

The Ongoing Evolution of Sustainable Business

2023 Trends Report



Contents

| | | |
|---|---------|----------------------|
| Introduction | page 3 | > |
| 1. Integrating ESG | page 4 | > |
| 2. Valuing human capital | page 9 | > |
| 3. Responding to climate change | page 14 | > |
| 4. Safeguarding natural systems | page 20 | > |
| 5. Building sustainable and resilient supply chains | page 26 | > |
| 6. Enabling sustainable consumption and production | page 31 | > |
| 7. Applying technology to sustainability | page 36 | > |
| 8. Respecting fundamental rights | page 41 | > |
| 9. Shaping policy, regulations, and norms | page 46 | > |
| 10. Moving toward stakeholder capitalism | page 51 | > |
| Endnotes | page 56 | > |

Introduction

Welcome to our 2023 Sustainability Trends report.

Every year has its defining events, but the last 12 months seemed to produce moments and issues of decadal if not generational consequence. Foremost among these, Russia's invasion of Ukraine transformed geopolitics, economics, and sustainability, with the implications still playing out. In many ways, global societal interconnections and dependencies like social media and supply chains amplified the impacts of the invasion, particularly those relating to energy, food security, and migration inside Ukraine and beyond. Economic disruptions wrought by the war coupled with the highest inflation levels in decades further challenged government and business leaders. As 2023 begins, recession threatens, and societies are bracing for financial hardship after years of strong growth and low unemployment in many regions.

Global and local corporations have been deeply affected by the war in Ukraine, its market impacts, and wider economic headwinds. This has forced the private sector to decide whether to fall back on fundamentals and lessen corporate sustainability efforts or whether ESG efforts should be maintained. While some companies have reduced sustainability activity and investment, more have embraced and upheld them in recognition that strong sustainability performance is likely to increase their resiliency to external shocks and bolster long-term profitability.

Corporate sustainability highlights from 2022 include companies linking executive compensation to ESG factors, helping their employees deal with economic upheaval with bonuses and unscheduled raises, setting net zero and nature positive goals, pursuing circular solutions like reuse and repair business models

to reduce waste, and increasing supplier diversity to strengthen inclusion and equity efforts and boost overall business resiliency.

Corporate sustainability also faced challenges this past year. On the one hand, Russia's invasion complicated ESG-related investment decisions as investors grappled with whether investments in fossil fuel and defense companies are ethical given the energy and security challenges triggered by the war. While on another front, some investors and politicians pushed back against sustainability and ESG initiatives, accusing them of putting societal issues over profitability.

The war in Ukraine cast a shadow across 2022. We were, and are still, appalled by the human suffering caused by this crisis. In such unique and tragic circumstances, it can be difficult to push forward on other pressing issues like climate change and the nature crisis. However, as we alluded to above, there is much to celebrate too.

The following pages detail the progress companies are making in working toward a more just and sustainable world. We hope that you enjoy reading about the trends we identify and the corporate responses emerging to them, and that some of this inspires action in your own lives and at your own organizations. As always, we welcome any feedback you may have.

1

Integrating ESG



In 2022, issues including fragile global supply chains and geopolitical instability challenged corporate ESG integration. Despite the difficulties such issues create, stakeholders have continued to demand corporate action and lawmakers have continued to propose more ESG-related regulations. ESG concepts are expected to be further integrated into the ways companies conduct business in 2023.

ESG (Environmental, Social, and Governance) concepts are dramatically changing the way business works. This is partly in response to stakeholder demands that the private sector does more to address issues such as climate change, social injustice, and data privacy. For example, a 2021 survey found that nearly 90 percent of Australian consumers believe it is important for companies to be both environmentally and socially responsible, while almost two-thirds say a company's performance on ESG issues factors into their purchase decisions. This sentiment seems to be consistent across regions, with consumers from the U.S. and UK responding similarly to their Australian counterparts.¹

However, as is often the case with change of the magnitude ESG might bring, there is resistance too. Across the world, some investors, politicians, and business leaders have pushed back on ESG-related initiatives and regulations. In the U.S., investment firms including Vanguard have rolled back some of their ESG and climate-related investment philosophies, and some politicians in states like Texas and Florida have banned ESG considerations in state-level public investments.^{2,3,4} Still, ESG-related assets under management continue to increase, and many governments are generating new guidelines that favor ESG, suggesting recent objections may be temporary distractions on the way to deeper integration of the responsible and sustainable business practices that characterize ESG.

Examples of continued ESG momentum in 2022 include:

- A survey of managers and senior executives showed that 46 percent of companies increased their focus on ESG while planning for 2022, while only 3 percent expected to decrease ESG-related spend over the full course of the year.⁵
- The Science Based Targets initiative (SBTi) released its guidance for Private Equity (PE) in late 2021. Six PE firms representing over 130 billion euros immediately received validation and approval of targets aligned with 1.5°C pathways.⁶
- Executive compensation at S&P 500 companies increasingly includes performance metrics tied to ESG considerations, rising from 66 percent in 2020 to 73 percent in 2022.⁷

Several ESG themes are likely to increase in prominence in 2023. One of the highest-profile trends is the ongoing development of ESG-related disclosure regulation in multiple countries. This includes new rules proposed by the U.S. Securities and Exchange Commission (SEC) and the European Financial Reporting Advisory Group (EFRAG). The UK also signed into law requirements for certain entities to disclose climate-related financial information in line with recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) starting in 2023. In many ways, the UK's new requirements are at the vanguard of compelling

the use of established frameworks like the TCFD as guides to produce comparable and decision-useful reporting for interested stakeholders.⁸

ESG- and sustainability-related regulations are expanding in Asia-Pacific as well. For instance, the Monetary Authority of Singapore (MAS) recently released guidelines designed to help reduce greenwashing risks for listed companies. Similarly, the Hong Kong Stock Exchange (HKEX) recently published a guide to help facilitate corporate compliance with TCFD recommendations.⁹ Further, the Australian government announced a consultation paper in late 2022 aimed at developing a climate risk disclosure framework, which they may make mandatory for large companies as soon as 2024.¹⁰

Though there has been some criticism toward ESG- and climate-related proposals and ESG writ large, momentum behind the concept continues to push it forward. Corporate action related to ESG is likely to evolve in the following ways over the next twelve months.



“ESG investing has been picking up incredibly fast, particularly in Asian geographies. We are seeing more and more financial institutions in the region becoming signatories to ESG-related frameworks and peer groups such as PRI and PRB, or developing their own ESG frameworks, establishing net zero goals, and overall taking a more comprehensive approach to ESG investing.”

Yulia Dobrolyubova
Partner, ERM

Corporate ESG activity and disclosure will become more standardized across geographies and sectors

Inconsistent ESG data availability and quality hinder corporate ESG efforts and impact. According to a March 2022 study, nearly 60 percent of finance, legal, and sustainability executives in the U.S. list data availability and quality as the greatest ESG disclosure challenges they face.¹¹ One of the driving factors behind these challenges is a lack of standardized data collection processes and inconsistent data disclosure. In another survey, nearly 90 percent of global institutional investors signaled interest in mandatory ESG performance reporting against globally consistent standards.¹² There is evidence that standardization initiatives are accelerating. In late 2021, the International Financial Reporting Standards Foundation (IFRS) formed the International Sustainability Standards Board (ISSB), consolidating several ESG standard-setting bodies including the Sustainability Accounting Standards Board (SASB), the Climate Disclosure Standards Board (CDSB), and the Integrated Reporting Framework (<IR>) into one organization.¹³

Nature-related disclosure will also advance in 2023. The Taskforce on Nature-related Financial Disclosures (TNFD) will provide companies with a framework for nature-related assessment and disclosure, with the full framework expected to be ready for market adoption in fall 2023.¹⁴ With respect to net zero ambitions, the Science Based Targets initiative (SBTi) continues to develop net zero frameworks like the Net Zero for Financial Institutions standard.¹⁵ These advances will enable more consistent ESG disclosure by companies. To prepare for this move toward consistency, companies should align their ESG activity with major frameworks and guidelines now to ensure future readiness and compatibility.

Growing challenges like scoring discrepancy will amplify calls for ESG ratings regulation

ESG ratings have seen increased uptake alongside growth in ESG investing; as more ESG funds are brought to market they will likely undergo increased scrutiny from regulators and investors. Over the past few years, use of ESG ratings has increased such that nearly 90 percent of all stocks in the S&P 500 have been included in ESG funds constructed using MSCI ratings.^{16,17,18} Still, while the number of ESG ratings continues to grow, there remain significant differences between the scores different ratings agencies assign the companies they cover. A 2021 study found that correlation between scores from six prominent ratings agencies was only 0.61, which is in sharp contrast to the high correlation of credit ratings, which often find alignment upwards of 0.95.^{19,20} Preliminary findings from the SustainAbility Institute's upcoming Rate the Raters report indicate that this lack of consistency and comparability across ratings is an issue that corporate issuers and investors are anxious to see resolved.¹

Regulatory bodies have begun to address some of these issues. In June 2022, French regulator Autorité des Marchés Financiers (AMF) called for a regulatory framework for ESG ratings and data providers in response to a European Commission initiative aimed at increasing "the reliability, trust, and comparability of ESG ratings by early 2023."²¹ Similarly, in November 2022, the UK's Financial Conduct Authority formed a panel to develop a Code of Conduct for ESG ratings and data providers.²² Outside of Europe, India's Securities and Exchange Board sought feedback on a January proposal to review the accreditation of ESG ratings providers every two years.²³ With governing bodies taking the first steps toward regulating ESG ratings and data providers, companies should engage with ESG ratings agencies to better understand how they evaluate their business so that they can better align their disclosures with external expectations.

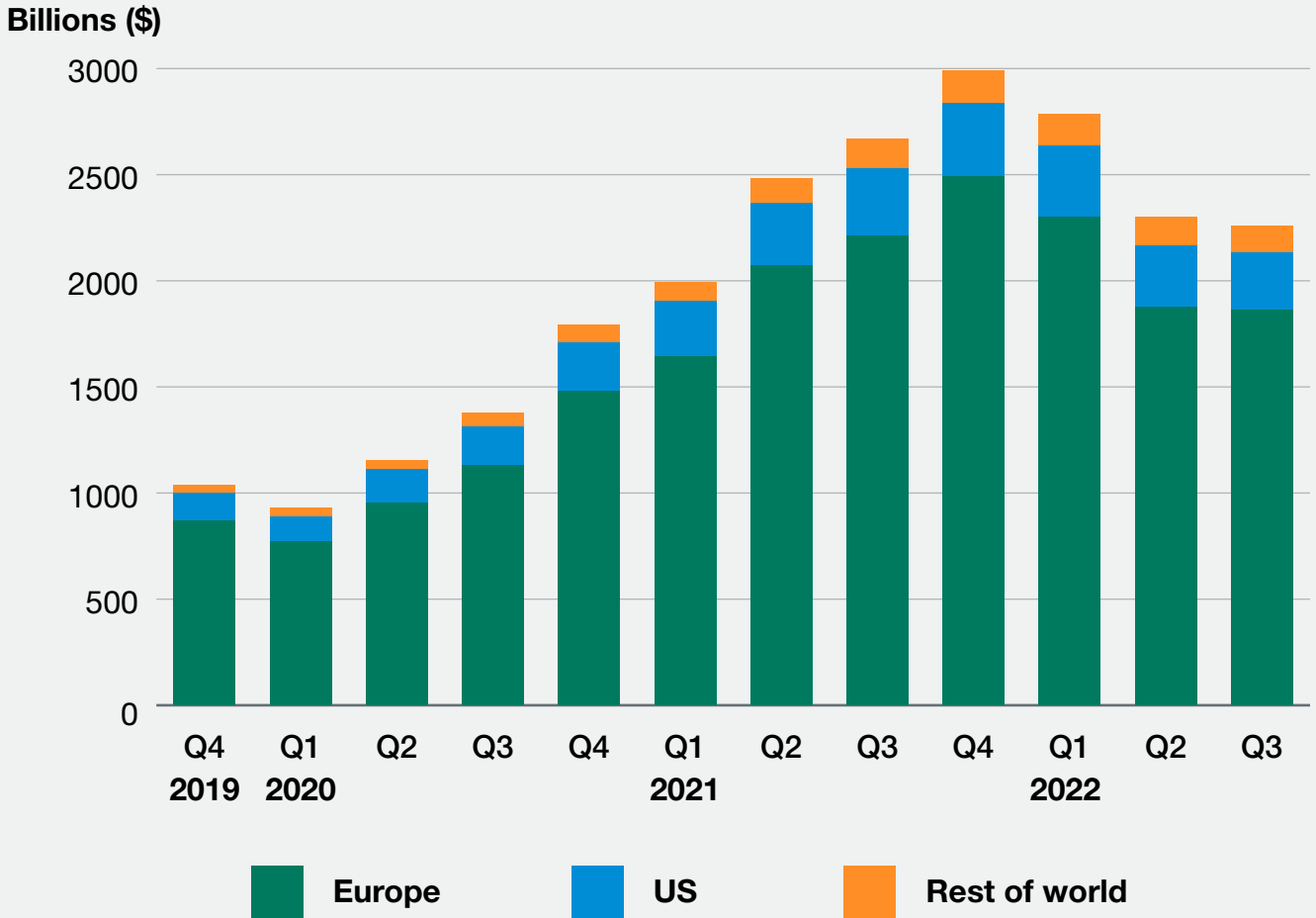
ESG investing will continue to grow in popularity

In 2022, investors modified their ESG investing approaches. Mega-firm BlackRock halved its support of environmental- and social-related shareholder proposals, supporting 22 percent in the 2022 proxy season compared to 47 percent in 2021. BlackRock cited the constraining and overly prescriptive nature of proposals as reason for reducing support, along with the failure of many proposals to recognize that companies had already addressed the issues the proposals covered.²⁴ Vanguard cited a need for independence as reasoning behind reduced ESG-related activity, withdrawing from the Net Zero Asset Managers Initiative, an alliance of financial institutions committed to net zero greenhouse gas emissions by 2050 or sooner.²⁵ Still, ESG investing is not expected to stop gaining in overall popularity. In 2021, global sustainable fund assets grew 53 percent year-over-year. Though these figures dipped in 2022 (see [Figure 1](#)), total ESG fund assets under management are projected to grow from \$40 trillion at the end of 2022 to more than \$50 trillion by 2025.^{26,27}

During the 2022 U.S. proxy season, 20 percent of ESG-related shareholder proposals received greater than 50 percent support, compared to 12 percent receiving the same level of support in 2021.²⁸ Stronger shareholder support demonstrates that investors are not only looking for new investments that fit their ESG strategies, but also pushing portfolio companies toward more ESG-aligned practices.

¹ The 2023 Rate the Raters research will be published in February of 2023. Please see www.sustainability.com for more information.

Figure 1
Quarterly Global Sustainable Fund Assets



Global sustainable fund assets by quarter.
Source: Morningstar Direct.²⁹

2 Valuing human capital



The workplace of 2023 is dramatically different than that of its pre-COVID-19 counterpart. Changes such as more flexible and remote work options and the increased pursuit of purposeful work have redefined the employee-employer relationship. In this environment, expectations for valuing human capital continue to grow.

Human capital has not always been top of mind for businesses and their stakeholders. However, the recent experience of workplaces upended by the COVID-19 pandemic has redefined how employees are viewed and valued. One constant theme during the COVID era has been the “Great Resignation,” whereby huge numbers of workers seek out new opportunities beyond their current employers. While motivations for job switching range widely, compensation remains a top driver. According to one global 2022 survey, financial compensation is the most important issue employees consider when deciding whether to switch jobs.³⁰ Ongoing economic difficulties, driven by inflation and the war in Ukraine, make this focus on compensation especially pertinent. In response, many companies have developed unique new approaches to support their employees. In the UK, companies including HSBC and Tesco have offered employees one-off bonuses and moved wage increases earlier to insulate employees from rising energy and food prices.³¹ Similarly, in Japan, some companies have provided one-off “inflation allowances” to offset price rises driven by the country’s highest rate of inflation in decades.³² Outside of individual companies, organizations are focused on supporting people in difficult times. The Business Commission to Tackle Inequality (BCTI), an organization in which ERM is involved, is one. The BCTI is dedicated to mobilizing business attention, investment, and action to fight the inequality generated and exacerbated by issues like inflation and the COVID-19 pandemic.³³

Although many employers have stepped up to support employees during challenging economic times, the same circumstances are

leading some to lay off workers at levels not seen since before the pandemic. For example, in the U.S., Amazon is expected to lay off up to 18,000 workers in the coming months, while in Europe, H&M cut over 1,500 jobs in November.^{34,35} These layoffs signal change in the still tight labor market, with some power shifting from workers back to employers, which may decrease businesses’ need to fight for talent and turn their focus to shoring-up bottom lines.

Non-economic issues factor into the talent attraction and retention equation. A 2022 study found that business owners, CEOs, and managers view company culture as the number one driver of employee retention, beating out salary and benefits, which ranked second.³⁶ This trend could complicate companies’ retention efforts, as another 2022 study found that only 25 percent of workers in the U.S., UK, and Ireland feel connected to their company’s culture.³⁷ Many workers are seeking greater purpose from their jobs and switching companies as a result. This past summer, numerous articles highlighted an increasing trend among tech workers leaving companies like Alphabet and Meta to work at companies focused on fighting climate change, forgoing high pay for higher impact.^{38,39}

While many workers are determined to seek out the employers that are the best fit for them, others are working to shape their current employers into the best fit from the inside. Nowhere is this more apparent than in the U.S., where unions have rebounded after years of declines. Between October 2021 and September 2022, union petitions to the National Labor Relations Board, the U.S. workplace

rights regulator, increased 53 percent compared to the same period previously, from 1,638 to 2,510, the highest number of petitions since 2016.⁴⁰ This increase has coincided with union pushes at major U.S. companies including Starbucks, where workers have made over 300 petitions, and at Amazon, which saw its first warehouse unionize in 2022.^{41,42}

Discussions of sensitive societal issues are also shaping workplaces. In a 2022 survey of global workers, 65 percent reported discussing political and social topics at work frequently or sometimes, with numbers higher for traditionally underrepresented groups and younger workers.⁴³ Far from causing workplace strife, the study found that workers believed that these conversations bring benefits to the workplace by improving their understanding of colleagues, creating a more open and inclusive environment, and helping colleagues better process their own views.

Workplaces are also changing in a physical sense. In May 2022, the U.S. Bureau of Labor Statistics reported that just 7.7 percent of workers worked remotely, down from 35.4 percent at the height of the COVID-19 pandemic in May of 2020.⁴⁴ Despite an overall decrease in remote work, demand for remote positions is still high. One 2022 study of workers in the Asia-Pacific region found that 56 percent

want the option to work in the office and remotely beyond the pandemic.⁴⁵ In addition to the quality-of-life benefits that flexible work offers, workers are also likely attracted to the compensation that often comes with it. Of listed open positions with salaries of \$100,000 or more in North America, 36 percent are remote.⁴⁶

Investors are focusing on the human capital of the organizations in which they invest. This is in part due to the increasingly large impact intangible assets have on corporate value.⁴⁷ In February 2022, BlackRock published its engagement approach for human capital management, outlining how the asset manager engages companies on practices ranging from human capital governance to workforce rights and protection.⁴⁸ Private equity (PE) firms are also expanding their focus beyond senior management to companies' wider human capital pool. A February 2022 article notes that PE firms are more frequently declining to invest in companies that lack strong human capital management or at least reducing their offer price for such companies.⁴⁹

As internal and external factors, including employees' pursuit of greater purpose and the lingering effects of the COVID-19 pandemic, continue to shape human capital practices in the modern workplace, corporate action is likely to evolve in the following ways.



Over the last few years, we have seen multiple examples of inequality negatively impacting society; from the toll of COVID-19 to inflationary pressures and the war in the Ukraine, inequality has become an urgent, systemic risk undermining people's dignity and creating social and civil upheaval. ERM's work with the Business Commission to Tackle Inequality (BCTI) aims to address this risk by creating a world in which dignity and rights are respected, basic needs are met, and equal opportunities are available for all."

Tim Strawn
Regional CEO Europe, Middle East & Africa, ERM

Pay transparency to become more important for both companies and employees

Driven by viral social media posts and a younger generation’s openness about their salaries, pay transparency is going mainstream. As transparency becomes more common, companies will need to reconsider an entrenched hesitancy to disclose pay information if they are to remain competitive in a tight labor market.⁵⁰ Currently, only 17 percent of North American companies disclose pay information, while 62 percent are deliberating whether to do so or are planning to do so.⁵¹ These numbers are likely to increase as jurisdictions implement pay transparency laws like the one that went into effect in New York City in November and those already in place in European countries including Austria, Spain, and Italy.^{52,53} More pay transparency laws are likely to benefit workers. One study found that workers at companies with pay transparency practices earn seven percent more than those at companies without them. Pay transparency is not without its flaws.⁵⁴ For example, a study found that it can diminish the connection between an individual’s pay and performance.⁵⁵ Despite this issue, companies can strengthen their own pay transparency practices by reviewing how they disclose pay information and developing an action plan to ensure these disclosures align with the expectations of their internal and external stakeholders.

“Quiet quitting” to redefine the relationship between employees and their employers

In the shadow of the “Great Resignation,” differing employee productivity expectations, highlighted by the “quiet quitting” trend, are redefining employee-employer relationships. “Quiet quitting”, which is when employees complete the work required of them and nothing more, is increasingly widespread. At least 50 percent of the U.S. workforce reportedly is not going above and beyond the minimum expectations of their positions.⁵⁶ Supervisors are taking note. A 2022 survey found that only 12 percent of managers across 11 countries in Asia, Australia, Europe, Latin America, and North America are confident their teams are productive at work.⁵⁷ To alleviate these productivity concerns, many companies are turning to workplace surveillance technologies that track everything from keystrokes to facial expressions in meetings. However, there is no peer-reviewed evidence that these technologies increase productivity.⁵⁸ Some experts believe these technologies may even decrease productivity if they negatively affect employees’ sense of personal agency. Rather than resorting to intrusive monitoring that could tarnish employee relationships, companies should look to better support their employees by appropriately compensating them for going above and beyond, setting defined work-life balance boundaries, holding regular conversations to talk through issues and build rapport, and supporting mental health and wellbeing.

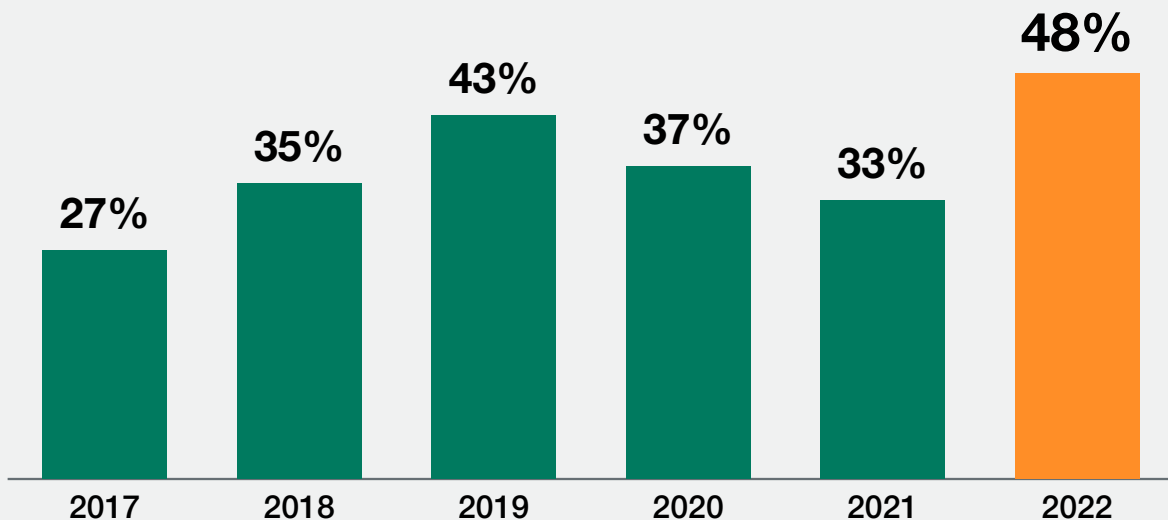


Companies to strengthen human capital development as the value employees bring to business is increasingly recognized

In the past, companies have viewed their physical capital assets through a value lens and their human capital assets through a cost lens. This kind of assessment of human capital is changing. As many companies shifted from resource intensive business models to service-focused ones rooted in intellectual assets in recent decades, they have recognized the value employees bring to their business. With this understanding, companies are expanding their human capital development practices to maximize business value. In a 2022 survey, 49 percent of U.S. HR professionals noted that their companies increased learning

and development budgets in 2022, up from 41 percent who noted an increase in 2021.⁵⁹ On the job training will be an essential part of human capital development expansion. Close to 50 percent of a worker’s accumulated human capital is understood to be a result of skills acquired on the job, a finding with which many companies seem to agree.⁶⁰ A 2022 study found that 85 percent of learning and development professionals around the world anticipated increases in on-the-job training this past year, while 48 percent expected larger learning and development budgets.⁶¹ Human capital development will also be critical as companies struggle to fill positions. One estimate puts the number of jobs globally that will go unfilled in 2030 due to employee skills shortages at 85 million.⁶² Overcoming these gaps will require companies to better equip existing workforces with the tools they need for success in the skills-driven modern economy.

Figure 2
Learning and Development Budget Expectations in 2022



Percentage of learning and development professionals who expect to have larger learning and development budgets in 2022.

Source: LinkedIn 2022 Workplace Learning Report.⁶³

3 Responding to climate change



Combatting the climate crisis is a generation-defining challenge. While society is working to accelerate its efforts to secure a livable future, the pace of corporate climate action is not yet fast enough. Despite this situation and disruptive events like the war in Ukraine, companies continue to seek better ways to address climate change.

The Intergovernmental Panel on Climate Change (IPCC)'s Sixth Assessment Report (AR6) outlined the monumental action required to limit global warming to 1.5°C, declaring that emissions need to peak by 2025 and fall by 43 percent by 2030 compared to 2019 levels.⁶⁴ This ambitious requirement has helped accelerate the uptake of corporate and governmental net zero goals and commitments. As of December 2022, 808 of the world's largest 2,000 companies, as well as 133 countries, had set a net zero ambition, representing 83 percent of global emissions and 91 percent of global GDP.⁶⁵

Even with increasing net zero commitments, there is concern that many goals lack robust implementation plans. According to a 2022 Oxford University study, 65 percent of net zero targets among global publicly traded companies do not meet minimum procedural standards of robustness (e.g., include a plan to achieve the target, publish progress on target achievement, etc.).⁶⁶ Even so, net zero goals are likely to continue spreading across economies and geographies.

