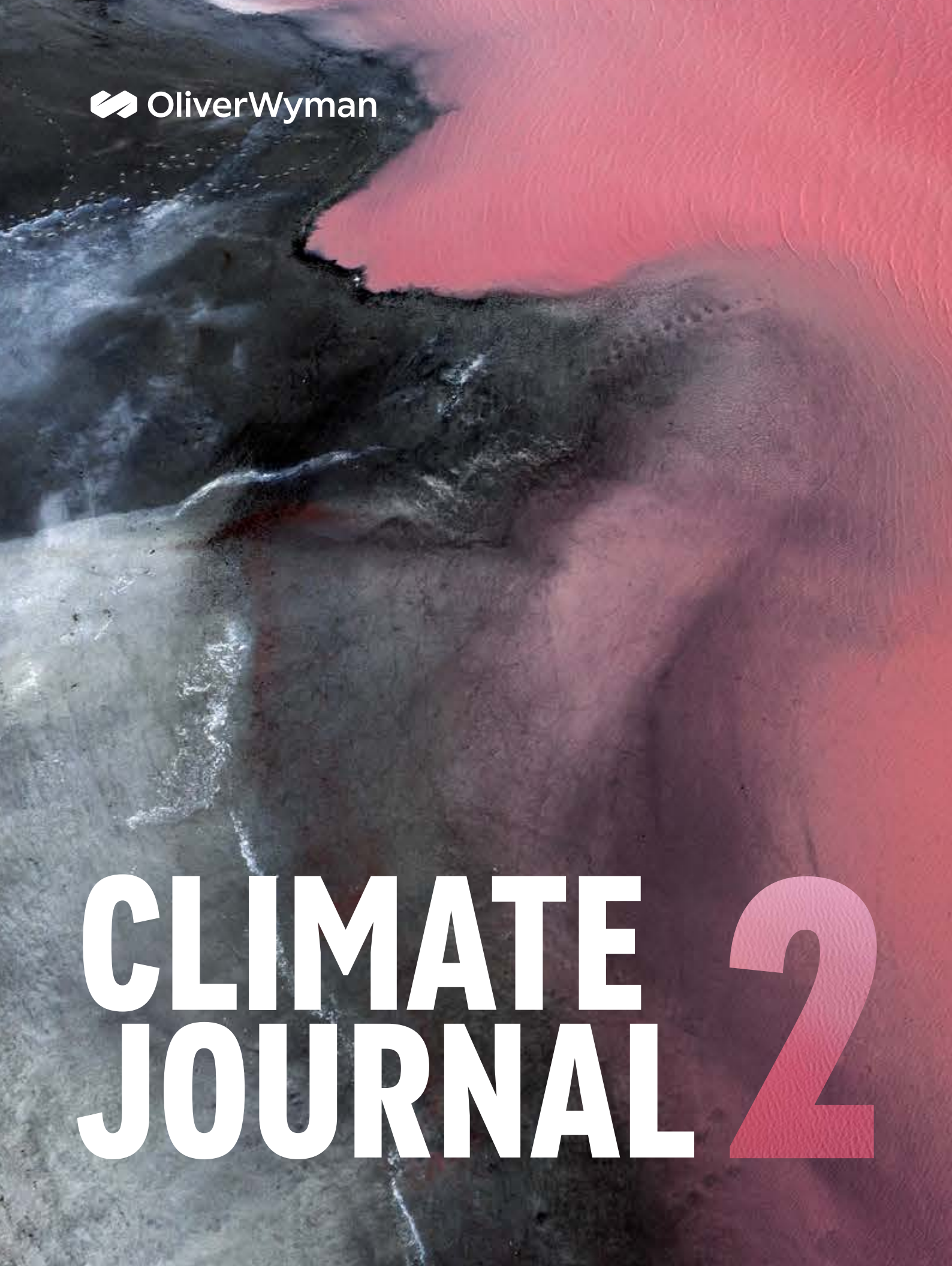
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With each passing year the climate crisis becomes more difficult to manage. Extreme weather battered every corner of the globe in 2022 — perhaps nowhere more brutally than Pakistan, where heavy rains after a crippling drought created a humanitarian catastrophe.

In the closing moments of the United Nations' COP27 summit in Egypt in November, attendees agreed to create a fund to help poorer countries like Pakistan rebuild from climatological disasters in the years ahead. The pact was a milestone not only because of what it says but also what it does: Nations at last are stepping up with concrete financial commitments in addition to the usual words acknowledging the need to act.

How this redounds to business is the quadrillion-dollar question. Recently, the incentive structure of climate action has sometimes featured too much stick and not enough carrot. In this next phase of the journey to "net zero," which we can call the Great Implementation, we need to be mindful of the treatment of businesses that are striving to achieve ambitious goals. Business leaders must feel welcomed and empowered to try new things, without fear. Some of these individual and collective actions will be constructive and some might not pan out. But this must be a time when lofty words of government officials are backed up by measurable deeds in the business community.

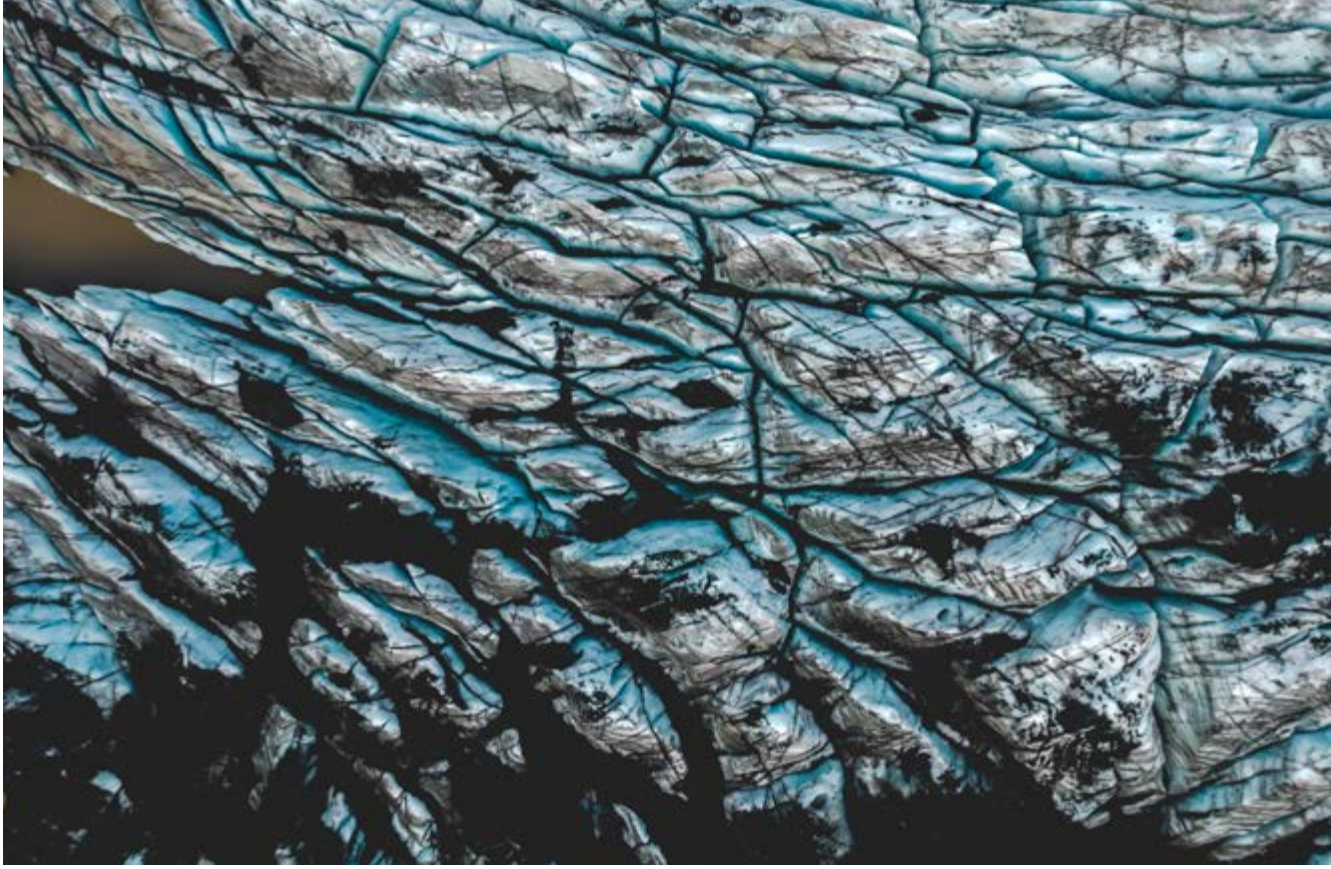
In that spirit we present the second annual Oliver Wyman Climate Journal. In the pages that follow you will find examples of steps being taken now to bring the world closer to the ambitious goals established for 2050 — gleaned from our client work, partnerships, and collaborations with some of the world's leading climate experts. We drill down into four areas of critical importance: leadership, finance, business systems, and customers.

These are the hard yards of the climate battle. We hope you will find useful insights, practical advice, and perhaps even some inspiration in the articles and infographics ahead.

Best wishes,

Nick Studer
CEO
Oliver Wyman Group

LEADERSHIP



TO TRANSITION TO NET ZERO, MODEL THE ALTERNATIVE

Simon Glynn
Simon Cooper

The very idea of transitioning a business to net-zero carbon emissions can be daunting. Revamping processes to reduce emissions will likely take years; switching to alternative energy sources across a globally distributed business is a complex endeavor. While some initiatives will save money through energy efficiency, others that need to be implemented will be costly — and risky, particularly if they involve bets on new technologies or business models. Without meaningful pressure from regulation or an external carbon price — and most businesses are experiencing neither today — a conventional financial case can be hard to make.

The cost of the transition shouldn't be compared with the status quo, but rather with the costs and risks of taking no action

It can be tempting for managers to try to delay their organization's transition to net zero until they have greater certainty — that is, until they use scenario analysis to evaluate the potential costs of standing still. When management teams evaluate their business against a future in which governments, competitors, customers, and investors all have transition plans, they realize that the true cost of transitioning to net-zero emissions should not be compared with the status quo. That won't exist in a few years, so the meaningful comparison is with the increased costs and risks the business will face if it takes *no* action. The new comparison forces corporate leadership to look beyond how climate will affect the business and focus on a broader agenda that includes the obligation to change and the opportunity to thrive in a low-carbon business environment.

THREE KEY SCENARIOS AND POTENTIAL SHIFTS

Companies often start out using scenario analysis to get ahead of risks, but the process can also uncover counterintuitive opportunities in a net-zero future. For example, one mining company involved in oil, natural gas, and thermal coal discovered that limiting the rise in global temperatures to 1.5 degrees Celsius, per the goals of the Paris Agreement, would create the best financial outcome for its business over the next 30 years. In this scenario, the reduced demand for its high-carbon commodities would be outweighed by booming demand for the nickel and copper it mines, essential elements for the transition to clean energy used in batteries and cables. The projected declines in the most threatened sectors, even in the most ambitious transition scenarios, are more than outweighed by the large upside for the commodities feeding the transition.

For banks, scenario modeling can highlight the greater financial value *and* climate impact of engaging with high-carbon clients and helping to finance their transitions. This is an alternative to cutting ties with them for the sake of having a "clean" balance sheet, but in essence merely transferring the problem to someone else.

