U.S. Corporate Boards Suffer From Inadequate Expertise in Financially Material ESG Matters. NYU Stern Center for Sustainable Business. Retrieved from: <https://www.stern.nyu.edu/sites/default/files/assets/documents/U.S.%20Corporate%20Boards%20Suffer%20From%20Inadequate%20%20Expertise%20in%20Financially%20Material%20ESG%20Matters.docx%20%282.13.21%29.pdf>
- 72 Spencer Stuart (2022). 2022 U.S. Spencer Stuart Board Index. Retrieved from: https://www.spencerstuart.com/-/media/2022/october/ssbi2022/2022_us_spencerstuart_board_index_final.pdf
- 73 The Conference Board (2023). How Board Diversity Can Contribute to Board Effectiveness. Retrieved from: <https://www.conference-board.org/publications/how-board-diversity-can-contribute-to-board-effectiveness>
- 74 S&P Global (2021). Business and Human Rights: Towards a Decade of Global Implementation. Retrieved from: https://www.ohchr.org/sites/default/files/Documents/Issues/Business/UNGPsBHRnext10/inputs/sp_global_trends_spglobal_corporate_sustainability_assessment.pdf
- 75 McKinsey & Company (2022). Unlocking the potential of chief diversity officers. Retrieved from: <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/unlocking-the-potential-of-chief-diversity-officers>
- 76 PwC (2023). 2023 Annual Corporate Directors Survey. Retrieved from: <https://www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html>
- 77 CDP (2023). Companies failing to engage suppliers on nature and climate despite incoming regulation. Retrieved from: <https://www.cdp.net/en/articles/media/companies-failing-to-engage-suppliers-on-nature-and-climate-despite-incoming-regulation>
- 78 Capgemini Research Institute (2023). Preserving the fabric of life: Why biodiversity loss is as urgent as climate change. Retrieved from: <https://www.capgemini.com/insights/research-library/biodiversity/>
- 79 JUST Capital (2023). 53% of America's Largest Public Companies Have a Diverse Supplier Policy, But Only 22% Share How Much They Actually Spend With Them. Retrieved from: <https://justcapital.com/reports/only-22-percent-of-russell-1000-share-supplier-diversity-spend-and-policy/>
- 80 DBS Group Holdings Ltd (2023). Sustainability Report 2023. Retrieved from: https://www.dbs.com/iwov-resources/images/sustainability/reporting/pdf/web/DBS_SR2023.pdf?pid=sg-group-pweb-sustainability-pdf-dbs-sustainability-report-2023#page=8
- 81 DBS Group Holdings Ltd (2021). DBS Bank Our Approach to Responsible Financing. Retrieved from: https://www.dbs.com/iwov-resources/images/sustainability/pdf/DBS%20Bank%20Our%20Approach%20to%20Responsible%20Financing_Updated_15Mar2021.pdf
- 82 BS Group Holdings Ltd (2023). Sustainability Report 2023. Retrieved from: https://www.dbs.com/iwov-resources/images/sustainability/reporting/pdf/web/DBS_SR2023.pdf?pid=sg-group-pweb-sustainability-pdf-dbs-sustainability-report-2023#page=21
- 83 Microsoft (2023). 2022 Environmental Sustainability Report. Retrieved from: <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RW15mgm>
- 84 LinkedIn (n.d.). Green Jobs. Retrieved from: <https://www.linkedin.com/jobs/collections/green-jobs/>
- 85 Microsoft (n.d.). Microsoft Sustainability Learning Center. Retrieved from: <https://www.microsoft.com/en-us/sustainability/learning-center>
- 86 The Conference Board (2023). Sustainability Culture Deeply Embedded in Just 13% of Firms. Retrieved from: <https://www.conference-board.org/press/press-release-building-a-sustainability-culture>
- 87 Bain & Company (2023). The Visionary CEO's Guide to Sustainability. Retrieved from: https://www.bain.com/globalassets/noindex/2023/bain_report_the_visionary_ceos_guide_to_sustainability.pdf
- 88 Kyndryl and Microsoft (2023). From Vision to Impact: The Global Sustainability Barometer. Retrieved from: https://www.kyndryl.com/content/dam/kyndrylprogram/cs_ar_as/global-sustainability-barometer.pdf
- 89 Kerber, R. et al. (2023) Insight: No global carbon price? Some companies set their own. Reuters. Retrieved from: <https://www.reuters.com/sustainability/no-global-carbon-price-some-companies-set-their-own-2023-12-10/>