While net zero goals often span long timeframes, society is experiencing physical climate impacts today. Recent months saw devastating climate-related disasters, including:⁶⁷

- Flooding in Pakistan that killed more than 1,500 people, washed away 2,000 miles of roadways, and inundated farmlands with waters that may not recede by the next planting season.⁶⁸ Scientists estimate the region's monsoon rains may at times

include approximately 75 percent more water because of warming temperatures due to climate change.⁶⁹

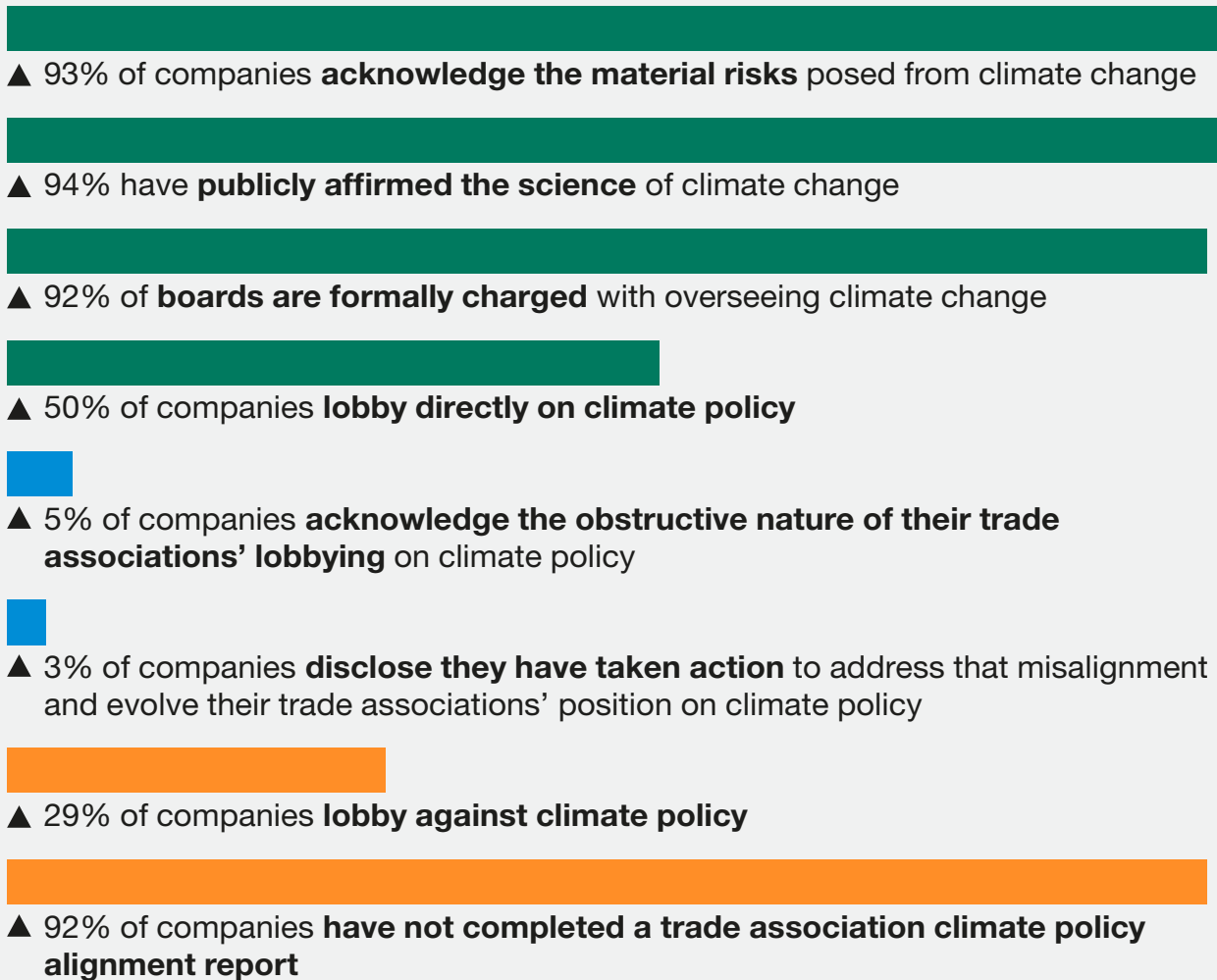
- Extreme heat waves in the UK broke 1990 temperature records by nearly 2°C. In their aftermath, scientists concluded that human-caused climate change made them at least 10 times more likely and about 4°C warmer than they would have been without climate change. In some locations, the likelihood of temperature extremes was statistically impossible without the influence of human-caused climate change.⁷⁰
- The western U.S. is experiencing its worst megadrought in more than a millennium. One study links 42 percent of the drought's intensity and duration to climate change.⁷¹

Worldwide, more than 80 percent of cities faced some sort of physical climate risk in 2022. Failure to combat climate change is likely to subject even more cities to these risks. Looking more broadly, climate inaction will put significant pressure on the entire global economy. A business-as-usual scenario resulting in unchecked climate change could result in over \$178 trillion in gross domestic product (GDP) losses over the next fifty years. Alternatively, transforming the global economy toward net zero could grow global GDP by more than \$43 trillion between now and 2070.⁷² Business has largely acknowledged the potential losses from climate impacts, but action to avoid losses or benefit from the transition is lagging.

According to a 2022 study conducted by nonprofit Ceres, 93 percent of companies in the S&P 100 acknowledge the material risk that climate change could have on their operations, but in the last three years, only 50 percent have advocated for policies that align with the Paris Agreement.⁷³ Further disparity between acknowledgement and action is demonstrated in [Figure 3](#) below.

A challenging geopolitical landscape has complicated public and private efforts to address climate change. Most notably, Russia’s invasion of Ukraine has drastically changed the trajectory of the low carbon economy transition, throwing energy markets into disarray and increasing fossil fuel usage in the short term. The current energy crisis is likely to be an inflection point in the global transition to a low carbon economy and could impact the path to net zero depicted in [Figure 4](#).

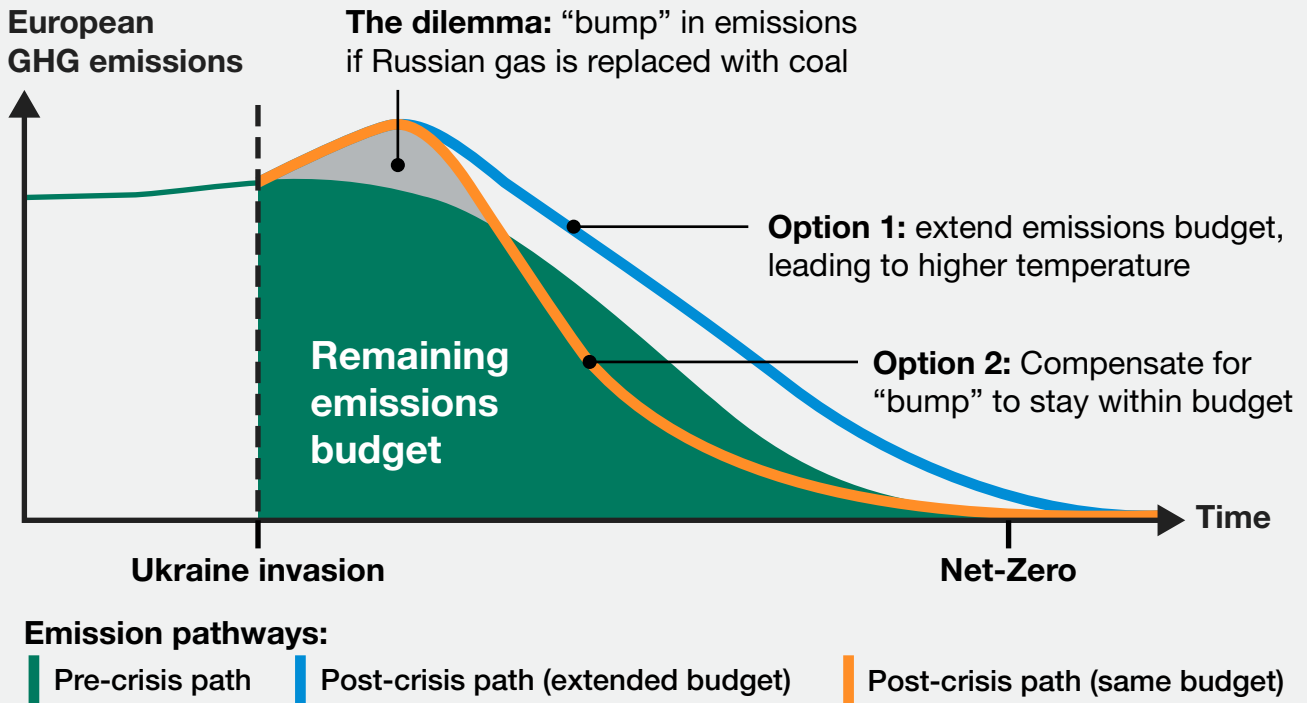
Figure 3
Climate Lobbying Activities of Large U.S. Companies



Percentage of large U.S. companies who acknowledge participating in certain climate lobbying activities.

Source: Ceres.⁷⁴

Figure 4
Impact of the War in Ukraine on Future European GHG Emissions Pathways



The impact of the short-term rise in GHG emissions because of the war in Ukraine on future European GHG emissions pathways.

Source: MSCI.⁷⁵

Though the fight against climate change faced new threats in 2022, there were positive developments as well. In late 2022, European lawmakers came to a provisional agreement on a Carbon Border Adjustment Mechanism (CBAM). When enacted, the CBAM will place a levy on imports of products in carbon-intensive industries like steel, cement, and fertilizers to ensure these imports bear the same carbon price as similar products produced within the EU.⁷⁶ Traditional energy giants are also stepping up climate action, with companies like BP investing in renewable natural gas and setting more ambitious transition targets and plans, while Ryanair has been collaborating with Shell to increase their use of sustainable aviation fuel.^{77,78} At the United Nations 27th Conference of the Parties (COP27), industrialized countries

agreed for the first time to create a fund to compensate vulnerable nations for ‘loss and damage’ related to climate change, although details for how this will work have yet to be confirmed.⁷⁹ In addition, COP27 included provisions that will funnel considerable investments into clean energy infrastructure in developing nations.⁸⁰

Even with significant setbacks in 2022, progress made toward addressing climate change impacts and reducing global greenhouse gas emissions is promising. While 2023 is likely to present its own hurdles, more climate action by governments, businesses, and NGOs can be expected. In this environment, corporate action is likely to evolve in the following ways.

The global energy crisis will help accelerate the energy transition

A global energy crisis significantly affected the world economy in 2022. Natural gas prices were highly volatile, increasing by up to 400 percent at times in some areas of Europe. This volatility was largely caused by Russia's invasion of Ukraine and the associated impacts the war had on global supply chains and energy trade. Europe's dependence on Russian natural gas also helped fuel this volatility. Prior to the war, Russia provided Europe with nearly 50 percent of its natural gas, while also supplying significant quantities of other fossil fuels.⁸¹ To compensate for energy supply issues caused by the war and its fallout, some countries are turning to depreciated or retired fossil fuel assets to generate electricity from more accessible coal resources. As a result, greenhouse gas emissions are rising, and, as demonstrated by [Figure 4](#), the push for energy independence may lead to higher demand for renewable energy in the long term.

Higher renewables demand is already being seen in certain regions. On some days in May 2022, California produced enough renewable electricity to exceed total consumer demand in the state. What's more, according to the U.S. Energy Information Administration, renewables accounted for more U.S. energy production than coal for the first time in 2020, with 21 percent of the country's electricity being generated by renewable sources, compared to just 19 percent for coal.⁸² In Europe, the REPowerEU plan to become independent from Russian energy sources before 2030 will help further increase demand. Under the plan, the EU will diversify its energy suppliers, integrate renewable natural gas into its energy mix, and replace its natural gas infrastructure with renewable power generation.⁸³ In 2023, more countries and businesses are likely to cite the current energy crisis as a factor motivating their adoption of renewable energy. Companies may take advantage of this push toward renewables in their own climate strategies by integrating renewable energy use to help reduce their total greenhouse gas emissions and limit their exposure to fossil fuel price volatility.

Carbon credits, particularly those sourced from Natural Climate Solutions, will be increasingly utilized in net zero strategies

As net zero commitments become more common, the question of how companies will achieve these goals becomes even more important. Many companies are starting their target implementation journeys by reducing their value chain emissions. However, even after undertaking all possible absolute emissions reductions on the path to net zero, some residual emissions are likely to remain. Purchasing carbon credits in the voluntary carbon market (VCM) can help companies close the remaining gap. In 2021, VCM investment activity surpassed \$1 billion, more than double the total of the previous year.⁸⁴ However, criticism is being directed toward low quality "junk" carbon offsets and avoidance offsets that fail to remove carbon from the atmosphere.⁸⁵



“Business needs to take the next step in the decarbonization journey by counterbalancing unabated emissions, and NCS carbon credits provide a natural and scalable solution for companies to do exactly that. However, NCS projects must deliver benefits beyond emissions reductions and carbon sequestration; they must also result in positive biodiversity gains and benefits for local communities in order to be considered high quality solutions.”

Giulia Carbone
Director, Natural Climate
Solutions Alliance

One method for addressing residual emissions includes procuring high-quality carbon credits from Natural Climate Solutions (NCS) programs. Through natural sequestration, NCS projects can store carbon in organic matter like trees and soil over long timeframes and provide affordable, high-quality carbon credits.⁸⁶ NCS projects also have the added benefit of improving ecosystem biodiversity and positively impacting local communities.

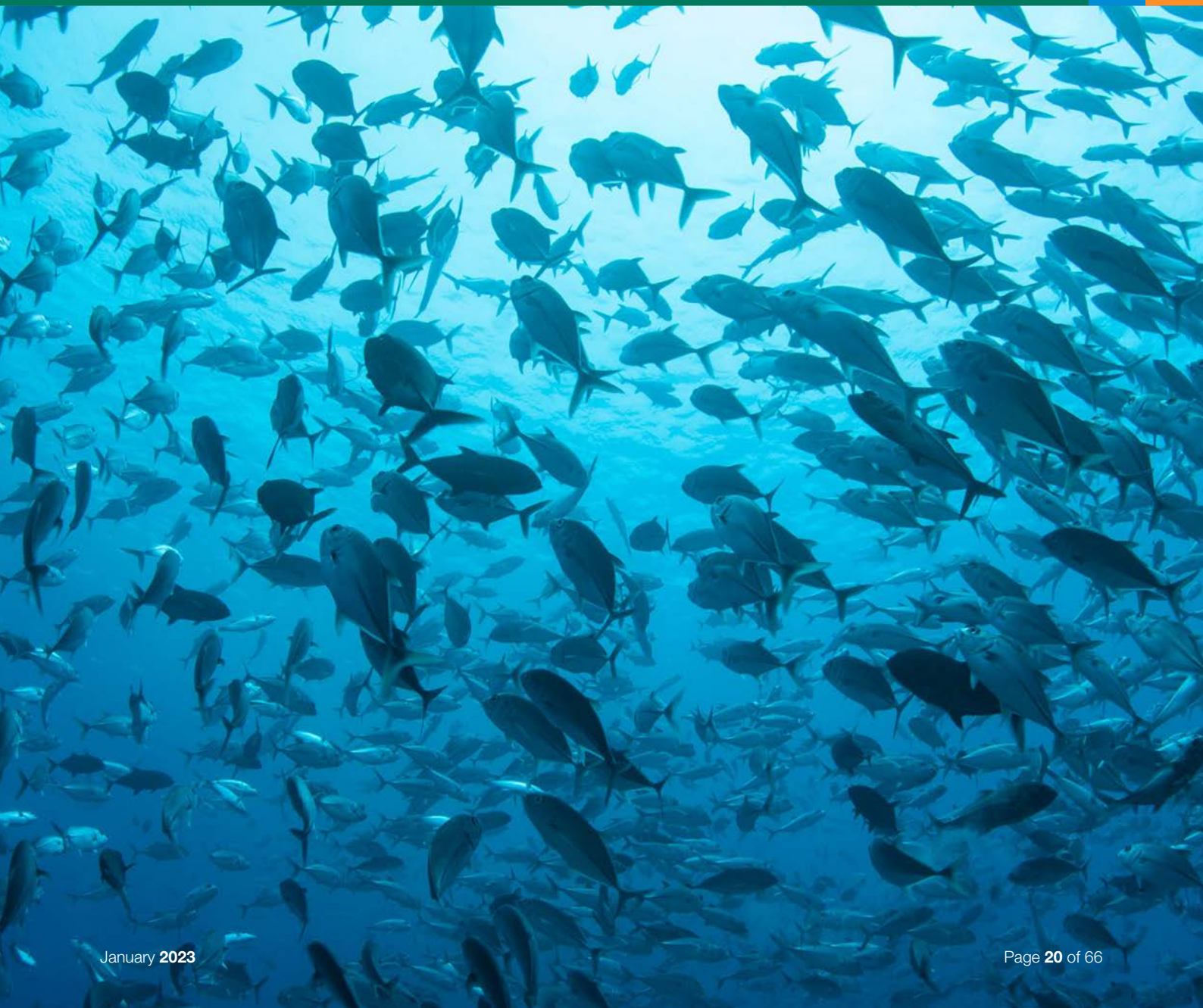
In the coming years, more companies will utilize high quality NCS voluntary carbon credits as part of their net zero strategies and the quantity of available credits will increase. Companies can bolster NCS understanding and access by joining industry groups focused on scaling NCS investments like the WBCSD's Natural Climate Solutions Alliance (NCSA) and its NCS Investment Accelerator.

Demand for electric vehicles will continue to increase, but supply chains and infrastructure may struggle to keep up

The transportation sector accounts for 14 percent of global emissions each year, with vehicles like cars and light trucks composing a large portion of these emissions.⁸⁷ As such, addressing transportation emissions will be an important factor in achieving the Paris Agreement's 1.5°C target. Consumers are already playing a part in this fight by purchasing Electric Vehicles (EVs), with demand rapidly increasing.⁸⁸ However, the combination of increasing EVs demand, the global energy crisis, unstable global supply chains, and prominent sustainability challenges like the sustainable sourcing of raw materials for batteries are likely to challenge corporate decarbonization strategies that rely on EVs for a significant portion of their emissions reductions.

EV sales were on track for nearly 11 million units in 2022, a sharp rise from the 6.6 million sold in 2021 and 3.1 million sold in 2020.⁸⁹ Demand is likely to continue rising as charging infrastructure improves, manufacturers transition from the internal combustion engine, and the cost of oil continues to push consumers to seek alternatives to gas-powered vehicles.⁹⁰ As EV demand grows, so too are the issues plaguing the industry. Supply chain instability and sustainable sourcing struggles have made it difficult for EV manufacturers to keep up. Many of the raw materials needed to manufacture EVs and other low carbon infrastructure are sourced from geopolitically unstable regions like metals and ores from Russia or graphite from China, both critical to EV battery construction.⁹¹ Automobile manufacturers are also facing a global microchip shortage as a result of supply chain instability, which is slowing EV manufacturing. Some EV companies like Tesla are getting around this by rewriting software to maximize microchip efficiency, but the shortage is still a major hurdle to meeting high EV demand.⁹² Because of these challenges, companies should maximize alternative emissions reductions and avoidance strategies to reduce their carbon footprint and combat any potential difficulties procuring EVs.

4 Safeguarding natural systems



Concern about nature and biodiversity has lagged the attention drawn by the climate crisis, but that is changing. The nature agenda is now top of mind after the United Nations 15th Biodiversity Conference in December 2022 agreed to the Kunming-Montreal Global Biodiversity Framework and as the linkages between biodiversity and climate are recognized.

The United Nations held its 15th Biodiversity Conference (COP15) in December in Montréal, Canada. The conference achieved for biodiversity – defined by the Convention on Biological Diversity as “the variability among living organisms... and the ecological complexes of which they are part...” – something like what the Paris Agreement achieved for climate in 2015, namely coming to a new, stronger global agreement for nature.⁹³ The Kunming-Montreal Global Biodiversity Framework (GBF) has four 2050 goals, including the ambition to preserve the integrity, connectivity, and resiliency of all ecosystems and to ensure that biodiversity is sustainably used and managed.⁹⁴ It also includes 23 targets to be achieved by 2030, such as objectives to conserve 30 percent of land and water ecosystems and ensure that Indigenous peoples and local communities are represented in decision-making related to biodiversity.

While COP15’s outcomes were cause for celebration in Montréal and beyond, events elsewhere around the world raised concern.⁹⁵ In Brazil, deforestation in the Amazon reached the highest level for a first half of the year since the Brazilian space agency the National Institute for Space Research (INPE) first began compiling its current data series in 2015.⁹⁶

Although deforestation is at a critical state in the Amazon, the story varies around the world. Global deforestation fell by 6.3 percent in 2021, with deforestation decreasing most rapidly in tropical Asia.⁹⁷ However, this is still far from the 10 percent annual reduction needed to achieve the pledge to eliminate deforestation by 2030

that 145 countries representing 91 percent of the world’s forests made in 2021 at COP26 in Glasgow.⁹⁸

The World Wide Fund for Nature (WWF) raised alarm about species diversity this year with the release of the 2022 update of its Living Planet Report, which biennially reports on the overall global abundance of species around the world.⁹⁹ This report found that global wildlife populations declined by an average of 69 percent between 1970 and 2018, with Latin America seeing the largest regional decline at 94 percent, and freshwater species seeing the largest species decline at 83 percent.

This was not the only discouraging biodiversity news published in 2022. In December, a study found that the \$154 billion the public and private sectors currently invest in nature-based solutions is far short of the \$384 billion per year that the UN Environment Programme estimates is required by 2025 and the \$484 billion required annually by 2030 to limit global warming to 1.5C and halt biodiversity loss.¹⁰⁰

While there is an overall nature-related funding shortfall, in 2021, private industry injected a record \$2 billion into the voluntary carbon market, where carbon credits generated through nature-based solutions projects are traded.¹⁰¹ Voluntary carbon markets also advanced in 2022 when African leaders at COP27 launched the Africa Carbon Markets Initiative (ACMI), which aims to accelerate carbon credit production to protect the continent’s extraordinary biodiversity.¹⁰²

Other governments took positive actions as well. The European Union enshrined into law a goal to repair 80 percent of European habitats in poor condition by 2050.¹⁰³ Also, in the political realm, nature conservation efforts were boosted by the election of Luiz Inácio Lula da Silva in Brazil, who pledged to work toward zero deforestation after the policies of his opponent Jair Bolsonaro helped accelerate deforestation in the Amazon during his term.^{104,105}

Companies are also acting. In November 2022, 12 major food and agriculture companies from Asia, Europe, and the U.S. launched an action plan to expand regenerative agriculture (practices that improve soil health and biodiversity and bolster carbon sequestration) through the Sustainable Markets Initiative’s Agribusiness Task Force.¹⁰⁶

Within Canada, a coalition of leading insurers is focused on increasing the natural world’s resiliency. Launched in March 2022, The Nature Force is a group of 15 Canadian insurance firms plus the non-governmental conservation organization Ducks Unlimited Canada committed to investing in natural infrastructure to protect communities from damaging climatic events and mitigating biodiversity loss and climate change.¹⁰⁷

Beyond its impact on climate and biodiversity, preventing nature loss may help diminish the risk of future pandemics – and at a much lower cost than what the world shouldered during the COVID-19 pandemic. 2022 research found that investing \$20 billion annually to fund deforestation reductions, among other nature positive actions, could help prevent pandemics at a fraction of the projected financial costs of lives lost and monetary losses from future pandemics that emerge from viral zoonoses, as COVID-19 is likely to have done.¹⁰⁸

Despite an uncertain picture for nature and biodiversity, developments in the past year provide reasons for hope, most notably in the form of the Kunming-Montreal Global Biodiversity Framework. In the context of this duality, corporate action is likely to evolve in the following ways.



“COP15 was exceptionally high energy, with many companies expressing strong interest in increasing their nature ambition and collaborating with emerging global frameworks like the TNFD. Moving forward, we expect companies to expand their nature-related initiatives across their entire value chains as they respond to growing demands for nature positive action and a need to enhance their operational and supply chain resilience as they work toward net zero goals.”

Matt Haddon
Global Innovation Leader,
Biodiversity, Nature and Water, ERM

The Taskforce on Nature-related Financial Disclosures to transform nature-related reporting

When the Taskforce on Nature-related Financial Disclosures (TNFD) publishes its final Framework in September 2023, it is expected to transform how companies approach nature-related reporting. Leveraging the successful approach of the Task Force on Climate-related Financial Disclosures or TCFD, the TNFD is led by 40 members representing financial institutions, companies, and market service providers with over \$20 trillion in assets.¹⁰⁹ In 2022, the TNFD launched three versions of its Framework for feedback which outline draft nature-related disclosure recommendations, metrics, and targets, as well as a risk and opportunity assessment approach.¹¹⁰ One more draft of the Framework, on which the TNFD will again receive feedback, will be published in March 2023.

The TNFD Framework comes at a critical time for corporate nature-related action. Despite the fact that over half of the world's GDP is moderately or highly dependent on nature, only five percent of Fortune 500 companies have set quantified nature-related targets, although 51 percent acknowledge that nature loss is a problem.^{111,112} Similarly, a study of public companies in Japan, Thailand, Singapore, and Hong Kong found that only four percent prioritize addressing nature-related issues.¹¹³ Businesses are demonstrating growing interest in addressing this shortfall. Shortly before the start of COP15, over 330 businesses demanded that world leaders require large companies to assess and disclose their nature-related impacts.¹¹⁴ The parties at COP15 responded to this demand with Target 15 of the Kunming-Montreal Global Biodiversity Framework, which requests that countries establish measures to ensure that companies and financial institutions “Regularly monitor, assess, and transparently disclose their risks, dependencies, and impacts on biodiversity” across their operations, value chains, and portfolios.¹¹⁵ To prepare for the changes TNFD will bring, companies should identify and assess their material nature-related risks and opportunities, develop a management strategy for them, and prepare to disclose information on these risks and opportunities and their management.



