



A new business paradigm to address climate change

Environmental stewardship as a leadership imperative

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Introduction

OF THE MANY issues billed as *the* defining challenges of our times, climate change is among those having the strongest claim. The science is as settled as any in the modern canon: Credible climate scientists are near-unanimous in concluding that human activity is changing the earth’s climate in ways that threaten the natural environment and civilization itself.¹

Given the stakes, every actor has a responsibility to do what they can to check climate change and adapt to a changed planet, a fact more companies are embracing as they look to embed a broader sense of purpose in their activities.² Companies’ stakeholders, from consumers and employees to lenders and communities, are increasingly demanding action. The regulatory environment is likely to grow only more stringent going forward.³ The climate-related risks to operations and supply chains and facilities and workers compound as we experience record heat and unprecedented flooding.

Most fundamentally, unchecked climate change can jeopardize enterprises’ stock of social and natural capital. Going forward, a company’s societal “license to operate” will likely be contingent, in part, on it being a responsible steward of the earth.

Being a good steward and averting a disaster of our own making requires us to rethink many of the orthodoxies we have long taken for granted. Encouragingly, the COVID-19 pandemic has illustrated, in dramatic fashion, that many of the constraints we thought were binding—about how and where and when work gets done, and to what ends—were far more malleable than we believed. And we increasingly see a business community ready to act quickly to mitigate, adapt to, and



create new value amid climate change, with bold initiatives being announced seemingly weekly.⁴

Takeaways from these examples aren’t necessarily obvious, though. What should *your* company do? It’s easy to argue that we need to devote all available resources and energies to mitigating the climate crisis—after all, “There is no wealth on a dead planet,” as one climate protestor observed.⁵ At the same time—and to be just as hyperbolic—what good is saving the planet if everyone dies in the process? Finding a realistic *and* effective response in the infinite yet bounded space between “everything” and “nothing” remains a challenge for the business community. We do not lack for resources, tools, or cleverness. What is missing is a set of new decision-making paradigms suited to such an unprecedented challenge.

And so, for those leaders prepared to act but struggling to determine how best to proceed, we suggest a new way of thinking about how business can address climate change.

Climate change and the business community

THIS ARTICLE ACCEPTS the scientific consensus of anthropogenic climate change.⁶ In short, the release of greenhouse gases (GHG) into the atmosphere due to the burning of fossil fuels has led to a rapid (in geologic terms) increase in average surface temperatures. We are already locked into a warmer climate, and absent rapid reductions in the emission of carbon dioxide, methane, and other heat-trapping gases, we will see further warming. Increasing flooding, food shortages, extreme heat, wildfires, and other developments⁷ are already proving calamitous for millions of people worldwide.⁸ Businesses are hardly immune to this pain: A group of nearly 7,000 companies reporting to the Climate Disclosure Project estimated they faced nearly US\$1 trillion in climate change-related risks, many of which they assessed were highly likely to occur—and would affect them in the next several years.⁹ And a diverse group of stakeholders—from consumers and employees to financiers and activists—is increasingly pressuring businesses to act.¹⁰

As the causes and consequences of global warming have grown clearer and pressure from a variety of sources has increased, businesses have begun responding across three (not mutually exclusive) dimensions: *mitigation*, *adaptation*, and *value creation*.

Mitigation

Climate change mitigation refers to efforts to reduce or prevent emission of GHGs at the source, as well as efforts to remove existing GHG emissions from the atmosphere. In a business context, mitigation seeks to reduce business-related emissions.

Avoiding the worst impacts of climate change depends on people limiting the rise in mean surface temperature to 1.5 C, which means dramatically reducing anthropogenic carbon dioxide emissions.¹¹ Businesses can help by: shifting power generation to nonemitting sources, such as solar, wind, and nuclear; electrifying systems that rely on the burning of fossil fuels, including vehicles and building heating; reducing emissions, through increased efficiency and decreased consumption of existing GHG-emitting activities; adapting agricultural systems; and capturing and sequestering carbon to offset emissions from sources for which we have no viable nonemitting substitute, and removing past emissions from the atmosphere.¹²

These targets and associated measures—enacted at scale, with urgency—are widely expected to be humanity’s best hope for avoiding acute future disruptions to economies, societies, and ways of life.

