



CLIMATE JOURNAL

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INTRODUCTION

We know that climate change is a collective action problem. No silver bullet exists that will pave the way to limit global warming to 1.5 degrees above pre-industrial levels and accelerate a shift to cleaner economies. So all organizations need to be receptive to multiple parallel ideas and approaches, contributed to by a broader range of voices, including those that have been underrepresented in climate decisions to date.

Transitioning to a net-zero future will require everyone's support and creativity. With this in mind, it is our honor to share with you our inaugural *Oliver Wyman Climate Journal*. This Journal reflects our firm's latest thinking, benefitting from our work with many generous clients, partners, and collaborators, on the steps that businesses can take to deliver on both climate-driven and commercial goals. In our collection of articles, we share our ideas for how businesses can best pursue a climate agenda that extends across their leadership, financing, business systems, and customers.

Learning from each other, companies will need to find a path through the monumental challenges and opportunities that lie ahead in order to prosper in a net-zero world. We hope you find the ideas in the *Climate Journal* useful as you explore your own possibilities in 2022.

Best wishes,



Nick Studer
President and CEO
The Oliver Wyman Group

* The art in the *Oliver Wyman Climate Journal* is inspired by the vast beauty that currently exists on our planet as reflected in 15 satellite images from the United States Geological Survey Collection.

How CEOs Can Respond to the 'Code Red' of the Climate Crisis

Nick Studer

Getting to Net Zero

Simon Cooper

Three Ways for Companies to Reach Net Zero — and Stay Profitable

Simon Glynn, Mike Peirce

How Women Can Help Companies Solve the Climate Crisis

Rupal Kantaria

Three Questions Directors Should Ask About the Transition to Net Zero

Simon Glynn, John T. Colas

LEADERSHIP



HOW CEOs CAN RESPOND TO THE 'CODE RED' OF THE CLIMATE CRISIS

Nick Studer

The United Nations has declared the climate crisis a "code red" for humanity, warning that the world must halve its carbon emissions by 2030 to avoid an irreversible rise in temperatures. Nevertheless, US policies and corporate actions are on course for a [nearly 3°C increase in global warming](#) over pre-industrial levels — about double the 2015 Paris Agreement's target of 1.5°C.

That means the crisis is also code red for CEOs. Business as usual is no longer tenable. Switching to renewable electricity will be the biggest contributor to reaching net zero, but it will account for less than a third of what will be required overall, [we estimate](#). With [COP26 in Glasgow well underway](#), now is the time to consider how businesses can not only protect their own bottom lines, but contribute to the global project to confront this global crisis.

There have been many promises and commitments, but action is harder, requiring long-term planning, creativity, and risk taking, including bold movements towards technologies and business models that may not have yet been invented.

But if companies do not embark rapidly on substantive change, they risk not only contributing to a climate disaster but also missing out on a new, green, front line for competition. They may face costs even higher than those involved in taking action now, including carbon taxes, more expensive financing, and declining demand for non-decarbonized products. Companies that do not move boldly may even lose their entire businesses to this existential threat.

3°C

The current anticipated increase in global warming over pre-industrial levels — about double the 2015 Paris Agreement's target of 1.5 degrees Celsius.

Reaching net zero implies a redesign of a company's entire business system. That means its own operations — but also how it works with and influences suppliers and customers to revamp the full range of activities needed to create a product or service. Many companies mistakenly assume they cannot transition their business systems to net zero within the normal pressures of sustaining and growing a profitable business. But leaders are already taking action, uncovering ways to transition to net zero profitably by identifying new possibilities in their operations, supply chains, and customer networks.

In fact, the more ambitious a company's scope, the more prospects it finds, because it develops new perspectives on its future, [research we recently conducted with the Climate Group](#) shows. Businesses that invest now can ride a green wave — a rapid, pervasive transformation comparable to the digital, technological innovations that have washed over virtually every industry during the past half century, creating fortunes for the winners.

Opportunities for profitability — and value — will shift as the world moves to net zero. Some businesses that are currently low margin will become strategically valuable once

revamped for a low-carbon future. Waste and scrap have long been seen as commodities, but repurposing scrap for another life will help reduce emissions, meaning that industry could undergo a metamorphosis. Energy and infrastructure companies that future-proof electricity grids so that they won't be knocked out by extreme weather events have a chance to redefine the future of urban power distribution.

Financial services firms that successfully partner with the likely winners in a climate transition have a chance today to build businesses with the Big Green titans of tomorrow. US loans with terms tied to ESG [surged by nearly 300%](#) since last year. Demand for sustainable financial products is booming, showing that there is great appetite in the market for both financing green assets (through instruments like green bonds) and playing an invaluable role in helping so-called "brown" companies turn green with sustainability-linked loans and bonds.

More than 450 financial institutions responsible for \$130 trillion in assets have [committed to align their businesses with net zero by 2050](#)

Building on this momentum, work is now under way to build climate considerations into the very heart of the mainstream financial system. At the COP26 conference, more than 450 financial institutions responsible for \$130 trillion in assets have [committed to align their businesses with net zero by 2050](#) under the banner of the Glasgow Financial Alliance for Net Zero. Yet in Europe, which has been at the vanguard on this topic, there is a [€4 trillion mismatch](#) between bank lending that aims to be "Paris-aligned" and the reality of where companies receiving that lending are today. As financial institutions seek to bridge this gap and meet their net-zero commitments, they must find ways to drive finance to companies in high emitting sectors who have ambitious and credible transition plans.

Companies need to embrace a vision of a low-carbon future and work back. This can help to surface opportunities that they might not otherwise identify. For example, batteries and motors are the most obvious technologies in battery electric vehicles. But some automakers have also started to invest in software: That is where much of the product differentiation in performance and in the driving experience will come from.

Strong organizations establish investments and strategies that stretch decades into the future. Given the need to implement several decades of continuous decarbonization, this way of thinking will become universal. The first movers will be the ones that will determine the rules that others will follow.

Nick Studer is President and Chief Executive Officer of the Oliver Wyman Group.

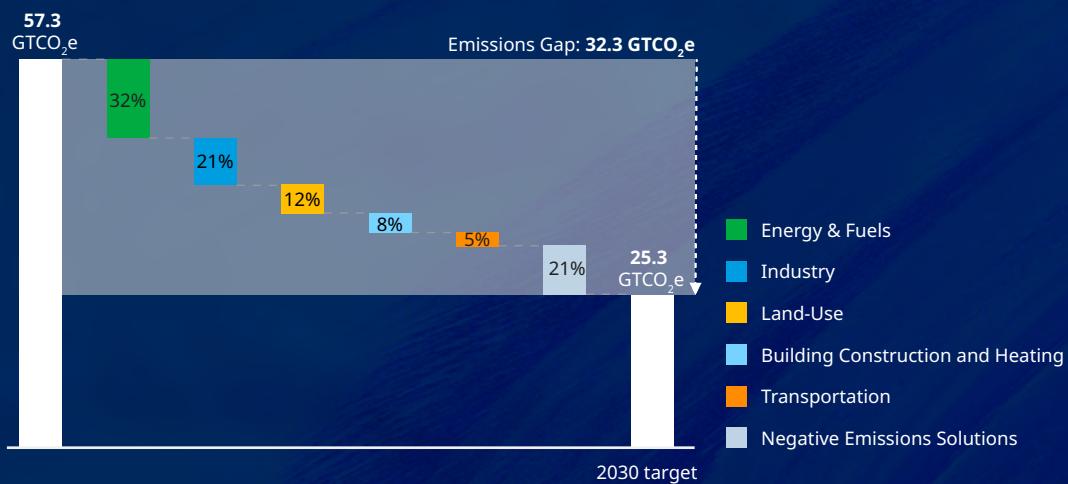
This article [first appeared](#) in Fortune.

GETTING TO NET ZERO

By Simon Cooper

Global greenhouse gas emissions are set to increase by 16%. We need to reverse that trend and halve emissions by 2030 to avoid the most devastating effects of climate change and be on track to meet the 2015 Paris Agreement and the 2021 Glasgow Climate Pact. Each industry needs to take a different approach to reach that goal. See our [Climate Action Navigator](#) analysis below to learn more.

Projected global greenhouse gas emissions gap by 2030, in GTCO₂e



Climate actions to close the world emission gap in 2030

	GTCO ₂ e
Scale low-emission power generation	9,652
Reduce methane emissions	708
Increase energy efficiency for industrial processes	3,364
Increase sustainable material use & efficiency	1,703
Scale low-carbon heating processes	1,683
Scale sustainable food production (incl. deforestation)	2,543
Reduce food loss and waste	1,244
Reduce emissions from building heating and cooling	2,620
Reduce heavy-duty transport emissions	1,041
Reduce light-duty transport emissions	645
Integrate CCU/S technologies	3,939
Accelerate afforestation and reforestation	2,844

Source: Oliver Wyman Forum Climate Action Navigator

Simon Cooper is a Partner who leads the Oliver Wyman Forum's Climate and Sustainability initiative.



THREE WAYS FOR COMPANIES TO ACHIEVE NET ZERO — AND STAY PROFITABLE

Simon Glynn
Mike Peirce

Transitioning to net zero is such a daunting task that companies often assume it is impossible to achieve while maintaining their profit margins. This leads many to focus on low-hanging fruit and short-term solutions: They offload emissions onto others by divesting high-carbon emitting businesses like mining minerals, processing meat, or financing oil companies, or they create “islands of green” within their company — for example, sourcing all electricity from renewables.

It can be beneficial for businesses to start off by focusing on here-and-now emissions reductions. In the long term, however, it is not enough. Switching to renewables-sourced electricity is a good way to reduce carbon dioxide emissions. But according to calculations we have made across 12 regions and 22 industries, it will amount to less than a third of what will be required to reach net zero. Ultimately, companies will have to redesign their business models to reduce emissions.

The good news is that we found mounting evidence that it is possible for corporations to transition to net-zero business models profitably, especially when compared with a future of inaction. Companies that ignore or put off these opportunities may be caught unprepared as customers, investors, and policymakers increasingly require them to reduce carbon emissions.