Financial companies to increase focus on nature-related impacts and risks

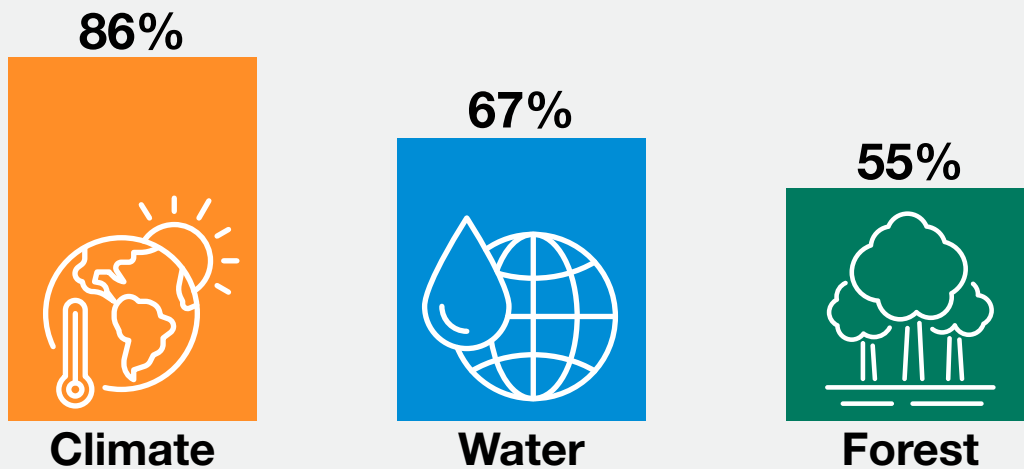
The world’s financial institutions have room to improve when it comes to decreasing their nature-related impacts. For example, two hundred of the world’s largest banks and investors have provided \$267 billion in funding to companies most involved in deforestation since the signing of the Paris Agreement in 2015.¹¹⁶ Additionally, only 55 percent of financial institutions reporting to CDP disclosed information on their nature-related risks in 2021 as compared to the 86 percent reporting on climate-related risks.¹¹⁷

Despite these shortfalls, there are signs that the financial industry is stepping up to address nature-related impacts. In 2022, 111 financial institutions based in 20 countries representing over \$17 trillion in assets signed the Finance for Biodiversity Pledge.¹¹⁸ The Pledge calls on financial leaders to protect and restore

biodiversity through their financial activities and investments. Also, the Partnership for Biodiversity Accounting Financials (PBAF) launched its PBAF Standard v 2022 outlining biodiversity impact assessment approaches to help financial companies reduce their impacts on nature.¹¹⁹ In a company-specific example, asset manager Nuveen published its Global Timberland Strategy in November 2022 with the aim “to provide investors with targeted exposure to sustainable timberland investments” that protect nature and reduce carbon emissions.¹²⁰

Overall, increased financial institution focus is likely to translate to greater pressure on companies to take nature-related action as these organizations use their influence to direct change. In response, companies should begin to assess their nature-related impacts now, both so that they can report them if required by investors or regulators, and so that they can develop strategies to minimize impacts that exist. Both these responses may be needed to avoid losing financing if financial institutions begin to evaluate companies’ nature-related performance.

Figure 5
CDP-reporting Financial Institutions Who Assess Their Portfolio Exposure to Environmental Risks



Percentage of CDP-reporting financial institutions who assess their portfolio exposure to environmental risks.

Source: CDP.¹²¹

Natural capital accounting to help companies better assess their nature-related impacts and dependencies

Carbon accounting relies on quantifying GHG emissions. Natural capital accounting, on the other hand, relies on quantifying ecosystem function – the impacts of an almost infinite number of potential interactions one entity may have with the natural world. The European Commission defines natural capital accounting as “a tool to measure the changes in the stock of natural capital at a variety of scales and to integrate the value of ecosystem services into accounting and reporting systems.”¹²² While a relatively new concept, vigorous efforts are being made to mainstream natural capital accounting practices. In 2022, the Aligning Accounting Approaches for Nature project led by the Capitals Coalition, launched its initial recommendations for a methodology and criteria for companies’ measurement and valuation of biodiversity elements.^{123,124}

Governments may also prove to be a strong force pushing toward the adoption of natural capital accounting approaches. In the U.S., the Biden administration published a draft strategy in August 2022 for developing natural capital accounting practices to generate data for use in official U.S. economic statistics.¹²⁵ Although this draft strategy is unlikely to be reflected in federal economic statistics any time soon, it signals interest in natural capital accounting in the most rarified of economic conversations. Uganda is already accounting for its abundant natural wealth. Since partnering with the UN Environment Programme World Conservation Monitoring Centre in 2018, the East African country has developed three sets of natural capital accounts for Biodiversity and Tourism, Fisheries Resources, and Land and Soil Improvement.¹²⁶

Companies may benefit from the refinement of these approaches, which should enable businesses both to better recognize and assess nature-related impacts and dependencies and to implement appropriate mitigation strategies for any damage that business activities cause. Companies should start by identifying where their business interacts with nature and gathering data through which they can value these interactions, following guidance from initiatives such as Aligning Accounting Approaches for Nature as needed.

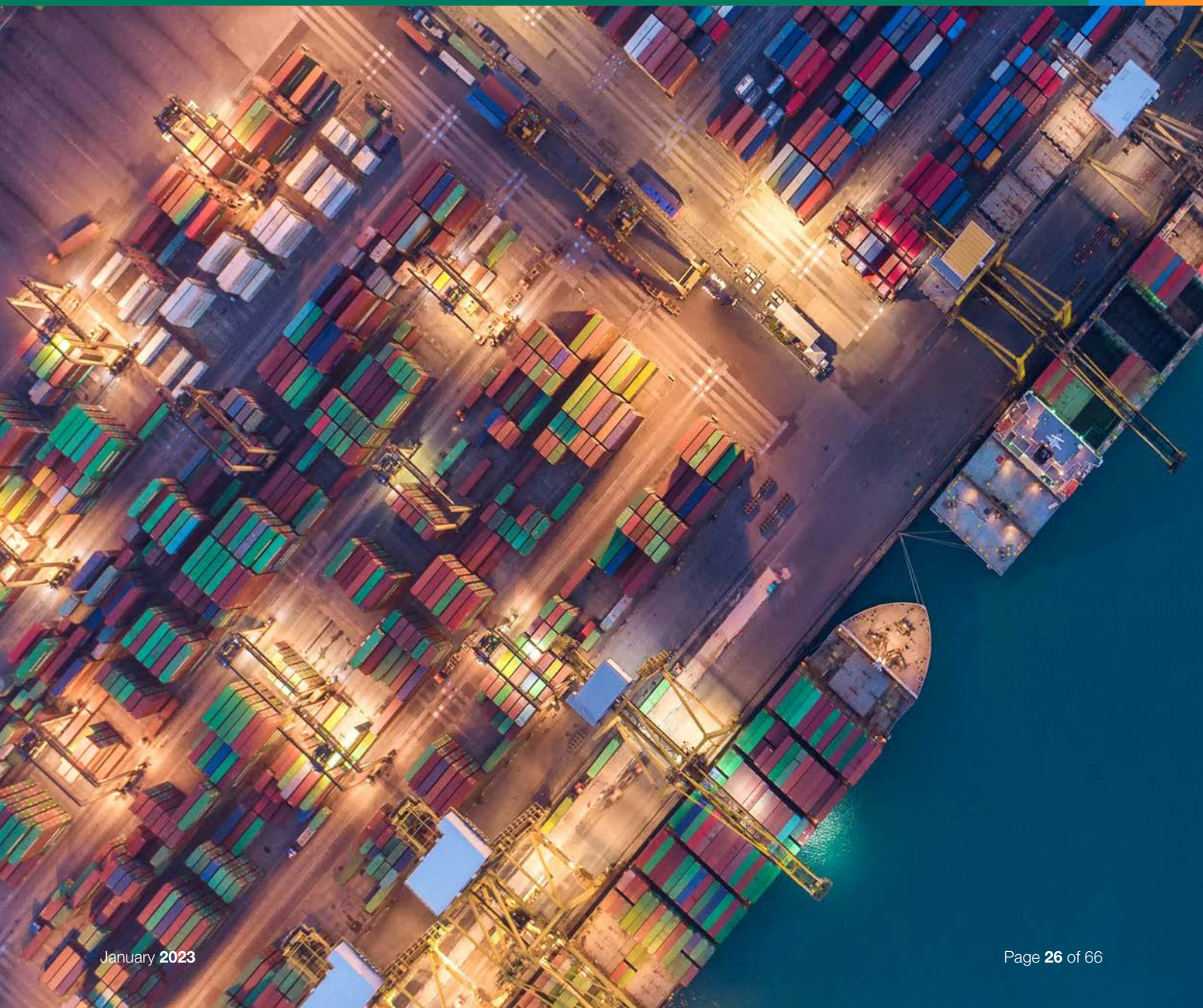


“There is growing momentum among companies to pursue nature positive action as emerging regulations, multilateral mechanisms, and investor pressures bring the natural world to the forefront of corporate circles. To ensure they meet these drivers, companies must assess their nature-related impacts and dependencies, set targets to guide their actions, and follow best practices for disclosure such as those coming out of the TNFD.”

Erika Washburn
Senior Consultant, ERM

5

Building sustainable and resilient supply chains



Supply chain challenges have been front and center in recent years, especially since COVID-19 emerged. The pandemic and other complications have increased consumer awareness of where and how goods originate. At the same time, companies are finding that better understanding of complex supply chains is key to solving the most complicated ESG issues.

Even as COVID-related supply chain challenges persisted in 2022, the war in Ukraine added new layers of complexity. According to one estimate, over 300,000 U.S. and European companies have supply chains that involve suppliers from Russia and/or Ukraine.¹²⁷ Production and logistical difficulties have hampered companies in all sectors and particularly semiconductor, automobile, industrial, and retail companies due to their reliance on materials from complex global supply chains like those required for electric vehicle batteries.¹²⁸ Consumers have been affected as well. The cost of consumer goods has risen as companies and suppliers pass increased costs related to supply chain issues on to consumers. In Canada, for example, the consumer price index surged to 8.1 percent in June 2022, a level not seen since the late 1970s.¹²⁹

Supply chain issues are expected to continue, with one survey finding that more than 75 percent of logistics managers at U.S. companies believe such challenges will continue into 2023 and beyond.¹³⁰ Companies are taking various actions in response. For example, companies are shifting their supply chains as a result of the war in Ukraine. Over 1,200 companies globally have discontinued operations in Russia since that country invaded Ukraine; this has been in part an ethical decision but is also a way to limit exposure to supply chain risks.¹³¹ Solutions are also emerging to help companies reduce sourcing risks. Launched in December 2022, the Supply Chain Risk Identification tool will help companies identify ESG-related supply chain risks and provide scoring for and ongoing monitoring of these risks.¹³²

Despite supply chain challenges, companies continue to improve supply chain sustainability management as awareness of its importance to long-term success grows. Supply chain sustainability rater EcoVadis noted a 61 percent increase in the number of companies being assessed from 2017 to 2021, with a particularly large jump occurring between 2020 to 2021.¹³³ In its most recent assessment, EcoVadis found that 53,000 companies of all sizes in various industries and geographies had significantly improved supply chain sustainability management practices.¹³⁴ Improvements include better systems for sustainable procurement as well as human rights due diligence. Overall, global average scores increased by 1.7 points on their 0-100 scale in 2021, nearly doubling the 0.9-point improvement seen the year prior.

Governments are also strengthening supply chain sustainability oversight. Proposed in November 2022, the U.S. Federal Supplier Climate Risks and Resilience Rule is intended to strengthen the country's supply chain.¹³⁵ The rule requires all major Federal contractors to publicly disclose their greenhouse gas emissions and climate-related financial risks and to set science-based emissions reduction targets. This is significant as it would be the first time a national government requires its major suppliers to establish Paris Agreement-aligned emissions reduction goals. It is likely that this rule will inspire other countries to follow suit.

The pursuit of supply chain sustainability was boosted this past year even in the face of continuing difficulties thanks to both corporate and governmental action. As the world continues to build more sustainable and resilient supply chains, corporate action is likely to evolve in the following ways.

Companies will increase supply chain resiliency through production site shifts

Companies are recognizing that they must carefully evaluate their supply chains if they are to meaningfully deliver on their short- and long-term sustainability goals. Because of mounting geopolitical risks, supplier location is likely to play a significant part in meeting these goals as companies shift production sites to increase resiliency to external shocks. Going forward, companies are likely to move at least parts of supply chains out of China to decrease exposure to these risks and pandemic-related hazards. For example, Apple, Microsoft, Google, and Amazon have already shifted some production out of China to Vietnam and India.¹³⁶ Samsung and Volvo have made similar shifts, and many other businesses have indicated they are considering doing the same.¹³⁷ In June 2022, 23 percent of Western firms said they were considering moving operations out of China because of COVID-19-related challenges.¹³⁸ Moreover, a recent political risk survey discovered that 95 percent of multinational companies are concerned about China, an increase from 62 percent in 2020.¹³⁹ While companies' calculations may change as China eases COVID-19 restrictions (and depending how much this easing causes COVID cases in China to spike), issues elsewhere will require them to remain vigilant. The war in Ukraine, for instance, generated food shortages soon after it began, and though these have lessened somewhat thanks to a UN-brokered grain export deal, they could arise again if the war escalates.¹⁴⁰

When making decisions to strengthen their resiliency to potential supply chain disruptions, companies should consider which parts of their supply chains are most at risk to external shocks and develop a plan to decrease this risk either by avoiding production concentration, switching suppliers, or moving production away from high-risk areas.

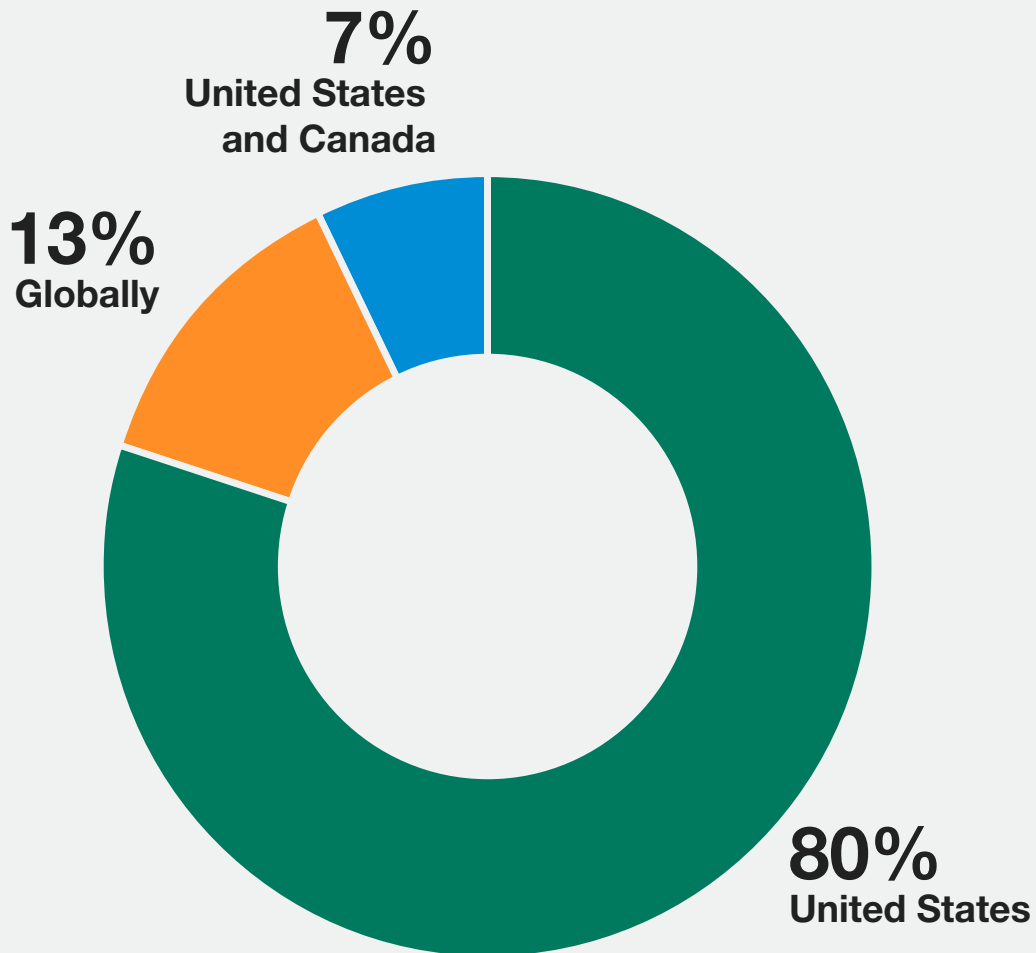
Companies will increase spending with diverse suppliers

Companies are connecting strong supplier diversity with their ability to deliver on ESG goals and broader business ambitions. According to one study, diverse suppliers (defined as minority- and women-owned businesses) offer companies potential year-over-year procurement cost savings of 8.5 percent, compared to the three to seven percent that most companies achieve annually.¹⁴¹ As companies' understanding of the value supplier diversity brings to their business grows, many are expanding their supplier diversity initiatives. In 2022, Salesforce increased spending with minority-owned businesses by more than 50 percent year-over-year and launched its Black-Owned Business Mentor/Sponsor Program to support Black-owned businesses through mentor relationships with Salesforce VPs.¹⁴² In addition to spending \$5.4 billion with women and minority-owned companies during their 2021 fiscal year, FedEx also launched its FedEx E-Commerce Learning Lab to help women- and minority-owned businesses develop or expand e-commerce operations.¹⁴³ Companies are also increasing supplier diversity through partnerships like the Billion Dollar Roundtable (BDR), a group of companies that promotes best practices for supplier diversity and which spend at minimum \$1 billion annually on Tier 1 diverse suppliers.¹⁴⁴ Supplier diversity programs are also gaining traction beyond the West. According to one study, 13 percent of supplier diversity programs globally in 2022 were outside the U.S. and Canada, compared to eight percent in 2021.¹⁴⁵

As companies expand their supplier diversity initiatives, they should evaluate where within their supply chains diversity can be most improved and then seek out potential partners within these areas. One way to identify diverse suppliers is by partnering with external supplier diversity organizations like the National Minority Supplier

Development Council and the Women’s Business Enterprise National Council.^{146,147} These groups certify that suppliers are diverse, making it easier for companies to find diverse suppliers that meet their needs.

Figure 6
Supplier Diversity Programs Across Geographies in 2022



Regions where respondents to Supplier.io’s annual supplier diversity survey noted they had active supplier diversity programs in 2022.

Source: Supplier.io.¹⁴⁸

Companies' ESG goals will impact suppliers

In addition to the way businesses depend on their supply chains to help deliver on their ESG goals, many companies are requiring suppliers to set and meet ESG goals of their own. For example, General Motors' (GM) new Environmental, Social, and Governance Partnership Pledge requests that suppliers achieve carbon neutrality for Scope 1 and 2 emissions and attain specific EcoVadis scores for issues such as diversity and non-discrimination, child and forced labor, and corruption and anticompetitive practices by 2025.¹⁴⁹ GM suppliers representing over half of the company's multibillion dollar direct material annual purchase value have already signed on to the pledge. Similarly, Deutsche Bank will require all its major suppliers to undergo an ESG assessment from one of a group of ESG ratings providers (EcoVadis, MSCI ESG, Sustainalytics, ISS ESG, S&P Global, and CDP) to ensure their suppliers have strong ESG practices.¹⁵⁰ For Deutsche Bank suppliers assessed by EcoVadis next year, the bank will only grant contracts worth over \$530,633 to vendors who achieve a sustainability rating of at least 25 out of 100 possible points.

If not planning to do so already, companies should begin setting ESG standards for suppliers to amplify and accelerate ESG progress. After setting ESG standards, companies should help suppliers meet the new requirements by sharing the knowledge and experience they have gained on their own ESG journeys. Companies who are required to meet these ESG requirements should work closely with their partners setting these requirements to ensure they understand what is required of them and that they are able to meet them in the timeframe required.

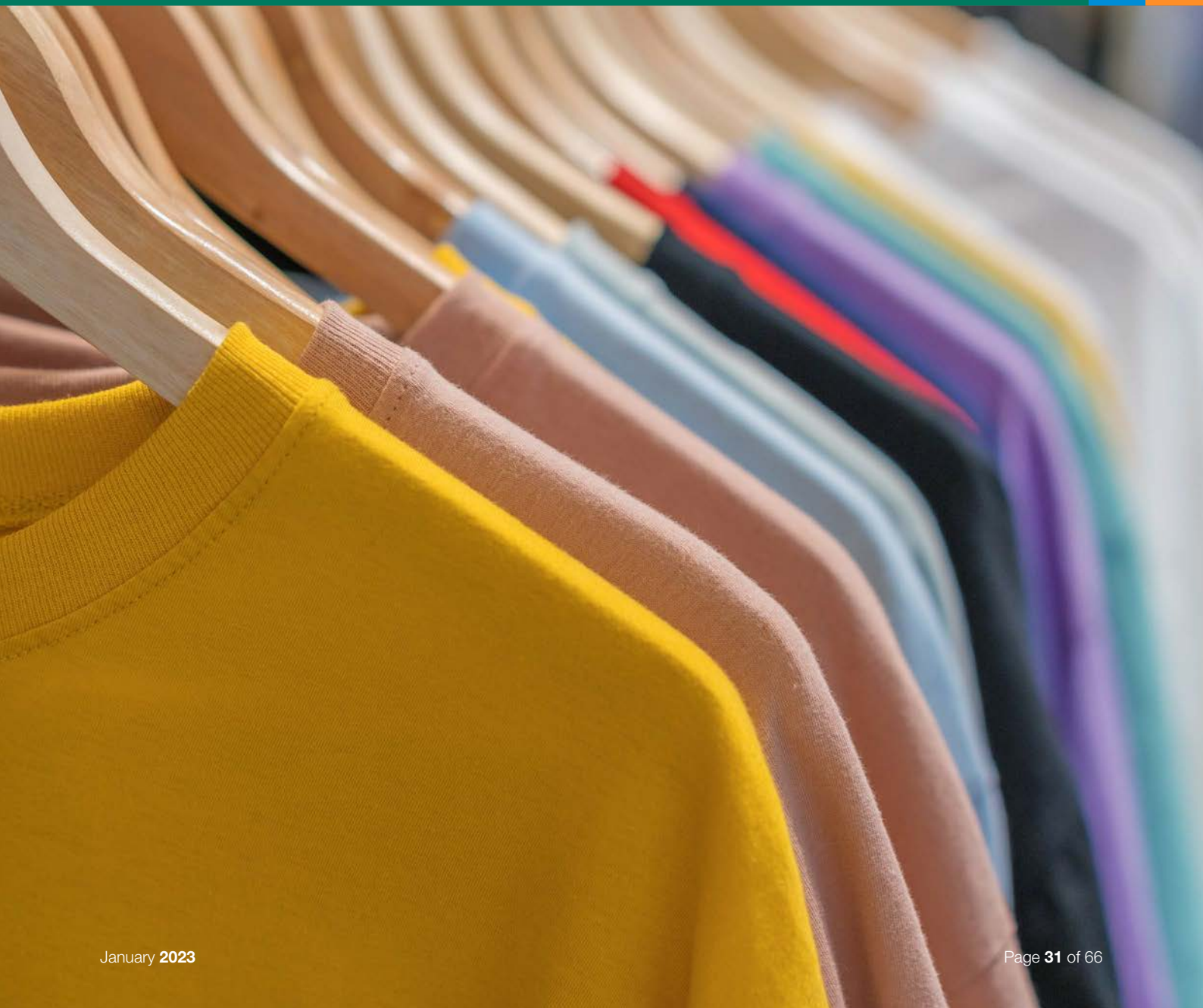


“Education is crucial to helping suppliers achieve ESG goals. Companies can set very firm demands of their supply base, however, if suppliers lack context or understanding, they set themselves up for failure. To be successful, companies must understand what their value chain is capable of and ensure that they have the knowledge and tools to achieve what they are required to do.”

JoAnne Sahli
Senior Consultant, ERM

6

Enabling sustainable consumption and production



The urgency of figuring out what to do with the world's waste is underlined by the phenomenon of even low waste production regions being overwhelmed with discarded goods.¹⁵¹ Businesses and governments are making headway developing circular strategies and models aimed at transitioning from take-make-waste to take-make-reuse approaches, but these efforts must accelerate.

The need for more sustainable consumption and production is increasingly clear. Between 2015 and 2021, the world extracted 70 percent more virgin materials from the Earth than what can be replenished in a year.¹⁵² Our take-make-waste economy contributes to this overextraction by consuming over 100 billion tons of materials a year, over 90 percent of which ends up as waste and is not incorporated back into products.¹⁵³ Much of the world's waste ends up in the environment. In 2016, up to 14 million tons of plastic waste entered aquatic ecosystems, a number projected to grow to as much as 37 million tons by 2040.¹⁵⁴ Beyond direct waste issues, unsustainable resource extraction and consumption contributes to climate change – 70 percent of global GHG emissions can be traced back to material handling and use.¹⁵⁵

Despite these sobering statistics, society is advancing toward more sustainable consumption and production. For instance, the market for secondary goods has increased in popularity among all age groups. 2021 research found that shopping for apparel in the secondhand market has increased between 30 and 55 percent depending on generation since 2019.¹⁵⁶ While shifting behaviors among older generations tends to be a prominent barrier in society's transition to sustainable consumption and production, the research also found that 81 percent of Baby Boomers engaged in some 'recommerce' (the buying and selling of previously owned items) in 2022, up significantly from 52 percent in 2019. The reasons consumers shop for resale options vary, but over 50 percent of those studied reported concern for the planet and their preference for circular options as motivating factors in their purchase decisions.

Companies are taking different approaches to circularity. Some fashion businesses not commonly associated with environmental initiatives, like fast fashion brand UNIQLO, have responded to growing customer sustainability preferences by offering affordable repair services for their products.¹⁵⁷ Even luxury retail has come aboard. For instance, several Kering brands including Gucci and Alexander McQueen launched resale programs in recent years, with Gucci reselling vintage items as part of Gucci Vault, while Alexander McQueen has partnered with Vestiaire through its Brand Approved program to authenticate and resell the brand's previous season items.¹⁵⁸ This pre-owned model is becoming more prevalent with other manufacturers like lululemon and Mara Hoffman whose 'Like New' and 'Full Circle Marketplace' programs, respectively, enable consumers to buy and sell used clothes.^{159,160}

Beyond the apparel industry, Starbucks announced a plan to eliminate single-use cups by replacing them with reusable cups.¹⁶¹ The coffee company has already trialed eliminating disposable cups in certain South Korean stores and by the end of 2023, it aims to enable all customers in the U.S. and Canada to use their own reusable cups for in-store, drive-thru, and mobile orders. PepsiCo is also pursuing reusable packaging. In December, it announced a goal to increase the percentage of its beverage servings it sells through reusable packaging to 20 percent by 2030, compared to its previous 10 percent goal.¹⁶²

In the governmental realm, circularity legislation made significant headway in 2022. In March, representatives from 173 countries agreed to develop a legally binding treaty to reduce plastic

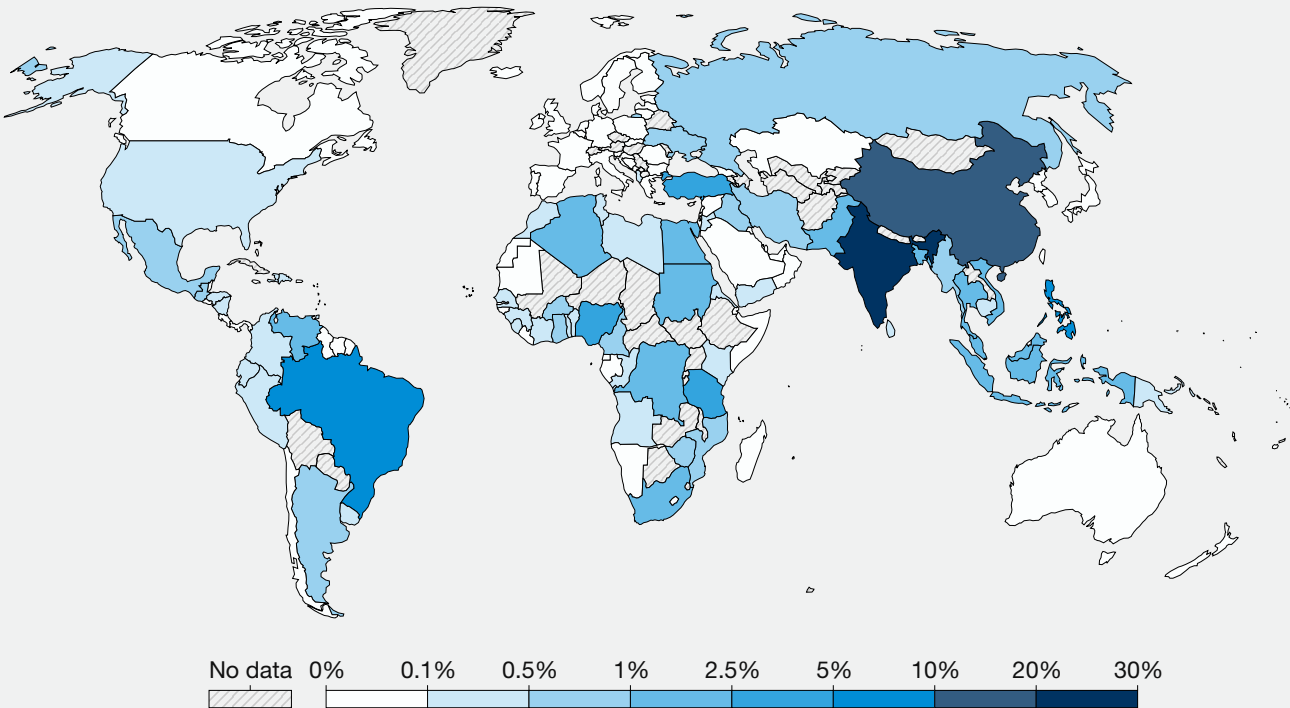
waste across the full life cycles of plastics.¹⁶³ The agreement, reached at the United Nations Environment Assembly in Nairobi, establishes an intergovernmental negotiating committee to draft and ratify the treaty, which negotiators aim to do by 2024.