Adaptation

Climate change adaptation refers to the process of adjustment to actual or expected climate change and its expected impacts. In a business context, adaptation seeks to moderate harm to business operations and activities.

Even as organizations act with urgency to limit further warming, we are locked in to a hotter climate for the foreseeable future.¹³ The repercussions are widespread and are already being felt in the form of longer droughts, more severe and frequent flooding and wildfire events, rising sea levels, and a host of other changes in the natural environment upon which all enterprises ultimately rely.¹⁴ Companies should assess how those changes might affect their business and take steps to reduce their exposure to climate-related risks—by, for example, relocating vulnerable links in the supply chain. The severity and frequency of the impacts are likely to only increase and compound with time even if global mitigation efforts succeed, adding urgency to business leaders' efforts to make their organizations more climate-resilient.

Create value

Value creation refers to the creation of business strategies, products, and services designed to exploit the beneficial opportunities presented by

climate change, or to the designing of mitigation and adaptation activities with a resulting commercial benefit in mind.

There would be short-term costs to broadly decarbonizing the global economy. But tremendous new opportunities to create and capture value would likely materialize as well.

Decarbonizing the global economy is often framed as a costly, painful endeavor that could retard growth, jeopardize jobs, and straitjacket innovation.¹⁵ To be sure, there will be short-term costs, which could be acute for some sectors and individual companies whose business models are currently contingent on fossil fuels and carbon-emitting processes. But tremendous new opportunities to create and capture value will likely materialize as well. The shift to renewable energy, the electrification of transport, changes to agricultural practices, and the transition to low-emission and higher-efficiency industrial processes are already powering a range of new business models.¹⁶

Shifting the business paradigm

FOR MUCH OF at least the last century, companies operating in market-based economies have largely been managed to maximize financial performance, bounded by regulatory constraints and with the enterprise itself as the locus of concern. Perhaps not coincidentally, that period has coincided with nearly all of the human-generated climate-warming emissions to date.¹⁷ Indeed, the climate crisis can be understood, as a comprehensive economic analysis of the issue puts it, as “the greatest market failure the world has ever seen.”¹⁸ The climate itself exemplifies a “commons problem,” whereby a shared and nonexcludable resource is subject to depletion.¹⁹ Countries, businesses, and individuals are subject to free riding, the temptation to avoid contributing to a public good (in this case climate mitigation), and collective-action problems.²⁰ GHG emissions are negative externalities that most markets either underprice or don’t price at all.²¹

In the last few years, however, there has been a growing movement to reexamine how companies operate—and for whom.²² “Stakeholder capitalism” imagines corporations as being responsible not only to their shareholders but to their employees, suppliers, communities, and the environment.²³ In that vein, more companies have begun to take action to address the climate crisis. More companies are disclosing more climate-related information in line with the Task Force on Climate-related Financial Disclosures’ recommendations.²⁴ Nearly 500 companies have approved science-based targets for reducing GHG emissions as of September 2020, for example, a number that continues to grow.²⁵ Climate and sustainability risks dominated the World Economic Forum’s annual meeting, as seen most prominently in the

championing of the effort to plant 1 trillion trees to capture carbon.²⁶ The list of actions grows almost daily.

The swift and dramatic shift has left many businesses without a set of analytical tools and decision-making mindsets commensurate with this broader purpose. When addressing climate change, applying only the same approaches we have used in the past to manage businesses—navigating between economic incentives and regulatory constraints, and with the individual company as the primary actor—is likely to leave us far short of what’s needed to help avoid some of the worst impacts of climate change, or even to prevent material disruption to our current ways of life. Why should we expect familiar management approaches to be capable of addressing the crisis?

We need to augment the ways companies have traditionally evaluated actions by expanding the scope and scale of activities that are in play. This means moving from an approach focused primarily on the enterprise itself to one that encompasses multiple fronts: the individual company, yes, but also acting collectively with others as an industry and across a broader ecosystem of participants.