For banks, there's greater financial value and climate impact in helping high-carbon clients finance transitions than cutting ties

But how can managers evaluate the true cost of delaying a transition to net zero when there are so many huge unknowns? Focusing on three key scenarios — the worst case, the best case, and a middle ground between the two — can generate practical insights into the wide range of outcomes possible. A worst-case scenario assumes that there are no changes to our current path and global warming significantly surpasses a 1.5 degrees Celsius increase, triggering a climate disaster. The best case looks at what happens if, in line with the Paris Agreement, governments and companies work together to reduce emissions enough by 2030 for life to remain relatively normal over the long term. And the middle-ground scenario models delayed policy action, with business as usual until 2030, at which point countries and companies will be forced to dramatically slash their emissions to head off a climate catastrophe.

Within each scenario, managers must consider not only the potential impact of climate risks on their businesses but also the costs involved in transitioning to an operating model with lower carbon dioxide (CO_2) emissions. That includes evaluating the potential effect of shifts on several fronts that are intermingled: policy changes, competitors' strategies, and customer pull.

POLICY CHANGES

Few companies are redesigning their businesses to take carbon pricing explicitly into account, primarily because only the European Union and a few other economies have carbon taxes. Still, an increasing number of companies are considering implementing internal shadow carbon prices to make their emissions' impacts on their underlying economics more transparent. Currently, these taxes are limited to energy-intensive, high-emissions industries, and the pricing of carbon is too low to be an effective deterrent. But the cost of offsetting corporate carbon emissions could surge tenfold over the next decade, to between $20 and $50 per metric ton of CO_2 or even higher, as growing numbers of businesses adopt net-zero targets, according to some estimates.

Stress-testing how a business will stand up in an alternative future in which carbon prices soar or carbon emissions become socially or legally unacceptable can clarify the potential costs of inaction. One way to do this is by incorporating shadow carbon costs alongside financial results to evaluate investment decisions. Examining a target company's exposure to potential carbon-pricing changes enables a potential investor to better evaluate the future profitability of projects and strategies. It also helps to promote a culture of constant carbon footprint reduction, even in the absence of an adequate regulatory framework.

10x: the expected surge in the cost of offsetting corporate carbon emissions over this decade

Scenario modeling for how climate change and decarbonization policy changes will affect competitors' strategies is critical. Government policies are increasingly creating life-and-death issues for many companies that fail to prepare for a net-zero world. The United States has set a target of half of vehicles sold in the country being electric by 2030, and the United Kingdom has banned the sale of new gas- and diesel-powered cars after 2030. Further regulatory actions in other high-carbon sectors — to restrict either production such as phasing out coal plants or demand such as phasing out gas boilers — is likely if targets for net zero are to be met.

RIVAL STRATEGIES

Companies that are acting on climate today are driven less by regulatory pressure itself, which is not yet strong enough to change business models than by the anticipation of that pressure and the need to be competitively positioned before, it happens. Auto companies that have invested in developing electric vehicles (EVs) have a significant advantage over rivals as sales of EVs start to take off. Utilities with more-diversified portfolios that include wind and solar power are positioned to grow, while those that stick to generating power from fossil fuels will have to adapt or risk extinction.

Competitor strategies can be a threat, driving a fear of being left behind. They can also be opportunities to create the solidarity among companies that's required in order to take on the costs and risk involved in the net-zero transition before being forced to do so. Future scenarios look more attractive when others in the sector have taken on the same burdens. Leaders at one company we interviewed described a "dark six months" when they made climate commitments ahead of their peers but noted the comfort that came when their big competitors followed suit.

Today, despite widespread interest in and concern about climate change, there is little commercial pull from customers. Framed in today's market, a business case based on customer demand looks pretty speculative and may appear less attractive than the status quo. But comparing against alternative futures, not against what's happening today, paints a different picture. The reasons to believe that customer pull is likely to grow are compelling.

RISING INTEREST IN DECARBONIZATION

Signs of rising interest in commercial solutions for decarbonization are already becoming apparent, with corporate customers embarking on their own net-zero transitions. Customer interest is trickling along the value chain: Automakers are looking to buy net-zero steel for their vehicles as attention shifts to the climate credentials of materials once tailpipe emissions are eliminated by the move to EVs. In turn, steelmakers are looking for iron ores that produce fewer emissions in the blast furnace — and for more steel scrap.

Customer interest is also spreading from corporate entities to small businesses through the procurement requirements that some organizations are now implementing in their supply chains. And companies will eventually learn how to translate consumer interest in climate change into commercial value.

The incentive to crack that code is high. Already, the degree to which people feel connected to a brand is highly correlated with the effort they think it is making on climate change, even if they aren't fully aware of everything the company is doing. We found just one brand out of 100 for which most customers said they knew what the brand was doing. But companies should not bet on consumers' lack of awareness persisting in all their future scenarios.

Managers have successfully identified new options by modeling alternative futures using scenario planning to look beyond their current situations and to consider uncertain and turbulent events. As the world uses more of its remaining carbon budget, carbon budget, managers can better evaluate the risks, opportunities, and likely outcomes of shifting toward net zero by evaluating different climate-related scenarios involving shifts of policy, competitors' strategies, and customer preferences. Scenario analysis can help the world halve carbon emissions by 2030 to meet the goals of the Paris Agreement and eventually achieve a net-zero future.

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A version of this commentary appeared first in MIT's Sloan Management Review

BOARDS SHOULD LOOK AT CLIMATE AS A STRATEGY QUESTION

Simon Glynn

TALENT, DIVERSITY, CLIMATE, CYBERSECURITY. WHICH IS THE ODD ONE OUT?

It is tempting, and tidy, to think of climate change as one of the environmental, social, and governance (ESG)-related risk categories for a board to monitor. And maybe not even one of the biggest or most urgent. The "growing impact of climate change" rated only 12th out of 18 in the US National Association of Corporate Directors' 2022 Public Company Board Practices and Oversight Survey among trends "having the greatest effect on your company over the next 12 months." In the same survey, among boards that say they have started to discuss climate change more frequently, half say they have done so in response to investor expectations, disclosure requirements, or compliance. Only a third say it is for the long-term growth prospects of the business.

The narrowness of this perspective shows up in companies' climate actions. In preparation for Climate Week NYC this year, Oliver Wyman and the international nonprofit Climate Group interviewed 30 corporate climate professionals around the world, and surveyed more than 100, to learn what is holding them back from greater progress and how they are breaking through the barriers. The stories we heard range in mood from exhilaration to frustration, and the pattern is clear.

In the stories of exhilaration, climate professionals and their companies have a clear strategy for the role they want to play in the climate transition. Their metrics and targets are a means to pursue the strategy — not an end in themselves.

39% **of corporate climate practitioners say the most pressure comes from investors**

In the stories of frustration, the task of reporting often overwhelms the task of transition. In theory, the metrics should provide the impetus for change. In practice, without an agreed strategy, the changes needed can be too fundamental for this incentive mechanism to work, shifting the organization's focus to near-term, incremental efforts that won't achieve what is required.

The importance of strategy may seem obvious but can be missed in the way organizations respond to pressure from investors. Our survey of climate practitioners aligns with the NACD survey of public company boards described above: Among practitioners, 39% said the most pressure came from investors, compared with 24% saying business customers, 14% employees, 9% consumers, and 8% policymakers. This pressure, and where it is dealt with organizationally, has sometimes favored a focus on emissions metrics and disclosures ahead over a strategy to tackle the transition.

Boards can help by looking beneath the metrics and disclosures through three lenses:

RISK A critical lens, risk goes beyond compliance with the still-evolving and hard-to-pin-down expectations of the ESG raters and analysts. The point with climate change is that the status quo is not an available option, so evaluation of risk requires comparison between alternative futures, not the usual business comparison between a possible future and today. The meaningful choice is between acting later and acting now. Siemens, for example, compares its possible climate actions against the "cost of doing nothing" and projects inaction into a possible future outcome.

OPPORTUNITY Forty percent of the climate practitioners we surveyed see the level of change their organization will have to undergo as transformative. As value chains are disrupted and redesigned, value will migrate, leaving some business models stranded but creating huge commercial opportunities for those that position themselves well.

Previously commoditized sectors are becoming less so. Companies are coming to value levels of performance from new strong, resilient, and lightweight materials, such as steels and plastics, and from materials with low embodied carbon emissions. They are looking at new, specialist applications (cabling to floating wind farms) or whole industries (carbon capture and vertical farming) with their own supply chains. All this has just been made more tangible by the level of spending on new forms of energy and other climate technologies in the Biden Administration's Inflation Reduction Act. Quizzing a company's executive team on its climate disclosures may be missing the bigger picture — and may focus the team's attention on the wrong place.

IMPACT Climate is the odd one out in another critical respect. In our survey of climate practitioners, just 29% rated climate change as either an existential threat or a highly concerning challenge to their business today — but this number rises to 71% when asked about 2030, and 79% for 2040. Succeeding in climate action matters to all of us. Companies can do an enormous amount to drive the climate transition. But they are often limited by managers' fear of failure, given that much is new and requires experimentation, or by unproven business cases that lack data or results that can be verified in advance. The strongest stories of corporate action involve bravery.

Fortunately, the stance of investors on climate is increasingly open and forgiving, provided that the intent is sound and the narrative is clear. The counterpart of investor pressure on climate is investor openness and a collective and enlightened self-interest in climate impact. Boards have a critical role in channeling this openness and encouragement — and not just the pressure — to the front line.

Simon Glynn *is a partner and co-lead of Oliver Wyman's Climate and Sustainability platform.*

A version of this commentary appeared first in the National Association of Corporate Directors' Board Talk.

CLIMATE ACTION DEMANDS STRATEGY NOT JUST MEASUREMENT

Simon Glynn
Mike Peirce

For Climate Week NYC this year, Oliver Wyman and international non-profit the Climate Group spoke with dozens of corporate climate professionals worldwide to learn about the obstacles holding them back from greater progress. How were they able at times to break through the barriers? The stories we heard ranged in mood from exhilaration to frustration, and the pattern was clear.

In the stories of exhilaration, climate professionals and their companies have clear strategies for the role they want to play in the climate transition. They see Scope 3 not as a measurement challenge, but as an opportunity to have an impact beyond themselves. Of course, they have metrics and targets, but these are means to pursuing the strategy — not ends in themselves. They measure progress toward strategic goals, and not only in terms of emissions.

In the stories of frustration, the task of reporting often overwhelms the task of transition. In theory, the metrics should provide the impetus for change. In practice, without an agreed-upon strategy, the changes needed can be too fundamental for this incentive mechanism to work and shift the organization's focus to near-term, incremental efforts that won't achieve what is required.

40% **of the climate professionals we surveyed expect climate change to be transformative for their business**

Leading with how the company will contribute to the transition, rather than with emissions outcomes, is essential for orchestrating the big shifts required and directing the actions needed. This is no different from the business's commercial agenda. You can achieve incremental growth by setting individual departments financial targets and budgets. But true business transformations require strategic direction — and 40% of the 100 climate professionals we surveyed said they thought the climate transition would be transformative for their business. In climate, we sometimes expect incremental management tools to yield transformational outcomes.

Conventionally, you might set a performance indicator for the outcome you want to achieve and let the business find the actions to achieve it. But in climate, basing results on emissions reduction alone can turn out to be a recipe for perverse incentives.

For example, for a telecom or tech company, the biggest impact is often from the emissions that its customers can avoid by using the company's services, for instance through using Zoom rather than traveling. But these avoided emissions are not attributed to the company — even within its Scope 3. One tech company found that the growth of these services actually stopped it from paying out the climate incentives in its senior leadership's compensation plan, because its own measured emissions had increased — even though the climate impact of this growth was beneficial.