By reducing plastic waste and transitioning to a circular economy, society should benefit broadly. Research from the Ellen MacArthur Foundation shows that, by 2040, a circular economy for plastic has the potential to generate plastic production and use savings

of \$200 billion per year, create 700,000 net additional jobs, reduce greenhouse gas emissions by 25 percent, and decrease the volume of plastics in the oceans by 80 percent annually.¹⁶⁴ As the benefits of sustainable production and consumption continue to be more widely known, businesses are likely to expand their circularity-related goals and KPIs.

With companies continuing to enable responsible production and consumption, we expect that corporate action is likely to evolve in the following ways:

Figure 7
Percentage of Plastic Waste Mismanaged by Country



Percentage of plastic waste mismanaged (i.e., plastic that is littered or inadequately disposed in a place where it is not adequately contained) by country.

Source: Our World in Data.¹⁶⁵

Circularity requirements will surge, driving businesses to develop more sustainable business models

Circular-related regulatory drivers are multiplying, especially given the EU Green Deal, which requires companies in the EU and those which trade with the EU to take a more holistic approach to circularity.¹⁶⁶ The deal includes proposed regulation for Ecodesign for Sustainable Products, which has requirements related to product durability and reusability, the presence of substances of concern, and many other requirements not previously laid out in this level of detail.¹⁶⁷ Also in 2022, countries made significant progress developing circularity-related policies and regulations. These initiatives are putting pressure on companies to develop circular practices to reduce their waste and help combat climate change by reducing their greenhouse gas emissions. For instance, Scotland is considering banning the destruction of unsold, durable goods and requiring retailers to pursue alternative use options like donation or recycling for these goods.¹⁶⁸ Canada and India announced bans on a series of single use plastic items. Canada's ban covers checkout bags, cutlery, and food service wares containing hard-to-recycle plastics, among other items.¹⁶⁹ The restriction on the manufacture and import of these products began in December 2022, with their sale prohibited from December 2023 onward. Canada will also prohibit the export of these plastics by 2025, making it the first country to implement such a rule. India's single use plastic ban includes items such as plates, cups, straws, and ear buds and was implemented after the country estimated that it generates approximately 3.5 million tons of plastic waste annually and that per capita waste generation has nearly doubled over the last five years.¹⁷⁰ In the U.S., New York lawmakers passed the country's first 'Right to Repair' law for electronics, which requires manufacturers to provide repair information, parts, and tools to consumers with the hope that it decreases the

number of electronic devices sent to landfills.¹⁷¹ As circularity-related policy and regulatory requirements continue to evolve, businesses will increasingly develop more sustainable business models to meet these requirements. When developing these new approaches, companies should consider the applicable policies and regulations in the jurisdictions they operate in to ensure they comply with local requirements.

Businesses will pursue more circularity-focused initiatives

As companies' sustainability programs mature, circularity-focused initiatives are likely to expand in number and scope. Walmart and IKEA provide two examples. In October, Walmart and Loop, a circular packaging reuse platform, announced that customers in select cities can purchase a number of products in refillable, reusable containers for home delivery through the Walmart+ InHome grocery delivery service.¹⁷² This initiative coincides with Walmart's goal of achieving 100% sustainable packaging (recyclable, reusable, or industrially compostable) by 2025. So far, the initiative includes 30 products from brands like Gillette, Cascade, Kraft Heinz, and Seventh Generation.¹⁷³ Earlier in the year, IKEA made its Buy Back & Resell initiative permanent in 37 U.S. stores following a successful pilot.^{174,175} Through the initiative, consumers can return a long list of specific furniture items that are functional and assembled. In another example, Australian shipping pallets and containers firm Brambles has put circularity at the center of its product development model by considering circular impacts from design and material selection to development and commercialization.¹⁷⁶ This circularity focus enabled Brambles to recover and refurbish four million pallets in 2022, the equivalent of approximately 195,000 trees.

With more businesses, particularly in the consumer goods industry, advancing circularity-focused initiatives, stakeholder expectations

for other companies to follow suit are likely to grow. To ensure companies meet these expectations, they should identify the areas of their business where circularity practices can have the most impact and develop initiatives to ensure these practices both increase circularity and contribute to efficiency gains that generate financial benefits.

Governments to increase their focus on eliminating PFAS or so-called ‘forever chemicals’

Societal tolerance for toxic chemicals, particularly the human-made PFAS (per- and polyfluoroalkyl substances) or ‘forever chemicals’ is decreasing. Chemical manufacturers have experienced increased litigation, with U.S. companies alone facing more than 6,400 PFAS-related lawsuits since 2005. Investors are also pressuring companies.¹⁷⁷ In November 2022, investors managing \$8 trillion in assets wrote to 54 companies imploring them to discontinue using PFAS.¹⁷⁸ Unfortunately, even while societal tolerance decreases, the threat of chemical pollution has continued to grow. In early 2022, scientists found that chemical pollution had crossed the planetary boundary for which the likelihood of global ecosystem destruction increases significantly.¹⁷⁹ While some PFAS have been banned for years, some can take decades to degrade. This longevity can have devastating impacts such as decreasing human fertility, delaying child development, and increasing the risk of cancers.¹⁸⁰

To combat PFAS and other dangerous chemicals, the EU released a plan for what could be the largest-ever chemicals ban – covering up to 12,000 chemicals – when it published its Restrictions Roadmap in April.¹⁸¹ The EU will use the roadmap to review specific classes of chemicals, including PFAS, to prioritize restrictions ahead of its 2027 update of its Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation.

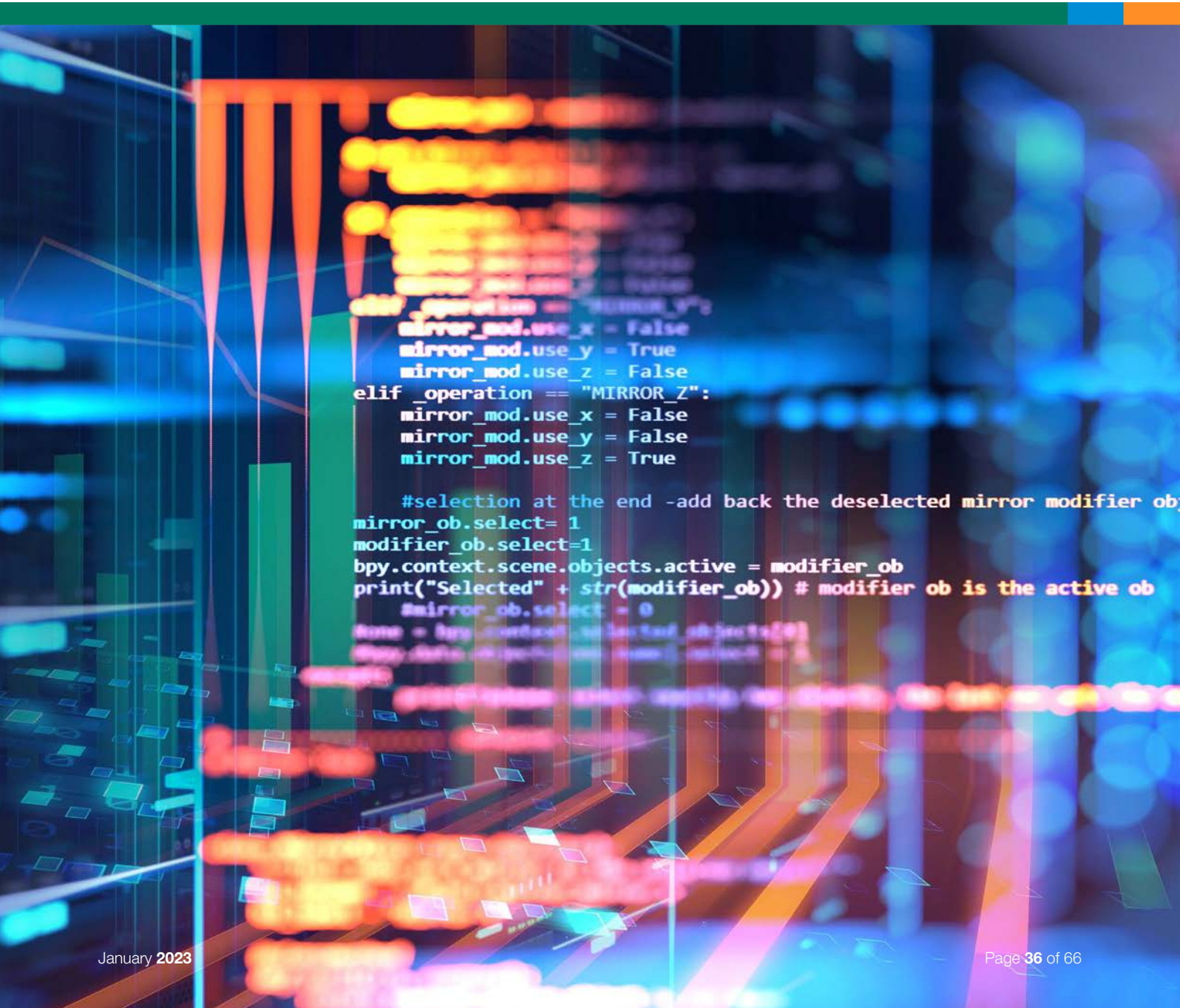
In the U.S., the State of California sued several large chemical producers, including 3M and DuPont, to help pay for the cleanup costs of PFAS in the state.¹⁸² Beyond the California suit, 3M also made PFAS-related news when in December 2022, it set a 2025 target to stop producing the chemicals.¹⁸³ With governmental action increasing, businesses need to carefully assess where within their businesses these chemicals may be used. U.S. companies should look to the EPA’s ‘PFAS Strategic Roadmap’, launched in October 2021, to better understand how the EPA plans to protect against PFAS contamination and the timelines involved in these plans.¹⁸⁴ Preparing for governmental PFAS requirements by collecting data on their PFAS use will pay dividends for companies, as the data can also be used to support PFAS-related disclosures required by regulations such as the U.S.’ Toxic Release Inventory.¹⁸⁵



“Effective use of resources will ultimately require hard looks at societal assumptions about consumption as a basis for lifestyle and economic participation. Without examining the entire product life cycle, including demand and use, we will not make significant progress. As we look at technical options for circularity within a company’s operations, we should not discount the question: Should this material or product even be in circulation to begin with, or do we need to look at broader societal changes around consumption?”

Kate Sellers
Technical Fellow and Partner, ERM

7 Applying technology to sustainability



Technological advancements support the rapid development of more sustainable economies and societies. As technological capability and accessibility grow, companies must grapple with important and complex questions about the ethical and sustainable application of the technologies available to them.

The world generates approximately 1.145 trillion MB of data daily, and the amount of data generated globally is doubling roughly every two years.¹⁸⁶ In fact, the world has created so much data that the General Conference on Weights and Measures created new unit measurements to keep up, the largest being the ‘quetta’ prefix, indicating 30 zeroes.¹⁸⁷ While data and technological advancements in general have provided myriad benefits to society, these developments also raise questions about the sustainability of technology and the ways it is applied.

The huge amount of data and information society produces requires a huge amount of electricity to process, manage, and store. Globally, data centers account for up to 1.5 percent of total energy usage.¹⁸⁸ How will these data centers sustainably manage their energy needs?

As technologies like AI advance, pressing questions about the ethical boundaries we put in place for technology emerge. How far is too far for artificial intelligence?

The amount of data stored by governments and companies about any given person raises significant data security and privacy concerns. Can organizations be trusted to protect this sensitive data?

Though these and other questions about technology and sustainability must be addressed, there are major benefits to utilizing technology to make business more sustainable.

Many companies have been seeking technological tools able to help decipher sustainability-related data and enhance their sustainability performance. Expansion of these technologies has been rapid, with tech solutions like that offered by recent ERM acquisition OPEX (a specialist AI and data science solutions software platform) helping carbon-intensive industries reduce their greenhouse gas emissions.¹⁸⁹ AI solutions like OPEX may have the capacity to collectively reduce global emissions by up to four percent by the year 2030.¹⁹⁰

Consumers have taken note of the positive and negative impacts that the tech industry has on the environment. A 2022 survey of U.S. adults revealed the tech industry is seen as having contributed more than any other industry to combatting the climate crisis. However, perceptions of tech industry material consumption and waste issues are more negative; respondents to the same survey indicated that reducing waste and resource consumption should be top sustainability priorities for tech companies.¹⁹¹

Questions about data security, energy usage, and ethical implementation of technology have increased in priority in recent years. In 2023, tech companies will need to further integrate sustainability into their processes and products to keep up. As a result, corporate action is likely to evolve in the following ways.

The role of the metaverse in business will become clearer

The expansion of the metaverse is shrinking the gap between the internet and reality by providing a virtual interface for users connecting virtual reality (VR) and augmented reality (AR) platforms. Thus far, the metaverse has been viewed primarily as a new, enhanced way of gaming. However, as the technology improves and becomes more widespread, broader business opportunities are emerging and will begin to be realized in the next few years. For instance, one study from research firm Gartner predicts that by 2026 a quarter of people will spend at least an hour a day in the metaverse for shopping, learning, and entertainment.¹⁹² Some companies are already jumping on the opportunity: J.P. Morgan was the first major bank to establish a presence in the metaverse, expecting a \$1 trillion market with assets like virtual real estate.¹⁹³ Fidelity is planning a similar entry into the metaverse by creating an NFT marketplace and providing financial services designed for the metaverse environment.¹⁹⁴

The metaverse can be used to generate non-financial value too. For example, it could provide substantial health & safety and diversity, equity, and inclusion (DEI) benefits. Virtual reality platforms have the potential to train employees how to handle sensitive or hazardous materials without needing to expose them to these hazards, help de-risk safety-related training and assist with hazard preparation. Companies may also be able to use the metaverse in their DEI efforts to build a more cohesive community, create belonging, and celebrate identity.

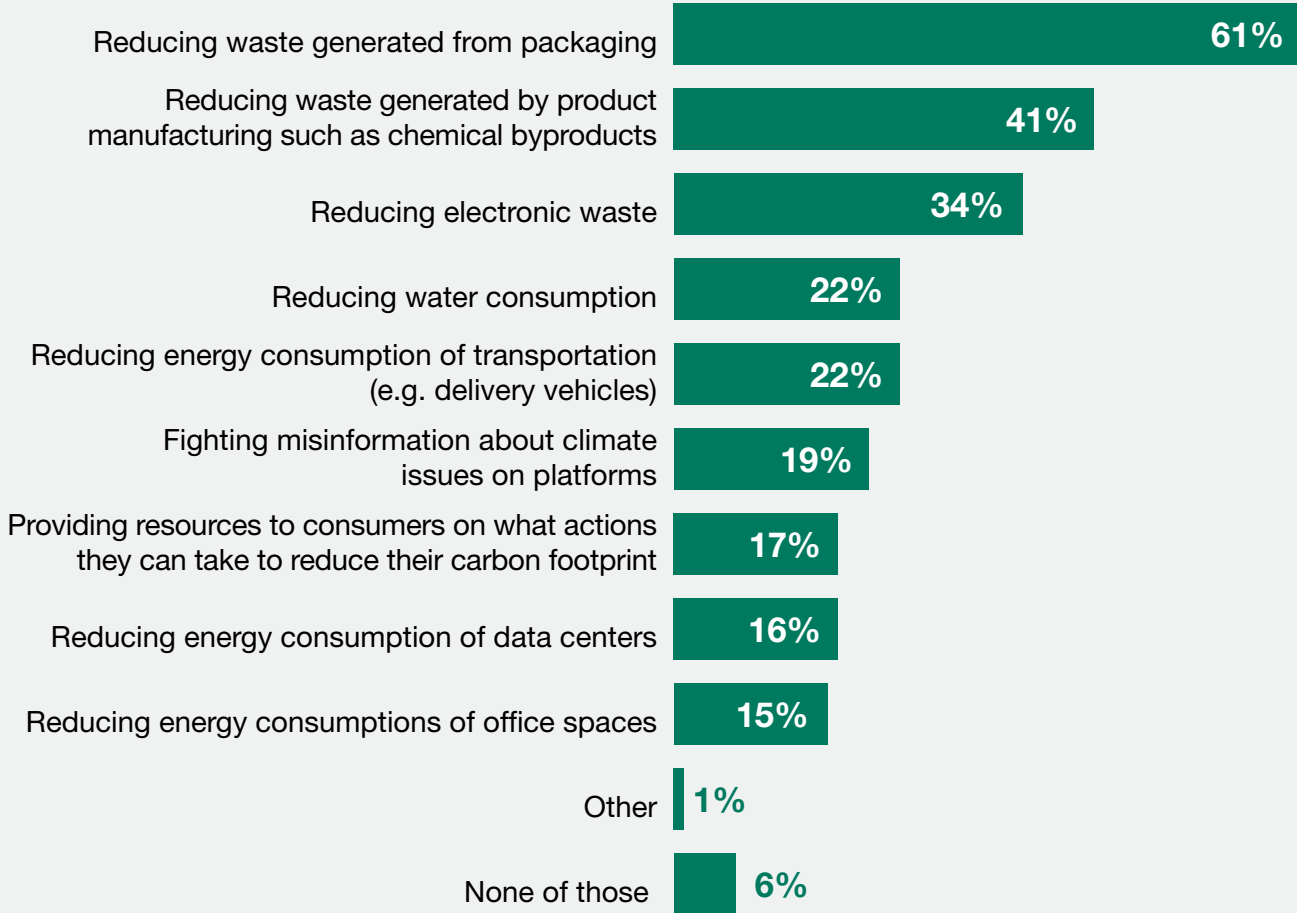
The metaverse is a nascent technology, but an abundance of opportunities for businesses will be recognized in 2023 as its role becomes clearer. Companies should prepare to engage with consumers in the metaverse and integrate virtual/augmented reality into their training programs as gaps between the virtual and physical worlds close.

Waste and recycling will remain top tech industry concerns

Enterprise technology accounts for nearly 400 megatons of CO₂ emissions per year, or one percent of total global emissions. Studies have also found that the lifecycles of phones, laptops, and other end-user devices result in nearly double the global emissions than generated by data centers worldwide. These emissions are often the result of the invasive techniques needed to source raw material inputs for technology products and the long distances they travel through supply chains.¹⁹⁵ These processes have significant environmental impacts, ranging from rare earth metals mining to difficulties in properly disposing e-waste. Consumers are taking note of the technology industry's waste impacts. As [Figure 8](#) below demonstrates, consumers ranked reducing waste as the top priority when asked what sustainability-related efforts technology companies should undertake. Some companies are already responding. For example, Apple announced a repair program after facing a shareholder proposal from activist investor Green Century demanding that the company enable the independent repair of its devices. Meanwhile, Google has partnered with technology repair outfit iFixIt to increase the fixability and extend the usable life of their technology products.¹⁹⁶ And in China, Huawei's e-waste recycling program promises their users data destruction, professional disassembly, and eco-processing when recycling personal devices.¹⁹⁷

These programs will likely face challenges, however. While stakeholders say they want device repair and recycling programs, companies may not receive enough physical devices to scale these programs as device users remain hesitant to return used hardware due to privacy concerns. Nevertheless, in response to regulatory and stakeholder pressure, more technology companies will implement circular economy-focused business plans in 2023 and increase users' ability to replace and recycle their devices.

Figure 8
Consumer Views on Technology Company Sustainability Priorities



U.S. consumer views on the sustainability issues that technology companies should prioritize.
Source: Morning Consult.¹⁹⁸

Increasing use of AI will continue to generate ethical questions

As AI capabilities rapidly improve, techniques like machine learning and natural language processing are being integrated into technology and society. AI is now in the hands of everyday users. Though there are concerns about the accuracy and ethics of user-facing AI, platforms like ChatGPT are proving capable of writing code and engaging in conversation.¹⁹⁹ In the ESG world, AI is used in corporate sustainability initiatives ranging from optimizing and reducing emissions to collecting data and assessing ESG ratings performance. However, as AI becomes more intelligent and its capabilities increase, concerns regarding discrimination, increased surveillance, and the proliferation of misinformation are growing.²⁰⁰ The EU is already working to address some of these concerns with its proposed Artificial Intelligence Act and AI Liability Directive.^{201,202} So too is Singapore, which in March launched its 'A.I. Verify' tool to enable companies to demonstrate the safety of their AI to their stakeholders.²⁰³ Such regulations will provide better protections for consumers and citizens against potential harm caused by AI like data leaks or device hacking. These regulations will also help companies. A 2022 study from research firm Gartner found that 41 percent of surveyed organizations have previously experienced an AI security incident or privacy breach.²⁰⁴

While regulators are considering the ethics of AI, there are still major AI-related issues with some of the world's most prominent information platforms. For instance, just three days after his takeover of Twitter, Elon Musk fired the company's Ethical AI team, which previously worked on making the platform's algorithms more transparent, fair, and secure.²⁰⁵ This move could have huge implications for what users see on a platform already wrought with claims of bias and riddled with misinformation on critical issues like the COVID-19 pandemic, the war in Ukraine, and election integrity. Given emerging AI-related regulations, further integration of AI into business processes, and the dangers of technological bias and the spread of misinformation, stakeholder demands for responsible AI use will continue through 2023. Companies will need to ensure they operate their AI systems ethically and responsibly through actions like reducing associated bias and discrimination or improving data security measures.



“As AI and machine learning get ever more sophisticated and they are inevitably integrated into more business applications, the ethical implications of their use are only going to become more and more of an issue.”

Susanne Baker
Partner, ERM

8

Respecting fundamental rights



Numerous events across the world shaped the human rights landscape of 2022, from Russia's invasion of Ukraine and massive protests against the Iranian government, to the overturning of *Roe v. Wade* in the U.S. Stakeholders will continue to demand that companies respect the fundamental rights of every person they interact with directly and indirectly.

Human rights considerations impacted notable 2022 events, sometimes in uncommon ways. At COP27, the attention of world leaders and experts who had gathered in Egypt to discuss climate change turned also to the host country's record of human rights abuses.²⁰⁶ The respected British-Egyptian dissident Alaa Abd el-Fattah, who is imprisoned over allegations of "spreading false news," ended a seven-month hunger strike during COP27 and underwent a "medical intervention" after refusing water.²⁰⁷ Against the backdrop of the climate negotiations, world leaders, including Emmanuel Macron of France and Olaf Scholz of Germany, discussed Abd el-Fattah's situation and health with Egyptian President Abdel Fatah al-Sisi.