It is possible to transition to net-zero business models profitably

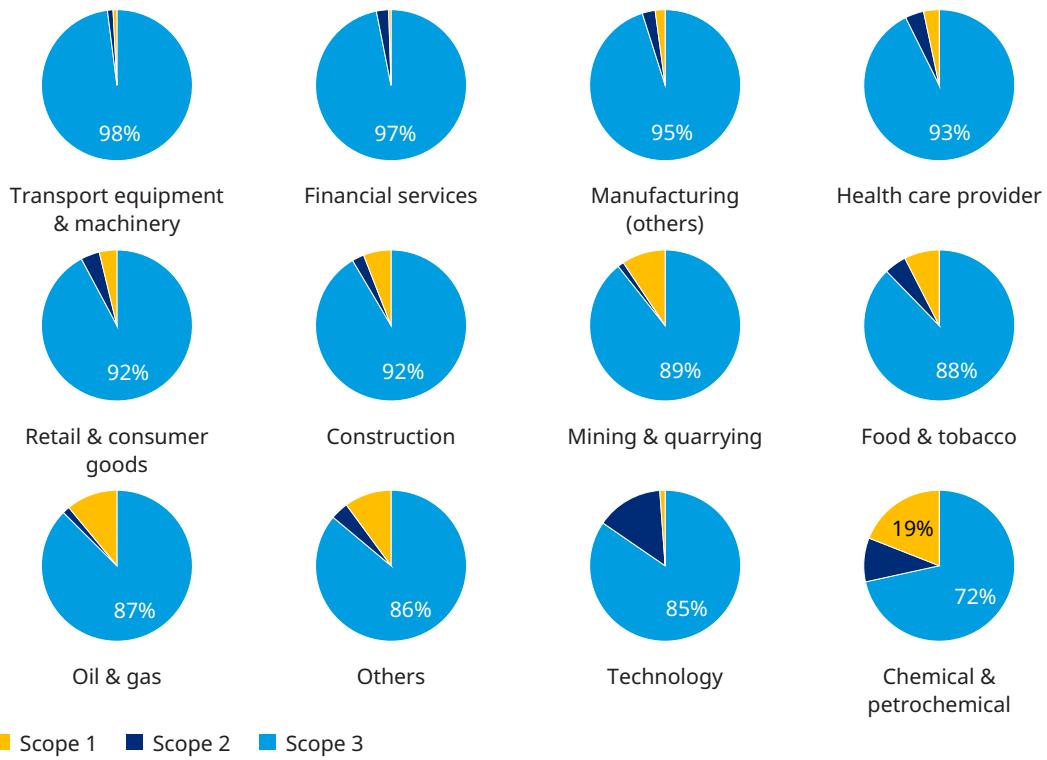
We spoke with representatives of 27 major corporations across a broad range of industries and regions, and found that many are already discovering ways to resolve the perpetual trade-offs between commercial and climate agendas. [Our report “Getting Real”](#) shows that companies are making progress when they approach this issue with the more ambitious goal of reducing emissions across the full range of activities needed to create their product or service. Here are three of many practices we identified that help:

1. REDUCE EMISSIONS ACROSS THE WHOLE VALUE CHAIN

For many businesses, most emissions — and the potential for climate action — lie in [“scope 3 assets”](#). These are not owned or controlled by the reporting organization, but contribute indirectly to the company’s value chain. To truly reduce emissions successfully, companies have to take action on these scope 3 emissions. One food-and-drink processor we interviewed, for example, is investing in thousands of net-zero dairy farms. A mining company supplies steelmakers with ore blends that demand less energy in the blast furnace. One fiber-optic cable manufacturer has actually invested in extending the scope of its business from cable making to the whole value chain of electrification.

Exhibit 1: Proportion of Emissions by Scope

Industry Breakdown



Source: Oliver Wyman Forum Climate Action Navigator

2. TACKLE THE ROOT CAUSES

The places where the big emissions happen are often not the most effective places for action. We found that companies are tracking emissions to find their root causes, either within their own business or along the value chain. One parcel delivery company, for example, reduces emissions in package delivery through fleet electrification and routing optimization – but it also provides better information and control to the people receiving packages, so that they can anticipate and redirect a delivery, reducing the number of delivery attempts. Big Tech companies measure power efficiency down to the code level in their artificial intelligence (AI) and cloud deployments and work with chip manufacturers to minimize energy consumption in the use of their products.

3. DON'T AUTOMATICALLY DEFUND HIGH-CARBON BUSINESSES

Investors are often tempted to increase their portfolio of low-carbon activities by simply rebalancing their allocation of capital. However, a more effective approach when it comes to actually incentivizing reduction is to invest in activities that currently cause high-carbon

emissions, while setting out a clear and urgent pathway to change. Our research found that of the more than \$100 trillion investment the transition will require, 70%-80% needs to go into some of the hardest-to-abate sectors. Some activists also now recognize this logic and are shifting from demanding divestment to demanding a managed transition of high-carbon businesses.

We found an example of this in the mortgage sector. Selling mortgages for homes that are already energy efficient improves the carbon metrics of a bank's mortgage book, but "green mortgages" don't reduce emissions. They are a first step that may draw consumers' attention to energy efficiency. The next step is to finance home retrofits, which will have a much greater decarbonization impact.

Similarly, lending can be used to finance effective transition plans. Some banks are continuing to lend to fossil fuel companies with the view that they will transition with their clients, and that transition will require capital. It will of course be vital for the credibility of these initiatives that the path of change delivers the pace and scale required by the science.

\$100 TRILLION

The amount of investment required to transition to a low-carbon economy

The lesson is that the easiest, most-obvious ways to reduce a company's carbon footprint will not lead all the way to net zero. Too much focus on these low-hanging fruit might distract from more fundamental measures. To get to a net-zero world, companies need to engineer emissions out of their entire business system, including their supply chain and customers' use of their products.

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This article [first appeared](#) on the World Economic Forum Agenda blog.



HOW WOMEN CAN HELP COMPANIES SOLVE THE CLIMATE CRISIS

Rupal Kantaria

Thousands of global leaders, diplomats, and activists gathered in Glasgow for the COP26 climate summit. On November 9, attendees focused on the topic of gender-responsive climate action, with many countries making commitments to address the disproportionate effects of climate change on women and girls. However, what many overlooked is the powerful role that women can play in climate policy and action itself.

A broad mix of people — including women — need to be explicitly included in companies' attempts to reach net-zero emissions by 2050. [Evidence shows](#) that women in leadership positions are more willing to contribute to climate goals, and female consumers and investors on average are more concerned about climate change than men.

Yet [research we conducted with the 30% Club](#) shows that even though more than a fifth of the world's largest companies have committed to the 2050 goal, few actively include or consider women in their climate-change decisions and plans. Women are generally overlooked and excluded from the most high-level corporate decision-making positions, and that's especially true in carbon-intensive industries such as energy generation, mining, manufacturing, agriculture, transport, and construction, which together account for [80% of the emissions reductions needed by 2030](#) to prevent global temperatures from rising more than 1.5 degrees Celsius above preindustrial levels. It is clear that we need to close the climate action gender gap.

WOMEN AS CHANGE MAKERS

Companies can accelerate the race to net zero by mainstreaming gender considerations in climate-focused initiatives. Businesses should start by including female colleagues in climate decisions; research has shown that a diverse leadership and workforce provide different perspectives and potential solutions, which are especially important when trying to solve a problem as complex as climate change. Companies that establish inclusive business cultures see large increases in creativity and innovation. They are also much better at assessing shifts in consumer interest and demand, according to [research conducted by the International Labour Organisation](#).

Women in leadership positions are more willing to contribute to climate goals

Businesses can influence environmentally-friendly spending habits better by focusing on women's preferences. Women make most of the household spending decisions in areas that generate high emissions, such as food, travel, and energy. They also are significantly more likely than men to recognize that climate action requires major lifestyle changes and are more likely to change behaviors that contribute to emissions reduction. Most people say

they want to shop green, but fail to make sustainable purchases because of higher costs, lack of access, and other factors. Addressing those issues and appealing to women could make a difference.

WOMEN AS INVESTORS

About \$100 trillion of investment is needed globally by 2050 to limit the rise of global temperatures. The United Kingdom alone will need annual low-carbon investments to rise to \$50 billion by 2030 from \$10 billion in 2020.

Governments and financial institutions will have to do most of the heavy lifting, but individuals also have an important role to play in providing necessary capital. Women's income and investment assets are growing and expected to climb significantly in the next few decades as they inherit even more wealth.

\$100 TRILLION *The amount of investment needed globally by 2050 to limit the rise of global temperatures*

There's an enormous opportunity to tap into this capital. Women already are more inclined than men to steer their funds toward green projects. Female investors, according to [one survey](#), were almost twice as likely as their male counterparts to say it is important for the companies that they invest in to integrate environmental, social, and corporate governance (ESG) factors.

The climate crisis is daunting, and it will take everyone to meet the challenge. Companies that pursue gender-equitable climate initiatives because they recognize the linkages between diversity and climate action are most likely to be in a better position to do business in a low-carbon economy.

Rupal Kantaria is a partner at the Oliver Wyman Forum.

This article [first appeared](#) in Business Green.



THREE QUESTIONS DIRECTORS SHOULD ASK ABOUT THE TRANSITION TO NET ZERO

Simon Glynn
John T. Colas

Public and large private companies are increasingly under pressure to publicly disclose their plans to transition to net-zero carbon emissions. US Securities and Exchange Commission (SEC) Chair Gary Gensler [has asked agency staff](#) to submit a proposal for mandatory climate-risk disclosures for SEC consideration by the end of this year.

Business as usual is no longer tenable. Global greenhouse gas emissions must be halved by 2030 to meet the Paris Agreement and Biden administration goal of reaching net-zero emissions by 2050 — yet carbon emissions are still rising.

Corporate momentum on net-zero initiatives is building. More than [one-fifth of the world's largest corporations](#) have pledged to reach net-zero carbon emissions by 2050. Organizations such as the [Glasgow Financial Alliance for Net Zero](#), made up of more than 450 financial institutions responsible for approximately \$130 trillion in assets, are setting science-based targets for 2025 and 2030 to mobilize finance at scale.

Companies that are among the first to figure out how to transition to a low-carbon economy will not only benefit from lower capital costs. They will also build competitive advantages that are hard to challenge: capturing new value as sectors reshape, progressing along steep experience curves, deepening customer relationships as they partner to solve for the whole value chain, and innovating their business systems.

By contrast, those organizations caught unprepared will not only risk contributing to a climate disaster — they will also risk falling behind better-equipped rivals through more expensive financing, lagging know-how, declining demand for non-decarbonized products, exclusion from new value systems, and damaged reputations.

20% **The percentage of major corporations that have pledged to reach net-zero carbon emissions by 2050**

So, as boards take stock of increasingly apparent climate risks, every director should raise questions that probe if their management teams are preparing for both the risks and opportunities on the way to a net-zero world. [Based on our recent research](#), here are three questions that can help:

1. Is the company climate-resilient? Risk to the company should not be the only perspective, though it is essential to provide continuity of service and to understand where innovating processes and products can lead to new opportunities and lower risk.

On the physical side, while companies may already have insurance against extreme weather events, they may not be protected against future cost increases of that insurance as weather risks increase: Operationally committed to their properties, companies may find themselves protected against weather risk but not climate risk.

On the transition side, directors need to ask management to present their plans for transitioning to a net-zero economy and the risks those plans entail.

What Directors Should Do: Confirm the company has people with the right skills to determine if the business is climate-resilient in both physical and transition risk. Probe if the team is making adequate climate-related disclosures to stakeholders. Verify that the management team is examining a wide range of transition scenarios. Consider: beyond the business itself, whom is the company relying on, and how well are they prepared for a low-carbon economy?

2. Is the business designed for maximum impact in a net-zero economy? To get to a net-zero world, companies need to engineer emissions out of their entire business systems, including their supply chains and customers' use of their products. Reaching this goal may involve embracing opportunities for new scope in adjacent spaces and new ways of establishing strategic control of the value chain. Opportunities for profitability — and value — are shifting as businesses that are currently low margin become strategically valuable once revamped for a low-carbon future. Pressure to repurpose scrap material for another life, for example, could transform the waste and scrap industry while increasing costs for the businesses depending on it.