- 90 Sovacool, B. et al. (2021). The hidden costs of energy and mobility: A global meta-analysis and research synthesis of electricity and transport externalities. *Energy Research & Social Science*. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S2214629620304606>
- 91 Tonello, M. (2024). ESG Performance Metrics in Executive Pay. Retrieved from: <https://corpgov.law.harvard.edu/2024/01/15/esg-performance-metrics-in-executive-pay/>
- 92 PricewaterhouseCoopers (2023). Paying for net zero. Retrieved from: <https://www.pwc.co.uk/human-resource-services/pdf/paying-for-net-zero-using-incentives-to-create-accountability-for-climate-goals.pdf>
- 93 BASF (n.d.). TripleS: transparent sustainability for our customers. Retrieved from: <https://www.basf.com/global/en/who-we-are/sustainability/we-drive-sustainable-solutions/sustainable-solution-steering.html>
- 94 BASF (n.d.). Purpose, Action Areas, Values. Retrieved from: <https://www.basf.com/sa/en/who-we-are/strategy/purpose-action-areas-values.html>
- 95 PepsiCo (2023) We're charting a new course to drive positive action for the planet and people. Retrieved from: <https://www.pepsico.com/who-we-are/our-commitments/pepsico-positive>
- 96 PepsiCo (2023). ESG Topics A-Z: Climate change. Retrieved from: <https://www.pepsico.com/our-impact/esg-topics-a-z/climate-change>
- 97 DBCTI (2023). Tackling Inequality Report. Retrieved from: <https://tacklinginequality.org/flagship-report/>
- 98 Stem (2023). Stem Sustainability Survey. Retrieved from: <https://www.stem.com/lp/stem-sustainability-survey/>
- 99 International Energy Agency (2023). Electric Vehicles. Retrieved from: <https://www.iea.org/energy-system/transport/electric-vehicles>
- 100 Bain & Company (2023). The Visionary CEO's Guide to Sustainability. Retrieved from: https://www.bain.com/globalassets/noindex/2023/bain_report_the_visionary_ceos_guide_to_sustainability.pdf
- 101 McKinsey and Company (2023). Consumers care about sustainability—and back it up with their wallets. Retrieved from: <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-care-about-sustainability-and-back-it-up-with-their-wallets>
- 102 Faelli, F. (2023). Selling Sustainability Means Decoding Consumers. Bain & Company. Retrieved from: <https://www.bain.com/insights/selling-sustainability-means-decoding-consumers-ceo-sustainability-guide-2023/>
- 103 Moore Intelligence (2020). The \$4 trillion ESG Dividend. Retrieved from: https://www.moore-global.com/MediaLibsAndFiles/media/MooreStephens2020/Documents/Moore_ESG_White-Paper_FINAL.pdf
- 104 Bain & Company (2023). The Visionary CEO's Guide to Sustainability. Retrieved from: https://www.bain.com/globalassets/noindex/2023/bain_report_the_visionary_ceos_guide_to_sustainability.pdf
- 105 International Energy Agency (2023). Methane Abatement. Retrieved from: <https://www.iea.org/energy-system/fossil-fuels/methane-abatement>
- 106 International Energy Agency (2024). Global Methane Tracker 2024. Retrieved from: <https://www.iea.org/reports/global-methane-tracker-2024>
- 107 International Energy Agency (2023). Energy Efficiency. Retrieved from: <https://www.iea.org/energy-system/energy-efficiency-and-demand/energy-efficiency>
- 108 Wallach, O. (2022). How many jobs could the clean energy transition create? World Economic Forum. Retrieved from: <https://www.weforum.org/agenda/2022/03/the-clean-energy-employment-shift-by-2030/>
- 109 Sustainable Markets Initiative (2022). Scaling Regenerative Farming: An Action Plan. Retrieved from: <https://a.storyblok.com/f/109506/x/7b102e6831/agribusiness-task-force-white-paper.pdf>
- 110 Boucher, M. (2023). Regenerative Agriculture Brochure. FAIRR. Retrieved from: <https://www.fairr.org/resources/reports/regenerative-agriculture-brochure>
- 111 Bugas, J. et al. (2023). Making Regenerative Agriculture Profitable for US Farmers. Boston Consulting Group. Retrieved from: <https://www.bcg.com/publications/2023/regenerative-agriculture-profitability-us-farmers>
- 112 JSS Swire Pacific (2022). Swire Pacific SD Fund Description. Retrieved from: <https://www.cleantech.com/wp-content/uploads/2022/05/Swire-Pacific-SD-Fund-Overview-2022.pdf>
- 113 JSS Swire Pacific (2022). Sustainable Development Report 2022. Retrieved from: <https://www.swirepacific.com/sdreport/2022/content/themes/swire/assets/files/SwirePacific-SDReport-2022-EN.pdf#page=10>