Each of these levels of action—organization, industry, ecosystem—requires a different set of objectives, constraints, and ways of evaluating success. At the level of the organization, we should consider how we prioritize outcomes and how we measure and capture value. At the level of the industry, we should collectively change the rules of the game—that is, the constraints organizations face when effectively competing—and how we create value in ways that lead to climate-friendly

outcomes. And at the level of the business ecosystem,²⁷ we should change the objectives to ones that put climate mitigation, adaptation, and value creation on at least equal footing with growth and profitability.

Why should we expect familiar management approaches to be capable of addressing the crisis?

These are not either/or choices. The magnitude and severity of the challenge suggest that business leaders should evaluate their options and work on initiatives across all three fronts at once.

Company-scale action: Change how you capture value by rethinking relevant priorities and time horizons

Companies often have a diverse array of climate actions they can undertake on their own. In this situation, you can apply traditional analytical tools: assessing ROI, expected costs versus profit, differentiation and competitive position, and so on. What shifts are the types of initiatives that get prioritized, and over what time horizon they are assessed.

In many cases, these actions can be easily justified in both environmental *and* economic terms. The Carbon Disclosure Project collected data on roughly 4,800 global companies that collectively reported supply chain efficiency efforts amounting to 551 million metric tons of carbon and cost savings of US\$14 billion, with approaches including smarter packaging, product life cycle analyses, and circular design.²⁸ Research on more than 1,500 companies suggests those that are more

carbon-efficient—using the least amount of carbon for a unit of output—are both more profitable and less vulnerable to macroeconomic risk.²⁹

To find what is often hiding in plain sight, decision-makers should reprioritize efforts and escape the often-hidden biases that make profitable climate-related investments largely invisible. Perhaps the most potent of those biases is an overemphasis on short-term results, a product of both human biology and cognition³⁰ and the structure of capital markets.³¹ By prioritizing quarterly or even annual growth and profits, business leaders can be blinded to the risks, costs, and foregone gains that accrue over even slightly longer time horizons. Viewing business implications through a lens of long-term, sustainable profitability and growth may make actions related to climate mitigation, adaptation, and value creation more justifiable in financial terms.

As time horizons expand, so should the universe of risks and opportunities that companies consider. Leaders tend to believe that their business choices for investments and initiatives are based on an exhaustive analysis of all possible options, but what makes the short list for consideration must be sufficiently salient to have been considered in the first place. By opening the aperture to embed climate-related issues in existing strategy and enterprise risk management practices, companies can take a more systematic approach to identifying where they can reduce their own impact and guard against emerging risks. Scenario planning, informed by detailed forecasts and an understanding of value-at-risk, can help leaders approach the challenge in a structured way. Ultimately, consideration of climate impact should infuse itself into every organizational decision, and business unit metrics and performance management systems should follow suit.

In short, you are changing your priorities for how you capture value within the constraints of your existing operating model.

Industry-scale action: Change how you create value by changing relevant constraints

When you can't change your business model to be less carbon-intensive in ways that enhance your competitive position, you should explore changing the constraints on your actions. And for that to not harm your competitive position, you might have to work beyond just your own company at an industry level, collaborating with customers and even competitors that, like you, see the importance of enabling change. A single company might be too small to, say, prompt its suppliers to shift to less carbon-intensive forms of crop cultivation—or, conversely, to unilaterally move to a more climate-friendly input that comes at greater cost. But the entire industry, asking together? While estimates vary by country and industry, often the majority of business-related GHG emissions fall under “Scope 3”—indirect emissions related to a company's operations, value chain, and product usage.³² Mitigating such emissions likely will require an industry-level approach to work with suppliers and customers to find new solutions.