Ask management if they are analyzing where value will migrate in their industry within a net-zero world

What Directors Should Do: Ask management if they are analyzing where value will migrate in their industry within a net-zero world — and if the company is prioritizing the right space. Is the team examining its entire value chain for new opportunities? Is it looking just at its own transition — or at the business opportunities of helping its customers with theirs?

3. Does the company have the support required for its plans? To reach net zero by 2050, every company will require investors, banks, suppliers, customers, employees, and policymakers to support its transition to a less carbon-emitting business. To persuade a wide range of stakeholders to back their plans, management teams need to select and track trusted emissions metrics aligned with the progress they are targeting in order to tell their stories. Metrics that recognize the dynamics of transition, such as those measuring carbon intensity or implied temperature rise, may prove more useful than focusing only on absolute emissions.

What Directors Should Do: Make sure management chooses metrics that support the path they have chosen, from the set of metrics recommended by the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#). Multiple bodies and standard setters, from the G20 Finance Ministers and Central Bank Governors to the International Financial Reporting Standards Foundation, have made statements in support of the TCFD framework as a shared international framework.

Applying an impact mindset can help ensure the business can embrace the opportunities of the transition

It is natural, and necessary, for the board to approach climate change with a risk mindset. But also applying an impact mindset can help ensure that the business can embrace the opportunities of the transition and establish a strong and defensible position on the path to net zero, in terms of both climate and financial impact.

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This article [first appeared](#) in NACD Boardtalk.

Banks Can Achieve Net-Zero Pledge by 2050

John T. Colas

How We Can Mobilize Capital for Breakthrough Decarbonizing Technologies

Sayli Chitre, Simran Singh, Derek Baraldi, and Manuela Stefania Fulga

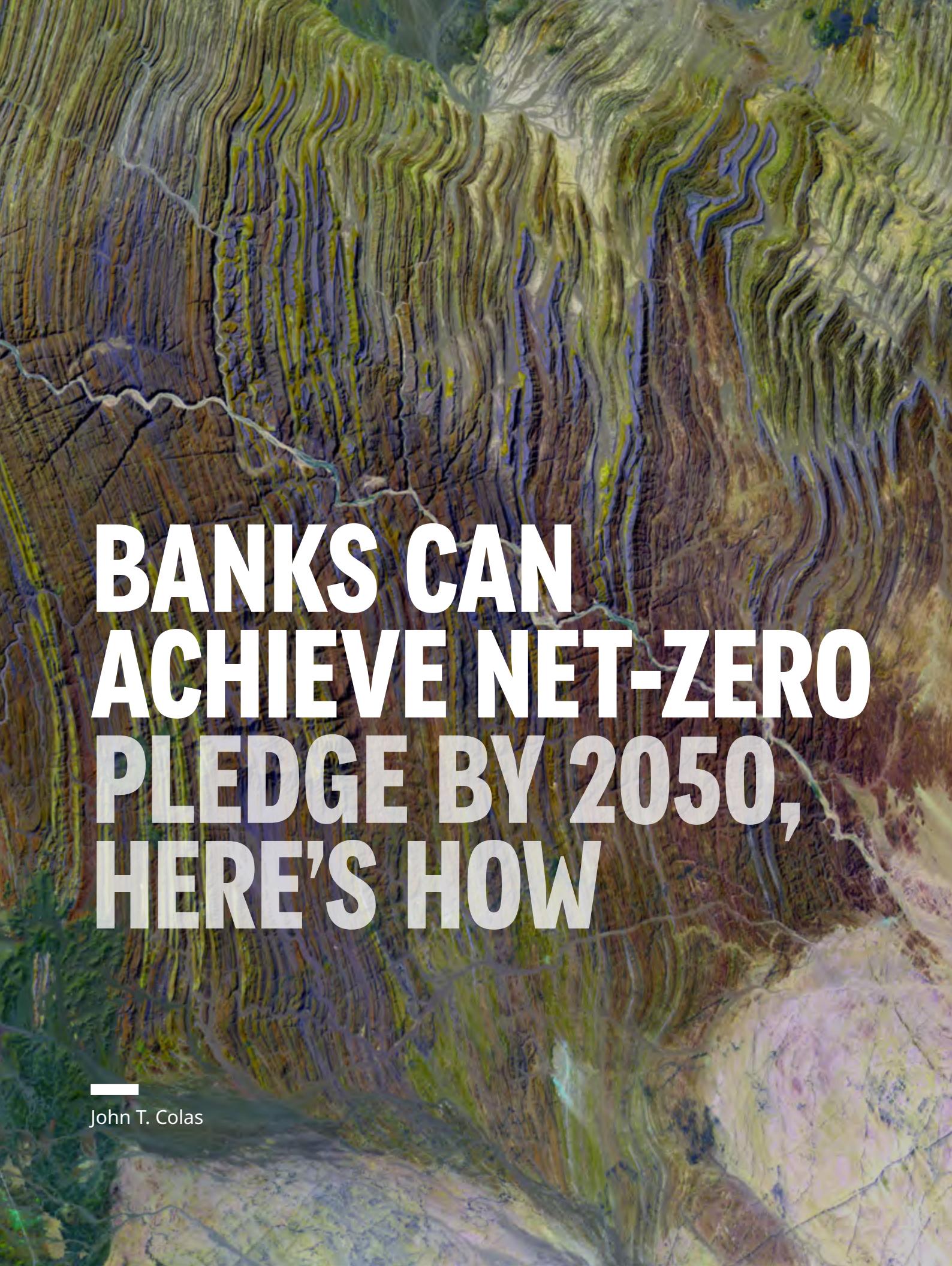
Fund Managers Will Soon Be Climate Consultants

Joshua Zwick

Mind the Gap

James Davis

FINANCE



BANKS CAN ACHIEVE NET-ZERO PLEDGE BY 2050, HERE'S HOW

John T. Colas

The climate challenge has been so difficult to overcome in part because of what economists call “externalities” or problems outside the economic system that can’t be addressed by one company or nation on its own. Carbon emissions are by far the global economy’s biggest externality, and as a result, no single group has been held accountable for reducing them.

Banks are stepping up to the challenge. The new UN-convened group known as the [Net-Zero Banking Alliance](#) brings together 53 banks from 27 countries with \$37 trillion in assets. Their historic pledge is to reach net-zero carbon emissions across their lending portfolios by 2050. It’s part of the broader Glasgow Financial Alliance for Net Zero, which also includes asset managers shepherding more than \$70 trillion of the world’s assets.

What makes the pledges so significant is that not only have banks demonstrated a high commitment to the issue by placing their credibility on the line — they also have invited the world to check their progress along the way in shifting capital toward companies making the net-zero transition.

Banks are especially well suited to influence corporate behavior. Not only do they make loans to corporations — they also underwrite corporate stock and bond offerings and manage investment portfolios. They have enormous expertise across their organizations that they can tap to help their clients make the transition and communicate with stakeholders such as regulators, shareholders, and communities.

But banks can’t push mankind to net-zero carbon emissions by themselves. Even in Europe, which is far ahead of the US, there is a \$4.5 trillion mismatch between the available pool of money and the corporations that currently qualify as “Paris aligned,” according to a recent report by [CDP-Europe and Oliver Wyman](#).

HOW CAN BANKS ACHIEVE NET ZERO?

For banks to make good on their pledges and help reduce global carbon emissions meaningfully, the broader incentive systems driving global business activity need to be realigned in numerous ways.

First, companies need a universal way to estimate the volume and cost of the carbon they emit. Right now, it’s a mixture depending in part on jurisdiction. Forty countries and 20 cities and regions have implemented carbon prices, charging companies a tax or fee for each ton of carbon emitted. But the prices vary widely.

40 The number of countries
that have implemented carbon prices

A global carbon price, driven by collective policy actions and market dynamics, would provide much needed clarity. But getting one won't be easy since there is no governing body powerful enough to enforce this across the globe. If some prominent international body — for example the G20 — were able to reach an agreement among member nations, that could help set the tone for the rest of the world.

Likewise, banks need international agreement on the proper accounting practices for carbon so they can all measure their progress the same way. No one is entirely sure how much carbon companies are producing because the data aren't readily and universally available. Banks will need to develop standards for their own use, but those might differ.

Banks need international agreement on the proper accounting practices for carbon

Authorities could help by creating standards so that all companies use the same language when reporting their carbon activities. The International Financial Reporting Standards Foundation, based in London, is aiming to create such standards by mid-2022, and the SEC has invited public comment for climate disclosure rulemaking.

Skeptics will note that central banks weren't created to enforce climate policy. But they do seek financial stability. Banks face major risks from climate change, such as loans made to companies in coastal areas at risk of rising ocean levels and tidal flooding. If one bank takes a big hit, others will suffer.

France's central bank governor told the *Financial Times* in June that "climate-related risks are part of financial risks. And so, for financial institutions and supervisors as well, it's not a nice-to-have. It's not part of [corporate social responsibility]. It is a must-have and it's part of risk management." The Bank of England's Prudential Regulatory Authority now asks banks to measure their climate exposures, while the European Central Bank is running a climate stress test and French regulators launched a pilot exercise in which banks and insurers measured their financial exposure to climate risk to 2050.

Banks also need the ability to track carbon emissions around the world. While company emissions data are available from multiple sources, these information sets aren't exhaustive. Imagine a single, perfect database that not only would help banks steer capital appropriately but also would help scientists model carbon levels and atmospheric conditions more robustly and come up with a real-time global carbon budget that could be constantly monitored. We are seeing breakthroughs in this arena through low-orbit satellites monitoring methane and the emergence of tech startups that measure and track emissions.

In addition to a stronger emissions database, the net-zero future won't come about without a more coherent global approach to climate policy. While banks can dispense advice and provide capital, companies must embrace the net-zero agenda — and they might need incentives such as tax breaks, subsidies, public contracts, or research to be nudged in that direction.

The net-zero future won't come about without a more coherent global approach to climate policy

For example, an airline might find it uneconomic to reach net-zero emissions — but if governments were to require that half their aviation fuel come from sustainable sources, their progress would rapidly accelerate. Think of it like a three-way partnership: the public sector, together with banks and companies, can help create and finance new solutions.

Banks are taking a commendable step in the climate fight. But if the rest of the world fails to figure out the correct financial incentives, metrics, and policies, their ambitions will remain forever out of reach — even as the mercury continues to rise.

John T. Colas is a Partner, Co-Lead of Climate and Sustainability, and Vice Chairman of Financial Services Americas at Oliver Wyman.

This article [first appeared](#) on the World Economic Agenda blog.



HOW WE CAN MOBILIZE CAPITAL FOR BREAKTHROUGH DECARBONIZING TECHNOLOGIES

Sayli Chitre
Simran Singh
Derek Baraldi
Manuela Stefania Fulga

The landmark [IPCC climate report](#) revealed an alarming reality: The globe is likely to reach 1.5C warming in the next 20 years. We need to cut greenhouse gas emissions urgently and at scale to prevent irreversible damage to our planet.