The FIFA World Cup in Qatar, the world's largest sporting event, unleashed a wave of human rights critiques about the 2022 tournament's host country, Qatar. While building infrastructure to support the tournament, more than 25,000 workers experienced human rights abuses, including harsh living conditions and delayed pay.²⁰⁸ Allegations of modern slavery also surrounded the World Cup; an eight-year investigation found that construction firms employed practices that created "a captive and controllable workforce" and amounted to violations of "forced labour indicators as defined under international standards."²⁰⁹

Not all human rights news in 2022 was negative. For instance, modern slavery prevention received a boost this year with ESG ratings firms launching modern slavery reporting products aimed at helping investors evaluate

and report on modern slavery risks in their portfolios.²¹⁰ Modern slavery standards are also spreading globally, with, for example, Canada's modern slavery act being passed in the Canadian Senate and approaching passage in the House of Commons.²¹¹

Other regulatory developments also shaped the fundamental rights space in 2022. In the EU, efforts to increase board diversity were boosted after the EU Council approved a law to improve board gender balance by requiring that 40 percent of non-executive directors of public EU companies must be members of the underrepresented sex by 2026.²¹² This rule should have a positive impact on overall diversity, equity, and inclusion outcomes at companies. A 2022 study found that representation of under-represented groups at staff and manager levels at assessed S&P 1500 companies increased significantly when board diversity improved.²¹³

In 2022, human rights due diligence was codified into law in Europe and Japan, and corporations stepped up their own due diligence processes as well. In February, the European Commission adopted its corporate sustainability due diligence directive for large companies (those with more than 500 employees), which includes a human rights standard, after initially proposing it in 2020.²¹⁴ In September, Japan published its own human rights due diligence guidelines, outlining how all companies that operate in the country, regardless of size, must address human rights risks within their operations and value chains.²¹⁵

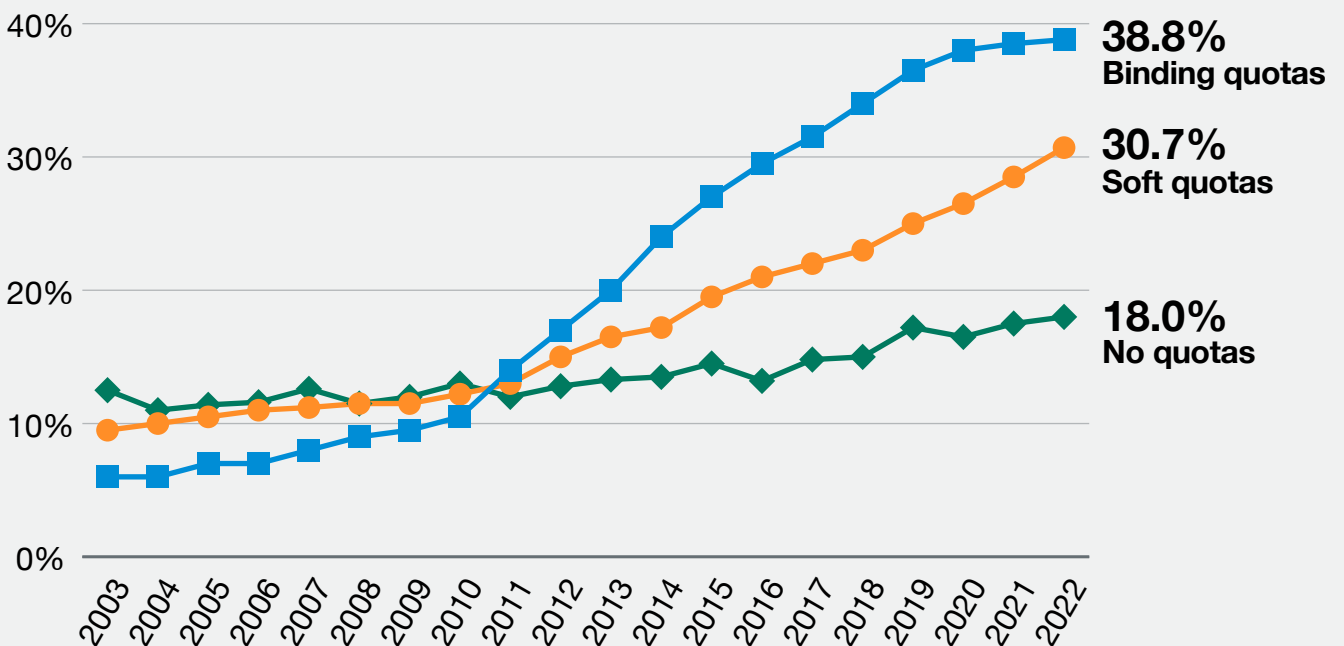
Companies themselves have stepped up their human rights due diligence in the aftermath of Russia’s invasion of Ukraine. In responding to an inquiry from the Business & Human Rights Resource Centre on how it has adapted its practices because of the war, Uber shared that it formed a steering committee to identify human rights risks and to develop mitigative actions, while Ericsson noted it integrated due diligence into its sales process to evaluate whether its technology was being misused from a human rights perspective.²¹⁶

The war in Ukraine has also upended how ESG-focused investors and regulators view defense companies. In Europe, defense industry groups have begun calling for weapons to be included in the EU’s social taxonomy for sustainable finance.²¹⁷ Meanwhile, Swedish bank SEB allowed six of its investment funds to invest in companies that derive more than 5 percent of their revenue from defense-related business,

reversing an earlier decision to exclude defense companies from its funds on ESG principles.²¹⁸ As the Ukraine-Russia war and other crises add to the world’s refugees, 45 major U.S. companies committed to hiring over 22,000 refugees in full-time positions in response to news that the nation’s 2022 refugee admission ceiling had been raised to 125,000.^{219,220}

While preventing the suffering of fellow humans should always be top of mind, the detrimental impacts of the Ukraine war, and the progress signaled by new human rights regulations, were among the developments bringing new energy to fundamental rights issues in 2022. With attention on fundamental rights only likely to grow, corporate action is likely to evolve in the following ways.

Figure 9
Representation of Women on Boards in EU Countries



Percentage of women on Boards in EU Countries with binding, soft, or no quotas for gender diversity. Source: Forbes.²²¹

Investor interest in corporate DEI practices will increase

Many companies have dramatically increased their DEI efforts. Investors now seem poised to do the same. In March 2022, the Investor Leadership Network (ILN), a global investor organization with over \$10 trillion in assets under management, published its Inclusive Finance Playbook.²²² Through the Playbook, the ILN aims to help institutional investors evaluate and engage their portfolios on inclusion-related issues. The same month, private equity firm The Carlyle Group formed the Carlyle DEI Leadership Network to strengthen the DEI strategies and goals of its portfolio companies.²²³ The Network provides tools to support DEI journeys, including an annual meeting for portfolio company CEOs to learn from experts and share successes and challenges, and a quarterly speaker series for portfolio company employees. One notable regulatory development came out of the UK where the Financial Conduct Authority, the UK regulator for financial service firms and financial markets, finalized rules requiring issuers to disclose if they comply with DEI-related targets, including having women make up at least 40 percent of their board and having at least one board member from a non-white ethnic group.²²⁴ As investor DEI interest continues to grow, companies will need to designate a person or team to frequently assess the DEI-related initiatives and positions of their largest investors to ensure their own practices align with the expectations of these stakeholders.

More companies are likely to issue social-related bonds

Sustainable bonds issuance has expanded significantly in recent years, rising from around \$100 billion in 2016 to over \$1 trillion in 2021.²²⁵ This growth has been driven primarily by green bonds used to fund projects that generate environmental benefits. However, social bonds, or bonds that fund projects that generate positive social outcomes such as affordable housing, are poised to compose a larger share of the total sustainable bond market. Social bonds are one of the fastest growing sustainable bond offerings, reaching \$206 billion in 2021 and a projected \$300 billion in 2022.²²⁶ Of the many types of social bonds, gender bonds, which aim to generate gender equality outcomes, are growing in prominence. Nowhere is this more apparent than in Latin America where research found that the region is an emerging leader in the space, with 14 gender bonds from 12 issuers in progress at the time of the 2022 study's April publication.²²⁷ As social bonds grow in number, initiatives are forming to help issuers better develop them. The Social Bond Principles (SBP) is one of these initiatives. Launched in 2021 and updated in 2022, the SBP are a set of guidelines outlining best practices for "financing socially sound and sustainable projects that achieve greater social benefit."²²⁸ With social bonds expanding, companies looking to pursue them should take heed of guidance like the SBP to ensure their related activities have a positive impact, meet stakeholder expectations, and avoid greenwashing.



“The energy transition, the technological revolution as well as geopolitical tensions and extremes are among the key drivers for business and human rights today. People want to know and have a say on how new infrastructure, land use, and economic activities – whether connected to renewables, data centers, mines or recycling facilities – will impact them. On top of that, in many geographies, governments have been absent or overwhelmed. Corporations have had to step in and figure out how to respond to societal expectations. We will certainly see companies working harder to embed human rights due diligence, address adverse impacts in their value chain, and enhance disclosures.”

Alexandra Guaqueta
Senior Partner, ERM

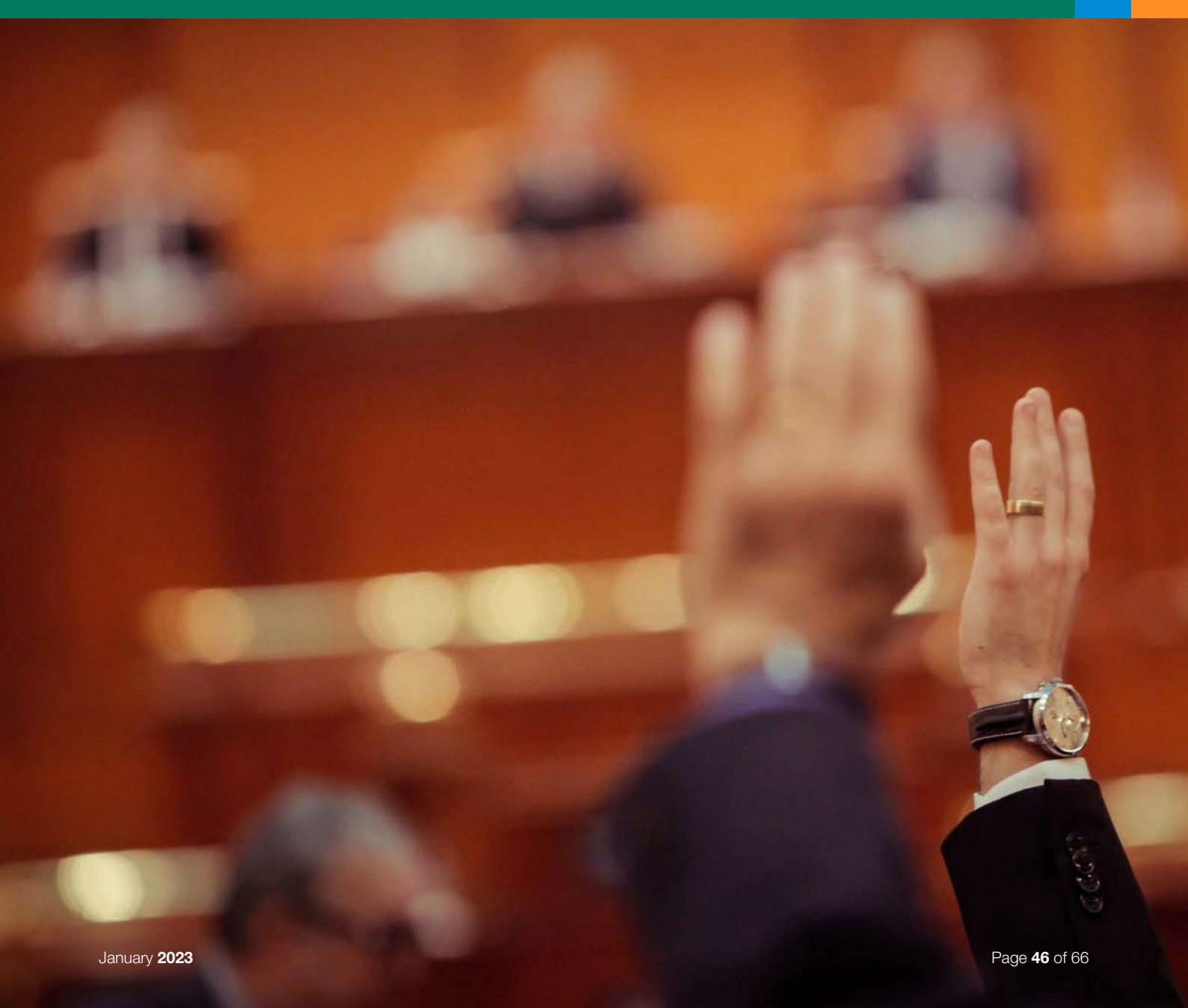
Companies will continue to respond to fundamental rights issues as consumer pressure rises

Consumers increasingly demand that companies respond to human rights issues. One 2022 survey of consumers in the U.S., UK, and Ireland found that over 70 percent want companies to speak out on important social issues, while a 2021 survey of consumers across multiple countries found that 74 percent consider ethical corporate practices and values an important factor in choosing a brand.^{229,230} With pressure mounting, companies are taking action. For example, satellite internet provider Starlink decided to continue to provide Ukraine its satellite internet systems, which the country's military heavily relies on, free of charge, after facing pushback for considering stopping service due to mounting costs. In Iran, protesters against the regime's continuing human rights abuses have received support from technology companies like Google, which provided a free virtual private network (VPN) to help demonstrators communicate.²³¹ Lastly, a range of American companies responded to the Supreme Court's overturn of *Roe v. Wade*, the landmark decision that had granted the right to abortion up until fetal viability federally.²³² Business responses included expanding employees' access to abortion through health insurance, providing travel benefits for employees to travel out of state for abortions if necessary, and expanding relocation benefits for those employees who wish to move after the ruling. With responses to human rights-related developments now squarely in the purview of corporations, companies must ensure they are future ready by proactively tracking developments and preparing response strategies for them. Companies should also conduct regular human rights due diligence to identify issues such as those that might occur in supplier factories.



9

Shaping policy, regulations, and norms



Recent global developments including geopolitical instability, regulatory initiatives, and civil society activism are redefining how businesses approach sustainability. With further changes and pressures certain in 2023, companies need to constantly update their sustainability playbook.

The private sector faces increasing pressure to address stakeholders' sustainability demands to reduce emissions, improve ESG reporting, integrate sustainability into core business functions, support ESG policy development, influence ESG regulation, and respect societal norms.

One of the most prominent stakeholder groups shaping corporate sustainability efforts are consumers. Many are demanding that companies take decisive action on ESG-related issues: according to a 2021 survey, 83 percent of consumers across five major economies believe that companies should actively shape ESG best practices. Similarly, over 90 percent of business leaders believe that their companies have a responsibility to act on ESG-related issues, while 86 percent of employees say they want to work for an organization whose values and priority issues align with their own.²³³

In 2022, companies utilized their economic influence to encourage government action on societal issues that mattered to their workforce and customers. This was particularly evident in the corporate response to the Russian invasion of Ukraine, prompting numerous companies to cease operations in Russia. Over 1,000 companies, with revenues representing almost 50 percent of Russia's gross domestic product (GDP), either limited or ended operations in Russia in response to the invasion of Ukraine.^{234,235} Remarkably, these often-difficult withdrawals have paid off for companies, with one study concluding that companies who exited Russia have been rewarded by investors with equity gains exceeding the exit costs associated with writing down Russian investments.²³⁶

New ESG- and sustainability-related regulations were influential in 2022, particularly with the EU Taxonomy's impact on business growing as it further defined what activities qualify as 'sustainable.' The EU taxonomy also inspired other countries to develop their own sustainability standards. In April 2022, Colombia became the first Latin American country to implement a green taxonomy. Colombia's Green Taxonomy similarly defines what economic activities are sustainable and support the country's environmental targets.²³⁷ Like the EU, the United Kingdom is at the leading edge of ESG regulatory requirements. In April 2022, the UK became the first G20 country to enshrine mandatory climate disclosure into law, requiring 1,300 of the country's largest companies to disclose climate-related financial information in line with TCFD recommendations.²³⁸

Looking ahead, regulators are expected to propose more ESG- and sustainability-related policies and regulations. The U.S. SEC is likely to update disclosure requirements for human capital-related costs and activities, while the EU's new carbon-related trade mechanism (the Carbon Border Adjustment Mechanism, or CBAM) may encourage corresponding regulation outside of European borders.^{239,240} Policymakers are also passing significant climate- and sustainability-related legislation. One of the largest and most profiled examples is the passing of the Inflation Reduction Act (IRA) in the U.S. The IRA earmarks \$369 billion over 10 years for clean energy and climate change mitigation initiatives aimed at achieving a roughly 40 percent reduction in U.S. carbon emissions by 2030.²⁴¹ This legislation indicates increasing government willingness to fund

climate-related initiatives and inject much-needed capital to support the transition to a low-carbon economy.

With the government initiatives, corporate action, and stakeholder demands seen in 2022, it is anticipated that sustainability will continue to be a major consideration in policy, regulation, and norms into 2023 and beyond. As such, corporate action is likely to evolve in the following ways.

ESG-related disclosure proposals will have rippling effects across geographies

Various major ESG-related disclosure proposals were released in 2022, including the U.S. SEC’s proposed Enhancement and Standardization of Climate-Related Disclosures, the European Union’s European Sustainability Reporting Standards (ESRS), and ISSB’s General Requirements for Disclosure of Sustainability-related Financial Information (and their supplementary Climate-Related Disclosures).^{242,243,244} Each of these focus strongly on climate-related risks and opportunities.²⁴⁵ Additionally, the UK’s TCFD-related disclosure requirements became mandatory in 2022. In many ways, the UK’s climate reporting requirements and other ESG-related proposals have led the way in advancing disclosure on major issues like climate and the environment.²⁴⁶ Additional disclosure requirements have spread across the globe, as shown in [Figure 10](#).

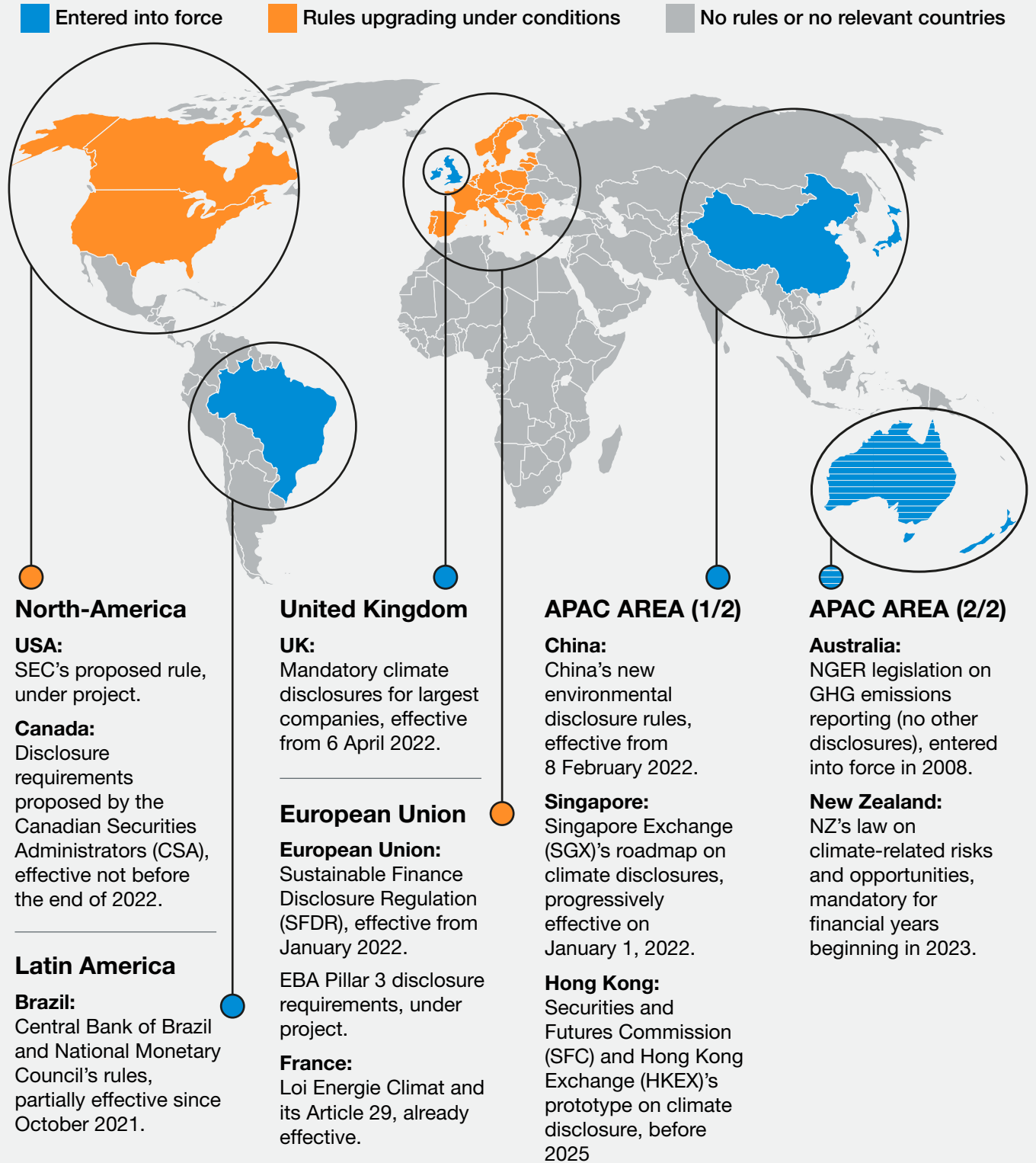
The competitive nature of business lifts accepted standards and business practices; as ESG-related disclosure proposals come into force, more companies across the globe will implement disclosure activities in line with them. Companies outside of the scope of the SEC or ESRS proposals may still be required to align reporting with their requirements. For example, investors may require the information, or competitors who are required to disclose will set new standards for best practice that other companies may feel pressured to equal.²⁴⁷ As expectations increase, ESG disclosures will shift from an additive component to an essential corporate reporting element.



“With recent ESG-related disclosure proposals, we are seeing an evolution in expectations from stakeholders that companies level up their prioritization of ESG. As companies adjust to the reality of mandatory disclosure, the immediate reaction may be to try to address every challenge quickly and at once. However, we know that acting on ESG initiatives takes time and enormous amounts of thought and effort. We recommend that companies take the time to advance ESG in a deliberate and thoughtful way, to best reflect their progress, operations, and strategy.”

Marley Leitner
Senior Consultant, ERM

Figure 10
Climate-related Disclosure Regulations Globally



Climate-related disclosure regulations by country and implementation status.

Source: Natixis.²⁴⁸

U.S. divisions on ESG will deepen

From implementation setbacks to legal challenges and policymaker pushback, 2022 was a difficult year for ESG in the United States. These tensions have led to a rise in ESG criticism, particularly from politicians, clouding the future of ESG.

Examples of this abound. In October 2022, 19 State Attorneys General joined a coalition investigating six major banks' involvement with the UN Net Zero Banking Alliance for concern that the Alliance's investment restrictions will negatively impact constituents and local economies.²⁴⁹ Investigations and pushbacks are happening across different levels of U.S. government including in Texas, which drafted a list of ten financial companies that could be subject to divestment if their "boycotting" of energy companies continues. Similarly, Florida banned fund managers of the state's \$228 billion in pension funds from incorporating ESG considerations into their investment processes.^{250,251} Late in 2022, Florida's Chief Financial Officer announced the divestment of \$2 billion worth of assets from BlackRock in response to the investor's ESG initiatives.²⁵² Five United States Senators have also warned U.S. law firms about advising clients on ESG-related matters with the intention of launching anti-trust investigations related to ESG.²⁵³ If governmental pushback on ESG continues or even intensifies in 2023, it will inject caution into private sector ESG activities in the U.S. and beyond.

Companies will reassess how geopolitical risks impact their operations

Russia's invasion of Ukraine has had a massive effect on the global economy. While the war's long-term economic impact remains to be seen, in the short-term, many companies have retreated from the Russian economy. Foreign oil producers, including some which had a major presence in Russia, such as BP, Equinor, and Shell, have exited the historically profitable Russian oil market.^{254,255} Many companies exiting Russia were not able to avoid significant losses. For example, German conglomerate Siemens faced more than 600 million Euros in losses due to impairments, fines, and decreased revenues associated with its exit.²⁵⁶

Other conflicts around the world may produce similar impacts. Tension between Taiwan and China in the South China Sea appears to be intensifying.²⁵⁷ Because Taiwan produces more than 90 percent of the world's advanced semiconductors, any conflagration there could strike a significant blow to global supply chains.²⁵⁸ Strains in the Mediterranean are also growing after the Aegean Conflict between Greece and Turkey was reignited by tourism disputes that could threaten the future of travel and trade in the region.²⁵⁹ And several geopolitical conflicts and hot points in Africa such as civil war in Ethiopia and a new government in Libya struggling to find its footing may impact international trade and the movement of goods across the region.²⁶⁰ The potential for flareups in these and other geopolitical hotspots may require companies to reassess where and how they do business going forward. This reassessment may take the form of scenario analysis or risk assessment to determine which of their assets and which economies they operate in may be most vulnerable to geopolitical conflict.

10

Moving toward stakeholder capitalism



Views on Stakeholder Capitalism have become increasingly mixed. Much heralded in recent years, criticism of the concept has grown, most notably in the form of anti-ESG shareholder proposals. Even so, actions such as Patagonia's commitment to donate future profits to protect nature and fight climate change and BNP Paribas' creation of a data solution for investors to evaluate companies' alignment with the UN SDGs demonstrate that stakeholder capitalism is still a powerful force.²⁶¹

Stakeholder capitalism is no longer an unfamiliar or distant concept. According to a 2022 survey of more than 200 C-suite executives, more than 90 percent believe a shift to stakeholder capitalism is already underway, and over 80 percent say it is already impacting their companies.²⁶² Further evidence comes from the investment world where impact investing (investment strategies designed to produce beneficial environmental and social impacts while also generating a financial return) assets under management surpassed \$1 trillion for the first time in 2022.²⁶³

One of 2022's strongest examples of stakeholder capitalism in action came from Patagonia whose founder transitioned ownership of the company to the Patagonia Purpose Trust, which will donate all future profits not reinvested in the business to combat the world's environmental crises.²⁶⁴ BlackRock also continued to emphasize its commitment to the concept. In his annual letter, BlackRock CEO Larry Fink defended stakeholder capitalism from criticism by stating that it is not political or "woke," rather it is capitalism focused on the very company-stakeholder relationships that enable business success.²⁶⁵

Patagonia and BlackRock are not alone. According to a global 2021-2022 survey of corporate governance professionals, 75 percent said their companies pursue information on the needs of their stakeholders.²⁶⁶ Further evidence

of the continued influence of stakeholder capitalism comes from the growth in corporate positions that support its practices. One report found that 76 percent of sustainability professionals within large companies reported a headcount increase in their sustainability teams in 2021 – an 18 percent increase from 2020.²⁶⁷ Similarly, 76 percent reported that their sustainability budgets grew – a 24 percent increase from 2020.

In last year's Trends report, we covered the growing number of companies committing to report in line with the International Business Council (IBC)'s Stakeholder Capitalism Metrics. Many of these companies are publishing the disclosures this requires. In September 2022, the IBC and the World Economic Forum (WEF) shared that 121 companies now include information against these metrics in their mainstream reporting and that 48 of these companies have now done so for two years straight.²⁶⁸ To encourage more companies to join these ranks, the WEF also released two sets of case studies outlining how the metrics have helped reporting companies create internal transformation and generate positive external impact.²⁶⁹

All was not positive or straightforward in stakeholder capitalism circles, however. One line of criticism from liberal-leaning circles has deemed corporate support for stakeholder capitalism as a distraction taking away from

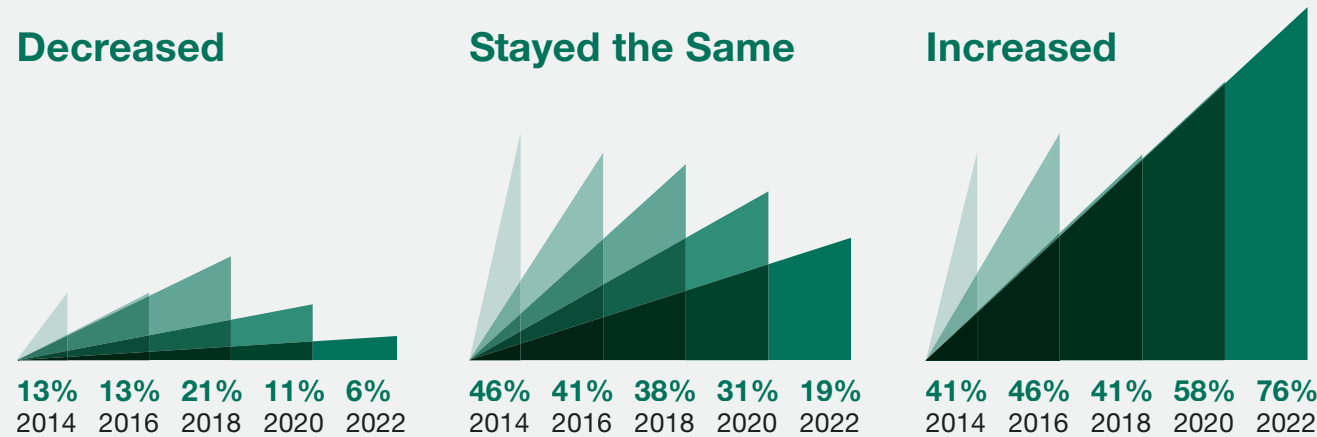
other political and social work required to tackle global issues like climate change and inequality.²⁷⁰ Conversely, more conservative political leaders in the U.S. have increasingly confronted companies regarding their stakeholder capitalism-related actions. In one headline-grabbing example, Florida Governor Ron DeSantis signed a law to dissolve Disney’s special governing district, Reedy Creek, by 2023 after then Disney CEO Bob Chapek spoke out against a Florida law that bans sexual orientation and gender identity discussions in schools before fourth grade.²⁷¹

Other stakeholder capitalism developments cast doubt on how much corporate executives focus on stakeholder interests despite making public statements on their commitment to them. A study examining all \$1 billion acquisitions of public companies announced from April 2020 to March 2022 found that while these deals generated substantial shareholder gains, they did little to protect the stakeholders most likely

to be impacted by them, namely employees at risk of being laid-off after the deal.²⁷² The researchers concluded that these results were driven by executive incentives to only act in the interest of stakeholders when necessary to benefit shareholders.