There are already examples of such industry-level action working to change the constraints within which businesses have traditionally operated. In the United States, agriculture is conservatively estimated to account for about 10% of the nation's total annual GHG emissions³³ but has the potential to not only become carbon neutral but to actually sequester carbon.³⁴ Right now, though, farmers and ranchers have little incentive to adopt carbon-friendly agricultural practices such as no-till and planting of cover crops. With thin margins to begin with and no mechanism to capture the positive externalities associated with climate-positive alternatives, the regenerative-agriculture movement has been slow to gain traction. In an effort to change constraints, producers formed the Ecosystem Services Market Consortium to create a market to reward sustainable agriculture practices in the form of credits, which others elsewhere in

the food supply chain could then purchase to offset their carbon footprints.³⁵ While still in the research and pilot phase, the group includes major industry consortia, nonprofits, and some of the largest US food companies.

To make the necessary moves requires actively shaping the decision-making context so that the outcomes are more climate-friendly. That requires first identifying how organizations in the industry can take steps to reduce their carbon footprint. Then comes the potentially most difficult task: convening erstwhile competitors to collectively change the rules of the game. In some cases, the actions on the table might be precompetitive, in which case marshaling support might be relatively straightforward. In others, where the changes could affect competitive position, success requires real leadership and perseverance, and the carrot of publicly crediting adopters should be used liberally—which, by extension, could create pressure for laggards to opt in. Industry and trade groups can serve as useful conveners, and can also be powerful voices for encouraging proclimate policies and regulation. The Science Based Targets Initiative has or is in the process of developing technical standards for emissions reduction for a variety of industries that individual companies can apply,³⁶ while organizations such as the Sustainable Forestry Initiative provide certifications and product labels attesting to certain standards being met.³⁷

It may also require hard conversations with industry suppliers (who might also be customers), who could face lower demand or higher costs as a result of the collective's changed approach. The industry should be willing to explore ways to share the burden by, for example, accepting higher prices or less preferential treatment.

Once operating in this new context, you're still optimizing for your own outcomes, just within new rules. Consider it a treaty, in which you and your competitors agree not to use certain strategies or

tactics even as you continue seeking advantages over them.

In short, you are changing the constraints, and within those new constraints, you can still make all your choices as you normally would—but with the result of doing business in a more climate-positive way.

Ecosystem-scale action: Change how you define “value” by changing your objective

Averting calamitous levels of global warming is almost certain to demand action of such breadth, depth, and urgency that company- or industry-level actions alone (even aggregated and accelerated) are likely to fall short. And to realize the most ambitious impacts at a planetary scale requires the mobilization of a host of actors at the scale of entire business ecosystems, cutting across traditional industry boundaries and often including governments, nonprofits, academia, and others.³⁸ Some critical elements of the solution can be implemented only via large-scale collective action.

That, in turn, requires a decision-making approach with an entirely different objective from what is typically pursued by business leaders. Unlike with industry-level action, competitive differentiation matters far less than usual—indeed, cooperation with competitors is often a hallmark of ecosystem-level action. The path to profitability may be murky or may stretch further into the future than standard business thinking typically accommodates. Value is measured not by immediate ROI but by the enterprise’s ability to have the natural and societal resources it needs to remain a going concern over the long run.

To be clear, this doesn’t mean sacrificing your company at the hand of climate change. But we can’t sugarcoat the challenge: While there are

many instances where climate-friendly practices are also good business, there are also a set of actions that may be, frankly, costly—at least by conventional financial measures and over the time frames typically used in business decision-making. Climate is an issue that transcends company, industry, even society and country. It is a global challenge that requires the contributions of profit-seeking enterprises to help address. The costs of inaction—and loss of a societal license to operate—are likely to be orders of magnitude beyond any near-term outlays.

With these collective-action initiatives, followership is almost certainly more valuable than leadership.

Deep-seated business mindsets can divert even the best-intentioned leaders from acting collectively where it could do the most good. Often, companies want customers and employees to perceive them as “owning” a particular climate solution or having a differentiated position. But the result may be losing sight of the ultimate, existential objective. Questions of uniqueness, differentiation, and ownership are less relevant. These are collective-action initiatives in which followership is almost certainly more valuable than leadership.

