Accelerating the Transition to Net-Zero Travel:
STRATEGIES FOR ACTION

Skift RESEARCH | McKinsey & Company

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Executive Summary

The worsening effects of climate change have made decarbonization a top priority for many industries, including global travel and tourism, which accounts for between 8 and 11 percent of the world's emissions.[1] If nothing is done, carbon emissions will only rise as the sector grows. Travel activity is expected to soar by 85 percent from 2016 to 2030.[2]

As many consider reducing their travel, consumers, employees, regulators, and investors are also ramping up the pressure for the sector to reduce its carbon emissions. In response, more travel companies have pledged to reach net-zero. But obstacles stand in the way. The range of decarbonization technologies in the market is limited, and what's available is expensive.

While demand reduction may need to be part of the answer, there are many practical steps travel companies can take right now to accelerate their journey toward greater sustainability—and potentially create value while doing so. In this report, McKinsey & Company and Skift Research explore four high-priority areas for travel companies to focus their decarbonization efforts to catalyze the most meaningful outcomes for the environment, their customers, and themselves.

1. Identify and Sequence Decarbonization Initiatives

Being familiar with the relevant decarbonization levers for your business is a good start, but it's not enough. Many travel companies struggle with implementation and balancing tradeoffs. A robust plan factoring in various potential pathways is critical for success in a quest as complex as deep decarbonization.

The marginal abatement cost curve (MACC) pathway framework provides a cost-benefit analysis of the individual levers and phasing plans, helping companies identify strategic tradeoffs between the various implementation

pathways over time. Companies can use the framework as a tool to validate climate-related targets and time their decarbonization initiatives. By assessing the feasibility and tradeoffs between multiple potential paths, companies could be better equipped to select the most appropriate pathway for them to reach their net-zero goals.

2. Partner to Accelerate Decarbonization of Business Travel

Business travel represents 30 percent of all travel spend, making it an important segment for travel companies.[3] As more organizations—businesses and non-profits alike—set more ambitious emissions-reduction goals for themselves, they'll almost certainly be reevaluating their travel habits. This opens up opportunities for travel companies to enter into robust decarbonization partnerships with their corporate clients.

The top 100 highest-spending organizations of business air travel spent around $12 billion on US booked domestic and international bookings in 2019. Forty-five organizations accounting for around half of this business air travel spend have not only made public decarbonization commitments, but have committed to a target year of 2030 or before.[4] These organizations will likely be eager to seek out ways to reduce their emissions and could be more receptive to enter into decarbonization agreements with travel companies.

To help organizations that travel achieve their net-zero goals, travel companies could expand their range of sustainability-focused product and service offerings. As examples, car rental companies could encourage clients to pay for electric vehicles, while hotels may command a premium for corporate packages that promote low-carbon and sustainable practices.

Travel companies could also devise other ways to support these organizations in their transition toward greater

1   "A Net Zero Roadmap for Travel & Tourism: Proposing a New Target Framework for the Travel & Tourism Sector", World Travel & Tourism Council, November 2021.

2   "Tourism's carbon emissions measured in landmark report launched at COP25," UNWTO, December 4, 2019.

3   "Getting back to business: Navigating the safe return of meetings and their role in economic recovery", US Travel Association, November 2020.

4   2020 corporate travel 100, Business Travel Network, October 2020.
"Companies taking action," Science Based Targets initiative (SBTi).

sustainability. These could include designing booking platforms to nudge users to make more sustainable choices while making reservations, helping employees track their individual emissions, and providing greater data transparency for organizations to accurately measure their carbon emissions from corporate travel.

3. Close the "Say-Do" Gap Among Leisure Travelers

Studies suggest that leisure travelers—who generate 70 percent of all travel revenues—are also supportive of decarbonization.[5] A recent McKinsey survey indicates that 40 percent of travelers globally say they are willing to pay at least two percent more for carbon-neutral flight tickets.[6]

However, Skift's latest consumer survey has exposed a "say-do" gap; only 14 percent of travelers state that they actually paid more for sustainable options when they travel.[7] There are a number of reasons for this "say-do" gap, including a lack of clear sustainability-related information, a scarcity of sustainable booking options, and high cost barriers. Many customers also struggle with balancing competing priorities when purchasing a travel service or product.