Ingka, the largest IKEA retailer, addresses this problem by reversing the process and aligning its metrics with the impact of its corporate actions. The insight here is that companies should focus on actions first rather than emissions metrics, which are likely to be off the mark initially anyway. For similar reasons, renewable energy provider Ørsted introduced management incentives on climate only after it had made the cultural shift that shaped what the business was trying to do thus allowing the incentives to reinforce the strategic direction.

In climate, basing results on emissions reduction alone can turn out to be a recipe for perverse incentives

Now is the time to resolve this tension, because now is the time when many organizations are making a shift. Instead of the climate agenda being the responsibility of specialist sustainability teams, it is being embedded throughout organizations as part of business as usual. This is a smart move to unite climate and business agendas — a common theme in the companies we talked to — and achieve change at scale. But it creates an urgent need to make sure that what is embedded in the organization is a strong, purposeful drive that can deliver transformation, not just a culture of technocratic compliance. Such a drive is not only suited to the scale of the task but also can be expected to energize the business. A narrative of relentless reduction and squeeze will inspire people across the organization less than a positive, inspirational vision for their business.

The importance of strategy may seem obvious. But in many organizations, climate action has been a response to pressure from investors. This pressure, and where it is dealt with organizationally, has sometimes favored a focus on emissions metrics and disclosure ahead of a strategy to tackle the transition.

The 2020s are supposed to be our "decade of delivery", when we need to halve global emissions to stay on track to limit the Earth's temperature rise to 1.5 degrees Celsius. We can't afford for the "decade of delivery" to be merely the "decade of disclosure".

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Mike Peirce *is the executive director of systems change at the Climate Group.*

A version of this article appeared first in the World Economic Forum Agenda.

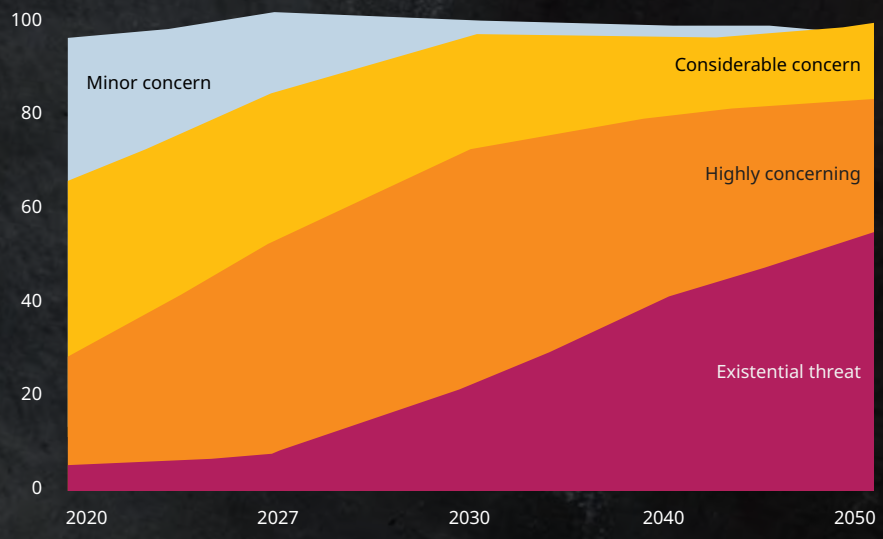
GETTING GOING

By Arun Mishra

TOO MANY EXECUTIVES CONSIDER CLIMATE CHANGE A MINOR CONCERN

The news on climate change isn't good. The World Meteorological Organization warned that limiting the Earth's temperature rise to 1.5 degrees Celsius is "barely within reach," with the past eight years on track to be the warmest on record. This has been fuelled by ever-rising greenhouse gas concentrations despite pledges made in 2015 in Paris by almost 200 nations to cut emissions.

Yet, despite this bleak prognosis for the planet, corporate executives are still having difficulty appreciating the severity of the problem. This insight came out of research undertaken by Oliver Wyman and the Climate Group for our joint report, *Getting Going*. In it, we identified the barriers to corporate climate action. One of the biggest may be executives downplaying the problem: Out of 130 climate professionals surveyed, around one-third currently consider climate change a minor concern; less than 10% consider it an existential threat. They expect to become more concerned over the next 30 years, but if companies don't act now, it may become impossible to reverse course.



Source: Oliver Wyman analysis

Read Oliver Wyman's *Getting Going* report to learn more.

Arun Mishra *is an engagement manager in Oliver Wyman's Health and Life Sciences practice.*

FINANCE

FROM CLIMATE RISK TO OPPORTUNITY

Robert Bailey
Anthony Bice
Alex Wittenberg
Ashish Bhargava
Roland Lasius

In spring 2022, the climate regulatory landscape changed dramatically for any insurer, domestic or foreign, subject to regulation in the United States. On the same day in March, the Securities and Exchange Commission (SEC) and the National Association of Insurance Commissioners (NAIC) both published new proposals with far-reaching consequences for how insurers will need to assess, manage, and disclose climate-related risks.

But while this double dose of climate regulation may feel like an unwelcome burden for many insurers, it is also an opportunity to develop the toolkit they will need to profitably navigate the transition to a low-carbon, climate-resilient future.

A COMMON STANDARD

Time is short. The NAIC's climate reporting standard called on 80% of the US insurance market to provide reports aligned with the guidance of the Task Force on Climate-Related Financial Disclosures (TCFD) by November 2022. The SEC's proposal, as outlined, would require SEC registrants to disclose climate risks and details of how these are managed, alongside details of their forecast greenhouse gas (GHG) emissions in the 2023 fiscal year.

80% **of the US insurance market must align with the Task Force on Climate-Related Financial Disclosures by November 2022**

The TCFD has become the *de facto* global standard for climate risk disclosure, so it is good news that both the NAIC and SEC used it as the basis for their proposals. TCFD provides guidance on how companies should disclose climate-related risks and opportunities, how these are incorporated into risk management, risk governance, and strategy, and the metrics and targets used. This common basis means insurers can realize significant synergies between NAIC and SEC compliance. It also provides a head start for companies that have already begun to make TCFD disclosures.

But even for the early adopters, these requirements represent a step change in effort, not least because a regulatory requirement demands a particular standard of particular rigor. So, whether an insurer is at the beginning of its journey or some way down the TCFD road, there is still a lot to do.

FULL-SPECTRUM RISK

Physical risks are already crystallizing for wildfire and flood and will worsen as climate change continues. Insurers need to understand how these risks are likely to evolve under different climate change scenarios to identify where they have risks that may become unattractive or even uninsurable in the future. Historically calibrated models may not be fit for this purpose.

Insurers also face increasing claims from climate-related litigation against their clients. The number of climate litigation cases is rising and spreading from energy to other sectors, including mining, financial services, and food and agriculture.

Cases are also becoming more diverse in nature, ranging from claims for climate damage to allegations of securities fraud, breach of duty of care, and greenwashing. Targets include companies and individuals.

The full spectrum of climate risks that insurers face necessitates a risk assessment that extends well beyond the next 12 months

The full spectrum of climate risks that insurers face necessitates an approach to risk assessment that is both comprehensive and practicable and which applies a strategic horizon that extends well beyond the next 12 months. As a first step, insurers can use a heatmapping methodology to evaluate climate risk exposures across their portfolio and identify key risk concentrations. However, ultimately, they will need a modelling infrastructure that allows them to stress test their portfolios against different scenarios and understand the implications by sector, geography, and product line.

EMISSIONS IN SCOPE

The SEC proposals also require the disclosure of companies' GHG emissions according to the Greenhouse Gas Protocol, which categorizes emissions into Scope 1 (from owned assets), Scope 2 (from purchased power, heat, and cooling), and Scope 3 (relating to a company's value chain). For insurers, Scope 3 emissions will invariably pose the biggest challenges. Specifically, Category 15 in the SEC proposals requires insurers to estimate the emissions attributable to their investment activities. Accepted methodologies for calculating investment emissions on both an absolute and an intensity basis are available, but they require non-trivial levels of investment in time, people, and data if they are to be adapted and applied appropriately.

Category 15 was written with banks and investors in mind and is unhelpfully silent on arguably the most important part of the insurance value chain: underwriting. Consequently, insurers will need to decide whether and how to disclose emissions attributable to their underwriting activities in the absence of clear guidance.

Some members of the insurance industry are working through the Partnership on Carbon Accounting in Financials (PCAF) to develop a methodology to attribute client emissions to an underwriting portfolio. In the meantime, more-advanced carriers are piloting emissions intensity measures. Understanding underwriting emissions is a key step towards managing transition risk.

FROM RISK TO OPPORTUNITY

If all the above sounds like a lot of work, it is! But insurers can make it worthwhile if they approach these incoming regulations not as a "tick box" disclosure exercise but as an investment in strategic risk management. Armed with the tools outlined above, insurers can begin to understand how different climate change and transition scenarios will play out for their businesses, develop strategies to navigate the fast-evolving risk landscape, and seize the commercial opportunities associated with the transition. Opportunistic firms will recognize this as a true commercial opportunity to create targeted products and services that address climate change and the energy transition.

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This article first appeared on the Oliver Wyman's expertise page.

CHINA'S CLIMATE CHALLENGE

Hang Qian
Kai Keller
Marie Penelope Nezurugo

Since 2006, China has been the world's largest emitter of carbon dioxide (CO_2). The 11 billion metric tons of CO_2 the nation released in 2020 accounted for about 30% of global emissions that year.

China is also an active participant in the global discussions on how to curb climate change. The country's latest five-year plan, covering 2021 through 2025, placed decarbonization and the "construction of a green development engine" at the center of policymaking.

To achieve its ambitious carbon peak and carbon neutrality goals, China needs to close an annual funding gap of about RMB1.1 trillion ($170 billion). It can only do so if it manages to develop far-more-sophisticated green financing schemes.

In China, bank lending is the backbone of corporate finance. Because of their risk-averse nature, banks tend to target large state-owned and private enterprises, meaning small and medium enterprises (SMEs) miss out on funding — despite accounting for 65% of the country's CO_2 emissions. Public funding must play a more significant role in China to close the substantial gap in net-zero financing.

FOUR CHALLENGES FOR NET ZERO

To generate the funding required for such a seismic transition away from fossil fuels, industry leaders and policymakers must address four major challenges:

1. Data granularity and quality

Tracking and reporting emissions is fundamental to China's net-zero transition. China has established national-level Carbon Emission Accounts and Datasets (CEADs). However, further efforts are required to be able to collect and make available all the granular, standardized data that is necessary. For example, regarding emission measurements, further clarity is needed if China's data are to match the requirements of international standards such as the Partnership for Carbon Accounting Financials and the Paris Agreement Capital Transition Assessment.

2. Funding mismatches

Funding support for net-zero transition efforts has thus far been primarily offered through bank loans, characterized by shorter tenors and rigid collateral requirements and pricing mechanisms. To support net-zero targets, the market needs to respond with longer-dated, blended equity and debt structures. Providing adequate financial support for the net-zero transition of SMEs will also be key, given their significant emissions and role in the economy.

$170 BILLION: how much investment China still needs to reach its decarbonization goals

3. Lack of clear policy support

Systemic coordination will be needed from government and industry to develop standards that are aligned across regions, business types, and sizes. For example, production limits for blast furnace steel vary widely, with large-scale state-owned enterprises in East China tending to have more flexibility than SMEs in the country's northeast. Currently, many steelmakers are reluctant to invest in mini mills because of concerns about possible future caps on production.