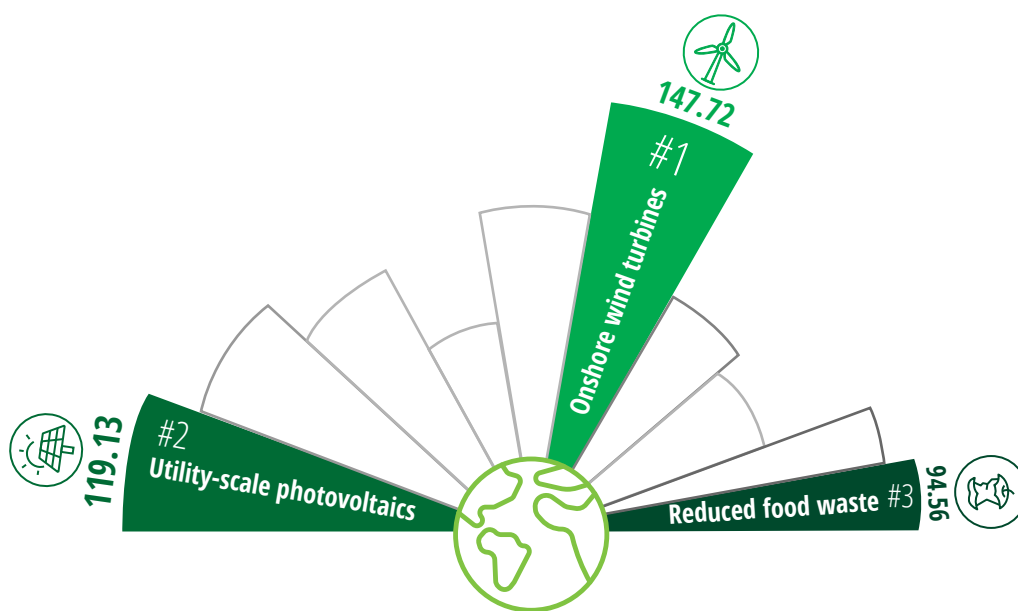
Once you’ve embraced this decision-making frame, precisely which effort or efforts to support can vary. But in keeping with the changed objective—reducing atmospheric carbon—the search should focus first on initiatives that promise the greatest potential impact. Some leading solutions include reducing food waste, expanding health and education services (particularly for women and girls), expanding plant-dense diets, reforestation/afforestation, changing agriculture practices, and

shifting electricity to renewable sources. (Figure 1 shows the nonprofit Project Drawdown’s top 10 solutions.³⁹) Many of these solutions are being actively pursued by established organizations that

bring together diverse sets of participants and experts in an effort to achieve broader impact. Find one that would benefit from your company’s contribution.

FIGURE 1

Leading solutions for reducing atmospheric GHG



Rank	Solution	Gigatons CO ₂ equivalent reduced/sequestered, 2020–50 (based on 1.5°C pathway)
1	Onshore wind turbines	147.72
2	Utility-scale photovoltaics	119.13
3	Reduced food waste	94.56
4	Plant-rich diets	91.72
5	Women’s education and health	85.42
6	Tropical forest restoration	85.14
7	Improved clean cookstoves	72.65
8	Distributed solar photovoltaics	68.64
9	Refrigerant management	57.75
10	Alternative refrigerants	50.53

Source: Project Drawdown, accessed September 2020.

GOVERNMENT'S ROLE

Even as business leaders adopt mindsets that go beyond traditional management approaches to tackle climate change, another approach to solving market failures—government—will likely continue playing a critical role. Public policy and regulation addressing climate change is evolving rapidly but unevenly across the globe, and the overall trajectory is toward more and more aggressive approaches to curtail GHG emissions and decarbonize the economy.⁴⁰

In the context of our framework, government action can accelerate, retard, obligate, or obviate particular types and levels of action. It shapes what is required of companies and industries, and what is possible across ecosystems. Tax credits and other incentives can influence consumer and business behavior, putting a broader range of activities into the category of things that “pay” for a company’s top or bottom line. Government-set standards can help to make coordinated, industry-level constraints unnecessary. Public-sector funding and financing can provide the necessary resources for ecosystem-level initiatives to get off the ground.