- 114 BMW Group (2023). BMW Group Report 2022. Retrieved from: <https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup.com/ir/downloads/en/2023/bericht/BMW-Group-Report-2022-en.pdf#page=43>
- 115 BMW Group (2023). BMW Group Report 2022. Retrieved from: <https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup.com/ir/downloads/en/2023/bericht/BMW-Group-Report-2022-en.pdf>
- 116 Ewing, J. (2024). BMW Is a Surprise Winner in Electric Vehicles. The New York Times. Retrieved from: <https://www.nytimes.com/2024/03/09/business/bmw-electric-vehicles.html>
- 117 European Investment Bank (2023). Investment Report 2022/2023: Resilience and renewable in Europe. Retrieved from: https://www.eib.org/attachments/lucalli/20220211_economic_investment_report_2022_2023_en.pdf
- 118 Economist Impact (2023). A green edge: Green skills for the future. Retrieved from: <https://drive.google.com/file/d/1MnnS8UtEpzVJ01i1pEaO2ZpwgOQJ2Rzd/view?pli=1>
- 119 PricewaterhouseCoopers (2023). PwC's 2023 Annual Corporate Directors Survey. Retrieved from: <https://www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html>
- 120 Edelman (2023). 2023 Edelman Trust Barometer. Retrieved from: <https://www.edelman.com/trust/2023/trust-barometer>
- 121 Carbon Market Watch (n.d.). Scaling up carbon pricing for inclusive and effective climate action. Retrieved from: https://unfccc.int/sites/default/files/resource/47_Talanoa%20Dialogue%20input.pdf
- 122 InfluenceMap (2023). "Net Zero Greenwash": The Gap Between Corporate Commitments and their Policy Engagement. Retrieved from: <https://influencemap.org/briefing/The-State-of-Net-Zero-Greenwash-24402>
- 123 Ceres (2022). How companies are – and are not – leading on U.S. climate policy. Retrieved from: <https://www.ceres.org/resources/reports/responsible-policy-engagement-analysis-2022>
- 124 Suzano (n.d.). Innovation Strategy. Retrieved from: <https://www.suzano.com.br/en/innovation/strategy>
- 125 Suzano (n.d.). Process Innovation. Retrieved from: <https://www.suzano.com.br/en/innovation/process-innovation>
- 126 Suzano (n.d.). Product Innovation. Retrieved from: <https://www.suzano.com.br/en/innovation/product-innovation>
- 127 Suzano (n.d.). Open Innovation. Retrieved from: <https://www.suzano.com.br/en/innovation/open-innovation>
- 128 Food and Agriculture Organization of the United Nations (2020). Sustainable Food and Agriculture. Retrieved from: <https://www.fao.org/sustainability/news/detail/en/c/1274219/>
- 129 United Nations (2021). Food systems account for over one-third of global greenhouse gas emissions. Retrieved from: <https://news.un.org/en/story/2021/03/1086822>
- 130 Nutrien (n.d.). Sustainable Acres. Retrieved from: <https://www.nutrien.com/sustainability/strategy/sustainable-acres>
- 131 Nutrien (n.d.) Agrible. Retrieved from: <https://nutrienagsolutions.com/agrible>
- 132 Nutrien (n.d.) Carbon Program. Retrieved from: <https://www.nutrien.com/sustainability/strategy/carbon-program>
- 133 Integrated Reporting Initiative (2019). Value of Value: The New Long-Term Horizon for Business Leaders. Retrieved from: <https://integratedreporting.ifrs.org/news/value-of-value-the-new-long-term-horizon-for-business-leaders/>
- 134 KPMG (2022). KPMG 2022 CEO Outlook. Retrieved from: <https://kpmg.com/xx/en/home/insights/2022/08/kpmg-2022-ceo-outlook.html>
- 135 The Conference Board (2023). ESG Alert: 71 Percent of US CEOs Say ESG Backlash Not Affecting Sustainability Investments and Other Findings from Annual C-Suite Outlook Report. Retrieved from: <https://www.conference-board.org/topics/c-suite-outlook/esg-alert-january-12-2023>
- 136 Janus Henderson (2024). Global dividends rose to a record \$1.66 trillion in 2023. Retrieved from: <https://www.janushenderson.com/en-be/advisor/article/global-dividends-rose-to-a-record-1-66-trillion-in-2023/>
- 137 BloombergNEF (2024). Global Clean Energy Investment Jumps 17%, Hits \$1.8 Trillion in 2023, According to BloombergNEF Report. Retrieved from: <https://about.bnef.com/blog/global-clean-energy-investment-jumps-17-hits-1-8-trillion-in-2023-according-to-bloombergnef-report/>
- 138 Bain & Company (2023). The Visionary CEO's Guide to Sustainability. Retrieved from: https://www.bain.com/globalassets/noindex/2023/bain_report_the_visionary_ceos_guide_to_sustainability.pdf
- 139 Circle Economy Foundation and Deloitte (2024). The Circularity Gap Report 2024. Retrieved from: <https://www.circularity-gap.world/2024>
- 140 Circle Economy Foundation and Deloitte (2024). The Circularity Gap Report 2023. Retrieved from: <https://www.circularity-gap.world/2023>