4. Lack of cross supply chain collaboration

The indirect emissions in a company's value chain, known as Scope 3 emissions, can be significant in certain industries. Reducing these emissions requires collaboration along a company's value chain. Scope 2 emissions arising from purchasing electricity, heat, and steam will also need to be addressed through partnerships with power generators. Most companies, however, are focusing mainly on cutting their Scope 1 emissions, those generated directly by sources controlled or owned by the organization.

WHAT IS NEEDED?

Due to the scale of change needed, China's major carbon-emitting sectors won't be able to complete their transition journeys themselves. They need support from the government and financing providers. They also need active collaboration from firms in their value chain.

Policy support for net zero: Top-down support led by the Chinese government is crucial given its outsized role vis-a-vis Western economic models. The support can be both financial and non-financial: Tax incentives, such as European carbon taxes, are particularly powerful tools for accelerating the transition.

Underpinning these efforts should be an ongoing effort to develop and enforce consistent and unified rules and regulations in different regions and for different sizes of companies.

Financing innovation: Financial institutions need to introduce innovative new products and services tailored to the needs of Chinese corporations. Innovation will require new term structures, collateral requirements, instrument archetypes, and portfolio strategies to ease the shortage of green equity financing and long-term green loans in China.

Ecosystem collaboration: Industry players need to connect with their value chain to establish holistic emissions goals, especially for to Scope 3 emissions. This will require anchors that set standards and enforce them throughout their supply chains. Beyond standard-setting, there is also a need for more-tailored incentives and verification mechanics.

THE NEW CHAMPIONS DIALOGUE

While the road ahead is long, China could position itself to drive the next green revolution globally, using the country's scale and position in the global economy and supply chains to its advantage. This will require a more innovative approach to financing, policy support, and industry collaboration.

The Worlds Economic Forum continues to play a critical role in providing a platform for public-private partnership through its Financing the Transition to a Net Zero Future. The project engages a multistakeholder community of financiers, industry stakeholders, philanthropists, and public institutions to identify policy interventions necessary to mobilize the private capital needed to achieve the net-zero targets.

During the 2022 New Champions Dialogue, technology and innovation were identified as major building blocks to achieve the deep cuts required in China's carbon emissions. The financial services community plays a crucial role in bringing these technologies to life, and the participation of committed industry and public sector leaders means this dialogue could be pivotal.

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The commentary first appeared in the World Economic Forum Agenda.

NET-ZERO TRANSITION PLANS ARE KEY TO PROGRESS FOR REGULATORS

Lisa Quest
Elizabeth Holyer

As COP27 came and went, one message rang abundantly clear: Global investment in decarbonization is falling far short of what is needed to get the world on track to limit warming to 1.5 degrees Celsius. Transition planning could play a big part in meeting climate objectives.

Although we need by 2030 to be spending four times our fossil fuel investment on expanding the low-carbon energy supply, today we are barely matching it. Another study puts the investment gap between now and 2050 at more than $270 trillion in energy, transport, buildings, and other industrial sectors. We have a long way to go.

So it was a welcome jolt when the United Nations' High-Level Expert Group on Net-Zero Emissions Commitments for Non-State Entities (HLEG) admonished global financial institutions to "dramatically" scale-up their financial commitments to the climate — a message echoed by the UN Secretary-General. The group called on regulatorsto introduce new rules and standards around net-zero pledges.

Many standard setters and regulators anticipated this call and have in the past couple of weeks been issuing a range of new guidelines on net-zero claims and key considerations around carbon markets. The problem: We can't keep waiting for the next COP to mobilize around the planet's existential threat.

While COP27 was billed as the implementation COP, there remains a significant implementation gap

For the financial sector to scale up, financial supervisors and regulators across jurisdictions must step up and coalesce around the immediate actions that are needed now. Probably the most helpful focus for the regulatory community would be to become champions of transition planning.

Why transition planning? Because when it comes to emissions, many countries and businesses are making promises that they haven't figured out how to deliver on. Pledges do not equate to action, and while COP27 was billed as the implementation COP, there remains a significant implementation gap. The missing element is transition planning — a set of goals, actions, and accountability mechanisms that align corporations' strategies and missions with a pathway to net zero. These plans provide the roadmap to lower emissions, and ultimately, net zero.

BE AMBITIOUS

How financial regulators and supervisors embrace transition planning may vary by jurisdiction, at least initially. Regardless of the approach taken, the regulatory community must insist that standards around transition planning are ambitious, coherent, and interoperable across jurisdictions. Ideally, regulators will embrace existing voluntary initiatives that have picked up steam in the private sector, such as those promoted by the Glasgow Financial Alliance for Net Zero, the Task Force on Climate-Related Financial Disclosures, the Task Force on Nature-Related Financial Disclosures — and the climate-related disclosure standards being drafted by the International Sustainability Standards Board (ISSB).

Regardless of how transition planning is formally embraced within the financial system, many will benefit. Take investors as an example. Transition planning endorsed by regulators will help investors to more effectively allocate capital to enterprises with viable plans for low-carbon operations. They will have more confidence that their investmenta are not being greenwashed.

The regulatory community must insist that standards around transition planning are ambitious, coherent, and interoperable across jurisdictions

Financial regulators and supervisors will also rest easier, as transition plans can clearly show if and how climate risk is being managed. Early engagement on the data provided by transition plans should help supervisors to shape best-in-class climate-risk management more effectively and proactively.

At a micro-prudential level, disclosures of financial institution transition plans enable a clear view as to which firms are left vulnerable. At a macro-prudential level, widespread disclosures can provide a window into potential systemic risk. The good news is that jurisdictions are beginning to embrace transition planning. Last week, the United Kingdom's Transition Plan Taskforce launched its definition of a "gold standard" transition plan, and the UK's Bank of England and Financial Conduct Authority have embraced transition plans as a way of enabling an orderly transition to net zero and managing climate risk.

Momentum is also building around tools and utilities that can help track progress against net-zero commitments and transition plans. For instance, the Climate Data Steering Committee outlined the foundational data upon which the planned Net Zero Data Public Utility (NZDPU) should be based, and a beta version of the NZDPU is expected to be launched in the third quarter of 2023. The CDP also agreed to apply the ISSB's climate disclosure standard in its work, ensuring that the largest environmental disclosure platform is aligned with global guidelines.

AN URGENT GAP

Yet in most jurisdictions, the need for transition planning is too often overlooked. This is a missed opportunity and a gap that is urgent to fill. Without clear expectations of what these plans should include, as well as careful considerations around, coordination and interoperability of requirements, the data from transition plans risk being disparate across firms and sectors — preventing them from painting a full picture of progress. A lack of clarity will also prevent supervisors and regulators from effectively managing climate risks in line with their mandates.

If we are to limit temperature increases in accordance with the Paris Agreement and mobilize the financial system to reach net zero, then supervisors and regulators need to step up and explore how they can enable an orderly transition that supports financial stability and avoids climate catastrophe. Transition plans — ideally made mandatory and disclosed at scale — may end up being the light that enables them to proceed with confidence.

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This article first appeared in Global Risk Regulator

FINANCIAL SERVICES LEADING THE WAY ON NET ZERO

By Linda Liu

EUROPEAN FINANCIAL INSTITUTIONS ARE LEADING THE WORLD IN ALIGNING THEIR PORTFOLIOS TO THE PARIS AGREEMENT

In 2021, some 61% of European financial institutions reported taking action to align their portfolios with the Paris Agreement, compared to 40% in North America and 49% for the rest of the world.

Financial institutions' own performances in meeting their targets will be based on the emissions associated with their portfolios and their alignments with the 1.5 degrees Celsius target on warming. It is essential that they disclose financed emissions fully, and we have already seen a notable uptick in reporting.

Going forward, financial institutions will be keen to partner with companies to partner with and support companies through the transition and not simply to divest. However, as institutions consider new investments and financing, they will be more focused both on companies' current emissions and the credibility and rigor of transition plans to drive them down.

Exhibit 1: % of financial institutions that are taking actions to align their portfolios to a well-below-2°C world, 2020-2021

Source: Oliver Wyman analysis, CDP data

Linda Liu *is an associate in Oliver Wyman's Finance and Risk practice.*

Decarbonizing Steel
Nils Naujok, Holger Stamm, Markus Knopf

Saf Tax Credit Not Enough To Reduce Airline Emissions
Robbie Bourke, David Kaplan

How To Embed Sustainability Into Corporate Procurement
Xavier Nouguès

Companies Need To Cooperate To Conquer Scope 3 Emissions
Simon Cooper

BUSINESS SYSTEMS

DECARBONIZING STEEL

Nils Naujok
Holger Stamm
Markus Knopf

When automaker BMW invested in US clean steel startup Boston Metal, and Mercedes-Benz bought a stake in Swedish startup H2 Green Steel, the investments represented more than the greening of an industrial portfolio. They marked the first steps in the decarbonization of steel — a process that will require the reinvention of not only how steel is made but also a reimagining of the entire steel supply chain.

Because steel is a basic building block of the global economy, it factors into the production and operations of most industries, from auto production to aviation to construction to household appliances. That means it contributes to all of their carbon footprints. Although steel is one of the most recycled materials on the planet, its initial production and energy demands make it the largest industrial consumer of coal and one of the most carbon-intensive industries on Earth. The sector accounts for 2.6 gigatons of carbon dioxide emissions annually, making up roughly 10% of the global total.

50% **the drop in demand for metallurgical coal by 2050**

According to the International Energy Association, "to meet global energy and climate goals, emissions from the steel industry must fall by at least 50% by 2050, with continuing declines towards zero emissions thereafter." To accomplish this, producers need a new energy source for production as well as new raw materials, requirements that will upend a large portion of the mining industry in particular.

LOWERING EMISSIONS IN THE IMMEDIATE FUTURE

The steel industry will have no choice, as its largest consumers — companies such as Mercedes and BMW — increasingly demand "green steel" in their quest to meet their own climate targets. But steel producers won't have to do it alone, as they begin to work together with their supply chains, both upstream and downstream.

Any solution will require a spectrum of technology changes and individual efforts to increase efficiencies that move the industry forward. In the immediate future, steel producers can lower emissions by 10% to 30% by applying the best available technologies and higher quality iron ores, and optimizing the fuel mix in blast furnace (BF) and blast oxygen furnace (BOF) operations. Efforts like these are particularly important in places such as China and India, where there is preponderance of older facilities, and newer techniques and feedstocks can have a material impact on the entire industry's emissions.