The good news is that both public and private stakeholders from industries, finance, and governments have announced ambitious pledges to reduce carbon emissions. [Net-zero commitments today cover ~68 percent of global GDP.](#)

\$4 TRILLION The amount of clean energy investment required annually to reach net-zero emissions by 2050

However, translating commitments to action is no simple undertaking. [Over \\$4 trillion will be required annually for the net-zero transition.](#) While some of this financing will be needed for energy efficiency improvements and demand reduction efforts, achieving net zero will require the deployment of decarbonization technologies — which reduce carbon emissions from the process chain — across all industrial sectors.

Net zero will require decarbonization technologies across all industrial sectors

Direct electrification is expected to be the cheapest and most energy-efficient decarbonization technology, [but electrification alone will not be sufficient to avert a climate disaster. Nearly half of the emissions reductions required to achieve net zero by 2050](#) will be attributed to technologies which are not currently commercially available (e.g., hydrogen-based fuels). This is especially true for the “hard-to-abate sectors” — including shipping, aviation, and steel — which comprise over one-quarter of global CO₂ emissions. Take shipping and aviation as examples: Electric engines with improved battery storage will help decarbonize short-distance transport, but sustainable fuel alternatives will be required for zero-emissions long-distance travel.

The promise of a net-zero future lies within the adoption and large-scale commercialization of these technologies.

Financing challenge: commercial viability and risks posed by early-stage decarbonization technologies

While financial institutions have made capital commitments in excess of \$70 trillion, the deployment of capital to transition-finance investments has been inhibited by two types of challenges: macro-level supply/demand-side issues and deal-level investment risks.

With private capital, widespread deployment of these technologies can be accelerated

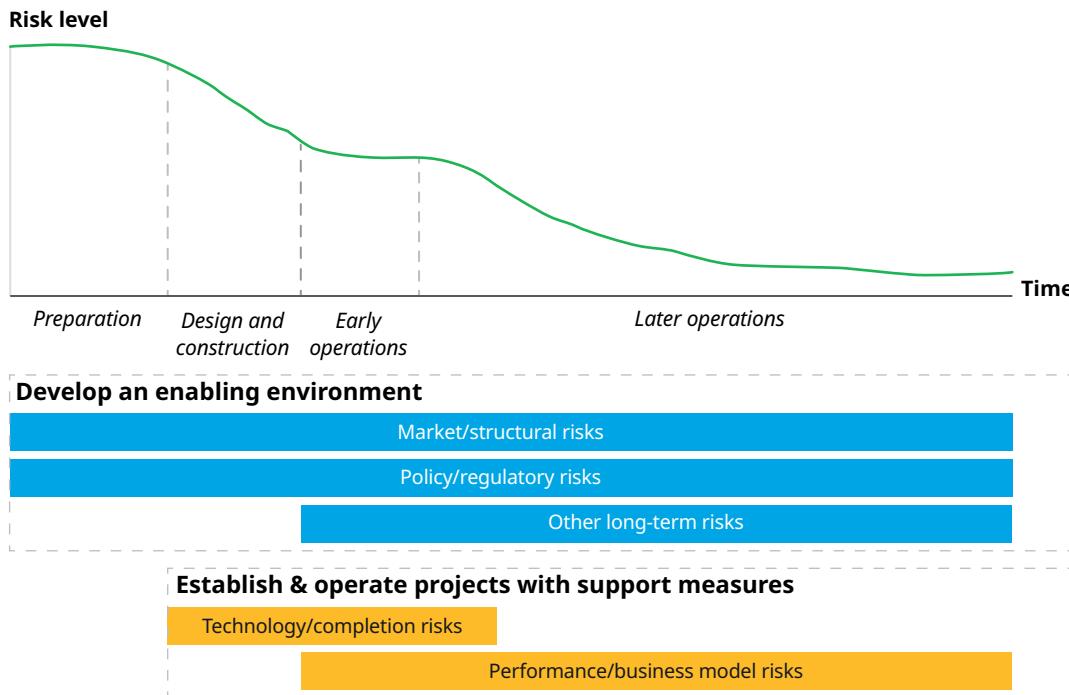
Early-stage decarbonizing technologies are often in the pilot project and/or early deployment stage. While they are past the research and development stage and have been validated at some level, scaling these technologies to a point where they are commercially viable remains a capital-intensive and high-risk undertaking. With the help of private capital, the widespread deployment of these technologies can be vastly accelerated.

However, the broader transition-finance investment environment faces supply- and demand-side issues, which are hindering the deployment of capital. These include:

- **Mismatch in the opportunity profile between capital supply and demand.** There is misalignment between the risk appetite/risk-return frameworks of individual institutions and the risk and return profile of transition-finance investment opportunities, as well as mismatch between typical debt financing tenors and project financing needs.
- **Limited pipeline of bankable opportunities.** A shortage of opportunities has resulted from stressed balance sheets in the aftermath of Covid-19, resulting in muted demand for finance for innovation, a lack of “first-mover-advantage” for firms that undertake decarbonization, and capacity/resource constraints within financial institutions.
- **Political and regulatory uncertainty.** Legislative uncertainty is compounded by an absence of global standards and certifications, and a lack of granular policies and economywide transition plans.
- **Limited data and clarity on pathways.** There are persistent data gaps across portfolio alignment metrics, transition plans, and investment performance of climate-solutions.

Given the early-stage nature of several decarbonizing technologies, financing is associated with perceived higher risk profiles than typical carbon-intensive investments, further hindering the deployment of capital at scale. While these risks are particularly significant early on where there is a reliance on enabling environments, they tend to decline throughout the later stages of operations.

Exhibit 1: Key groups of risks and where they fall along the project lifecycle



Source: Oliver Wyman analysis/ World Economic Forum

Mitigating these challenges and risks will require the cultivation of an enabling environment for transition finance and targeted measures to improve the commerciality of these investments.

The proposed solution: financing blueprints and policy enablers to improve commercial viability, deploy de-risking measures, and unlock private capital.

To mobilize the trillions of dollars needed to progress decarbonization technologies towards commercial-scale deployment, a multi-stakeholder transition-finance ecosystem must be cultivated to enable coordination and collaboration across industry, the public sector, and private finance.

Success will be driven by two critical inputs:

1. Innovative financing blueprints.

At the investment level, breakthrough financing and de-risking solutions must be developed to mitigate the risks and challenges associated with transition-finance opportunities. These solutions must define roles for stakeholders across the investment value chain, public sector, and industry to enable risk sharing. Innovative deal structures, where capital stacks are optimized to yield the lowest required green premium, will enable green products and

processes to compete with existing alternatives at scale. These blueprints must be tailored to sector-technology pairs, with careful consideration of the financing needs and unique risks associated with the sector and technology at hand.

Solutions must define roles for stakeholders across the investment value chain, public sector, and industry

2. Policy intervention.

In order to accelerate the deployment of capital at the pace and scale required, the public sector must cultivate an enabling environment for investors. Policymakers must improve the commercial viability of decarbonization investment opportunities. Further, governments should catalyze the development of the transition finance ecosystem by carving out a leadership role for multilateral development banks to leverage their capacity, financing abilities, and technical expertise. Other key priorities for the public sector should be to develop global governance, standards, and guidance, and carefully design policy interventions to avoid unintended consequences.

The [Financing the Transition to Net-Zero Future \(FTT\)](#) initiative was launched by the World Economic Forum in collaboration with Oliver Wyman to identify financing and de-risking solutions to enable the commercial-scale deployment of early-stage technologies. FTT has engaged a community of over 50 leading financial institutions and several industry stakeholders to develop sector-specific financing blueprints.

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This article [first appeared](#) on the World Economic Forum Agenda blog.



FUND MANAGERS WILL SOON BE CLIMATE ADVISERS

Joshua Zwick

The growth of environmental, social, and governance investing, or ESG, in the past few years has been nothing short of explosive. While interest in issues like social justice and equality, climate and sustainability, and diversity and inclusion has been growing for a number of years, the pandemic has accelerated awareness on a global scale.

Asset managers have responded with a flurry of marketing activity and product launches to seize the moment. Call this ESG Phase I, or “the great productization.”

So far they have been quite successful: ESG portfolios in Europe and the United States attracted record inflows in 2020. When compared to the outflows experienced by most managers in their actively managed portfolios, the growth looks even more impressive.

Yet there is an even bigger opportunity at hand for asset managers. This next phase of ESG could be characterized as “the great consultation”: offering strategic ESG advice and expertise to big investors.

Many large institutional investors recently have made public commitments to meeting ESG standards, most notably around the environmental (or “E”) component. Among the highest-profile efforts is the United Nations-convened Net-Zero Asset Owners Alliance, or NZAOA. Launched in 2019, the group comprises asset owners from around the world with nearly \$6 trillion of the world’s wealth. Together, they have pledged that by 2050 the carbon emissions of the companies in their investment portfolios will be net zero, a key tenet of the 2015 Paris climate accord.

\$6 TRILLION The assets under management by the United Nations-convened Net-Zero Asset Owners Alliance

The NZAOA is significant because these investors have voluntarily put themselves on the hook — and indirectly have put pressure on their peers as well. Recognizing that they will be scrutinized to see if they make good on their promises, many have started making changes to their portfolios where they can. But the activity has been spotty, and the low-hanging fruit has often already been picked. Taking the next steps will be harder.

And therein lies the opportunity for asset managers.

In ESG Phase II, leading asset managers will raise their game. They won’t just offer climate-friendly products or roll out new ESG screening services that help clients’ feel good about their investments.

Instead, they will become climate-change consultants, advising their clients on how best to transition their portfolios to meet the lofty commitments they’ve made while still achieving their return objectives and satisfying risk constraints. Balancing all these objectives isn’t

easy and will only become more challenging over time. The most forward-looking asset managers will offer genuine climate expertise-based solutions that can not only inform how they make their own investments and structure better investments for clients, but also help clients with their transition to net zero as well.

We are seeing these capabilities start to bubble up in the marketplace, with [some asset managers aligning in joint ventures with climate specialists](#) and others creating their own [climate-science risk management platforms](#). In an industry characterized by product commoditization, firms that move aggressively to integrate these capabilities into their offerings will be able to build and sustain an advantage.

Larger asset managers are probably best positioned because they have the resources to invest in building up this expertise even though these services are unlikely to generate revenue directly. Smaller, more capital-constrained organizations might be faced with more acute trade-offs. Whether resources are dedicated to efforts like this will likely depend on leaders' willingness to go beyond the consideration of short-term, first-order economic consequences.

Asset managers that capitalize on this opportunity will be doing themselves and the planet a service

The asset managers that capitalize on this opportunity will be doing themselves and the planet a service. Climate change is among the most daunting problem mankind faces, and a significant part of the solution lies at the feet of long-term investors, who hold the power to starve firms whose futures are in question and to provide a bounty to others more likely to thrive. Asset managers' role should go beyond providing responsible investing products; it should be about providing climate expertise and hands-on consultation that helps clients transition their entire portfolios — while still generating the returns they need to satisfy all the other commitments they've made.