- 141 Circle Economy Foundation and Deloitte (2024). The Circularity Gap Report 2024. Retrieved from: <https://www.circularity-gap.world/2024>
- 142 Walmart (2023). Regeneration of Natural Resources: Forests, Land, Oceans. Retrieved from: <https://corporate.walmart.com/purpose/esgreport/environmental/regeneration-of-natural-resources-forests-land-oceans>
- 143 Walmart (2023). Project Gigaton. Retrieved from: <https://www.walmart.com/sustainabilityhub.com/project-gigaton>
- 144 Petronas (2022). 2022 Integrated Report: Resolutely Progressive. Retrieved from: <https://www.petronas.com/integrated-report-2022/assets/pdf/PETRONAS-Integrated-Report-2022.pdf#page=113>
- 145 Petronas (2023). Navigating the Energy Transition. Retrieved from: <https://www.petronas.com/activity-outlook-2024-2026/assets/pdf/PETRONAS-Activity-Outlook-2024-2026-Navigating-Energy-Transition.pdf>
- 146 LyondellBasell Industries (2023). Capital Markets Day. Retrieved from: https://www.lyondellbasell.com/495656/globalassets/investors/events/2023/lyb_cmd_combined-incl-appendix.pdf#page=64
- 147 McKinsey & Company (2023). A unique moment in time: Scaling plastics circularity. Retrieved from: <https://www.mckinsey.com/industries/chemicals/our-insights/a-unique-moment-in-time-scaling-plastics-circularity>
- 148 LyondellBasell Industries (2023). Capital Markets Day. Retrieved from: https://www.lyondellbasell.com/495656/globalassets/investors/events/2023/lyb_cmd_combined-incl-appendix.pdf
- 149 LyondellBasell (2023). LyondellBasell and EEW sign LOI for potential advanced waste sorting. Retrieved from: <https://www.lyondellbasell.com/en/news-events/corporate-financial-news/lyondellbasell-and-eew-sign-loi-for-potential-advanced-waste-sorting/>
- 150 LyondellBasell (2023). LyondellBasell to Build Industrial-scale Advanced Recycling Plant in Germany. Retrieved from: <https://www.lyondellbasell.com/en/news-events/corporate-financial-news/lyondellbasell-to-build-industrial-scale-advanced-recycling-plant-in-germany/>
- 151 Nestlé (2014). The Rural Development Framework. Retrieved from: <https://www.nestle.com/sites/default/files/asset-library/documents/library/documents/corporate-social-responsibility/rural-development-framework-update-july-2014.pdf>
- 152 Nestlé (2024). Nestlé Responsible Sourcing Core Requirements. Retrieved from: <https://www.nestle.com/sites/default/files/asset-library/documents/library/documents/suppliers/nestle-responsible-sourcing-standard-english.pdf>
- 153 Nestlé (2024). Regenerative Agriculture. Retrieved from: <https://www.nestle.com/sustainability/nature-environment/regenerative-agriculture>
- 154 Sustainable Agriculture Initiative Platform (2024). SAI Platform. Retrieved from: <https://saiplatform.org/>
- 155 Regen10 (2024). About Regen10. Retrieved from: <https://regen10.org/>