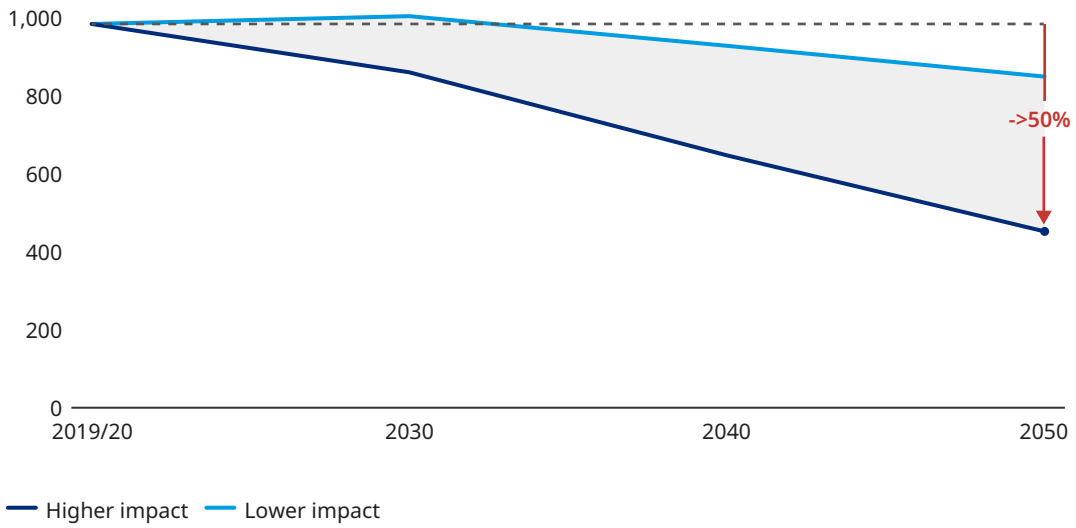
BIGGER INVESTMENTS ARE NEEDED FOR SUSTAINABLE CHANGE

But realizing larger emissions reductions will require significant investment in new technology: This might include hydrogen-based reduction to produce DRI/HBI with low or no emissions, carbon capture, storage, and use technologies, or even newer alternatives, such as molten electrolysis. Also pivotal to progress will be an increased emphasis on the circular economy and recycling scrap steel to replace primary steel production.

Oliver Wyman modeled a range of global and key regional steel-producing scenarios, assuming ambitious combinations of technologies and emission-abatement measures. We also assumed changing market shares of BF-BOF and Electric Arc Furnace (EAF) based production. While exact timelines are hard to predict, certain trends emerged for the industry.

Ultimately, this overhaul of steel production will lead to substantially reduced intake of metallurgical coal intake over time. By 2050, demand will drop to 50% of average levels in 2019 and 2020. While the decline will depend on how fast the largest customers deploy their efficiency measures, we think significant decreases will be possible in this decade.

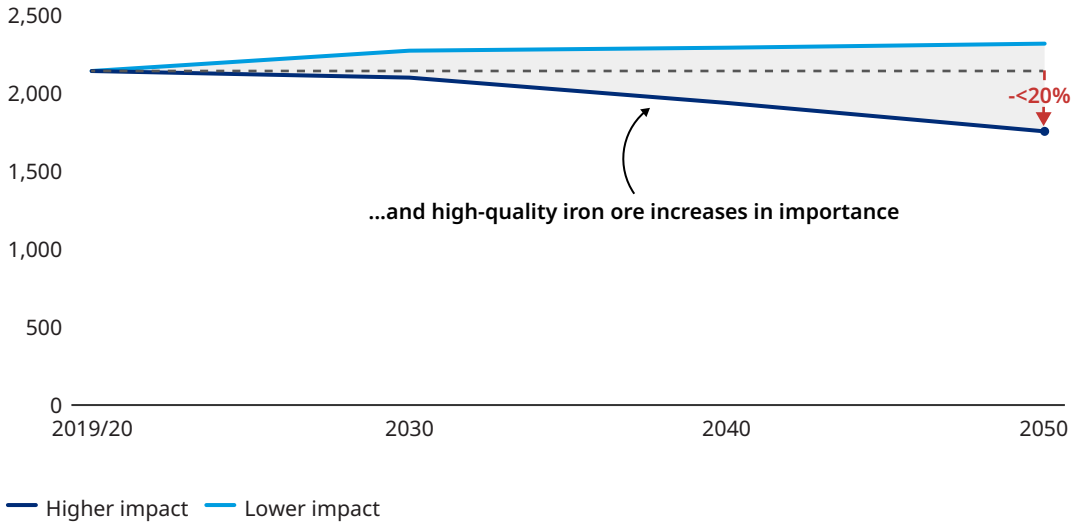
Exhibit 1: Metallurgical coal demand down by 50% [in million metric tons]



Source: Oliver Wyman analysis

For iron ore, the outlook is more stable, but the composition of the supply will continue to change, as demand for higher-quality ores increases. These higher grades will play a key role in the realization of the first 10% to 30% of emissions reduction in BF-BOF operations, as well as for DRI/HBI production. Already today, the higher-grade ores are fetching significant price premiums.

Exhibit 2: Iron ore demand changes [in million metric tons]

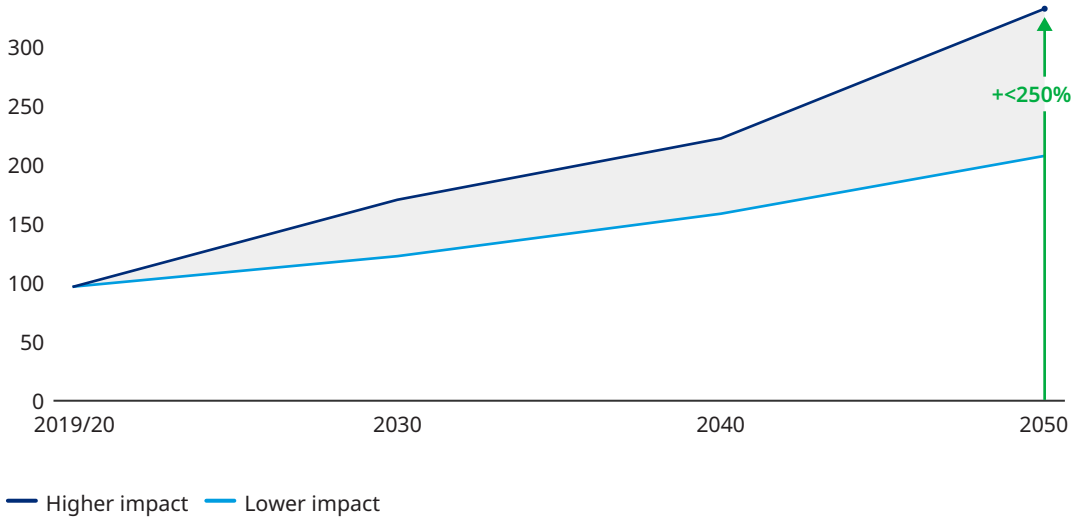


Source: Oliver Wyman analysis

DRI/HBI-based steel will play an important role in the new steel industry. Even with supply limits on higher-grade iron ores, we forecast a significant demand increase for DRI/HBI through 2050 — maybe as much as 200% higher. This would also indicate a marked increase in the trading volume of HBI, suggesting the formation of a new commodity market.

Increased use of DRI/HBI in turn will drive demand for hydrogen, not all of which will be green, especially in the beginning. We expect to see a significant increase in electrolysis capacity beginning in 2030. By 2050, an additional 100 gigawatts may be required, where today there is very little dedicated capacity.

Exhibit 3: More opportunities for DRI-HBI as EAF share rises [in million metric tons]



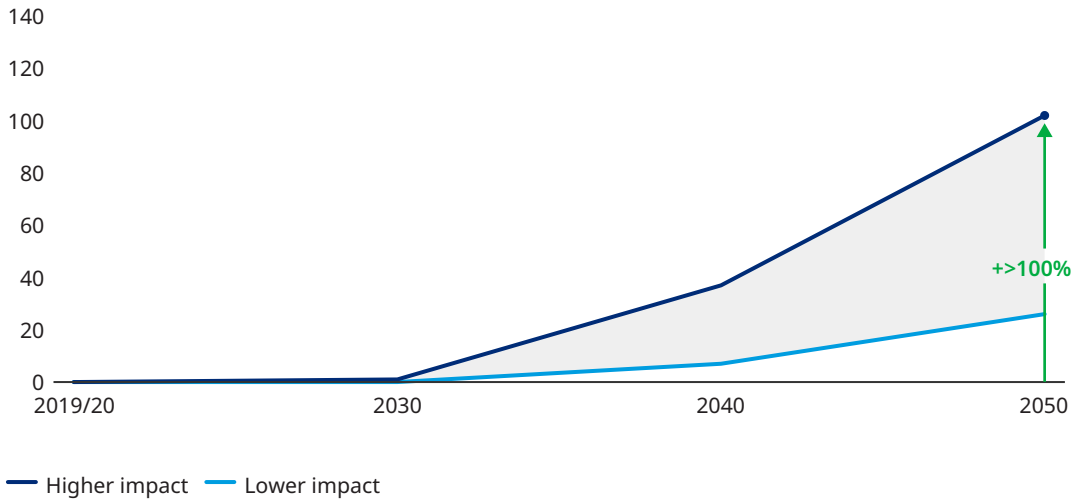
Source: Oliver Wyman analysis

Both the increasing share of EAF and H2 electrolysis will significantly drive electricity demand, in particular for renewable energy.

Finally, scrap supply will have to increase significantly. This is especially true for China, where supply would have to double to as much as 400 million metric tons to accommodate a significant increase in EAF-based production. That would imply a jump in Chinese EAF production from 10% of the total to at least 40%.

As a result, the supply chains that today move large amounts of metallurgical coal and iron ore to steel producers will need to switch to providing equally voluminous amounts of electricity, hydrogen, scrap, and DRI/HBI. While eventually the aim will be for these new inputs to be "green," initially there is unlikely to be enough production capacity to achieve that.

Exhibit 4: Hydrogen is key for green steel's future
[H2 electrolysis capacity for DRI/HBI, in gigawatts]



Source: Oliver Wyman analysis

What does this mean for various regional economies? Here are some examples:

Australia has several resources it could leverage, including renewable energy and natural gas, to become a leader in hydrogen production. Also has vast iron ore deposits that could be used to produce HBI for export, green steel products, or semi-finished products.

Sweden already has ambitious plans to build green steel production leveraging its resources, which include carbon-free electricity and iron ore, to support domestic car production and other activities.

Russia is aiming to use its gas for hydrogen and DRI production.

Chinese steel producers want to start producing high-grade iron ores in regions such as Africa, in an effort to become more independent from Australian ore producers and make China's own steel production more efficient.

TRENDS TO ANTICIPATE

The importance of renewable power, hydrogen, and scrap in these new value chains makes it vital and inevitable for energy, technology, engineering, and recycling players to become active in the transformation of the steel supply chain. That new competition will put pressure on incumbents in the mining and steel industries. Expect some jostling as players try to seize an early advantage in what will be a $1 trillion-plus transition over the next 30 years.

The large number of newcomers and the dramatically increased need to cooperate across industries to reduce carbon footprints will lead to a reevaluation of production locations and new contractual arrangements. It will also encourage the formation of new partnerships and symbiotic ecosystems to share the cost of the transition and develop new markets. One example is a memorandum of understanding signed between Rio Tinto and Nippon Steel to jointly explore and develop low-carbon steel value chains. But many others exist.

The eventual greening of steel is inevitable, and the metallurgical coal business looks to be one of the biggest losers, with other technologies and commodities, such as renewable electricity and hydrogen, clear winners. Which will come out on top among regions and corporate players remains far less apparent. But given the amount of investment required and the length of time needed to bring products to market, the advantage will go to those willing to move quickly and take calculated and shared risks through partnerships to help create new industrial ecosystems and position themselves along the steel industry value chains.

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This commentary first appeared in GreenBiz and Brink.

SAF TAX CREDIT NOT ENOUGH TO REDUCE AIRLINE EMISSIONS

Robbie Bourke
David Kaplan

Sustainable aviation fuel, otherwise known as SAF, will be pivotal in the effort by airlines to reach net zero. But while the recently enacted Inflation Reduction Act in the United States took an important step toward increasing the supply, there still won't be enough SAF by 2030 to stop the rise in greenhouse gas emissions from air travel.