Stakeholder capitalism continued to shape the business world in 2022. However, after enjoying years of relatively broad support and rapid advancement, the concept is beginning to be challenged by those who characterize it as political theater disguised as free enterprise. With controversy rising, corporate action is likely to evolve in the following ways.

Figure 11
Sustainability Team Headcount Changes at Large Companies from 2014-2022



Percentage of sustainability professionals within large companies (revenue greater than \$1 billion) reporting decreases, no changes, or increases in the headcount of their sustainability teams between 2014 and 2022.

Source: GreenBiz State of the Profession 2022.²⁷³

With stakeholder capitalism-related actions proliferating, companies are likely to face more greenwashing accusations

Greenwashing has always been a concern among those in corporate sustainability circles. However, with more companies than ever pursuing stakeholder capitalism-related actions, greenwashing accusations are primed to increase. This trend was apparent in numerous 2022 regulatory clampdowns. In May, German authorities raided the Frankfurt offices of Deutsche Bank's DWS after media reports and a whistleblower alleged the bank's investment arm was exaggerating the green credentials of its financial products.²⁷⁴ In another banking incident, the UK's Advertising Standards Authority banned HSBC ads promoting its climate action because it omitted information outlining its financing of emissions-intensive industries.²⁷⁵ Elsewhere, the Australian Securities and Investments Commission issued its first greenwashing fine when it made Tlou Energy pay more than \$35,000 in fines for making false or misleading statements around the sustainability credentials of its energy production projects. And regulators were not alone in combatting greenwashing.²⁷⁶ Financial services firm Morningstar reduced the number of European investment funds it considers sustainable by 27 percent after it found that some funds only excluded firms from their investments, rather than actively shaping their investment strategy with sustainability indicators as Morningstar requires to meet this classification.²⁷⁷ Still, increased greenwashing scrutiny should not deter companies from pursuing stakeholder capitalism. Instead, they should take steps to both reduce risk and maximize impact from their activities. To protect against greenwashing, Joel Makower, co-founder of GreenBiz, recommends that companies follow the CRED strategy, which calls for companies to evaluate the credibility

and relevance of their actions, develop an effective messaging strategy for it, and assess whether it differentiates them from other actors.²⁷⁸

Companies to increasingly align stakeholder capitalism-related lobbying with public positions

In March, a group of U.S. senators made news when they called out companies for funding lobbying against climate change legislation in the U.S despite openly supporting climate action.²⁷⁹ This high-profile statement highlighted growing concern among corporate stakeholders that companies state one position publicly and then use lobbying groups to advocate for the opposite position behind the scenes. Research highlights evidence for this concern, finding that three years after the Business Roundtable issued a statement putting stakeholders at the center of corporate purpose, it continues to lobby against governmental climate action.²⁸⁰ Lobbying associations are not the only ones with conflicting positions. Fed up with corporate lobbying inconsistencies, stakeholders are pressuring individual companies to improve as well. In October 2022, Volkswagen was sued by a group of pension funds to disclose its climate lobbying activities over concerns that the company's lobbying contradicts its public climate positions.²⁸¹ Stakeholders also demanded disclosures through shareholder proposals. In the U.S., a record 46 proposals in 2022 focused on improving climate lobbying practices by, for example, calling for evidence that a company's lobbying is aligned with the Paris Agreement.²⁸² Of these proposals, companies negotiated agreements for 18. To avoid the financial and reputational impacts associated with lobbying inconsistencies, companies should align their lobbying with stakeholder capitalism-related goals as Salesforce did when it committed to advocating for policies in line with a 1.5°C future.²⁸³

Companies can also align their practices with existing frameworks for responsible lobbying like the Responsible Lobbying Framework and the Global Standard on Responsible Climate Lobbying.^{284,285}

Shareholders will redefine stakeholder capitalism

Shareholders, a group whose primacy in business purpose was supposed to be moderated by stakeholder capitalism, are redefining what the concept means. This past year, shareholders reframed stakeholder capitalism in two very different ways. On one hand, proliferating ESG shareholder proposals are pushing more companies to adopt stakeholder-positive practices, with shareholders submitting a record 607 ESG proposals during the 2022 U.S. proxy season. More shareholders are gaining a voice in proxy voting decisions too.²⁸⁶ For example, BlackRock’s Voting Choice enables clients of almost half of the firm’s index equity assets to vote on shareholder proposals, allowing more people to express their views on ESG matters. At the same time, in response to the increased uptake of ESG-focused shareholder proposals, anti-ESG proposals are emerging, forcing companies to defend stakeholder-positive practices. Mostly submitted by conservative-leaning groups, these proposals target issues such as DEI efforts that are perceived to negatively affect non-minorities. The success of anti-ESG proposals has so far been limited, with none having passed and few shareholders voting in favor.²⁸⁷ Outside of shareholder proposals, anti-ESG is gaining traction in some asset management circles. Most notably, Strive Asset Management was formed in May 2022 to advocate for value maximization over ESG goals and to separate politics from business.²⁸⁸ The push and pull of these developments reinforces the careful balance that companies must strike when pursuing stakeholder capitalism. Given that no one action is likely to appease every corporate stakeholder, companies

must continue to thoroughly evaluate their relationships to ensure that their efforts maximize positive stakeholder impact while still creating business value.



“The emergence of anti-ESG shareholder proposals can be traced to the growing understanding by both investors and companies of the fundamental importance of ESG as a framework for risk mitigation and long-term value creation. Despite pushback against ESG from the political right, the mainstream investment community’s understanding of the importance of ESG to long-term sustainability means they will continue to advocate for and support corporate ESG initiatives.”

Josh Zinner
CEO, Interfaith Center on Corporate Responsibility

Endnotes

- 1 Glow. 2021. *Social Responsibility Score*. Online posting. Glow. Accessed 19 December 2022. <https://campaign.glowfeed.com/socialresponsibilityscore>
- 2 Clifford, Catherine. 2022. *BlackRock to vote for fewer climate shareholder provisions in 2022 than 2021*. Online posting. CNBC. Accessed 19 December 2022. <https://www.cnbc.com/2022/05/11/blackrock-to-vote-for-fewer-climate-provisions-in-2022-than-2021.html>.
- 3 Kerber, Ross and Zainab Hussain, Noor. 2022. *Vanguard quits net zero climate effort, citing need for independence*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/sustainable-business/vanguard-quits-net-zero-climate-alliance-2022-12-07/>
- 4 Ramonas, Andrew and Hudson, Clara. 2022. *ESG Foes in States, Congress Ready Attacks on 'Woke' Investing*. Online posting. Bloomberg Law. Accessed 19 December 2022. <https://news.bloomberglaw.com/securities-law/esg-foes-in-states-congress-ready-attacks-on-woke-investing>
- 5 NAVEX. 2022. *Environmental, Social, and Governance (ESG) Global Survey Validates that ESG is a Growing Priority for Businesses*. Online posting. NAVEX. Accessed 19 December 2022. <https://www.navex.com/en-us/company/press-room/esg-global-survey-validates-that-esg-is-a-growing-priority-for-businesses/>
- 6 SBTi. 2021. *Six Private Equity Firms representing €133 bn AUM combat climate change with ambitious science based targets*. Online posting. Science Based Targets Initiative. Accessed 19 December 2022. <https://sciencebasedtargets.org/news/six-private-equity-firms-representing-133-bn-aum-combat-climate-change-with-ambitious-science-based-targets>.
- 7 Spierings, Merel. 2022. *Linking Executive Compensation to ESG Performance*. Online posting. The Conference Board. Accessed 19 December 2022. <https://www.conference-board.org/topics/esg-risks-and-opportunities/linking-executive-compensation-to-ESG-performance>.
- 8 Department for Business, Energy & Industrial Strategy. 2022. *Climate-related financial disclosures for companies and limited liability partnerships (LLPs)*. Online posting. United Kingdom Government. Accessed 19 December 2022. <https://www.gov.uk/government/publications/climate-related-financial-disclosures-for-companies-and-limited-liability-partnerships-llps>.
- 9 Engler, Henry. 2022. *Special report: ESG under strain*. Online posting. Thomson Reuters. Accessed 19 December 2022. <https://www.thomsonreuters.com/en/reports/esg-under-strain.html>
- 10 Australian Treasury. 2022. *Climate-related financial disclosure: Consultation paper*. Online posting. Australian Government. Accessed 19 December 2022. https://treasury.gov.au/sites/default/files/2022-12/c2022-314397_0.pdf.
- 11 Deloitte. 2022. *ESG executive survey: Preparing for high-quality disclosures*. Online posting. Deloitte. Accessed 19 December 2022. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-esg-preparedness-disclosures-reporting-requirements.pdf>
- 12 Nelson, Matthew. 2021. *Is your ESG data unlocking long-term value?* Online posting. EY. Accessed 19 December 2022. https://www.ey.com/en_gl/assurance/is-your-esg-data-unlocking-long-term-value?WT.mc_id=18300313&AA.tsrc=display&dclid=CNP4ooWLovsCFUTH5wMd4tMMuQ.
- 13 IFRS. 2021. *IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements*. Online posting. IFRS. Accessed 19 December 2022. <https://www.ifrs.org/news-and-events/news/2021/11/ifrs-foundation-announces-issb-consolidation-with-cdsb-vrf-publication-of-prototypes/>.
- 14 TNFD. 2022. *TNFD releases third iteration of beta framework*. Online posting. Taskforce on Nature-related Financial Disclosures. Accessed 19 December, 2022. <http://tnfd.global/news/tnfd-releases-third-beta-framework/>.
- 15 SBTi. 2022. *Foundations for Science-Based Net-Zero Target Setting in the Financial Sector: Version 1.0*. Online posting. Science Based Targets Initiative. Accessed 19 December 2022. <https://sciencebasedtargets.org/resources/files/SBTi-Finance-Net-Zero-Foundations-paper.pdf>.
- 16 Simpson, Cam, Rathi, Akshat, and Saijel, Kishan. 2021. *The ESG Mirage*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/graphics/2021-what-is-esg-investing-msci-ratings-focus-on-corporate-bottom-line/>.
- 17 Berg, Florian, Kolben, Julian F., and Rigobon, Roberto. 2019. *Aggregate Confusion: The Divergence of ESG Ratings*. Online posting. SSRN. Accessed 19 December 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3438533.
- 18 Stackpole, Beth. 2021. *Why sustainable business needs better ESG ratings*. Online posting. MIT Sloan School of Management. Accessed 19 December 2022. <https://mitsloan.mit.edu/ideas-made-to-matter/why-sustainable-business-needs-better-esg-ratings>.
- 19 Berg, Florian, Kolben, Julian F., and Rigobon, Roberto. 2019. *Aggregate Confusion: The Divergence of ESG Ratings*. Online posting. SSRN. Accessed 19 December 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3438533.
- 20 Stackpole, Beth. 2021. *Why sustainable business needs better ESG ratings*. Online posting. MIT Sloan School of Management. Accessed 19 December 2022. <https://mitsloan.mit.edu/ideas-made-to-matter/why-sustainable-business-needs-better-esg-ratings>.
- 21 AMF. 2022. *The AMF reiterates its call for a European regulation of ESG data, ratings, and related services*. Online posting. Autorité des Marchés Financiers. Accessed 19 December 2022. <https://www.amf-france.org/en/news-publications/news/amf-reiterates-its-call-european-regulation-esg-data-ratings-and-related-services>.
- 22 FCA. 2022. *FCA announces ESG Advisory Committee to its board*. Online posting. Financial Conduct Authority. Accessed 19 December 2022. <https://www.fca.org.uk/news/news-stories/fca-announces-esg-advisory-committee-its-board>.
- 23 Laidlaw, Jennifer and Kaye, Daniel. 2022. *EU Taxonomy guidance, emissions disclosure in California*. Online posting. S&P Global. Accessed 19 December 2022. <https://www.spglobal.com/esg/insights/esg-regulatory-tracker-february-2022>.
- 24 Jessop, Simon. 2022. *Drop in BlackRock's support for environmental, social resolutions*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/sustainable-business/drop-blackrocks-support-environmental-social-resolutions-2022-07-26/>.
- 25 <https://www.netzeroassetmanagers.org/>

- 26 Bioy, Hortense. 2022. *Sustainable Inflows Slow in Q3*. Online posting. Morningstar. Accessed 19 December 2022. <https://www.morningstar.co.uk/uk/news/227979/sustainable-inflows-slow-in-q3.aspx>.
- 27 Henze, Veronika and Boyd, Samantha. 2022. *ESG May Surpass \$41 trillion Assets in 2022, But Not Without Challenges, Finds Bloomberg Intelligence*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/company/press/esg-may-surpass-41-trillion-assets-in-2022-but-not-without-challenges-finds-bloomberg-intelligence/>.
- 28 Clifford, Catherine. 2022. *BlackRock to vote for fewer climate shareholder provisions in 2022 than 2021*. Online posting. CNBC. Accessed 19 December 2022. <https://www.cnbc.com/2022/05/11/blackrock-to-vote-for-fewer-climate-provisions-in-2022-than-2021.html>.
- 29 Bioy, Hortense. 2022. *Sustainable Inflows Slow in Q3*. Online posting. Morningstar. Accessed 19 December 2022. <https://www.morningstar.co.uk/uk/news/227979/sustainable-inflows-slow-in-q3.aspx>.
- 30 PwC. 2022. *Global Workforce Hopes and Fears Survey 2022*. Online posting. PwC. Accessed 19 December 2022. <https://www.pwc.com/gx/en/issues/workforce/hopes-and-fears-2022.html>
- 31 Reuters. 2022. *Factbox: What European companies are doing to help workers fight inflation*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/retail-consumer/uk-retailers-raising-staff-pay-amid-cost-of-living-crunch-2022-09-22/>
- 32 Chau, C. 2022. *Companies in Japan offer extra pay to help workers deal with inflation*. Online posting. HRM Asia. Accessed 19 December 2022. <https://hrmasia.com/companies-in-japan-offer-extra-pay-to-help-workers-deal-with-inflation/>
- 33 <https://tacklinginequality.org/>
- 34 Jassy, A. 2023. *Update from CEO Andy Jassy on role eliminations*. Online posting. Amazon. Accessed 4 January 2023. <https://www.aboutamazon.com/news/company-news/update-from-ceo-andy-jassy-on-role-eliminations>
- 35 Jacobsen, S. 2022. *Sweden's H&M to lay off 1,500 staff in drive to cut soaring costs and rescue profits*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/retail-consumer/retailer-hm-cut-1500-jobs-2022-11-30/>
- 36 Paycor. 2022. *Paycor Survey Reveals Retention is the #1 Priority of HR in 2023*. Online posting. Paycor. Accessed 19 December 2022. <https://www.paycor.com/company/news-press/paycor-survey-reveals-retention-is-the-1-priority-of-hr-in-2023/>
- 37 Workhuman. 2022. *Unleashing the Human Element at Work: Transforming Workplaces Through Recognition*. Online posting. Workhuman. Accessed 19 December 2022. <https://www.workhuman.com/resources/reports-guides/unleashing-the-human-element-at-work-transforming-workplaces-through-recognition>
- 38 Clifford, C. 2022. *Why tech workers are quitting great jobs at companies like Google to fight climate change*. Online posting. CNBC. Accessed 19 December 2022. <https://www.cnbc.com/2022/07/26/tech-to-climate-career-changes-why-these-workers-left-jobs-like-google.html>
- 39 Ma, M. 2022. *The climate is luring engineers away from Big Tech*. Online posting. Protocol. Accessed 19 December 2022. <https://www.protocol.com/newsletters/climate/climate-tech-workers-jobs>
- 40 National Labor Relations Board. 2022. *Election Petitions Up 53%, Board Continues to Reduce Case Processing Time in FY22*. Online posting. National Labor Relations Board. Accessed 19 December 2022. <https://www.nlr.gov/news-outreach/news-story/election-petitions-up-53-board-continues-to-reduce-case-processing-time-in>
- 41 DiPalma, B. 2022. *Starbucks is 'choosing to fight tooth and nail': Labor union president*. Online posting. Yahoo! News. Accessed 19 December 2022. <https://news.yahoo.com/starbucks-is-choosing-to-fight-tooth-and-nail-against-unions-seiu-president-204547759.html>
- 42 Day, M and Soper, S. 2022. *Amazon NYC Warehouse Workers Support Union in Historic Labor Win*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/news/articles/2022-04-01/amazon-labor-union-clinches-historic-election-in-new-york#xj4y7vzkg?leadSource=uverify%20wall>
- 43 PwC. 2022. *Global Workforce Hopes and Fears Survey 2022*. Online posting. PwC. Accessed 19 December 2022. <https://www.pwc.com/gx/en/issues/workforce/hopes-and-fears-2022.html>
- 44 U.S. Bureau of Labor Statistics. 2022. *7.7 percent of workers teleworked due to COVID-19 in April 2022*. Online posting. U.S. Bureau of Labor Statistics. Accessed 19 December 2022. <https://www.bls.gov/opub/ted/2022/7-7-percent-of-workers-teleworked-due-to-covid-19-in-april-2022.htm>
- 45 IDC. 2022. *New IDC Report Reveals 56% of Asia/Pacific* Employees Want Flexible Work Even Beyond the Pandemic*. Online posting. IDC. Accessed 19 December 2022. <https://www.idc.com/getdoc.jsp?containerId=prAP48993022>
- 46 Mayer, K. 2022. *Remote work options are still surging among high-paying jobs*. Online posting. Human resource Executive. Accessed 19 December 2022. https://hrexecutive.com/remote-work-options-are-still-surging-among-high-paying-jobs/?oly_enc_id=3014I5589489F3X
- 47 Ocean Tomo. N.D. *Intangible Asset Market Value Study*. Online posting. Ocean Tomo. Accessed 19 December 2022. <https://www.oceantomo.com/intangible-asset-market-value-study/>
- 48 BlackRock. 2022. *Our approach to engagement on human capital management*. Online posting. BlackRock. Accessed 19 December 2022. <https://www.blackrock.com/corporate/literature/publication/blk-commentary-engagement-on-human-capital.pdf>
- 49 Cooper, L. 2022. *Private-Equity Firms Put Focus on Talent Before Backing New Deals*. Online posting. The Wall Street Journal. Accessed 19 December 2022. <https://www.wsj.com/articles/private-equity-firms-put-focus-on-talent-before-backing-new-deals-11645012801?page=1>
- 50 Johanson, M. 2021. *Why companies don't post salaries in job adverts*. Online posting. BBC. Accessed 19 December 2022. <https://www.bbc.com/worklife/article/20210921-why-companies-dont-post-salaries-in-job-adverts>
- 51 Willis Towers Watson. 2022. *More North American organizations plan to disclose pay information, survey finds*. Online posting. Willis Towers Watson. <https://www.globenewswire.com/news-release/2022/09/14/2516203/0/en/More-North-American-organizations-plan-to-disclose-pay-information-survey-finds.html?tpcc=nlcfodaily>
- 52 NYC Commission on Human Rights. 2022. *Salary Transparency in Job Advertisements*. Online posting. City of New York. Accessed 19 December 2022. <https://www1.nyc.gov/assets/cchr/downloads/pdf/publications/Salary-Transparency-Factsheet.pdf>
- 53 Tamma, P. 2022. *Does gender pay transparency work?* Online posting. Politico. Accessed 19 December 2022. <https://www.politico.eu/article/pay-transparency-pay-off-gender-gap/>
- 54 Molla, R. 2022. *Companies are being forced to reveal what a job pays. It's a start*. Online posting. Vox. Accessed 19 December 2022. <https://www.vox.com/recode/2022/10/17/23404953/pay-transparency-laws-salary-wage-gap>
- 55 Obloj, T and Zenger, T. 2022. *The influence of pay transparency on (gender) inequity, inequality and the performance basis of pay*. Online posting. Nature Human Behaviour. Accessed 19 December 2022. <https://www.nature.com/articles/s41562-022-01288-9>

The SustainAbility Institute by ERM
2023 Trends Report

- 56 Harter, J. 2022. *Is Quiet Quitting Real*. Online posting. Gallup. Accessed 19 December 2022. <https://www.gallup.com/workplace/398306/quiet-quitting-real.aspx>
- 57 Microsoft. 2022. *Hybrid Work Is Just Work. Are We Doing It Wrong?* Online posting. Microsoft. Accessed 19 December 2022. <https://www.microsoft.com/en-us/worklab/work-trend-index/hybrid-work-is-just-work>
- 58 Mims, C. 2022. *More Bosses Are Spying on Quiet Quitters. It Could Backfire*. Online posting. The Wall Street Journal. Accessed 19 December 2022. https://www.wsj.com/articles/more-bosses-are-spying-on-quiet-quitters-it-could-backfire-11663387216?mod=article_inline
- 59 Westfall, B. 2022. *To Close Skill Gaps, Nearly 50% of Companies Are Spending More on Upskilling Employees in 2022*. Online posting. Capterra. Accessed 19 December 2022. <https://www.capterra.com/resources/upskilling-employees-research/>
- 60 Madgavkar, A. et al. 2022. *Human capital at work*. Online posting. McKinsey Global Institute. Accessed 19 December 2022. <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/human-capital-at-work-the-value-of-experience>
- 61 LinkedIn Learning. 2022. *2022 Workplace Learning Report*. Online posting. LinkedIn. Accessed 19 December 2022. https://learning.linkedin.com/content/dam/me/learning/en-us/pdfs/workplace-learning-report/LinkedIn-Learning_Workplace-Learning-Report-2022-EN.pdf
- 62 Franzino, M. et al. N.D. *The \$8.5 trillion Talent Shortage*. Online posting. Korn Ferry. Accessed 19 December 2022. <https://www.kornferry.com/insights/this-week-in-leadership/talent-crunch-future-of-work>
- 63 LinkedIn Learning. 2022. *2022 Workplace Learning Report*. Online posting. LinkedIn. Accessed 19 December 2022. https://learning.linkedin.com/content/dam/me/learning/en-us/pdfs/workplace-learning-report/LinkedIn-Learning_Workplace-Learning-Report-2022-EN.pdf
- 64 IPCC. 2022. *Sixth Assessment Report*. Online posting. IPCC. Accessed 19 December 2022. <https://www.ipcc.ch/assessment-report/ar6/>
- 65 www.zerotracker.net
- 66 University of Oxford. 2022. *Tracking net zero progress: How aligned are we on the global path to net zero?* Online posting. Netzeroclimate.org. Accessed 19 December 2022. <https://netzeroclimate.org/innovation-for-net-zero/progress-tracking/>
- 67 Zhong, Raymond. 2022. *Climate Change Linked to Pakistan's Floods, Study Finds*. Online posting. The New York Times. Accessed 19 December 2022. <https://www.nytimes.com/2022/09/15/climate/pakistan-floods-global-warming.html>
- 68 WWA. 2022. *Climate change likely increased extreme monsoon rainfall, flooding highly variable communities in Pakistan*. Online posting. World Weather Attribution. Accessed 19 December 2022. <https://www.worldweatherattribution.org/climate-change-likely-increased-extreme-monsoon-rainfall-flooding-highly-vulnerable-communities-in-pakistan/>
- 69 Pakistan Meteorological Department. 2022. *Pakistan's Monthly Climate Summary: August 2022*. Online posting. Government of Pakistan. Accessed 19 December 2022. http://www.pmd.gov.pk/en/assets/monthly_weather/Aug_2022_outlook.pdf
- 70 Zhong, Raymond. 2022. *Climate Change Linked to Pakistan's Floods, Study Finds*. Online posting. The New York Times. Accessed 19 December 2022. <https://www.nytimes.com/2022/09/15/climate/pakistan-floods-global-warming.html>
- 71 Williams, A. Park., et al. 2022. *Rapid intensification of the emerging southwestern North American megadrought in 2020-2021*. Online posting. Nature climate change. Accessed 19 December 2022. <https://www.nature.com/articles/s41558-022-01290-z>
- 72 Deloitte. 2022. *The turning point: a Global Summary*. Online posting. Deloitte. Accessed 19 December 2022. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/gx-global/turning-point-report.pdf>
- 73 Ceres Accelerator for Sustainable Capital Markets. 2022. *Responsible Policy Engagement Analysis 2022*. Online posting. Ceres. Accessed 19 December 2022. <https://www.ceres.org/resources/reports/responsible-policy-engagement>
- 74 Ketu, Y. 2022. *How companies are – and are not – leading on U.S. climate policy*. Online posting. Ceres. Accessed 19 December 2022. https://www.ceres.org/sites/default/files/reports/2022-11/RPE%20Report_Nov22.pdf
- 75 Giese, G. et al. 2022. *What the War in Ukraine Could Mean for Net-Zero Investing*. Online posting. MSCI. Accessed 19 December 2022. <https://www.msci.com/documents/10199/2141cdd5-a0ad-440b-b0ec-237bd7d6ce99>
- 76 European Council. 2022. *EU climate action: provisional agreement reached on Carbon Border Adjustment Mechanism (CBAM)*. Online posting. European Union. Accessed 19 December 2022. <https://www.consilium.europa.eu/en/press/press-releases/2022/12/13/eu-climate-action-provisional-agreement-reached-on-carbon-border-adjustment-mechanism-cbam/>
- 77 Strasburg, Jenny. 2022. *BP Buys Renewable Natural-Gas Company in \$4.1 billion Deal*. Online posting. The Wall Street Journal. Accessed 19 December 2022. <https://www.wsj.com/articles/bp-buys-renewable-natural-gas-company-for-26-a-share-11666009037>
- 78 Ryanair. 2022. *Ryanair & Shell Sign Sustainable Fuel Agreement*. Online posting. Ryanair Corporate. Accessed 19 December 2022. <https://corporate.ryanair.com/novedades/ryanair-shell-sign-sustainable-fuel-agreement/>
- 79 UNFCCC. 2022. *COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries*. Online posting. United Nations. Accessed 19 December 2022. <https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries>
- 80 Rott, Nathan, et al. 2022. *Did the world make progress on climate change? Here's what was decided at global talks*. Online posting. NPR. Accessed 19 December 2022. <https://www.npr.org/2022/11/20/1137349916/did-the-world-make-progress-on-climate-change-heres-what-was-decided-at-global-t>
- 81 IEA. 2022. *How Europe can cut natural gas imports significantly within a year*. Online posting. International Energy Agency. Accessed 19 December 2022. <https://www.iea.org/news/how-europe-can-cut-natural-gas-imports-from-russia-significantly-within-a-year>
- 82 EIA. 2021. *Renewables became the second-most prevalent US electricity source in 2020*. Online posting. US Energy Information Administration. Accessed 19 December 2022. <https://www.eia.gov/todayinenergy/detail.php?id=48896>
- 83 European Commission. 2022. *REPowerEU: Joint European action for more affordable, secure and sustainable energy*. Online posting. European Union. Accessed 19 December 2022. https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1511
- 84 Macquarie, Rob. 2022. *Searching for trust in the voluntary carbon markets*. Online posting. LSE. Accessed 19 December 2022. <https://blogs.lse.ac.uk/businessreview/2022/02/16/searching-for-trust-in-the-voluntary-carbon-markets/>