Suffusing climate thinking

No matter what industry a business is in or which customers it serves, averting catastrophic levels of planetary warming presents leaders with both an obligation and an opportunity. Many organizations have already set out on this journey, but for those who haven't, it often begins by developing a holistic understanding of the company's climate impact that should be mitigated, climate risks that should be adapted to, and the avenues in which the company might be able to create new value.⁴¹

Once an organization's climate profile is clear, leaders can launch a concerted effort to pinpoint the suite of options available to mitigate emissions, adapt to climate risks, and identify new business models. This is when it becomes important to think expansively across multiple levels of potential action—the individual company, with others in your industry, or with a diverse coalition of stakeholders—to home in on the most effective course(s) and to address the barriers and constraints that could prevent moving forward.

Such efforts should go beyond “defensive” moves meant to assuage stakeholders or guard against climate-related risks to the business, and often limited to what the company itself can do to adapt to or mitigate climate change. Nor should they stop at more proactive initiatives characteristic of a climate-aware organization, driven only by a corporate sustainability team or a single business function. Ultimately, enabling new value creation and the most impactful ecosystem-level action means aspiring to be a climate steward, infusing an awareness of and responsiveness to climate impacts into every key decision (figure 2). Ideally, that should include concrete, tangible metrics

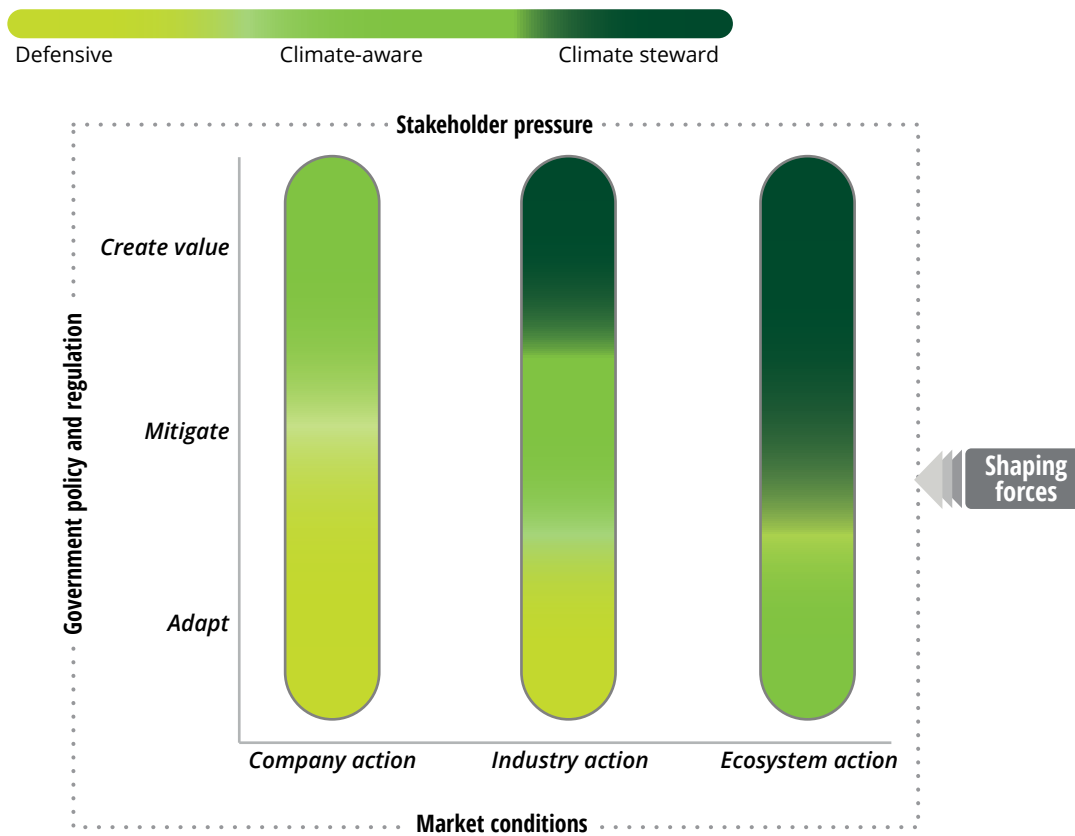
(such as an internal price on carbon) that factor into each cost-benefit analysis and to which leaders are held accountable.⁴²

Organizations should consider making big bets, even if they're not sure they're the best bets. As they learn, they can dial back or adjust.