Signed by President Biden, the new law contains a provision that raises the existing $1 blender's tax credit for SAF by 25 to 75 cents per gallon — an incentive aimed at encouraging use and production. The sliding-scale credit is linked to the level of emissions per gallon versus conventional jet fuel — lower the emissions, the higher the credit.

Still, the best-case scenario for 2030 envisions a supply of about 5.4 billion gallons, according to Oliver Wyman's proprietary calculations based on our fleet and demand forecasts. That's one-third the production necessary to stay even at the same level as 2019 emissions. Our most likely SAF scenario — even with the higher tax credit — projects a supply of 3.1 billion gallons, equivalent to about 2.9% of global consumption. To hold emissions at 2019 levels would require a supply of 16 billion gallons, or about 15% of total consumption.

SAF'S SIGNIFICANCE

For aviation, considered a hard-to-abate industry because of its reliance on fossil fuel-powered aircraft, SAF is the key to moving forward on decarbonization — at least between now and 2050. While new propulsion technologies, such as batteries, hydrogen fuel cells, and hydrogen as a fuel, are being explored for aviation use, they are not likely to reach commercial scale production for airliners until well into the 2030s — if at all. Once that happens, it will take several more decades for the current fleet of fossil fuel-propelled aircraft to be replaced fully by new planes with low-carbon technology. That means SAF — a gallon of which can emit up to 80% less carbon dioxide than conventional jet fuel — will be needed through much of this century for use in older aircraft.

Anticipated SAF production capacity would have to almost triple by 2030 to cut airline emissions

Besides SAF, the aviation industry is also trying to solve the emissions challenge by pushing the envelope on fuel efficiency. This can include engine and aircraft upgrades, looking for shorter ways to fly from one place to another, reducing aircraft weight, and cutting time on the tarmac and waiting to land. But these operational improvements usually only produce 1% to 2% gains in fuel efficiency annually, which would not be enough to offset the anticipated increases in emissions from additional flying. This makes adding SAF to the mix essential.

Many airlines have come to understand the pivotal role of SAF and are encouraging SAF production with pledges of 10% usage by 2030. Those commitments, while not binding, would exceed the proposed blending targets called for by the European Commission and the International Air Transport Association.

$4 BILLION **investment in SAF production pledged by the Biden administration**

In the United States, even before the Inflation Reduction Act, the Biden administration had recognized SAF's importance. It announced a plan to develop 3 billion gallons of capacity by 2030, which would represent 10% of US demand. While the government is kicking off the project with a $4 billion investment, it will take tens of billions more to complete. Much of this additional money will need to come from private investors.

WHY INCENTIVES MATTER

So far, there hasn't been enough investment in SAF production because of the fuel's opaque pricing environment and inadequate government support mechanisms compared with those provided to similar immature technologies, such as renewable diesel (RD) and renewable energy.

US production of RD, used in road transportation, grew by more than 300% between 2017 and 2021, largely thanks to the Renewable Fuel Standard. This federal usage mandate requires transportation fuel sold in the US to contain a minimum percentage of renewable fuels. RD also is eligible for the same $1 blender's tax credit as SAF. In RD's case, the mandate and credit lowered investor risk and helped build a credible market for the lower-carbon fuel. SAF production has lagged behind RD because of its higher production costs and less developed marketplace.

Probably the key for SAF is figuring out how to get swing biofuel capacity — the 20% or so of production capable of turning out either RD or SAF — to switch to SAF. Here's where the recently enacted, more generous incentives for SAF could help.

SAF and RD rely heavily on hydroprocessed esters and fatty acids (HEFA) from used cooking oils, animal fats, and other biowaste as feedstock. To ensure adequate feedstock supplies moving forward, more incentives could be created to push advanced SAF production technologies that depend on alternative feedstocks, such as municipal solid waste and woody biomass byproducts, ethanol, and e-SAF.

NEED VERSUS OBSTACLES

SAF faces significant hurdles. Without sufficient supply and a reliable market, airlines are likely to be hesitant to enter into long-term SAF agreements, and investors and producers will likely move too cautiously to expand production without binding airline commitments. Those conditions will lead to too little SAF, too late.

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A version of this commentary first appeared on Forbes.com.

HOW TO EMBED SUSTAINABILITY INTO CORPORATE PROCUREMENT

Xavier Nouguès

Because supply chain emissions often dominate corporate carbon footprints, procurement is central to delivering on a company's environmental, social, and governance (ESG) agenda and ultimately on corporate net-zero pledges on emissions. Yet still too many companies fall short of being able to use procurement as a primary lever to reduce their greenhouse gas emissions.

That's because only a tiny minority — 2% to 3% — rely on ESG quantitative data as predominant factors in decisions on the selection of suppliers and sourcing, according to a 2022 Oliver Wyman survey of 300 chief procurement officers. Instead, most still depend heavily on historical metrics, such as cost, quality, and service level. As a result, many companies are missing out on an important opportunity to make their operations more sustainable and reduce their ESG risks.

ONLY 2-3% **of companies use ESG criteria as predominant factors in procurement decisions**

But the news is not all bad. A majority of companies told Oliver Wyman that they now routinely include ESG quantitative criteria in decisions on suppliers and sourcing. Only around one-fifth said they don't consider ESG at all. That's significant progress over a few short years.

We expect even more attention to be paid to procurement and supply chains in the coming months. Chief procurement officers continue to address the plethora of disruptions from natural disasters, geopolitical conflicts, inflation, labor shortages, and the COVID-19 pandemic that have kept them up at night for the past two years. With things in this state of flux, now is a perfect time for CPOs to overhaul procurement processes to make them and corporate operations more sustainable.

USING THE ESG LEVER

That said, it's no easy task. Even though procurement is the primary way companies can reduce their Scope 3 supply chain emissions, senior leaders often need to be shown the real cost of failing to embed ESG into business as usual. For sustainability to become a driving force in companies, sustainable procurement must be a substantial part of the business model.

What needs to change? Essentially, the problem stems from a failure to make quantitative ESG criteria a day-to-day predominant factor in supplier selections and sourcing decisions. This prevents procurement from realizing its full potential as a strategic tool.

In the small minority of companies where ESG-driven procurement is business as usual, procurement teams are able to translate ESG ambition into robust management objectives, key performance indicators (KPIs), and even new operational approaches to the core business.

For sustainability to become a driving force in companies, sustainable procurement must be a substantial part of the business model

These leaders do not wait for legislation to tell them how to address sustainability. They listen to what their customers and investors are looking for in terms of emissions reductions and climate risk management. They respond instead to the marketplace zeitgeist, which is after all also driving legislation.

But to do this successfully, companies must give sustainable performance metrics proper priority and have in place the right managers with sufficient understanding of ESG principles and climate challenges, as well as the training to implement and adapt policies. Almost always this requires significantly expanding the skillsets of both managers and buyers.

REINVENTING PERFORMANCE MONITORING

How performance is monitored is also key to whether ESG will become embedded in procurement. ESG needs to drive purchasing, but if the metrics for sustainability are of secondary importance in decision-making, then the outcomes will likely not reflect a company's net-zero or sustainability goals.

Various methodologies can be used to reinvent the monitoring of procurement performance. Looking at the environmental pillar of ESG, this might include adopting a narrowly targeted metric, such as carbon pricing. The metric calculates the carbon impact of every purchasing alternative.

More broadly, an ESG-adjusted total cost of ownership model can present a powerful and comprehensive approach that can be incorporated directly into an environmental profit and loss (EP&L) account and reported on the company balance sheet. A worldwide luxury goods company that adopted this approach to monitor its ESG performance has received accolades from financial rating organizations for the clarity this produces. Additional credibility comes from ensuring the independent monitoring of outcomes in a third-party assessment or independent audit.

TRAINING PROCUREMENT TEAMS

ESG is a complex topic, with regulation constantly evolving. It places extraordinary demands on category managers and buyers involved in the procurement process that go well beyond their usual remit.

For these decision-makers to understand ESG fundamentals and stay well-informed on evolving best practices, companies must make it an urgent priority to expand their skillsets and reprioritize decision-making processes to emphasize ESG criteria. This upskilling will require much more than a few random training sessions and may require them to be more involved in strategy setting efforts.

But it is not only category managers and buyers who need to understand how the new ESG KPIs apply in procurement. ESG needs to be understood companywide. This is an area where the procurement teams can take a lead in training internal stakeholders throughout the company.

TRACKING OUTCOMES USING DIGITAL SOLUTIONS

One final piece of the jigsaw needs to be in place to ensure the company can embed its ESG metrics: the right technology. This is easier to do than ever before because of the evolution of software and networks.

Four out of 10 companies report that they leverage the latest available procurement tools to collect, digest, and report ESG data. The next step is to ensure these enhance the efficiency of procurement. Chief procurement officers are looking to their teams to employ digital solutions that enable them to focus on value-adding activities and eliminate those that are more transactional in nature.

Overall, in terms of the data itself, it is important to favor data quality over data quantity. This will help avoid creating massive data reserves that end up producing meaningless averages with data points of low credibility.

The urgency of sustainable procurement has been underlined by COP27. The pressures driving ESG is growing all the time and is shining a spotlight on corporate procurement. For chief procurement officers, doing nothing to make procurement more ESG-aligned is getting to be a very risky game.

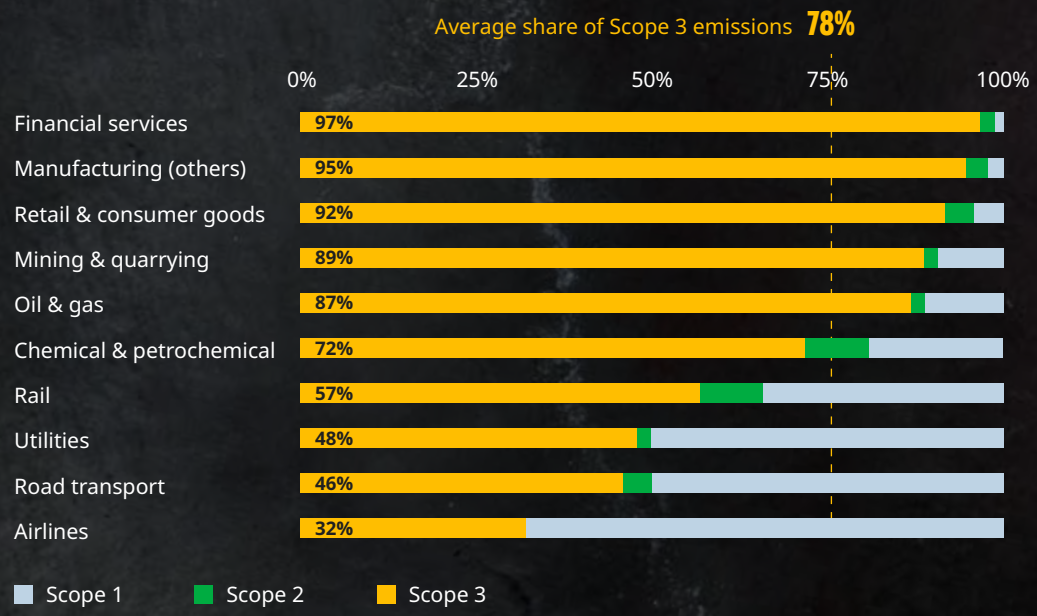
Xavier Nouguès *is a partner and global head of Value Sourcing in Oliver Wyman's Paris office.*

COMPANIES NEED TO COOPERATE TO CONQUER SCOPE 3 EMISSIONS

By Simon Cooper

Thousands of companies globally have committed to cut their emissions to zero by 2050, but meeting those goals will take significant work, investment, and cooperation. Many of these businesses are already focusing on reducing Scope 1 and Scope 2 emissions, which are driven by their own operations, including direct emissions and those from generating the electricity they consume. But the biggest challenge will be eliminating Scope 3, which accounts on average for 78% of total emissions, according to the Oliver Wyman Forum Climate Action Navigator.