- 85 Rathi, Akshat, et al. 2022. *Junk Carbon Offsets Are What Make These Big Companies 'Carbon Neutral'*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/graphics/2022-carbon-offsets-renewable-energy/?leadSource=verify%20wall>.
- 86 Segal, Mark. 2022. *Stripe, Alphabet, McKinsey, Shopify, and Meta Launch \$925 million Initiative to Scale Carbon Removal Market*. Online posting. ESG Today. Accessed 19 December 2022. <https://www.esgtoday.com/stripe-alphabet-mckinsey-shopify-and-meta-launch-925-million-carbon-removal-market-initiative/>.
- 87 EPA. 2022. *Fast Facts on Transportation Greenhouse Gas Emissions*. Online posting. U.S. Environmental Protection Agency. Accessed 19 December 2022. <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>.
- 88 IEA. 2022. *Global electric car sales have continued their strong growth in 2022 after breaking records last year*. Online posting. IEA. Accessed 19 December 2022. <https://www.iea.org/news/global-electric-car-sales-have-continued-their-strong-growth-in-2022-after-breaking-records-last-year>.
- 89 BloombergNEF. 2022. *Zero-Emission Vehicles Factbook*. Online posting. Bloomberg. Accessed 19 December 2022. https://assets.bbhub.io/professional/sites/24/BNEF-Zero-Emission-Vehicles-Factbook_FINAL.pdf.
- 90 Office of Governor Gavin Newsom. 2022. *California Makes Largest Investment to Date to Expand Clean Transportation in Underserved Communities*. Online posting. Government of California. Accessed 19 December 2022. <https://www.gov.ca.gov/2022/11/18/california-makes-largest-investment-to-date-to-expand-clean-transportation-in-underserved-communities/>.
- 91 Samandari, Hamid, et al. 2022. *The net-zero transition in the wake of the war in Ukraine: A detour, a derailment, or a different path?* Online posting. McKinsey Sustainability. Accessed 19 December 2022. <https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-in-the-wake-of-the-war-in-ukraine-a-detour-a-derailment-or-a-different-path>
- 92 Zimmerman, Sarah. 2022. *Tesla rewrites software to get around chip shortages hampering EV production*. Online posting. Utility Dive. Accessed 19 December 2022. <https://www.utilitydive.com/news/tesla-chip-semiconductor-shortage/628150/>.
- 93 Convention on Biological Diversity. 2006. *Biodiversity Convention Article 2. Use of Terms*. Online posting. Convention on Biological Diversity. Accessed 19 December 2022. <https://www.cbd.int/convention/articles/?a=cbd-02>
- 94 Convention on Biological Diversity. 2022. *Kunming-Montreal Global biodiversity framework*. Online posting. Convention on Biological Diversity. Accessed 19 December 2019. <https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf>
- 95 Einhorn, C. 2022. *Nearly Every Country Signs On to a Sweeping Deal to Protect Nature*. Online posting. The New York Times. Accessed 19 December 2022. <https://www.nytimes.com/2022/12/19/climate/biodiversity-cop15-montreal-30x30.html>
- 96 Spring, J. and Kelly, B. 2022. *Deforestation in Brazil's Amazon hits record for first half of 2022*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/environment/deforestation-brazils-amazon-hits-record-first-half-2022-2022-07-08/>
- 97 Forest Declaration Platform. 2022. *Forest Declaration Assessment: Are we on track for 2030?* Online posting. Forest Declaration Platform. Accessed 19 December 2022. <https://forestdeclaration.org/resources/forest-declaration-assessment-2022/>
- 98 UN Climate change Conference UK 2021. 2021. *Glasgow Leaders' Declaration on Forests and Land Use*. Online posting. UN Climate change Conference UK 2021. Accessed 19 December 2022. <https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/>
- 99 World Wide Fund for Nature. 2022. *Living Planet Report 2022*. Online posting. World Wide Fund for Nature. Accessed 19 December 2022. <https://livingplanet.panda.org/en-US/>
- 100 UN Environment Programme. 2022. *State of Finance for Nature*. Online posting. UN Environment Programme. Accessed 19 December 2022. https://wedocs.unep.org/bitstream/handle/20.500.11822/41333/state_finance_nature.pdf?sequence=3
- 101 Ecosystem Marketplace. 2022. *VCM Reaches Towards \$2 billion in 2021: New Market Analysis Published from Ecosystem Marketplace*. Online posting. Ecosystem Marketplace. Accessed 19 December 2022. <https://www.ecosystemmarketplace.com/articles/the-art-of-integrity-state-of-the-voluntary-carbon-markets-q3-2022/>
- 102 UN Climate Change High-Level Champions. 2022. *Africa Carbon Markets Initiative launched to dramatically expand Africa's participation in voluntary carbon market*. Online posting. UN Climate Change High-Level Champions. Accessed 19 December 2022. <https://climatechampions.unfccc.int/africa-carbon-markets-initiative/>
- 103 European Commission. 2022. *Green Deal: pioneering proposals to restore Europe's nature by 2050 and halve pesticide use by 2030*. Online posting. European Commission. Accessed 19 December 2022. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3746
- 104 Kahn, C. 2022. *Luiz Inácio Lula da Silva wins Brazil's presidential election*. Online posting. NPR. Accessed 19 December 2022. <https://www.npr.org/2022/10/31/1132766679/luiz-inacio-lula-da-silva-wins-brazils-presidential-election>
- 105 Cuff, M. 2022. *COP27: Brazil's Lula promises zero deforestation in the Amazon by 2030*. Online posting. NewScientist. Accessed 19 December 2022. <https://www.newscientist.com/article/2347429-cop27-brazils-lula-promises-zero-deforestation-in-the-amazon-by-2030/>
- 106 SMI Agribusiness Taskforce. 2022. *World's leading food & farming businesses launch action plan to scale regenerative farming, warning speed of progress 'must triple' to tackle the impacts of climate change*. Online posting. PR Newswire. Accessed 19 December 2022. <https://www.prnewswire.com/in/news-releases/worlds-leading-food--farming-businesses-launch-action-plan-to-scale-regenerative-farming-warning-speed-of-progress-must-triple-to-tackle-the-impacts-of-climate-change-301667333.html>
- 107 <https://www.thenatureforce.com/>
- 108 Bernstein, A. et al. 2022. *The costs and benefits of primary prevention of zoonotic pandemics*. Online posting. Science Advances. Accessed 19 December 2022. <https://www.science.org/doi/10.1126/sciadv.abl4183>
- 109 <https://tnfd.global/>
- 110 <https://framework.tnfd.global/>
- 111 World Economic Forum. 2020. *Half of World's GDP Moderately or Highly Dependent on Nature, Says New Report*. Online posting. World Economic Forum. Accessed 19 December 2022. <https://www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report/>
- 112 Claes, J. et al. 2022. *Where the world's largest companies stand on nature*. Online posting. McKinsey & Company. Accessed 19 December 2022. <https://www.mckinsey.com/capabilities/sustainability/our-insights/where-the-worlds-largest-companies-stand-on-nature>

- 113** Nature Positive. 2022. *Asian Markets Biodiversity Report Card*. Online posting. Nature Positive. Accessed 19 December 2022. <https://naturepositive.com/asian-markets-biodiversity-report/>
- 114** Portala, J. 2022. *Global firms urge governments to require mandatory disclosures on nature*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/sustainable-business/global-firms-urge-governments-require-mandatory-disclosures-nature-2022-10-26/>
- 115** Convention on Biological Diversity. 2022. *Kunming-Montreal Global biodiversity framework*. Online posting. Convention on Biological Diversity. Accessed 19 December 2019. <https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf>
- 116** Forests & Finance. 2022. *Policy Assessment 2022*. Online posting. Forests & Finance. Accessed 19 December 2022. <https://forestsandfinance.org/wp-content/uploads/2022/10/FF2022-policy-briefer.pdf>
- 117** CDP. 2022. *The financial sector needs to report on nature risks, and here's why*. Online posting. CDP. Accessed 19 December 2022. <https://www.cdp.net/en/articles/investor/the-financial-sector-needs-to-report-on-nature-risks-and-heres-why>
- 118** <https://www.financeforbiodiversity.org/>
- 119** <https://pbafglobal.com/standard>
- 120** Nuveen. 2022. *Nuveen launches a new global timberland strategy*. Online posting. Nuveen. Accessed 19 December 2022. <https://www.nuveen.com/global/insights/news/2022/nuveen-launches-a-new-global-timberland-strategy>
- 121** CDP. 2022. *The financial sector needs to report on nature risks, and here's why*. Online posting. CDP. Accessed 19 December 2022. <https://www.cdp.net/en/articles/investor/the-financial-sector-needs-to-report-on-nature-risks-and-heres-why>
- 122** European Commission. N.D. *Natural Capital Accounting*. Online posting. European Commission. Accessed 19 December 2022. https://ec.europa.eu/environment/nature/capital_accounting/index_en.htm
- 123** <https://capitalscoalition.org/project/align/>
- 124** Aligning Accounting Approaches for Nature. 2022. *Recommendations for a standard on corporate biodiversity measurement and valuation*. Online posting. European Commission. https://ec.europa.eu/environment/biodiversity/business/assets/pdf/2022/Align_Report_301122.pdf
- 125** The White House. 2022. *National Strategy to Develop Statistics for Environmental-Economic Decisions*. Online posting. The White House. Accessed 19 December 2022. <https://www.whitehouse.gov/wp-content/uploads/2022/08/Natural-Capital-Accounting-Strategy.pdf>
- 126** UN Environment Programme World Conservation Monitoring Centre. 2022. *Helping Uganda Account for Nature*. Online posting. UN Environment Programme World Conservation Monitoring Centre. Accessed 19 December 2022. <https://www.unep-wcmc.org/en/news/helping-uganda-account-for-nature>
- 127** Interos. 2022. *Supply Chain Disruption from the Russian Invasion of Ukraine*. Online posting. Interos. Accessed 19 December 2022. <https://www.interos.ai/blog-supply-chain-disruption-from-the-russia-ukraine-conflict/>
- 128** Hossain, J. 2022. *Where Does the Supply Chain Crisis Stand Now?* Online posting. Morningstar. Accessed 19 December 2022. <https://www.morningstar.com/articles/1096095/where-does-the-supply-chain-crisis-stand-now>
- 129** Hicks, C. and Broverman, A. 2022. *Inflation Outlook For 2023*. Online posting. Forbes. Accessed 19 December 2022. <https://www.forbes.com/advisor/ca/investing/inflation-outlook-2023/>
- 130** LaRocco, L. 2022. *Most supply chain managers expect problems to continue at least through 2024*. Online posting. CNBC. Accessed 23 December 2022. <https://www.cnbc.com/2022/12/23/supply-chain-managers-expect-problems-continue-2024.html>
- 131** Yale School of Management. 2022. *Over 1,000 Companies Have Curtailed Operations in Russia—But Some Remain*. Online posting. Yale School of Management. Accessed 20 December 2022. <https://som.yale.edu/story/2022/over-1000-companies-have-curtailed-operations-russia-some-remain>
- 132** EY and Thomson Reuters. 2022. *Tackling supply chain risk is a key driver in expanded EY US and Thomson Reuters alliance to help companies navigate ESG complexities*. Online posting. PR Newswire. Accessed 19 December 2022. <https://www.prnewswire.com/news-releases/tackling-supply-chain-risk-is-a-key-driver-in-expanded-ey-us-and-thomson-reuters-alliance-to-help-companies-navigate-esg-complexities-301690234.html>
- 133** EcoVadis. 2022. *Business Sustainability Risk and Performance Index: Insights from Global Supply Chain Ratings Sixth Edition*. Online posting. EcoVadis. Accessed 19 December 2022. <https://resources.ecovadis.com/sustainability-impact/business-sustainability-risk-and-performance-index-sixth-edition>
- 134** EcoVadis. 2022. *Business Sustainability Risk and Performance Index: Insights from Global Supply Chain Ratings Sixth Edition*. Online posting. EcoVadis. Accessed 19 December 2022. <https://resources.ecovadis.com/sustainability-impact/business-sustainability-risk-and-performance-index-sixth-edition>
- 135** The White House. 2022. *FACT SHEET: Biden- Harris Administration Proposes Plan to Protect Federal Supply Chain from Climate-Related Risks*. Online posting. The White House. Accessed 19 December 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/10/fact-sheet-biden-harris-administration-proposes-plan-to-protect-federal-supply-chain-from-climate-related-risks/>
- 136** Wakabayashi, D. and Mickle, T. 2022. *Tech companies slowly shift production away from China*. Online posting. The New York Times. Accessed 19 December 2022. <https://www.nytimes.com/2022/09/01/business/tech-companies-china.html?smid=nytcore-ios-share&referringSource=articleShare>
- 137** Seidel, J. 2022. *Big tech companies are moving production out of China over geostrategic concerns*. Online posting. News.com.au. Accessed 19 December 2022. <https://www.news.com.au/finance/economy/world-economy/big-tech-companies-are-moving-production-out-of-china-over-geostrategic-concerns/news-story/ce27ed75e2ba0617e90a9d5f75034450>
- 138** Braw, E. 2022. *Companies Are Fleeing China for Friendlier Shores*. Online posting. Foreign Policy. Accessed 19 December 2022. <https://foreignpolicy.com/2022/08/02/companies-fleeing-china-friendshoring-supply-chains/>
- 139** Wilkin, S. 2022. *2022 Political Risk Survey Report*. Online posting. Willis Towers Watson. Online posting. Accessed 19 December 2022. <https://www.wtwco.com/en-AU/Insights/2022/03/2022-political-risk-survey-report>
- 140** Strubenhoff, H. 2022. *The war in Ukraine triggered a global food shortage*. Online posting. The Brookings Institution. Accessed 19 December 2022. <https://www.brookings.edu/blog/future-development/2022/06/14/the-war-in-ukraine-triggered-a-global-food-shortage/>
- 141** Prilepok, M. et al. 2022. *Expand diversity among your suppliers—and add value to your organization*. Online posting. McKinsey & Company. Accessed 19 December 2022. <https://www.mckinsey.com/capabilities/operations/our-insights/expand-diversity-among-your-suppliers-and-add-value-to-your-organization>

- 142 Salesforce. 2022. Stakeholder Impact Report. Online posting. Salesforce. Accessed 19 December 2022. <https://stakeholderimpactreport.salesforce.com/governance/supply-chain-responsibility>
- 143 FedEx. 2022. 2022 ESG Report. Online posting. FedEx. Accessed 19 December 2022. https://www.fedex.com/content/dam/fedex/us-united-states/sustainability/gcrs/FedEx_2022_ESG_Report.pdf#page=41
- 144 <https://billiondollarroundtable.org/>
- 145 supplier.io. 2022. *2022 State of Supplier Diversity Report*. Online posting. Supplier.io. Accessed 19 December 2022. <https://www.supplier.io/hubfs/2022%20State%20of%20Supplier%20Diversity%20Report.pdf?hsCtaTracking=f6f17fc5-0f50-4e66-a197-894ec139b426%7C91d27ba8-24fe-4068-9dac-af1659fdede9>
- 146 <https://nmsdc.org/>
- 147 <https://www.wbenc.org/>
- 148 supplier.io. 2022. *2022 State of Supplier Diversity Report*. Online posting. Supplier.io. Accessed 19 December 2022. <https://www.supplier.io/hubfs/2022%20State%20of%20Supplier%20Diversity%20Report.pdf?hsCtaTracking=f6f17fc5-0f50-4e66-a197-894ec139b426%7C91d27ba8-24fe-4068-9dac-af1659fdede9>
- 149 General Motors Co. 2022. *GM Asks Suppliers to Sign Pledge Advancing Global Climate Action and Human Rights*. Online posting. PR Newswire. Accessed 19 December 2022. <https://www.prnewswire.com/news-releases/gm-asks-suppliers-to-sign-pledge-advancing-global-climate-action-and-human-rights-301532027.html>
- 150 Hartmann, F. 2022. *Deutsche Bank makes vendor sustainability ratings mandatory*. Online posting. Deutsche Bank. Online posting. Accessed 19 December 2022. https://www.db.com/news/detail/20220518-deutsche-bank-makes-vendor-sustainability-ratings-mandatory?language_id=1
- 151 Pearson, N. et al. 2022. *Fast-Fashion Waste Is Choking Developing Countries With Mountains of Trash*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/news/features/2022-11-02/h-m-zara-fast-fashion-waste-leaves-environmental-impact>
- 152 Circle Economy. 2022. *The Circularity Gap Report*. Online posting. Circle Economy. Accessed 19 December 2022. <https://www.circularity-gap.world/>
- 153 Circle Economy. 2022. *The Circularity Gap Report*. Online posting. Circle Economy. Accessed 19 December 2022. <https://www.circularity-gap.world/>
- 154 <https://www.unep.org/interactives/beat-plastic-pollution/>
- 155 Circle Economy. 2022. *The Circularity Gap Report*. Online posting. Circle Economy. Accessed 19 December 2022. <https://www.circularity-gap.world/>
- 156 Petro, G. 2022. *Gen Z Is Driving Growth In New Shopping Formats—But Are Retailers Paying Attention?* Online posting. Forbes. Accessed 19 December 2022. <https://www.forbes.com/sites/gregpetro/2022/03/05/gen-z-is-driving-growth-in-new-shopping-formats-but-are-retailers-paying-attention/>
- 157 Velasquez, A. 2022. *Uniqlo Launches Repair Services at NYC Flagship*. Online posting. Sourcing Journal. Accessed 19 December 2022. <https://sourcingjournal.com/denim/denim-sustainability/uniqlo-repair-studio-new-york-soho-flagship-circular-economy-g-star-nudie-jeans-326083/>
- 158 Webb, B. 2022. *Where fashion resale is headed in the next two years*. Online posting. Vogue Business. Accessed 19 December 2022. <https://www.voguebusiness.com/sustainability/where-fashion-resale-is-headed-in-the-next-two-years-vestiaire-kering-balenciaga>
- 159 <https://vault.gucci.com/en-US/story/gucci-vintage>
- 160 <https://us.vestiairecollective.com/alexander-mcqueen/>
- 161 Starbucks Stories. 2022. *Starbucks Innovates, Tests and Learns from Store Partners to Achieve Waste Goals*. Online posting. Starbucks. Accessed 19 December 2022. <https://stories.starbucks.com/stories/2022/starbucks-innovates-tests-and-learns-from-store-partners-to-achieve-waste-goals/>
- 162 PepsiCo, Inc. 2022. *PepsiCo Introduces New Packaging Goal, Doubling Down on Scaling Reusable Packaging Options*. Online posting. PR Newswire. Accessed 19 December 2022. <https://www.prnewswire.com/news-releases/pepsico-introduces-new-packaging-goal-doubling-down-on-scaling-reusable-packaging-options-301692662.html>
- 163 McVeigh, K. 2022. *World leaders agree to draw up 'historic' treaty on plastic waste*. Online posting. The Guardian. Accessed 19 December 2022. <https://www.theguardian.com/environment/2022/mar/02/world-leaders-agree-draw-up-historic-treaty-plastic-waste>
- 164 <https://ellenmacarthurfoundation.org/topics/plastics/overview>
- 165 <https://ourworldindata.org/plastic-pollution>
- 166 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
- 167 Directorate-General for Environment. 2022. *Proposal for Ecodesign for Sustainable Products Regulation*. Online posting. European Commission. Accessed 19 December 2022. https://environment.ec.europa.eu/publications/proposal-ecodesign-sustainable-products-regulation_en
- 168 BBC. 2022. *Destruction of unsold goods could be banned in Scotland*. Online posting. BBC. Accessed 19 December 2022. <https://www.bbc.com/news/uk-scotland-scotland-politics-60691961>
- 169 Environment and Climate Change Canada. 2022. *Change is here: Canada's ban on certain harmful single-use plastics starts to take effect this month*. Online posting. Government of Canada. Accessed 19 December 2022. <https://www.canada.ca/en/environment-climate-change/news/2022/12/change-is-here-canadas-ban-on-certain-harmful-single-use-plastics-starts-to-take-effect-this-month.html>
- 170 Bhardwaj, M. 2022. *India bans single-use plastic to combat pollution*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/world/india/india-bans-single-use-plastic-combat-pollution-2022-07-01/>
- 171 Faulkner, C. 2022. *New York breaks the right to repair bill as it's signed into law*. Online posting. The Verge. Accessed 29 December 2022. <https://www.theverge.com/2022/12/29/23530733/right-to-repair-law-new-york-tech-hochul-oems-parts>
- 172 Loop. 2022. *Circular Consumption: Loop Now Available Through Walmart InHome in Select Cities*. Online posting. Loop. Accessed 19 December 2022. https://dva1blx501zrw.cloudfront.net/download_resources/us/downloads/16760/Walmart_Launch_Release_Final_%281%29.pdf
- 173 Anderson, D. 2022. *Walmart partners with Loop for reuse*. Online posting. GreenBiz. Accessed 19 December 2022. <https://www.greenbiz.com/article/walmart-partners-loop-reuse>
- 174 IKEA. N.D. *Buy Back & Resell*. Online posting. IKEA. Accessed 19 December 2022. <https://www.ikea.com/us/en/customer-service/services/buyback-pubfeb6cc00>
- 175 Ryan, T. 2022. *IKEA Sees Sustainable Plan In Secondhand Furniture*. Online posting. Forbes. Accessed 19 December 2022. <https://www.forbes.com/sites/retailwire/2022/04/12/ikea-sees-sustainable-plan-in-secondhand-furniture/?sh=57d082081ee4>
- 176 Brambles. 2022. *Sustainability Review 2022*. Online posting. Brambles. Accessed 19 December 2022. <https://www.brambles.com/Content/cms/sustainability-2022/documents/Brambles-Sustainability-Review-2022.pdf>

- 177** Galvin, J. et al. 2022. *A brief primer on PFAS litigation: Trends and future disputes*. Online posting. Thomson Coburn. Accessed 19 December 2022. <https://www.thomsoncoburn.com/insights/publications/item/2022-08-25/a-brief-primer-on-pfas-litigation-trends-and-future-disputes>
- 178** Jessop, S. 2022. *Call to phase out 'forever chemicals' gains investor momentum*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/environment/call-phase-out-forever-chemicals-gains-investor-momentum-2022-12-01/>
- 179** Persson, L. 2022. *Outside the Safe Operating Space of the Planetary Boundary for Novel Entities*. Online posting. Environmental Science & Technology. Accessed 19 December 2022. <https://pubs.acs.org/doi/10.1021/acs.est.1c04158>
- 180** United States Environmental Protection Agency. N.D. *Our Current Understanding of the Human Health and Environmental Risks of PFAS*. Online posting. United States Environmental Protection Agency. Accessed 19 December 2022. <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>
- 181** European Commission. 2022. *Restrictions Roadmap under the Chemicals Strategy for Sustainability*. Online posting. European Commission. Accessed 19 December 2022. <https://ec.europa.eu/docsroom/documents/49734>
- 182** Reuters. 2022. *California sues 3M, DuPont over toxic 'forever chemicals'*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/environment/california-sues-3m-dupont-over-toxic-forever-chemicals-2022-11-10/>
- 183** Reuters. 2022. *3M to end 'forever chemicals' output at cost of up to \$2.3 bln*. Online posting. Reuters. Accessed 20 December 2022. <https://www.reuters.com/business/3m-stop-making-forever-chemicals-take-up-23-bln-charge-2022-12-20/>
- 184** United States Environmental Protection Agency. N.D. *PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024*. Online posting. United States Environmental Protection Agency. Accessed 19 December 2022. <https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024#year-one-report>
- 185** United States Environmental Protection Agency. N.D. *Toxics Release Inventory (TRI) Program*. Online posting. United States Environmental Protection Agency. Accessed 19 December 2022. <https://www.epa.gov/toxics-release-inventory-tri-program>
- 186** Finances Online. 2021. *53 Important Statistics About How Much Data Is Created Every Day*. Online posting. Finances Online. Accessed 19 December 2022. <https://financesonline.com/how-much-data-is-created-every-day/>
- 187** Ahn, Ashley. 2022. *The world generates so much data that new unit measurements were created to keep up*. Online posting. NPR. Accessed 19 December 2022. <https://www.npr.org/2022/11/19/1137985619/metric-system-measurement-prefix>
- 188** IEA. 2021. *Data centres & networks*. Online posting. International Energy Agency. Accessed 19 December 2022. <https://www.iea.org/fuels-and-technologies/data-centres-networks>
- 189** ERM. 2021. *ERM acquires AI and data science solutions provider OPEX group*. Online posting. ERM. Accessed 19 December 2022. <https://www.erm.com/news/erm-acquires-ai-and-data-science-solutions-provider-opex-group/>
- 190** Neslen, Arthur. 2021. *Here's how AI can help fight climate change*. Online posting. World Economic Forum. Accessed 19 December 2022. <https://www.weforum.org/agenda/2021/08/how-ai-can-fight-climate-change/>
- 191** Marlatt, Jordan. 2022. *Consumers Expect Tech to Drive Sustainability Innovation*. Online posting. Morning Consult. Accessed 19 December 2022. <https://morningconsult.com/2022/10/12/consumers-expect-tech-to-drive-sustainability-innovation/>
- 192** Rimol, Meghan. 2022. *Gartner Predicts 25% of People Will Spend At Least One Hour Per Day in the Metaverse by 2026*. Online posting. Gartner. Accessed 19 December 2022. <https://www.gartner.com/en/newsroom/press-releases/2022-02-07-gartner-predicts-25-percent-of-people-will-spend-at-least-one-hour-per-day-in-the-metaverse-by-2026>
- 193** Birch, Kate. 2022. *JP Morgan is first leading bank to launch in the metaverse*. Online posting. FinTech. Accessed 19 December 2022. <https://fintechmagazine.com/banking/jp-morgan-becomes-the-first-bank-to-launch-in-the-metaverse>
- 194** Quarmby, Brian. 2022. *Fidelity plans NFT marketplace and financial services in the metaverse*. Online posting. Cointelegraph. Accessed 19 December 2022. <https://cointelegraph.com/news/fidelity-plans-nft-marketplace-and-financial-services-in-the-metaverse>
- 195** Becker, Gerrit. 2022. *The green IT revolution: A blueprint for CIOs to combat climate change*. Online posting. McKinsey Digital. Accessed 19 December 2022. <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-green-it-revolution-a-blueprint-for-cios-to-combat-climate-change>
- 196** Green Century. 2021. *STATEMENT: Apple* Takes Major Step Forward on Repair, Prompting the Withdrawal of Green Century Capital Management Shareholder Proposal*. Online posting. Green Century Funds. Accessed 19 December 2022. <https://www.greencentury.com/statement-apple-takes-major-step-forward-on-repair-prompting-the-withdrawal-of-green-century-capital-management-shareholder-proposal/>
- 197** Huawei. 2022. *E-waste Recycling Program*. Online posting. Huawei. Accessed 19 December 2022. <https://consumer.huawei.com/us/support/recycling/>
- 198** Marlatt, Jordan. 2022. *Consumers Expect Tech to Drive Sustainability Innovation*. Online posting. Morning Consult. Accessed 19 December 2022. <https://morningconsult.com/2022/10/12/consumers-expect-tech-to-drive-sustainability-innovation/>
- 199** OpenAI. 2022. *ChatGPT: Optimizing Language Models for Dialogue*. Online posting. OpenAI. Accessed 19 December 2022. <https://openai.com/blog/chatgpt/>
- 200** Walch, Kathleen. 2019. *Ethical Concerns of AI*. Online posting. Forbes. Accessed 19 December 2022. <https://www.forbes.com/sites/cognitiveworld/2020/12/29/ethical-concerns-of-ai/?sh=6a6a459d23a8>
- 201** The AI Act. 2021. *Laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts*. Online posting. European Commission. Accessed 19 December 2022. <https://artificialintelligenceact.eu/the-act/>
- 202** EC. 2022. *Liability Rules for Artificial Intelligence*. Online posting. European Commission. Accessed 19 December 2022. https://commission.europa.eu/business-economy-euro/doing-business-eu/contract-rules/digital-contracts/liability-rules-artificial-intelligence_en
- 203** PDPC. 2022. *Launch of AI Verify-An AI Governance Testing Framework and Toolkit*. Online posting. Personal Data Protection Commission Singapore. Accessed 19 December 2022. <https://www.pdpc.gov.sg/news-and-events/announcements/2022/05/launch-of-ai-verify---an-ai-governance-testing-framework-and-toolkit>
- 204** Gartner. 2022. *Gartner Identifies the Top 10 Strategic Technology Trends for 2023*. Online posting. Gartner. Accessed 19 December 2022. <https://www.gartner.com/en/newsroom/press-releases/2022-10-17-gartner-identifies-the-top-10-strategic-technology-trends-for-2023>
- 205** Knight, Will. 2022. *Elon Musk Has Fired Twitter's 'Ethical AI' Team*. Online posting. Wired. Accessed 19 December 2022. <https://www.wired.com/story/twitter-ethical-ai-team/>