Asset managers can help meet the challenges that will unfold over the coming decades — if they start embracing Phase II now.

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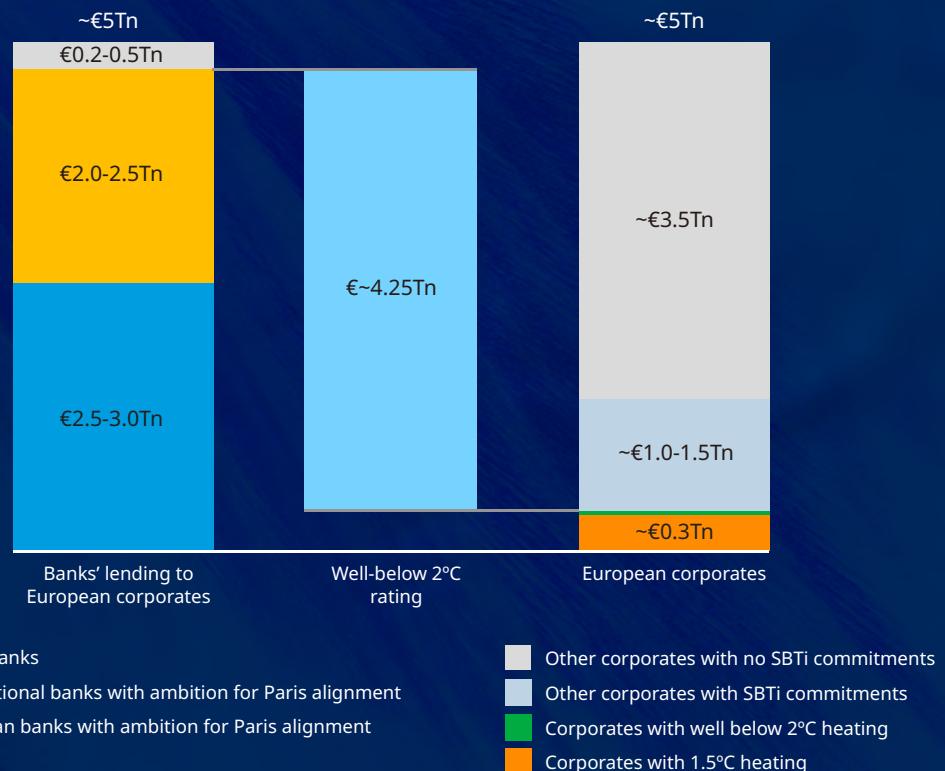
This article [first appeared](#) in FT Adviser.

MIND THE GAP

By James Davis

Banks are well suited to impact corporate behavior. Not only do they make loans to corporations — they also underwrite corporate stock and bond offerings and manage investment portfolios. They have enormous expertise across their organizations that they can tap to help their clients make the transition and communicate with stakeholders such as regulators, shareholders, and communities.

But for all their influence, banks can't push mankind to net-zero carbon emissions by themselves. Even in Europe, which is far ahead of the United States, there is a €4 trillion mismatch between the available pool of money and the corporations that currently qualify as being aligned with the Paris Agreement.



Source: Oliver Wyman analysis, CDP temperature data, Dealogic, ECB

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Aviation Needs More Urgency and SAF for Numbers to Add Up on Cutting Emissions

Robbie Bourke, David Kaplan

The US Needs to Produce Batteries, Not Just EVs

Alan Wilkinson, Srinath Rengarajan

There's Good News in the Global Methane Pledge for Natural Gas Producers. Here's Why

David Knipe

Sustainability Holds the Key to Mobility's Future

Guillaume Thibault

BUSINESS SYSTEMS



AVIATION NEEDS MORE URGENCY AND SAF FOR NUMBERS TO ADD UP ON CUTTING EMISSIONS

—
Robbie Bourke
David Kaplan

When it comes to cutting greenhouse gas emissions, commercial aviation faces one of the toughest challenges of any industry. Currently, aviation accounts for about 2.6% of emissions worldwide, but it risks rising to as much as 5% of the global total, as the industry falls behind others when it comes to decarbonization.

The reasons for the jump are simple. Substantially more people will be traveling by air by 2030, and the current pledges made by airlines to use more low-carbon alternative fuel will at best only help cancel out a chunk of that growth. That leaves the industry exposed to public criticism and regulation — and the planet in peril.

Between 2019 and 2030, the global aircraft fleet is expected to expand 30%, and air travel — particularly in places like China and India — will be up substantially. Because of this growth, emissions from aviation could rise as much as 20% by 2030 — at a time when the planet needs the global economy to halve its greenhouse gas output, not increase it. Just to keep emissions close to flat with 2019 levels, every global airline would have to substitute low-carbon sustainable aviation fuel (SAF) for more than 15% of their current consumption. Anything less and emissions will move in the wrong direction.

INNOVATION AT SCALE

To cut emissions, even a little, will take commercially scalable new technology and new fuels. Right now neither is within immediate reach.

Admittedly, aerospace has a short but impressive history of innovation at scale. In just the past century, it has moved from crude propeller planes to jets, to supersonic aircraft, to rockets that travel beyond Earth's atmosphere. Over that 100 years, aerospace manufacturers have consistently pushed the envelope on developing ever more efficient engines that burn less and less fossil fuel. But to make progress on the emissions problem by 2030 would require the industry to mount an effort as urgent as the search for the Covid-19 vaccine, and so far that hasn't emerged.

To keep emissions flat, airlines would have to substitute SAF for more than 15% of their current fuel consumption

For now, it's one step forward, two steps back for aviation on emissions because of the insatiable demand for air travel. For instance, while aviation managed to cut the amount of fuel burned per passenger by 24% between 2005 and 2017, there was simultaneously a much bigger percentage increase in air travel. Passengers flew 60% more on average in 2017 than they did in 2005, and that was bad news for emissions. Most experts also believe we're close to the apex on the efficiency that can be achieved with fossil fuel-powered engines.

SAF TO THE RESCUE?

Probably the nearest thing to a short-term solution the industry has is SAF. Made from used cooking oils, waste animal fats, and other sustainable low-carbon feedstocks, SAF could make up a steadily increasing percentage of the fuel commercial aviation consumes from now through 2050 at least. A month ago, more than 50 of the biggest airlines and energy companies committed to expand use of SAF to 10% by 2030. But those are voluntary commitments, and even the European Union's proposed Renewable Energy Directive II regulation only targets 5% by 2030. At present, a handful of jurisdictions have SAF mandates.

But insufficient commitments aren't the only problem. One of the reasons airlines have hesitated on SAF is because of the uncertain supply of feedstock necessary to make it. Right now, SAF has to compete with renewable diesel for much of the same feedstock, and renewable diesel has typically been prioritized by regulators.

For now, it's one step forward, two steps back for aviation on emissions because of the insatiable demand for air travel

Renewable diesel (RD), which is used in trucks, buses, boats, farm equipment, and other commercial transport, requires slightly less upfront investment by fossil-fuel refineries looking to convert. Also, given current regulatory mandates, RD has more predictable demand and value, which means most existing and announced projects focus on RD. That said, much of the existing and new capacity could be converted to SAF with the proper incentives and capital investment.

Feedstock challenges could be remedied with breakthroughs on research into turning waste or algae into fuel, but many of these avenues of inquiry have been in the works for decades with insufficient progress. Other nascent technologies, such as waste-based ethanol to SAF, would also expand potential feedstock pools, but corn-based and sugar cane-based fuels raise concerns because they could put fuel in competition with feeding the planet and protecting forests.

COSTLY SOLUTION

The cost of SAF is currently three times the cost of a gallon of Jet A-1, a kerosene grade of fuel used by commercial airliners. Using 5% to 10% SAF could raise airline operating costs 2% to 4%, unwelcome economics in an industry with historically tight margins that is still trying to escape the grip of Covid-19.

3X**How much more expensive SAF is compared
with the cost of a gallon of jet fuel**

Until airlines are willing to commit or mandates exist, it makes investment in new SAF capacity risky. Currently, planned global capacity is about four million metrics tons. To fulfill a proposed EU mandate requiring 5% SAF, approximately three million metric tons would be necessary. But if the European Commission were to increase the mandate to 10%, six million in capacity would be required — 50% more than projects announced to date.

The current price differential is driven in part by the fact there are only a handful of SAF producers worldwide. Expansion of supply — perhaps in response to regulatory mandates or incentives — would likely bring that price differential down, although it would probably never reach parity with traditional jet fuel given the higher costs of production.

Current SAF prices suggest a healthy return on the \$1 billion-plus investment required to build or convert a small refinery. But some in the industry are reluctant to invest because they are uncertain about the sustainability of those prices without the security government mandates provide.

NO EASY ANSWERS

No doubt, solving aviation's emissions problem is complicated. Even though industry doesn't always welcome regulation, more mandates would provide the clarity and certainty investment needs. But governments could also provide incentives too, such as money to jumpstart the research into alternative feedstocks. One of the most promising on the horizon: synthetic fuels, made from the carbon already in the atmosphere or produced by industry.

If the aviation industry is to reduce emissions by mounting the kind of effort science put together for Covid-19, it will need to work more closely and even partner with its supply chain as well as government regulators. There simply needs to be more investment and more urgency.

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THE US NEEDS TO PRODUCE BATTERIES, NOT JUST EVs



—
Alan Wilkinson
Srinath Rengarajan

President Joe Biden wants 50% of new vehicle sales in the United States to be zero emission by 2030. And the two largest US automakers just pledged at the UN climate summit in Glasgow that 100% of their new car sales would be zero emission by 2040. But for the US to benefit fully from the economic opportunity this new production represents, we really also need to be asking where all the batteries for those cars are coming from.

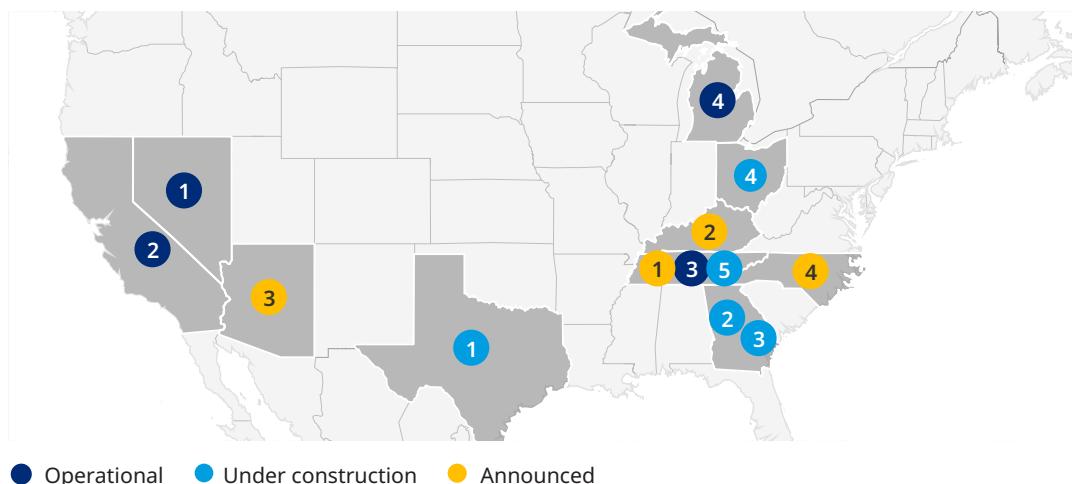
The key to dominance in EV production is the battery because it accounts for as much as 50% of an EV's total value. Countries that don't make their own batteries may miss out on the bulk of the economic contribution possible from an EV industry, including the new, good-paying jobs related to the propulsion systems of electric vehicles. In the case of EVs and batteries, the US is playing catch-up with China's dominance and Europe's potential.