Scope 3 includes all the other indirect emissions in the value chain — both upstream throughout the supply chain and downstream from customers' usage of products. Reducing upstream emissions requires understanding suppliers' current and future emissions and, if ambitions are not sufficient then working with them or switching. Reducing downstream emissions could require either redesigning products or educating customers on usage. Either way, companies cannot simply rely on reducing those emissions directly under their control to meet net-zero expectations.



Source: Oliver Wyman Forum

Simon Cooper *is a partner and lead of the Oliver Wyman Forum's Climate and Sustainability initiative.*

How To Help Gen Z Turn Climate Anxiety Into Action
Ana Kreacic, Simon Cooper

Consumer Sector Faces Challenge From Sec Emissions Rule
Randall Sargent, Marc Rousset

Sustainability In The Food Industry
Vikram Dhaliwal, Nordal Cavadini

Climate Catalysts Mean Business
Simon Cooper

CUSTOMERS

HOW TO HELP GEN Z TURN CLIMATE ANXIETY INTO ACTION

Ana Kreacic
Simon Cooper

As parents of Generation Z youngsters, we've witnessed this generation's idealism, creativity, and angst firsthand. Like all of us, they have experienced a lifetime's worth of upheaval — pandemic, political unrest, and social change — in just the past few years. But because Gen Z is so young, comprising people born between 1997 and 2012, the tumult has shaped their lives disproportionately.

For them, this is the era of anxiety. The mobile phones and computers that provide a constant stream of social posts and news also leave them more anxious and aware of social issues than previous generations were at their age. The vast majority worry about the potentially catastrophic consequences of climate change — and many say they are committed to finding solutions by speaking up, changing their diets, and altering their vacation plans, according to survey research conducted by the Oliver Wyman Forum.

But the research also shows that there is a significant gap between the anxiety Gen Z feels about climate change and the actions they take to reduce their emissions. Despite their fears and good intentions, most members of Gen Z don't take simple actions such as minimizing waste, opting for sustainable products, or limiting consumption. Cost is often an issue, since sustainable products are frequently much more expensive.

Business and government leaders hoping to reach net-zero carbon emissions by 2050 will need to mobilize Gen Z to make it happen. Gen Z, for its part, needs better information and encouragement now.

CLIMATE-CONCERNED

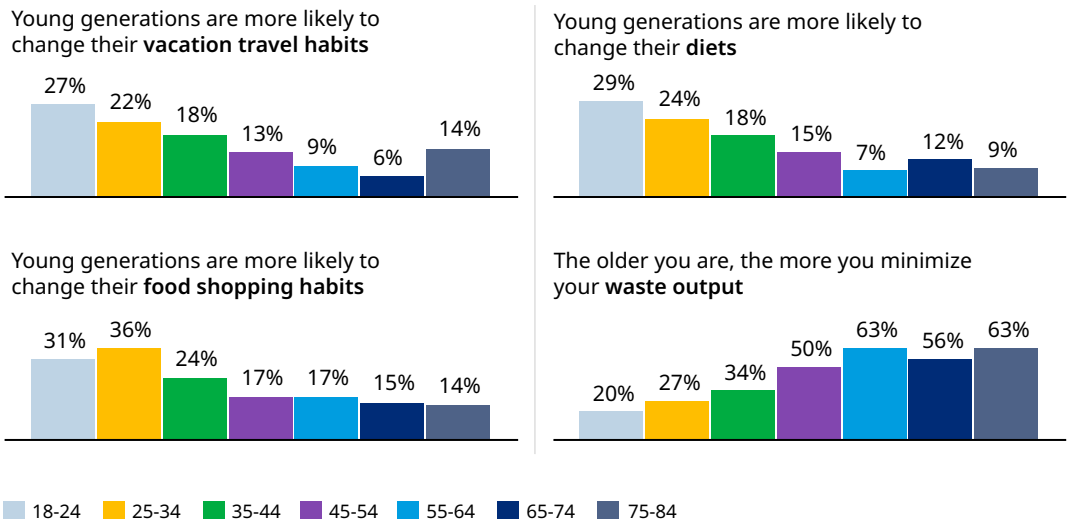
Make no mistake: Gen Z already understands the importance of protecting the environment. The vast majority of these young adults — as many as 93% in the United States and 84% in the United Kingdom — say addressing climate change is critical for the future of the planet.

20% **of Gen Z say they work to minimize waste versus 45% of the overall population**

But there's a disconnect between concern and action. In the United States, more than 40% of Gen Z members rank climate change as one of the top three issues facing the world — but only 20% say they minimize their waste, compared with 45% of the overall population. Similarly, only 37% say they reduce their energy and utility usage, compared with 43% of the overall population. Of those trying to reduce their energy use, fewer than half of Gen Z respondents say they turn off lights or decrease their heating or cooling use, compared with nearly 70% of non-Gen Z adults.

Exhibit 1: Gen Z disproportionately believe climate change is a threat, and lead climate action in some areas

"Which of the following changes have you made because of climate change?"



Source: Oliver Wyman Forum Global ConsumerSentiment Survey
Note: N=1,267, US only, Dec '21, Question: PSQ78: Which of the following changes have you made because of climate change?

FAST FASHIONISTAS

One of the biggest climate inconsistencies among members of Gen Z is in their shopping decisions. A whopping 95% say they are willing to pay more for sustainable products, compared with about a third of the overall population. Yet when it comes to purchasing clothing, Gen Z overwhelmingly prioritizes price and comfort.

Cost is a factor, but the constant pressure of social media and availability of easy online shopping keeps Gen Z loyal to "fast fashion" — cheap, super-trendy clothing — despite their climate concerns. More than half of them say they purchase clothing at least monthly.

Fewer than half of respondents use an outfit for more than two seasons, and almost a quarter wear different clothes each time they post on social media. But they're also more likely to purchase used garments than other generations. More than 70% say they purchase some second-hand clothing, while the majority of those older than 25 purchase only new clothing.

LINKING LABELS TO IMPACT

Members of Gen Z say they are eager to make a difference, but they need better information in easily digestible formats. More than three-quarters say a better understanding of specific climate actions would help drive a sustainable future.

Better labeling and transparency of sustainable products also would improve Gen Z perception and likelihood to purchase these products. Nearly one in five say they are skeptical about the climate impact of products labeled as sustainable. Almost a third say they would purchase them if they had clearer labels, and 29% say they would buy these items if there were more information about the products' climate impact.

Nearly one in five members of Gen Z say they are skeptical about the climate impact of products labeled as sustainable

Consumers of all ages say they would buy more sustainable products if the prices were lower, according to Oliver Wyman Forum surveys. That's particularly true for younger adults. More than a third of Gen Z say sustainable products are simply too expensive.

INFLUENCERS BIG AND SMALL

Gen Z is the most tech-savvy generation in history (for now, anyway). Most of these digital natives received their first smartphone around age 12. Providing more innovative and creative opportunities to tap their tech skills in pursuit of climate goals could encourage them to lower their emissions. Gen Z is already more likely than other age groups to use "smart devices" such as smart power strips or outlet timers to automate energy use.

Given that almost 90% of the Gen Z members surveyed are using social media platforms, influencers can play a bigger role in improving Gen Z habits. For example, online thrift store thredUp is partnering with *Stranger Things* star Priah Ferguson to launch Fast Fashion Confessional Hotline, a resource to counsel members of Gen Z away from fast fashion and teach them about the environment.

Family and friends can also help Gen Z make greener choices. Nearly a quarter say activism by relatives or friends encourages them to better understand the climate threat.

Business and government leaders have an opportunity to exert their influence as well. Offering affordable sustainable products, more targeted information, and access via social media could help Gen Z make better decisions. And governments can put into place policies that encourage adoption.

No single group of people will solve the climate conundrum by themselves. But Gen Z, the oldest of whom will be 53 in 2050, will be a major part of the solution. The sooner leaders help this cohort to close the gap between climate concern and action, the better their chances of building a sustainable future.

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This commentary first appeared in the World Economic Forum's Agenda.

CONSUMER SECTOR FACES CHALLENGE FROM SEC EMISSIONS RULE

Randall Sargent
Marc Rousset

Retailers and consumer goods manufacturers need to be proactive when it comes to the recently proposed greenhouse gas (GHG) emissions disclosure rule from the Securities and Exchange Commission (SEC). While some may hope current court challenges will derail the proposal, the smartest thing the consumer sector can do is to recognize the significant investor support behind disclosure, which almost guarantees some iteration of the rule will be adopted. The best strategy is to get ahead of it.

As with most management challenges, retailers and consumer goods manufacturers that move quickly will have first-mover advantage and the strongest shot at differentiating their customer value propositions and reimagining supply chains to cut emissions.

Compliance won't be easy. With potentially tens of thousands of products in inventory, larger retailers and consumer goods companies would confront the task of measuring and evaluating emissions from each, if the regulation is adopted — from raw materials to the point of sale and beyond. That's a more daunting challenge than most other companies and industries face.

Adding to the complication, many large retailers and consumer goods manufacturers have voluntarily committed to reduce GHG emissions, with several pledging to achieve net-zero emissions by a specific date. Those enterprises would have to disclose their success with emissions reductions each year in annual reports.

HOW TO MEASURE

So where to start? Retailers and consumer goods manufacturers can hit the ground running by integrating global frameworks from the Task Force on Climate-Related Financial Disclosures (TCFD) and Greenhouse Gas Protocol into their climate-related oversight, management, and reporting. In particular, the GHG Protocol introduces a framework to measure GHG emissions from both operations and the value chain.

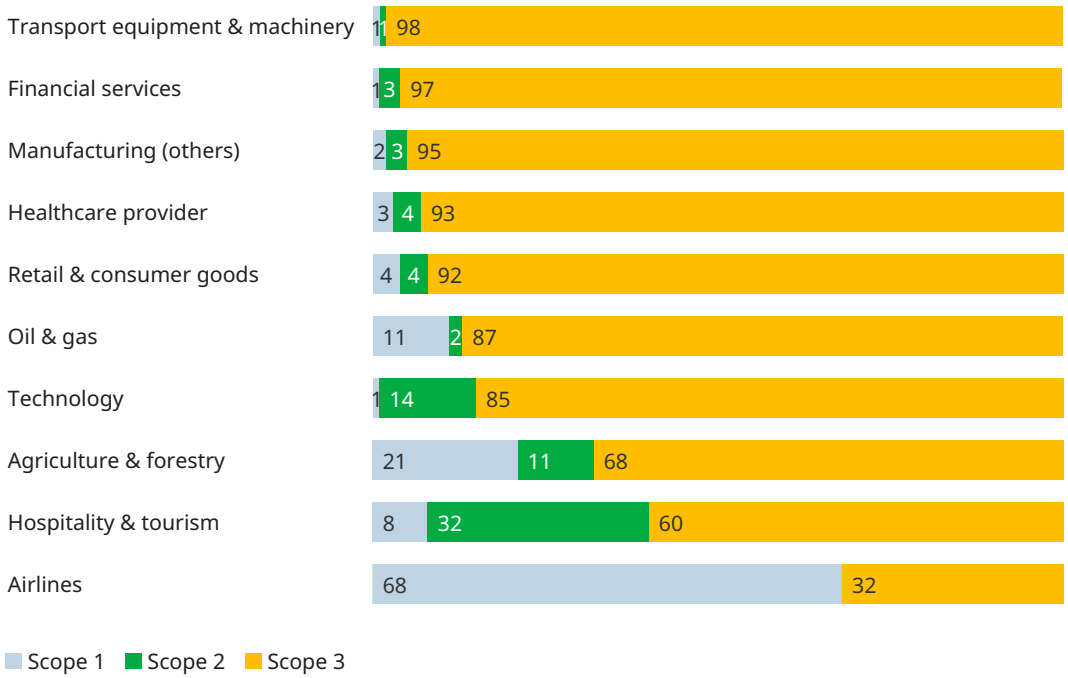
90% **of emissions from the consumer sector are Scope 3 emissions**

Based on an analysis by Oliver Wyman and the Joint Global Change Research Institute, 90% of emissions for the consumer sector are so-called Scope 3 emissions. These are among the hardest to track and control, because they are usually being created by enterprises upstream and downstream from the company filing with the SEC.