- 206 Michaelson, R. 2022. *Cop27 wifi in Egypt blocks human rights and key news websites*. Online posting. The Guardian. Accessed 19 December 2022. <https://www.theguardian.com/environment/2022/nov/07/cop27-wifi-egypt-blocks-human-rights-key-news-websites>
- 207 Gritten, D. 2022. *Alaa Abdel Fattah: Jailed British-Egyptian activist ends hunger strike – letter*. Online posting. BBC. Accessed 19 December 2022. <https://www.bbc.com/news/world-middle-east-63636783>
- 208 Business & Human Rights Resource Centre. 2022. *Labour rights and the Qatar World Cup 2022*. Online posting. Business & Human Rights Resource Centre. Accessed 19 December 2022. <https://www.business-humanrights.org/en/big-issues/major-sporting-events/labour-rights-and-the-qatar-world-cup-2022/>
- 209 Equidem. 2022. "If we complain, we are fired". Online posting. Equidem. Accessed 19 December 2022. <https://www.equidem.org/reports/if-we-complain-we-are-fired>
- 210 <https://www.issgovernance.com/esg/screening/modern-slavery-scorecard/>
- 211 Parliament of Canada. 2022. *An Act to enact the Fighting Against Forced Labour and Child Labour in Supply Chains Act and to amend the Customs Tariff*. Online posting. Parliament of Canada. <https://www.parl.ca/legisinfo/en/bill/44-1/s-211>
- 212 European Council. 2022. *Council approves EU law to improve gender balance on company boards*. Online posting. European Council. Accessed 19 December 2022. <https://www.consilium.europa.eu/en/press/press-releases/2022/10/17/council-approves-eu-law-to-improve-gender-balance-on-company-boards/>
- 213 Pacelli, J. 2022. *Do Diverse Directors Influence DEI Outcomes?* Online posting. Harvard Law School Forum on Corporate Governance. Accessed 19 December 2022. <https://corpgov.law.harvard.edu/2022/11/09/do-diverse-directors-influence-dei-outcomes/>
- 214 European Commission. 2022. *Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains*. Online posting. European Commission. Accessed 19 December 2022. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145
- 215 Crockett, A. 2022. *Japan Publishes Guidelines on Corporate Human Rights Due Diligence*. Online posting. Society for Human Resource Management. Accessed 19 December 2022. <https://www.shrm.org/resourcesandtools/hr-topics/global-hr/pages/japan-guidelines-corporate-human-rights-due-diligence.aspx>
- 216 Business & Human Rights Resource Centre. 2022. *Russian invasion of Ukraine: What companies have to say about their human rights due diligence*. Online posting. Business & Human Rights Resource Centre. 2022. <https://www.business-humanrights.org/en/latest-news/russian-invasion-of-ukraine-what-companies-have-to-say-about-their-human-rights-due-diligence/>
- 217 Ainger, J. and Arons, S. 2022. *Weapons Group Points to Ukraine in Bid to Shape ESG Rulebook*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/news/articles/2022-02-28/weapons-group-points-to-ukraine-in-bid-to-shape-eu-s-esg-rules?leadSource=verify%20wall>
- 218 Ballard, E. 2022. *Sweden's SEB Changes Course on Defense Stocks as War Tests ESG Rules*. Online posting. The Wall Street Journal. Accessed 19 December 2022. <https://www.wsj.com/articles/swedens-seb-changes-course-on-defense-stocks-as-war-tests-esg-rules-11646253384>
- 219 Tent Partnership for Refugees. 2022. *45 Major Companies Commit to Hiring Over 20,000 Refugees at Tent Business Summit*. Online posting. PR Newswire. Accessed 19 December 2022. <https://www.prnewswire.com/news-releases/45-major-companies-commit-to-hiring-over-20-000-refugees-at-tent-business-summit-301626806.html>
- 220 The White House. 2021. *Memorandum for the Secretary of State on Presidential Determination on Refugee Admissions for Fiscal Year 2022*. Online posting. The White House. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/08/memorandum-for-the-secretary-of-state-on-presidential-determination-on-refugee-admissions-for-fiscal-year-2022/>
- 221 Gaudiano, P. 2022. *EU Law Set To Increase Gender Diversity On Company Boards*. Online posting. Forbes. Accessed 19 December 2022. <https://www.forbes.com/sites/paologaudiano/2022/11/30/eu-law-set-to-increase-gender-diversity-on-company-boards/?sh=4e61ffa33eaa>
- 222 Investor Leadership Network. 2022. *Inclusive Finance Playbook*. Online posting. Investor Leadership Network. Accessed 19 December 2022. <https://investorleadershipnetwork.org/en/resource/inclusion-playbook/>
- 223 Carlyle Group. 2022. *Carlyle Establishes DEI Leadership Network of Portfolio Company CEOs as it Continues Push to Advance Diversity Standards Across the Private Equity Industry*. Online posting. Carlyle Group. Accessed 19 December 2022. <https://www.carlyle.com/media-room/news-release-archive/carlyle-establishes-dei-leadership-network-portfolio-company-ceos>
- 224 Financial Conduct Authority. 2022. *PS22/3: Diversity and inclusion on company boards and executive management*. Online posting. Financial Conduct Authority. Accessed 19 December 2022. <https://www.fca.org.uk/publications/policy-statements/ps22-3-diversity-inclusion-company-boards-executive-management>
- 225 Climate Bonds Initiative. 2022. *Sustainable Debt Global State of the Market 2021*. Online posting. Climate Bonds Initiative. Accessed 19 December 2022. https://www.climatebonds.net/files/reports/cbi_global_sotm_2021_02h_0.pdf
- 226 International Finance Corporation. 2022. *Social Bond Impact Report*. Online posting. International Finance Corporation. Accessed 19 December 2022. <https://www.ifc.org/wps/wcm/connect/c7b96f2a-bce0-4d5a-9ca1-feb8baa0466e/FY21+IFC+Social+Bond+Impact+Report.pdf?MOD=AJPERES&CVID=nZWSf4p>
- 227 Sacristan, G. 2022. *Latin America, World Leader in Gender Bonds*. Inter-American Development Bank. Online posting. Accessed 19 December 2022. https://idbinvest.org/en/blog/gender/latin-america-world-leader-gender-bonds?_ga=2.6115318.430256597.1659038923-636814050.1659038923
- 228 International Capital Market Association. 2022. *Social Bond Principles*. Online posting. International Capital Market Association. Accessed 19 December 2022. <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/social-bond-principles-sbp/>
- 229 Sprout Social. 2022. *Social Media Trends for 2022 & Beyond*. Online posting. Sprout Social. Accessed 19 December 2022. <https://sproutsocial.com/insights/index/>
- 230 Accenture. 2022. *Shaping the Sustainable Organization*. Online posting. Accenture. Accessed 19 December 2022. https://www.accenture.com/content/dam/accenture/final/a-com-migration/custom/_acnmedia/thought-leadership-assets/pdf-5/Accenture-Shaping-the-Sustainable-Organization-Report.pdf
- 231 Menn, J. and Abutaleb, Y. 2022. *With U.S. nudges, Google and others aim to help Iranian protesters*. Online posting. The Washington Post. Accessed 19 December 2022. <https://www.washingtonpost.com/technology/2022/10/13/iran-protests-google-jigsaw-vpn/>
- 232 Just Capital. 2022. *How is Corporate America Responding to the Overturning of Roe v. Wade?* Online posting. Just Capital. Accessed 19 December 2022. <https://justcapital.com/news/how-is-corporate-america-responding-to-the-overturning-of-roe-v-wade-abortion/>

- 233** PwC. 2021. *Beyond Compliance: Consumers and employees want business to do more on ESG*. Online posting. PwC. Accessed 19 December 2022. <https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/consumer-and-employee-esg-expectations.html>.
- 234** Sonnenfeld, Jeffrey. 2022. *Over 1,000 Companies Have Curtailed Operations in Russia – But Some Remain*. Online Posting. Yale School of Management. Accessed 19 December 2022. <https://som.yale.edu/story/2022/over-1000-companies-have-curtailed-operations-russia-some-remain>.
- 235** Shehadi, Sebastian. 2022. *Study shows money lost from companies leaving russia amounts to 45% of GDP*. Online posting. Investment Monitor. Accessed 19 December 2022. <https://www.investmentmonitor.ai/news/companies-leaving-russia-gdp-exports-fdi/>.
- 236** Sonnenfeld, Jeffrey, et al. 2022. *It Pays for Companies to Leave Russia*. Online posting. SSRN. Accessed 19 December 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4112885.
- 237** GFL. 2021. *Green Taxonomy developed by Colombia*. Online posting. Green Finance for Latin America and the Caribbean. Accessed 19 December 2022. <https://greenfinancelac.org/resources/news/green-taxonomy-developed-by-colombia/>.
- 238** Department for Business, Energy & Industrial Strategy. 2021. *UK to enshrine mandatory climate disclosures for largest companies in law*. Online posting. UK Government. Accessed 19 December 2022. <https://www.gov.uk/government/news/uk-to-enshrine-mandatory-climate-disclosures-for-largest-companies-in-law>.
- 239** Martin, Erin and Soehner, Celia. 2022. *How to Respond to SEC's Focus on Human Capital Disclosures*. Online posting. Accessed 19 December 2022. <https://news.bloomberglaw.com/esg/how-to-respond-to-secs-focus-on-human-capital-disclosures>.
- 240** European Council. 2022. *EU climate action: provisional agreement reached on Carbon Border Adjustment Mechanism (CBAM)*. Online posting. European Union. Accessed 19 December 2022. <https://www.consilium.europa.eu/en/press/press-releases/2022/12/13/eu-climate-action-provisional-agreement-reached-on-carbon-border-adjustment-mechanism-cbam/>.
- 241** US Senate. 2022. *Summary: The Inflation Reduction Act of 2022*. Online posting. US Senate. Accessed 19 December 2022. https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_one_page_summary.pdf.
- 242** Securities and Exchange Commission. 2022. *The Enhancement and Standardization of Climate-Related Disclosures for Investors*. Online posting. US SEC. Accessed 19 December 2022. <https://www.sec.gov/rules/proposed/2022/33-11042.pdf>.
- 243** EFRAG. 2022. *Public consultation on the first set of Draft ESRS*. Online posting. EFRAG. Accessed 19 December 2022. <https://www.efrag.org/lab3?AspxAutoDetectCookieSupport=1>.
- 244** ISSB. 2022. *Exposure Draft and comment letters: Climate-related Disclosures*. Online posting. IFRS. Accessed 19 December 2022. <https://www.ifrs.org/projects/work-plan/climate-related-disclosures/exposure-draft-and-comment-letters/>.
- 245** Haddon, Matt, et al. 2022. *The Evolution of Sustainability Disclosure: Comparing the 2022 SEC, ESRS and ISSB Proposals*. Online posting. The SustainAbility Institute by ERM. Accessed 19 December 2022. <https://www.sustainability.com/thinking/the-evolution-of-sustainability-disclosure-comparing-the-sec-esrs-issb-proposals/>.
- 246** Department for Business, Energy & Industrial Strategy. 2022. *Climate-related financial disclosures for companies and limited liability partnerships (LLPs)*. Online posting. United Kingdom Government. Accessed 19 December 2022. <https://www.gov.uk/government/publications/climate-related-financial-disclosures-for-companies-and-limited-liability-partnerships-llps>.
- 247** Weicht, Johann. 2022. *Over Two Years with the EU Taxonomy: An ERM Expert Briefing on its Impact on the Global Reporting Landscape*. Online posting. The SustainAbility Institute by ERM. <https://www.sustainability.com/thinking/over-two-years-with-the-eu-taxonomy/>.
- 248** Azzouz, M. and Brisson-Felix, A. 2022. *Navigating the sea of proposed climate-related disclosures: A deep dive into the SEC's, ISSB's and EFRAG's proposals*. Online posting. Natixis. <https://gsh.cib.natixis.com/our-center-of-expertise/articles/navigating-the-sea-of-proposed-climate-related-disclosures-a-deep-dive-into-the-sec-s-issb-s-and-efrag-s-proposals>
- 249** Schmitt, Eric. 2022. *Missouri Attorney General Leads 19 State Coalition in Launching Investigation into Six Major Banks Over ESG Investing*. Online posting. State of Missouri. Accessed 19 December 2022. <https://ago.mo.gov/home/news/2022/10/19/missouri-attorney-general-leads-19-state-coalition-in-launching-investigation-into-six-major-banks-over-esg-investing>.
- 250** Segal, Mark. 2022. *Texas Places BlackRock, Credit Suisse & UBS on Divestment List for "Boycotting" Fossil Fuel Companies in Anti-ESG Backlash*. Online posting. ESG Today. Accessed 19 December 2022. <https://www.esgtoday.com/texas-places-blackrock-credit-suisse-ubs-on-divestment-list-for-boycotting-fossil-fuel-companies-in-anti-esg-backlash/>.
- 251** Segal, Mark. 2022. *Florida Bans ESG Investing in \$228 billion State Pension Funds*. Online posting. ESG Today. Accessed 19 December 2022. <https://www.esgtoday.com/florida-bans-esg-investing-in-228-billion-state-pension-funds/>.
- 252** Kerber, Ross. 2022. *Florida pulls \$2 bln from BlackRock in largest anti-ESG divestment*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/business/finance/florida-pulls-2-bln-blackrock-largest-anti-esg-divestment-2022-12-01/>.
- 253** Thomas, David. 2022. *Senate Republicans warn U.S. law firms over ESG advice*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/legal/government/senate-republicans-warn-us-law-firms-over-esg-advice-2022-11-04/>.
- 254** IEA. 2022. *Oil Market and Russian Supply*. Online posting. International Energy Agency. Accessed 19 December 2022. <https://www.iea.org/reports/russian-supplies-to-global-energy-markets/oil-market-and-russian-supply-2>.
- 255** Fisher, Jonah. 2022. *EU reveals its plans to stop using Russian gas*. Online posting. BBC. Accessed 19 December 2022. <https://www.bbc.com/news/science-environment-61497315>.
- 256** Treisman, Rachel. 2022. *German industrial giant Siemens is leaving Russia after nearly 170 years*. Online posting. NPR. Accessed 19 December 2022. <https://www.npr.org/2022/05/12/1098508384/siemens-leaves-russia-over-ukraine-war>.
- 257** Blanchard, Ben. 2022. *China-Taiwan: why tensions are rising and what could happen in 2023*. Online posting. Reuters. Accessed 19 December 2022. <https://www.reuters.com/world/asia-pacific/yearender-eye-storm-taiwan-centre-sino-us-tensions-2022-12-06/>.
- 258** Lee, Yimou, et al. 2021. *The Battle for Taiwan*. Online posting. Reuters Investigates. Accessed 19 December 2022. <https://www.reuters.com/investigates/special-report/taiwan-china-chips/>.
- 259** Stamouli, Nektaria. 2022. *Greece lashes out over EU backing for 'Turkaegean' slogan*. Online posting. Politico. Accessed 19 December 2022. <https://www.politico.eu/article/greece-turkey-spat-eu-backing-turkaegean-slogan/>.
- 260** PSC Report. 2021. *African conflicts to watch in 2022*. Online posting. ISS Africa. Accessed 19 December 2022. <https://issafrica.org/pscreport/psc-insights/african-conflicts-to-watch-in-2022#:~:text=Libya%2C%20South%20Sudan%2C%20the%20Central,war%20from%202018%20to%202019>.

- 261** BNP Paribas Asset Management. 2022. *Matter partners with BNP Paribas Asset Management to launch 'SDG Fundamentals' revenue alignment data solution*. Online posting. BNP Paribas Asset Management. Accessed 19 December 2022. <https://mediaroom-en.bnpparibas-am.com/news/bnp-paribas-asset-management-partners-with-matter-to-launch-sdg-fundamentals-revenue-alignment-data-solution-795b-0fb7a.html>
- 262** Washington, P. and Mitchell, C. 2022. *The Shift to Stakeholder Capitalism Is Real and Durable*. Online posting. The Conference Board. Accessed 19 December 2022. <https://www.conference-board.org/topics/toward-stakeholder-capitalism/tectonic-shift-in-capitalism>
- 263** Global Impact Investing Network. 2022. *Sizing the Impact Investing Market*. Online posting. Global Impact Investing Network. Accessed 19 December 2022. <https://thegiin.org/assets/2022-Market%20Sizing%20Report-Final.pdf>
- 264** Chouinard, Y. 2022. *Earth is now our only shareholder*. Online posting. Patagonia. Accessed 19 December 2022. <https://www.patagonia.com/ownership/>
- 265** Fink, L. 2022. *The Power of Capitalism*. Online posting. BlackRock. Accessed 19 December 2022. <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>
- 266** Corporate Secretary. 2022. *Stakeholder capitalism and the board: Taking on a new mindset*. Online posting. Corporate Secretary. Accessed 19 December 2022. <https://www.corporatesecretary.com/content/stakeholder-capitalism-and-board-taking-new-mindset>
- 267** Davies, J. 2022. *State of the Profession 2022*. Online posting. GrennBiz Group. Accessed 19 December 2022. <https://www.greenbiz.com/report/state-profession-2022-report>
- 268** World Economic Forum. 2022. *Stakeholder Capitalism Metrics Initiative: over 120 companies implement the ESG reporting metrics*. Online posting. World Economic Forum. Accessed 19 December 2022. <https://www.weforum.org/impact/stakeholder-capitalism-esg-reporting-metrics/>
- 269** World Economic Forum. 2022. *Stakeholder Capitalism Metrics Initiative: Partner Case Studies (Part 2)*. Online posting. World Economic Forum. Accessed 19 December 2022. <https://www.weforum.org/whitepapers/stakeholder-capitalism-metrics-initiative-partner-case-studies-part-2/>
- 270** Phillips-Fein, K. 2022. *I wouldn't Bet on the Kind of Democracy Big Business Is Selling Us*. Online posting. The New York Times. Accessed 19 December 2022. <https://www.nytimes.com/2022/02/01/opinion/corporations-democracy.html>
- 271** Atterbury, A. 2022. *DeSantis revokes Disney's special status after 'Don't Say Gay' opposition*. Online posting. Politico. Accessed 19 December 2022. <https://www.politico.com/news/2022/04/22/desantis-disney-special-status-dont-say-gay-00027302>
- 272** Bebchuk, L. et al. 2022. *Stakeholder Capitalism in the Time of COVID*. Online posting. Yale Journal on Regulation. Accessed 19 December 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4026803
- 273** Davies, J. 2022. *State of the Profession 2022*. Online posting. GrennBiz Group. Accessed 19 December 2022. <https://www.greenbiz.com/report/state-profession-2022-report>
- 274** Hetzner, C. 2022. *Deutsche Bank raided by authorities over ESG 'greenwashing' claims: 'We've found evidence that that could support allegations of prospectus fraud'*. Online posting. Fortune. Accessed 19 December 2022. <https://fortune.com/2022/05/31/deutsche-bank-dws-esg-greenwashing-raid-evidence-seized-whistleblower-fixler/>
- 275** Makortoff, K. 2022. *Watchdog bans HSBC climate ads in fresh blow to bank's green credentials*. Online posting. The Guardian. Accessed 19 December 2022. <https://www.theguardian.com/business/2022/oct/19/watchdog-bans-hsbc-ads-green-cop26-climate-crisis>
- 276** Cox, L. 2022. *Australia's corporate regulator issues first fine for greenwashing*. Online posting. The Guardian. Accessed 19 December 2022. <https://www.theguardian.com/environment/2022/oct/27/australias-corporate-regulator-issues-first-fine-for-greenwashing>
- 277** Schwartzkopff, F. and Kishan, S. 2022. *ESG Funds Managing \$1 trillion Are Stripped of Sustainable Tag by Morningstar*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/news/articles/2022-02-10/funds-managing-1-trillion-stripped-of-esg-tag-by-morningstar#xj4y7vzkg?leadSource=verify%20wall>
- 278** Makower, J. 2022. *Greenhushing: Should companies speak up or shut up?* Online posting. GreenBiz Group. Accessed 19 December 2022. <https://www.greenbiz.com/article/greenhushing-should-companies-speak-or-shut-up>
- 279** Whitehouse, S. 2022. *Ahead of Expected SEC Climate Rule, Whitehouse Calls for Increased Climate Lobbying Disclosure Requirements*. Online posting. United States Senate. Accessed 19 December 2022. <https://www.whitehouse.senate.gov/news/release/ahead-of-expected-sec-climate-rule-whitehouse-calls-for-increased-climate-lobbying-disclosure-requirements>
- 280** Lowenstein, A. 2022. *How a top US business lobby promised climate action – but worked to block efforts*. Online posting. The Guardian. Accessed 19 December 2022. <https://www.theguardian.com/environment/2022/aug/19/top-us-business-lobby-group-climate-action-business-roundtable>
- 281** Matussek, K. 2022. *Volkswagen Sued for Not Disclosing Climate Lobbying Activity*. Online posting. Bloomberg. Accessed 19 December 2022. <https://www.bloomberg.com/news/articles/2022-10-20/volkswagen-sued-for-denying-access-to-climate-lobbying-activity?leadSource=verify%20wall>
- 282** Ceres. 2022. *Shareholders Escalate Campaign Pressing Companies to 'Walk Their Talk' on Climate Lobbying*. Online posting. Ceres. Accessed 19 December 2022. <https://www.ceres.org/news-center/press-releases/shareholders-escalate-campaign-pressing-companies-walk-their-talk>
- 283** Salesforce. 2021. *Climate Policy Platform: A Critical Step in Salesforce's Climate Action Plan*. Online posting. Salesforce. Accessed 19 December 2022. <https://www.salesforce.com/news/stories/climate-policy-platform/>
- 284** <https://www.responsible-lobbying.org/>
- 285** <https://climate-lobbying.com/>
- 286** Rives, K. 2022. *Record number of shareholder ESG proposals in 2022 defies GOP political backlash*. Online posting. S&P Global. Accessed 19 December 2022. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/record-number-of-shareholder-esg-proposals-in-2022-defies-gop-political-backlash-71181308>
- 287** Freshfields. 2022. *Trends and Updates from the 2022 Proxy Season*. Online posting. Freshfields. Accessed 19 December 2022. <https://ssl.freshfields.com/noindex/documents/0722/trends-and-updates-from-the-2022-proxy-season.pdf>
- 288** <https://strive.com/>



About The SustainAbility Institute by ERM

The 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.

Authors

Andrew Angle
Justin Nelson
Dia Rizakos

ERM Contributors

Ajani Alleyne
Susanne Baker
Sade Bamimore
Aiste Brackley
Emily Brock
Andrea Caro Silva
Hayley Constable
Yulia Dobrolyubova
Zulfikar Fathoni
Alexandra Guaqueta
Matt Haddon
Mark Lee
Marley Leitner
Negar Naghshinehpour
JoAnne Sahli
Kate Sellers
Tim Strawn
Latoya Tlomatsana
Erika Washburn

Other Contributors

Giulia Carbone,
Natural Climate
Solutions Alliance

Josh Zinner, Interfaith
Center on Corporate
Responsibility

Design

Eleanor Powell, ERM
Bruce Stoddart, ERM

Twitter: twitter.com/Sustlnsti
LinkedIn: linkedin.com/company/sustainabilityinstituteerm
Website: sustainability.com



© Copyright 2023 by The ERM International Group Limited and/or its affiliates ('ERM'). All Rights Reserved. No part of this work may be reproduced or transmitted in any form or by any means, without prior written permission of ERM.