While Americans may have as many as 240 EV models to choose from by 2030, they won't have enough domestic battery production to power them. To reach Biden's goal and guarantee that the EVs sold here are truly "Made in the USA," the nation would need over 1,000 gigawatt-hours (GWh) of annual battery production by our calculations. Currently, the US only has 59 GWh of cell production capacity — with most of the needed components and raw materials imported from Asia.

MORE GIGAFACTORIES NEEDED

Between now and 2030, we calculate that as much as \$100 billion would need to be invested in battery gigafactories alone for the US to have sufficient capacity. Current levels of investment would not even get us halfway there. On top of that, billions more are needed to develop a domestic supply chain to support those battery gigafactories.

Exhibit 1: US battery cell manufacturing is slated for big growth



*Four locations are yet to be announced.

Source: Oliver Wyman analysis

The failure to create a domestic battery manufacturing infrastructure would leave the entire EV industry dependent on imports and thus vulnerable to trade conflicts and supply shortages like those we are currently seeing in semiconductors — another key EV component. Shipping battery cells and materials around the world also involves a huge carbon footprint, which may eventually pose a heightened risk to the industry from regulation around decarbonization.

59

The number of gigawatt-hours of annual battery capacity available in the US by 2030 when it will need 1,000

What makes this scenario so tragic is the fact that much of the best early-stage battery research in the world is being done by US universities and national labs through federal grants. While the ability to innovate should give the US a leg up — especially with Tesla, the largest EV maker in the world, based here — American manufacturers face heavily subsidized EV industries in both China and Europe.

China is the largest global producer of EVs and represents the biggest consumer market for them, thanks to years of extensive subsidies to the automotive and battery industries and to consumers purchasing EVs. It also accounts for the bulk of global battery-cell production capacity as well as 80% the world's total output of raw materials for advanced batteries. Currently, China controls the processing of pretty much all of the critical minerals needed for batteries — including rare earth elements, lithium, cobalt, and graphite, [according to the Institute for Energy Research](#).

Meanwhile, Europe is working to create its own EV market by imposing regulations that make it more expensive to drive internal combustion vehicles and others that will eventually outlaw new sales of them in some places. European governments are also encouraging foreign battery makers to open factories locally with financial and regulatory incentives. This has been extended to other parts of the supply chain. Europe is also providing domestic players with technological support and access to capital for new gigafactories.

NEED FOR FEDERAL BACKING

Among the lessons the US should take away: The industry needs industrial policy and federal funding, as well as coordination among federal, state, and local governments. To make the kind of investments required, automakers need some kind of guarantee that a sizable domestic EV market will develop, and as we've seen in China and Europe, subsidies and regulation can help provide that.

To have a hope of taking the lead — or even keeping up — the US also must begin building a comprehensive domestic EV supply chain. Not having these capabilities at scale makes battery

production less efficient and less competitive. In these early days, that will require carmakers and investors to help the many innovative US startups and university spin-offs looking to commercialize cutting-edge technologies.

For instance, US companies have developed unique recycling processes to extract raw materials from used batteries economically. But with almost no domestic battery material production capacity, raw materials are shipped overseas for processing and manufacturing electrodes. The good news: Investment is beginning to flow into battery capacity and the processing of active materials and downstream recycling.

Countries that don't make their own batteries may miss out on the bulk of the economic contribution possible from an EV industry

US players should also look to collaborate with global firms along the value chain. Securing long-term raw material supplies — especially for critical minerals like lithium, nickel, and cobalt — will require upstream partnerships created today. One potential avenue could be long-term agreements with Canada, which mines many of the metals used in batteries and has recently invested in developing lithium production.

A NEW SKILLSET

Another challenge faced in the US and Europe is a shortage of skilled labor. Legacy automotive workforces offer skillsets that emphasize mechanical engineering and machining capabilities rather than knowledge in battery chemistries, electronics, and industrial engineering needed for EVs and battery manufacturing. Right now, the industry and government are not sufficiently addressing what may become a potential obstacle to growth.

None of these challenges can be addressed overnight. While historical strengths in research and development and abundant, cheap capital should help the US auto industry, much will depend on whether automakers and government are aligned and fully committed to a new future of electric mobility.

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This article [first appeared](#) in Industry Today.



**THERE'S GOOD NEWS
IN THE GLOBAL
METHANE PLEDGE
FOR NATURAL
GAS PRODUCERS.
HERE'S WHY**

David Knipe

On the second day of the COP26 climate summit in Glasgow, Scotland, the United States and European Union launched a historic pledge to lower methane emissions by 30% by 2030. Joined by over 100 countries, the commitment won't directly save the planet — but it might just buy enough time for it to be saved.

While most efforts to reduce emissions have been aimed at carbon dioxide, methane has a much more potent effect on heating the planet — roughly 86 times more powerful than CO₂ over a 20-year period.

By focusing on methane emissions, through multi-nation commitments like the Global Methane Pledge adopted November 2, we can more effectively stem the rise in the Earth's temperature than we could by limiting our efforts to CO₂ alone.

On the face of it, that new target sounds like bad news for the natural gas industry.

Natural gas is essentially methane, and a big chunk of those emissions trace directly back to its production and distribution. Yet, rather than treat it as a death knell, the industry should regard the pledge — and tighter regulations on leakage and venting from facilities and pipelines that come with it — as opportunities to ensure that natural gas can continue as a transition fuel during decarbonization.

The more the industry cleans up its carbon footprint, the longer it remains viable.

But the industry needs to act sooner than later — and address not just some, but all of natural gas' easier-to-eliminate greenhouse gas emissions. That means doing away with the practice of flaring and stopping the venting and leakage of methane entirely. Targeting industry practices like flaring, venting, and everyday leakage from pipelines and facilities may sound trivial, but addressing these would make a significant difference in the climate battle.

86X How much more methane affects heating the planet compared with CO₂ over a 20-year period

First, let's look at flaring. According to [Capterio](#), a UK-based gas flaring specialist, huge volumes of excess gas — equivalent to the total gas consumption of Europe's two largest markets, Germany and the United Kingdom — are routinely burned off during oil production, resulting in CO₂ emissions and the release of methane from incomplete combustion.

According to the [World Bank](#), gas flaring worldwide creates some 400 million tons of CO₂-equivalent [emissions](#) — a measure used to compare the emissions from various greenhouse gases based upon their global warming potential — annually, though that is likely a conservative estimate. Often the result of technical, regulatory, or economic constraints,

the greenhouse gas-intensive process generates no power and fails to realize more than \$21 billion of potential revenue.

The practice is routine in oil-producing regions like the southwestern US, Russia, the Middle East, and Nigeria where no [external carbon \(or carbon-equivalent\) price](#) — a financial penalty for greenhouse gas emissions — exists as it does in places like Europe and California. That makes flaring a no-cost solution for oil and gas producers. If producers are serious about lowering emissions, they'll apply an [internal carbon price](#) on flaring before one is imposed on them and incentivize the development of alternative solutions.

Boards, investors, and finance providers must also hold executives accountable for delivering on the World Bank's ["Zero Routine Flaring"](#) goal by 2030. As of today, 49 oil companies and over 30 governments — including the US, Saudi Arabia, and Russia — have endorsed the pledge, but missing from the list are a few of the biggest offenders. To date, flaring worldwide has only been [reduced 14%](#) since 1996. That's less than a paltry 1 billion cubic meters per year. To achieve the World Bank's goal, flaring must be reduced yearly by around 15 bcm, between now and 2030.

But the industry's major source of methane emissions is operational venting and leakage from vast networks of pipelines and valves. Venting and leakage together add [another 5.7 billion metric tons](#) of CO₂-equivalent per year to the atmosphere. That figure reflects the heightened potency of methane.

The more the industry cleans up its carbon footprint, the longer it remains viable

[In an earlier report](#), we called on gas regulators to set a higher bar when it comes to maintenance, requiring operators to demonstrate containment or risk the revocation of licenses to operate. While recently announced new regulations would raise that standard, the industry could go a step beyond by budgeting for a significant increase in spending on maintenance now, even before problems are found.

For the industry, there's a lot at stake.

While it will not be cheap to eliminate flaring, venting, and leakage, that investment pales against the trillions that could be lost on investments if natural gas is eliminated from the fuel mix sooner than later. Closing up these obvious emission sources also may narrow the 34 trillion cubic-meter gap between industry pledges to cut future gas production and the reduction in supply called for in the [2050 net-zero scenario](#) from the International Energy Agency.

Gas regulators to set a higher bar when it comes to maintenance

We're playing against time: Can we develop economically viable and scalable no-carbon energy alternatives, such as green hydrogen, before the planet's temperature rises over pre-industrial levels exceeds 1.5 degrees Celsius?

If achieving cleaner natural gas provides extra time for innovation and extends gas' role in the energy transition, then getting rid of flaring, venting, and leakage now is really a very small price to pay.

David Knipe is a Partner in the Energy and Natural Resources Practice at Oliver Wyman and a former Head of International Gas for BP.

This article [first appeared](#) in the Houston Chronicle.

SUSTAINABILITY HOLDS THE KEY TO MOBILITY'S FUTURE

By Guillaume Thibault

City planners have been reimagining urban transportation since Baron Haussmann transformed Paris with his grand boulevards and London pioneered the first underground railway in the 19th century. Today, cities stand on the threshold of another new transformation: With evidence growing about the threat of climate change and transportation generating 15% of global greenhouse gas emissions, it's clear that the future of mobility depends upon sustainability.

The Oliver Wyman Forum's latest annual [Urban Mobility Readiness Index](#) includes a sustainable mobility sub-index for the first time, and the results are striking. Eight of the top 10 cities in overall mobility also rank in the top 10 for sustainability. The pacesetters include Oslo, Amsterdam, and Hong Kong. Please see the results of our analysis below.



Guillaume Thibault is a Partner and member of the Oliver Wyman Forum's Mobility initiative, which produces the annual Urban Mobility Readiness Index with the University of California, Berkeley.

Three Tactics That Engage Consumers on Climate

Simon Glynn, Alex Paine

Climate Looms Large for Global Consumers

Ana Kreacic, Lucia Uribe

Which Global Consumers Are Helping to Save the Planet?

Simon Cooper

CUSTOMERS



THREE TACTICS THAT ENGAGE CONSUMERS ON CLIMATE

Simon Glynn
Alex Paine

One of the important next steps for business leadership to take on climate change, especially in the wake of COP26, is to think through how to engage their customers on climate. Climate action costs money, so pioneers risk being disadvantaged — unless they can learn how to create value from their climate leadership. Unlocking this value is not just a commercial business opportunity; it is a vital enabler of climate action at scale.