Emissions are categorized based on the stage in a product's life at which they are generated. For instance, for a manufacturer, most Scope 1 emissions result from the production. In the case of retailers, a large portion of Scope 1 emissions come from the operation of stores. Scope 2 emissions are predominantly those resulting from the production of power consumed by a company.

Retail and consumer goods companies are close to the highest when it comes to Scope 3 emissions as a percentage of total emissions.

Exhibit 1: A look at the task facing various industries on greenhouse gas emissions [%]



Source: Oliver Wyman Forum and the Joint Global Change Research Institute

CONTROLLING SCOPE 3 EMISSIONS

Scope 3 emissions come from a company's manufacturing supply chain, transportation of products, and customers' use and disposal of products. To establish their Scope 3 emissions, food companies and grocery chains may need to tally emissions from vast networks of small farmers across the developing world. Processes to handle this cannot be put in place overnight. Yet, companies are expected to begin Scope 3 disclosures in their 2024 filings.

But the disclosure data could prove useful to companies that want to make their supply chains more sustainable. Using the data, consumer sector companies may be able to restructure supply chains to reduce emissions risk. This might mean picking new suppliers or changing the mix of transportation modes. For instance, companies may decide to choose nearby suppliers to reduce emissions from transportation or to stock more sustainable products.

Disclosure data could prove useful to companies that want to make their supply chains more sustainable

Considering factors like these could enhance a company's reputation and brand from a corporate social responsibility standpoint, so companies should consider how they communicate their efforts to customers, employees, and investors. We believe retailers and consumer goods companies that move quickly have first-mover, customer engagement opportunities. For instance, could a new scale rating for "emission-friendly" products based on Scope 3 emissions be developed? This is generally yet-to-be-claimed territory for the consumer sector, meaning the first retailers or consumer goods manufacturers to act will have an outsize influence on customer expectations and outsize authority to define the standards, and they will reap outsize value on brand equity.

ECONOMIC DISTRACTIONS

At present, retail and consumer goods companies are understandably distracted by the economy. They're looking at supply chains and primarily trying to fend off inflation and eliminate the disruptions caused by COVID-19 and the invasion of Ukraine. But companies that factor in the long-term impact of sustainability are likely to create a more durable team of suppliers over the long haul — and be less vulnerable to emissions and nature-related risks and more diversified in terms of geography and delivery schedules and modes.

While combating inflation is top of mind, sustainability will be more transformational than higher prices, and it will enhance performance more. Despite the enormous complexities, Scope 3 disclosures present a unique opportunity for retailers and consumer goods manufacturers to differentiate their customer value propositions as a highly sustainable organizations.

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This commentary first appeared on Industry Today.com.

SUSTAINABILITY IN THE FOOD INDUSTRY

Vikram Dhaliwal
Nordal Cavadini

The quest for sustainability is making life more stressful for all manufacturers and retailers, but the food industry has a particularly complicated road to travel. Besides demands to cut greenhouse gas emissions, all kinds of stakeholders — regulators, activist investors, environmental and animal protection organizations, and even consumers — also want to see food production and distribution become healthier, more socially responsible, more efficient, and more humane.

One day, the industry gets slammed for its carbon footprint, the next for its water usage, and the next over animal welfare concerns and deforestation. Oftentimes, making progress in one area exposes a company to criticism in another and forces tradeoffs of one good against another — pitting, for instance, gains in land-use efficiency against biodiversity needs. Competing environmental concerns sometimes prompt food manufacturers and retailers to give in on one issue even if it means compromising strategies on another, including some that might lead to lower emissions over the long run.

Many industry players have difficulty explaining publicly their sustainability choices

Why does that happen? One reason may be the difficulty many industry players have explaining publicly their sustainability choices. That's why we recommend that food companies consider creating an internal system that uses the same scale to measure the impacts of all environmental and sustainability activities against each other. With this kind of system, companies will be in a better position to explain their decisions to stakeholders and to understand how their choices might play out over time.

Having such a company-wide system would allow enterprises to translate their choices into concrete metrics and then into measurable objectives for managers. Integrating these metrics into a new generation of commercial tools will put sustainability alongside revenue and margin and allow for effective control over day-to-day decisions. When presented to the consumers, such a system could help companies to differentiate their offers and support selective price increases.

TOUGH-TO-SWALLOW STATISTICS

The food industry accounts for more than one-third of global greenhouse gas emissions, according to a 2021 study by the University of Illinois at Urbana-Champaign. That makes it a target for most campaigns cut emissions. So far, the industry has fallen behind others when it comes to sustainability and particularly decarbonization. For example, there were no representatives from the food industry among Earth.org's top 50 sustainable companies for 2021. A big part of the reason is the complex value chain from farm to fork via processing, distribution, and retail networks.

Instead of asking, "What will stakeholders expect next on sustainability?" the question to ask is, "What new opportunities are opened up by meeting the challenges around sustainability?"

1/3: the portion of global greenhouse gas emissions the food industry represents

To fashion sustainability agendas, food companies must consider everything from biodiversity, water consumption, farm labor conditions and animal welfare at one end of the chain to transportation, packaging, and product safety at the other. As a result of the complexity and the lack of a measurement system to help sort out conflicting pressures, very few food companies have taken the lead in tackling sustainability end-to-end. Instead, the task of driving the agenda has been left to other stakeholders.

The results are not always optimal, with external stakeholders often focusing on single issues rather than taking a holistic approach to sustainability. Addressing one sustainability concern can cause another to pop up, leaving food companies playing a game of “whack-a-mole.”

For example, environmental nongovernmental organizations (NGOs) have persuaded some leading food companies to eliminate palm oil from their supply chains because of its negative effects on the planet. These include deforestation and threatening biodiversity.

But the issue isn’t entirely black and white. Palm oil has one of the highest yields per hectare of oil-producing crops, which makes it cheap to grow and attractive to farmers. If food companies can’t use palm oil, then is there an alternative oil that isn’t bad for the planet? That answer isn’t clear, as other oil-producing plants also threaten rainforests and wildlife habitats.

THE ENVIRONMENTAL CONSUMER

But it’s not just environmental NGOs that care about these issues. Research shows that consumers are interested in buying sustainable products. In the case of food products, they have demonstrated some willingness to pay more for them. Food companies with consistent and transparent sustainability agendas could more effectively provide consumers with ways to actively contribute to sustainable consumption. For instance, the use of sustainability scores on products lets consumers understand the impacts of their purchases. Carbon-footprint labeling displays a product’s greenhouse gas emissions in terms of kilograms of carbon dioxide equivalent. Some supermarket apps even let grocery shoppers on the go calculate the overall carbon footprint of a basket of goods and the proportion of products that are locally sourced.

As consumers become better educated and show preferences for sustainable goods, their choices can be used to persuade suppliers to develop more products that score high on sustainability. Such products will keep food companies ahead of the demands of external stakeholders and allow those that champion such products to differentiate themselves from competitors. They may also support premium prices and higher margins.

To regain control in this way, food companies must be proactive and focus their strategies on future goals, not just addressing complaints. Instead of asking, “What will stakeholders expect next on sustainability?” the question to ask is, “What new opportunities are opened up by meeting the challenges around sustainability?” That’s where the sustainability measurement system becomes an invaluable tool that puts companies in charge of their destinies.

The results could be powerful, as food companies gain a commercial advantage and orchestrate better outcomes for the entire value chain through their sustainability agendas. Commercial teams will be informed, incentivized, and empowered. Consumers will be engaged and make well-informed choices. Supplier standards will be lifted through both inspiration and the pressure that comes with metrics. In the end, stakeholders will see each company’s vision through its actions and not through their own demands.

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This commentary first appeared in GreenBiz and Brink News.

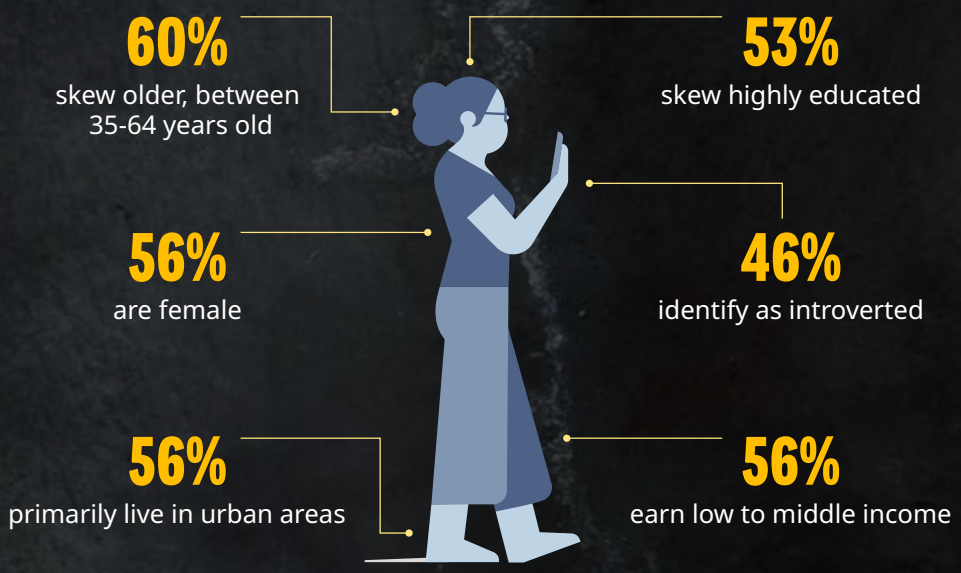
CLIMATE CATALYSTS MEAN BUSINESS

By Simon Cooper

While Gen Z worries about the environment, their parents and grandparents are far more likely to take steps to address climate change, according to research by the Oliver Wyman Forum. Climate Catalysts, about 13% of the global population, have spent years recycling, buying carbon offsets, and writing to government officials. But as the severe weather has worsened, they've grown more disappointed by the lack of progress by world leaders.

This largely 35-and-older urban crowd isn't waiting any longer. Climate Catalysts expect companies to use their brands to engage in social issues. Almost 75% of them avoid companies that don't work to stop climate change, and 46% plan to boycott companies that don't change.

Who are Climate Catalysts?



Source: Oliver Wyman Forum Climate Catalysts Survey

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Oliver Wyman is a global leader in management consulting. With offices in more than 70 cities across 30 countries, Oliver Wyman combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation. The firm has more than 6,000 professionals around the world who work with clients to optimize their business, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities.

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