For many, infusing climate considerations throughout the organization will require a far more sweeping transformation than currently envisioned, with implications for procurement, talent, the supply chain, product development, customer relationships, and more. To succeed, such an effort almost certainly must be championed by the board and led from the C-suite, with the CEO's visible and vocal support. For many, it will constitute a fundamental business model transformation. It necessitates new processes, yes, but also a shift in mindset throughout the workforce, its suppliers, and its customers. This is where many existing corporate sustainability initiatives can play an important role. While things such as distributing (branded) reusable water bottles are often derided as “greenwashing”—and often have only a tangential relationship to climate change—they can be valuable as a form of “sincere signaling” and a way to raise awareness of the organization's impact on the environment.

FIGURE 2

Businesses should aspire to be climate stewards



Source: Deloitte analysis.

If you're just getting started, all of this may seem overwhelming, at least when compared with a more modest approach. But aggressive action on all fronts simultaneously may be the best way to manage climate risk effectively—something easy to miss, because addressing climate change challenges conventional ways of managing risk. Typically, many start small—pilot efforts, exploring multiple options—and reassess and accelerate as they learn more. As an emissions mitigation strategy, that might have worked decades ago. But time is running out. The business community should advance aggressively on all fronts at once, since delay reduces the latitude for action in the

future. It seems necessary to make big bets, even if it's unclear that they're the best bets. As organizations learn, they can dial back or adjust.

Remember, the ultimate goals are clear: decarbonize the global economy by shifting to renewable power generation, electrifying fossil fuel-burning devices, and capturing and sequestering emissions. How a given company or industry can best support those goals will vary. But by thinking through each locus of action—and by infusing a climate-first mindset into every decision—companies can mature to become true stewards.

Conclusion: Embracing a stewardship ethos

Being stewards of the climate brings with it the responsibility to do something about it, at least as a matter of material self-interest, if not survival. Global warming will affect every industry and every country, albeit with differing intensities and at different times. The pressure from shareholders, financial markets, customers, regulators, and employees to translate words into tangible, substantive actions will only grow more acute. There will be new opportunities to capitalize on in the transition to a decarbonized economy, too. And given the stakes, the onus is on each of us to do what we can to mitigate the harm.

More and more we see signs that the business community is awakening to this responsibility, part of a broader and growing movement to reimagine business's role relative to the environment, society, and the broader economy. This emerging mindset—a *stewardship ethos*—envisions each of us not as owners, managers, or consumers but as

temporary caretakers of our organizations and our planet. It asks that whatever enterprise we shepherd positively contributes to—and does no unnecessary harm—the environment and society. It “presumes that resources are finite, and should be used conservatively and wisely with a view to long-term priorities and consequences of the ways in which resources are used.”⁴³

Grappling with the enormity, complexity, and direness of climate change can be a grim affair. But if there is a silver lining, it is this: We have the tools and technology we need to head off the worst outcomes, and a (narrow, closing) window to do so. Success is not principally about technical advances—it's about personal and systemic change. Collective action *can* realize rapid, effective outcomes on a planetary scale. We need only change the priorities, constraints, and objectives by which we evaluate actions. Very little is truly off limits, and it's worth questioning every assumption.



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Acknowledgments

The authors would like to thank **Sam Baker, Scott Corwin, Bill Eggers, Steve Goldbach, Meadow Shawnee Hackett, Kate Hardin, Eamonn Kelly, Marlene Motyka, Christine Robinson, Rod Sides, Brenna Sniderman, Kristen Sullivan,** and **Kyle Tanger** for providing valuable input.

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