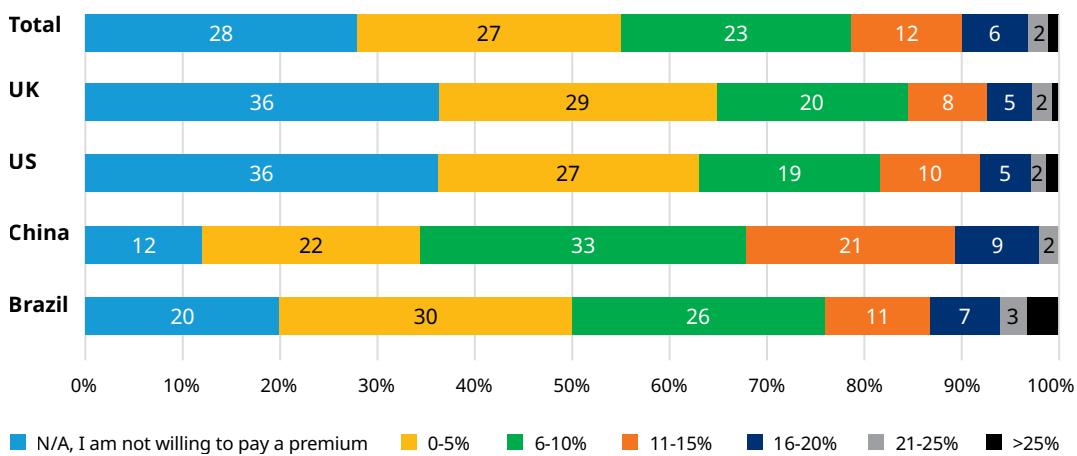
For companies serving corporate customers, the routes to commercial value are relatively clear. Corporate customers are pursuing their own climate transition efforts, creating opportunities to help them through differentiated products that decarbonize their supply chain, through joint problem-solving efforts that deepen the customer relationship, or through playing new roles as value migrates along the chain.

Companies serving consumers have found the challenge much harder. The opportunity looks attractive: Research consistently shows that as individuals, we care a lot about climate change, and we say that we are happy to pay more for sustainable options. Yet many companies have stories of climate-friendly products and services they have launched, that have had next to no take-up. And consumers remain mostly unaware, and unengaged, with the climate efforts companies are making.

This is not a failure of individuals; this is a failure of companies to figure out how climate leadership translates into value.

Exhibit 1: Stated willingness to pay

A substantial majority of people across countries say they are willing to pay for sustainability



"Are you willing to pay a premium for sustainable products and services? If yes, how much?"

Source: Oliver Wyman Forum 2021. N = 3,500.

PLENTY OF INTEREST, LITTLE VALUE

Climate change has become a mainstream concern. Today, 26% of people in the United States are “alarmed” by climate change and strongly support immediate action to address it — up from 11% just eight years ago, according to the Yale Program on Climate Change Communication. Across the globe, people want to be part of the solution, and say they are willing to pay more for it, we found in a recent survey. (See Exhibit 1.)

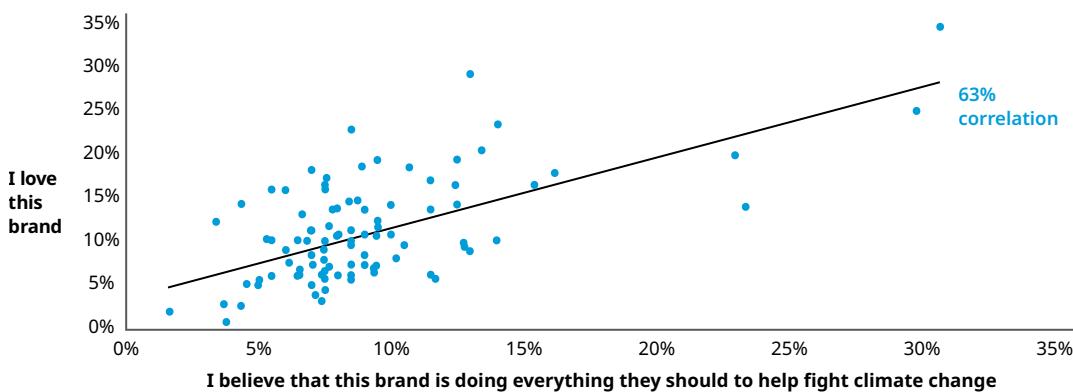
Early attempts to turn this interest into value followed a “build it and they will come” logic. Banks built “green mortgages,” energy companies offered “green tariffs,” travel came with an option to offset. Most of these attempts failed to scale. One airline, for example, found that three years after launch, only 3% of passengers chose to pay the \$2.70 to offset their flight emissions.

Today, companies are shifting their efforts from the product level to the brand and company level, recognizing that consumers expect brands to commit without them having to pay for it. The World Business Council for Sustainable Development’s (WBCSD) Vision 2050 report “Time to transform” describes this as “making all choices good choices.” It takes a proactive effort. As Roberta Barbieri, VP of Global Sustainability at PepsiCo, puts it: “We can’t simply rely on consumer behavior to dictate how fast the industry evolves — it’s on corporations like ours to drive these changes.”

The brand-level approach can work — for consumer, company, and climate. Customers connect with brands that they see acting on climate, and love them for it, as we have shown in our [Brand Aperture™ research](#). (See Exhibit 2.) The correlation between people believing that a brand is doing everything it should on climate change, and saying they love that brand, is consistently high: 65% in the US, 63% in the UK, 58% in China, in our research covering 300 brands across the three markets.

Exhibit 2: Climate action and brand connection

High correlation between “I believe that this brand is doing everything they should to help fight climate change” and “I love this brand”



Source: Lippincott Brand Aperture™ 2021

TACTIC 1: MAKE SUSTAINABILITY CORE TO YOUR BRAND

Many brands are talking sustainability; few cut through. Less than 15% of United Kingdom consumers say they know what their favorite brands are doing on sustainability, and this includes some real leaders. At a time when so many companies are taking action and wanting to be seen doing so, the bar for recognition is high.

DPDgroup, the European parcel delivery company, is advanced both in the ambition of its climate targets and in its real-world progress. In 2020, DPD delivered more than 10 million parcels with electric vehicles, for example, up from one million the previous year. The company is recognized as a sustainability leader by sustainability ratings company EcoVadis and the environmental disclosure nonprofit CDP. Yet in our research, only 5% of consumers using DPD say they know what the brand is doing to fight climate change and only 3% see it as a leader in this space.

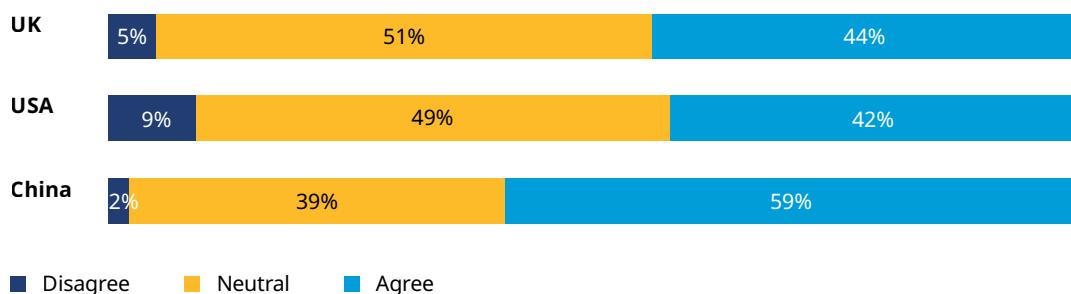
In fact, in the UK, we found only one brand (out of 100 tested) for whom a majority of its consumers said they know what the brand is doing to fight climate change: Tesla.

TACTIC 2: MAKE IT ABOUT ME, NOT YOU

When brands talk sustainability, it is often about what the company is doing. When people talk sustainability, it is all about what we should be doing. Rationally, we could have most impact by using our collective purchasing power and voting power to influence the actions of corporations and governments at scale. But what consumers are looking for is something more personal and direct, focused on reducing their own carbon footprint. We call this the “Me” bias. (See Exhibit 3.)

Exhibit 3: The “Me” bias

“The biggest contribution I can make on sustainability is to reduce my own carbon footprint.”



Source: Lippincott Brand Aperture™ 2021

This “Me” bias drives customers to discount companies’ sustainability efforts. It’s not that they don’t care; they just don’t see the relevance to their day-to-day lives.

Microsoft has one of the world’s boldest emissions reduction efforts and commitments, using internal carbon pricing that directly costs their operating businesses, and uniquely committing to remove all historical carbon emissions by 2050. There is no role for the customer in their announcement, it’s simply a thing Microsoft is doing about Microsoft’s emissions. Yet only 14% of their US consumers in our research see them leading their industry in fighting climate change.

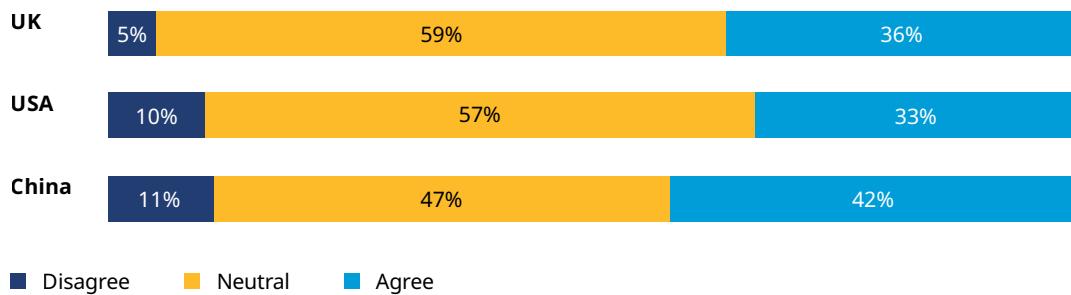
Ant Group, by contrast, focuses on the personal carbon footprint. Their Ant Forest initiative, launched in 2016, allows consumers to collect green energy points from choosing sustainable options, and convert them into planting trees. Some 57% of their consumers in China see them as a climate leader.

TACTIC 3: FOCUS ON NOW, NOT THE FUTURE

Climate action is famously urgent, yet the timeframes of companies’ climate commitments are extraordinarily long. In what other context do companies make projections for 2050, or talk of 2030 as an interim milestone? With frequent news stories of how the world is not on track in its emissions reductions, it is no surprise if consumers are skeptical. The result is that consumers undervalue commitments for the future — which are the bulk of most companies’ climate efforts — and overvalue action today. We call this the “Now” bias: (See Exhibit 4.)

Exhibit 4: The “Now” bias

“I don’t trust the ‘commitments’ that companies make about climate change; what matters is what they are doing now.”



Source: Lippincott Brand Aperture™ 2021

The combination of the “Me” and “Now” biases drives some potentially unhelpful, results. We tested three climate narratives that a bank could tell, using actual language from banks’ websites: a net-zero commitment, focusing on defunding fossil fuels; a transition-finance commitment, at the scale of \$1 trillion; and offering non-plastic, eco-friendly bank cards. What people most valued were the eco-friendly cards.