Acknowledgements

Disclaimer

This report is released in the name of the World Business Council for Sustainable Development (WBCSD) and ERM. It is the result of a collaborative effort between WBCSD, ERM, representatives from WBCSD member companies, and external subject matter experts. A range of stakeholders reviewed drafts, ensuring that the publication broadly represents the perspective of WBCSD membership. WBCSD and ERM incorporated input and feedback from stakeholders in a balanced way. However, this does not mean that every member company or stakeholder agrees with every word or endorses the report. This publication has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax, legal, or other professional advice.

Acknowledgements

Throughout 2023 and 2024, WBCSD and the ERM Sustainability Institute actively engaged with over 130 sustainability professionals to prepare this publication, including in-depth interviews and consultations. While there are too many companies and individuals to name, we thank everyone for their time, transparency, and valuable insights. This work reflects the challenges that we are collectively working to address and builds on contributors' ideas and proposals for unlocking progress.

Lead Author

Jacco Kroon, ERM

Project Manager

Maren Steinkemper, ERM

WBCSD Core Contributors

Jennie Dodson
James Gomme
Julian Hill-Landolt
John Revers
Dominic Waughray

ERM Core Contributors

Andrew Angle
Mark Lee
Sabine Hoefnagel

About the World Business Council for Sustainable Development

The World Business Council for Sustainable Development (WBCSD) is a global community of over 220 of the world's leading businesses, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Together, we transform the systems we work in to limit the impact of the climate crisis, restore nature, and tackle inequality. We accelerate value chain transformation across key sectors and reshape the financial system to reward sustainable leadership and action through a lower cost of capital. Through the exchange of best practices, improving performance, accessing education, forming partnerships, and shaping the policy agenda, we drive progress in businesses and sharpen the accountability of their performance.

Follow us on [X](#) and [LinkedIn](#)

www.wbcسد.org

About the ERM Sustainability Institute

The ERM Sustainability Institute is ERM's primary platform for thought leadership on sustainability. The purpose of the Institute is to define, accelerate, and scale sustainability performance by developing actionable insight for business. We provide an independent and authoritative voice to decode complexities. The Institute identifies innovative solutions to global sustainability challenges built on ERM's experience, expertise, and commitment to transformational change.

Follow us on [X](#) and [LinkedIn](#)

www.sustainability.com



World Business
Council
*for Sustainable
Development*



ERM
SUSTAINABILITY
INSTITUTE