Our point is not to focus on tokenistic crowd-pleasers. It is that, to cut through to consumers and work with their “Me” and “Now” biases, the key is to show them how they themselves can do something more sustainably, today. With Tesla, I can drive more sustainably today. With Alipay, I can shop more sustainably today. Brands that can channel their climate actions into a meaningful customer-centered proposition like that, can deliver for the consumer, the company, and the climate.

Simon Glynn is a Partner and Co-Lead of Climate and Sustainability at Oliver Wyman.

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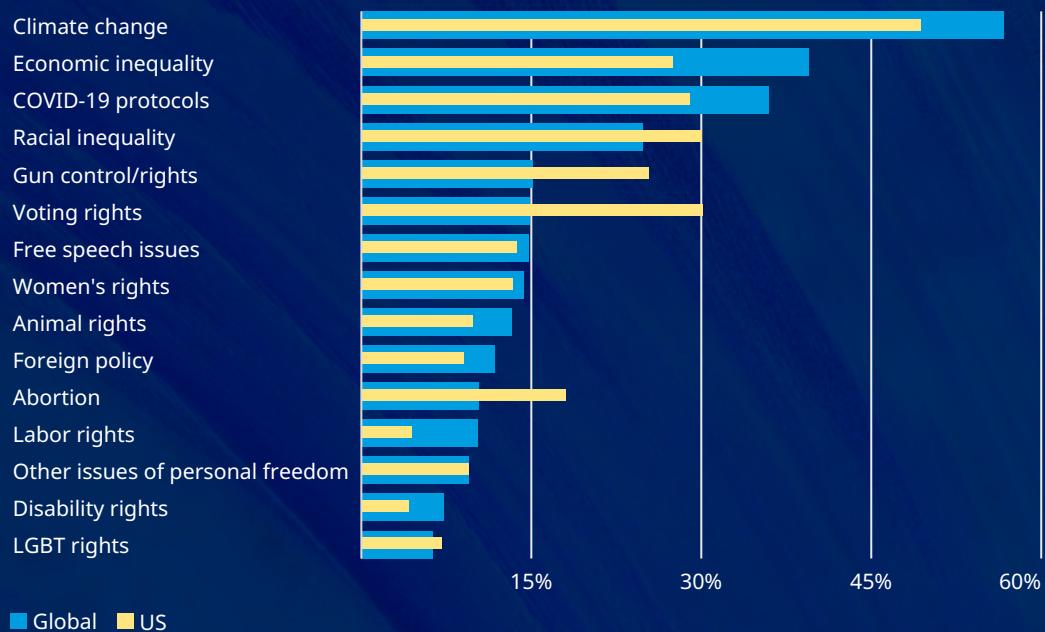
This article is slated to appear in GreenBiz.

CLIMATE LOOMS LARGE FOR GLOBAL CONSUMERS

By Ana Kreacic and Lucia Uribe

Fifty-six percent of respondents in a recent Oliver Wyman Forum global consumer sentiment survey rated climate change as one of the three most pressing issues of our time. That was ahead of economic equality (38%), COVID-19 protocols (37%), and racial equality (25%), according to respondents in Brazil, China, the United Kingdom, and the United States.

The increased awareness could impact the bottom line. Three quarters of the climate concerned said they would be less likely to purchase a product if they learned that a company was acting in a way that conflicted with their values. Almost 30% of consumers who list climate change as a top issue and became involved in some form of activism during the pandemic are already boycotting companies.



Source: Oliver Wyman Forum Global Consumer Sentiment Survey

Ana Kreacic is a Partner, Chief Operating Officer of the Oliver Wyman Forum, and co-leads the [Global Consumer Sentiment initiative](#)

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An aerial photograph showing a coastal landscape. The upper portion of the image is dominated by a large body of water, likely a bay or estuary, with various shades of blue and green. In the middle ground, there is a strip of land with dense green vegetation, possibly a forest or a coastal area. The land is intersected by several roads and small paths. The overall scene suggests a mix of natural and human-made environments.

WHICH GLOBAL CONSUMERS ARE HELPING TO SAVE THE PLANET?

Simon Cooper

Most people want the world to go green. But first, more of us need to agree on how. While governments and corporations commit to net-zero emissions, consumers are covering their own tracks. A whopping 94% of almost 5,600 people we recently surveyed said they're making at least one lifestyle change in 2021 to lower their personal carbon footprint.

Individuals were polled across seven countries and asked what, if any, sustainability-related behaviors they expect to change this year. Americans, it seems, believe more energy efficient homes are the key. Chinese want to buy electric cars. Spaniards and Italians think locally produced and sustainable products will do the trick. And only 3% globally plan to start to use socially responsible investments like mutual funds.

Substantially more action across the globe is required to keep human-driven global warming below the 2°C needed to avert the dire consequences of climate change.

This decade is critical and we'll need to act fast. The sooner we restrict the amount of greenhouse gases released into the atmosphere, the less we'll deplete the global "carbon budget," and the easier it will be to reach net-zero in the future.

It will be crucial for governments and companies to do the heavy lifting. Governments can create the right incentives to drive behavioral changes, and corporations must take responsibility for their emissions.

But consumers also have a significant role to play in solving this enormous challenge. The average carbon footprint globally is about four tons, with Americans emitting four times that amount per person. By some estimates, we need to reduce our individual carbon emissions to two tons a person globally by 2050 to prevent temperatures from climbing.

COMMITTED TO CHANGING LIFESTYLES

The majority of people we surveyed are ready to try lifestyle changes. Approximately 98% of Chinese people plan to make at least one lifestyle change in 2021 to lower their emissions. The Italians and the French are a close second with 96%, followed by 95% in Spain, 94% in the UK, and 92% in Germany.

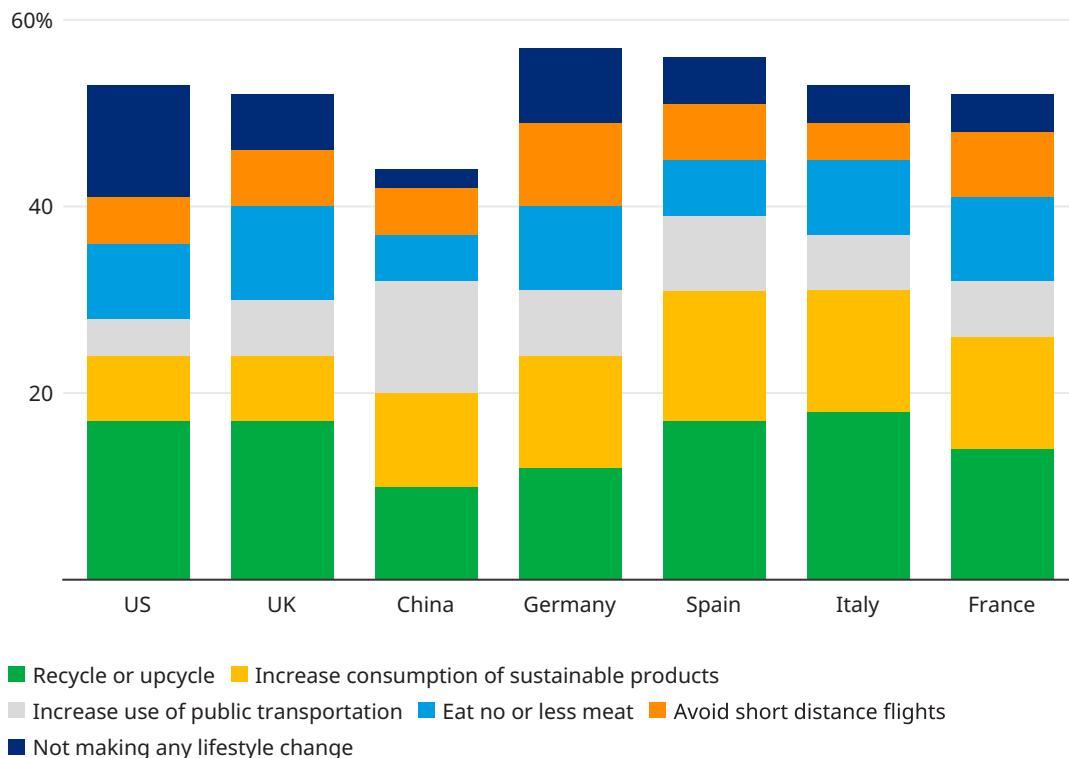
Even in last place, 88% of people in the US intend to lead greener lives. The number there is slightly lower among seniors, at least 83%, but at least 93% among those under 40.

DRIVING LESS, RECYCLING MORE

One of the most popular global lifestyle changes of the dozen we asked about is recycling or reusing products for another purpose — with almost 20% of those in Italy, Spain, the UK, and the US participating, but only 10% in China and 12% in Germany.

Exhibit 1: What are consumers doing to reduce their carbon emissions?

The majority of people we surveyed are ready, at least to try



- Recycle or upcycle ■ Increase consumption of sustainable products
- Increase use of public transportation ■ Eat no or less meat ■ Avoid short distance flights
- Not making any lifestyle change

Source: Oliver Wyman Forum

Consumers also are committed to driving less, but not necessarily taking more mass transit, at least this year. We found that 14% of those in the US and Spain, 12% in the UK, and 11% in China and Germany said they were driving less, but only four percent of Americans expect to use mass transit more in 2021.

Almost 90% of Chinese people surveyed are willing to pay extra fees to decrease congestion compared to only 40% of Americans, 39% British, and 27% of Germans.

The Europeans also are consuming more locally produced foods and products, with Spain topping the list at 14%, followed by Italy at 13%, and France and Germany at 12%. The Italians and Spanish are also walking and biking more at 16%. The US, not so much — only 8%.

FORGET THE BROCCOLI

But we're still not ready to skip flights or filet mignon. People plan to keep flying on both long and short trips. At 4% the Italians were the least willing to avoid flights, and the Germans the most willing to give it up at 9% for short and 8% for long trips.

And while most of us know that it takes a lot more land, water, and feed to produce a cow than a cauliflower, most are not trading burgers for broccoli. While 10% of those in the UK said they are eating no or less meat, only 5% are in China. Slightly more at 8% in Italy and the US, and 9% in France and Germany.

People might disagree on how to go green, but every bike ride, electric vehicle purchase, and energy efficient home decreases our global footprint. We just need to dramatically quicken the pace with governments and corporations leading the way, and consumers adapting lifestyle changes to help save the planet.

Simon Cooper is a Partner who leads the Oliver Wyman Forum's Climate and Sustainability initiative.

This article [first appeared](#) in the World Economic Forum.

FURTHER READING

[The Climate Action Navigator](#)

[Getting Real: A Blueprint for a Commercially Smart Climate Transition](#)

[Financing the Transition](#)

[Running Hot: Accelerating Europe's Path to Paris](#)

[The Climate Action Gender Gap](#)

[World Energy Trilemma Index 2021](#)

[Urban Mobility Readiness Index 2021](#)

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