Travel companies can bridge this gap and help consumers choose more sustainable actions by focusing on three levers: offering more sustainability-focused travel products and services visibly within the booking journey, presenting decarbonization information in compelling ways to engage and resonate with customers, and using behavioral science techniques to encourage leisure travelers to make sustainable purchase decisions (for instance by actively promoting the most environmentally friendly options first).

A methodical approach is necessary to execute these initiatives while keeping the booking journey seamless for the customer. A dedicated task force armed with digital, consumer insights, and sustainability expertise could be set up to test and refine

these changes for smaller sample groups in each customer segment before implementation is scaled up.

4. Build New Sustainable Travel Businesses for the Future

Instead of reacting to the latest developments in the transition toward net zero, the travel sector can be a proactive force and pioneer sustainable products and services. Not only will doing so reduce the industry's carbon emissions, but it will also enable individual travel companies to create new sources of revenue that could be redirected to other green business opportunities.

There are as many possibilities as there are types of travel company. For example, an airline may consider playing a more active role in the sustainable aviation fuel (SAF) value chain, perhaps by investing in production plants to increase the supply of alternative fuels, or launching a green airline that deploys smaller alternative propulsion aircraft. Hotel and lodging companies can launch green hotels or brands, applying the latest design approaches and green technologies. Larger and more established travel agencies and booking platforms could explore providing standardized environmental, social, and governance (ESG) measurement services to smaller travel companies that lack such capabilities or brands focused on green travel. Finally, credit card companies could partner with airlines and hotels to offer customers a consolidated view of their emissions across travel providers and additional rewards when they choose more sustainable options.

Launching these new businesses will likely require companies to create special initiatives outside of the current core of the business. These teams will need to be empowered to experiment with and learn from short iterations and pilots without the pressure to be immediately profitable. Fortunately, the first examples of travel companies applying green business-building principles show promising results, which should pave the way for others to follow suit.

A Checklist for Action

The report concludes by offering a checklist for travel companies to track their readiness in each of the four strategies and to maximize their chances for a successful—and profitable—journey to net zero. Companies that act now could gain a competitive advantage over their peers, while those that stand by and wait may find their value proposition erode as they get left behind.

5   "Getting back to business: Navigating the safe return of meetings and their role in economic recovery", US Travel Association, November 2020.

6   Mishal Ahmad, Frederik Franz, Tomas Nauclér, and Daniel Riefer, "Opportunities for industry leaders as new travelers take to the skies," McKinsey, April 5, 2022.

7   "US travel tracker survey," Skift Research, August 2022.

Terminology and Key Concepts

Note: Numerous criteria are critical to sustainability, including water, waste, nature conservation, and emissions. This report focuses only on the carbon-emissions component of environmental sustainability, given the large and growing volume of corporate commitments to net zero and the challenges that companies currently face in mapping a decarbonization pathway. This approach enables the report to delve deeper and more richly into this critical topic.

For a common understanding of the terms relating to carbon emissions, some of the key terms used in this report are described.

Carbon budget is the cumulative amount of carbon emissions permitted, as defined by academic institutions (e.g., IPCC), within a time period (e.g., through 2050) to remain within defined temperature-rise thresholds.

Carbon intensity is the volume of emissions relative to a metric of physical or economic activity that's reflective of an industry, for example, kilogram of CO2e per passenger kilometer.

Carbon neutrality is the balance between a company's emissions footprint and voluntary compensation (offsetting) with avoidance carbon offsets to achieve an emission equilibrium. Carbon neutrality could refer to emissions in scopes 1 and 2, but not necessarily in scope 3 depending on the company's disclosure and offsetting strategy.

Carbon offsets involve investing in activities that avoid carbon emissions, which is represented by a carbon credit that can be traded on the voluntary or regulatory carbon markets. This offsets the carbon emissions elsewhere: in a different company, sector, or even country. Offsetting strategies should align with the Oxford Principles and ensure that credits are certified by third parties. In best practices, offsetting should be pursued as part of a holistic carbon mitigation strategy after or in parallel with carbon reductions.

Carbon reduction is direct reduction of a company's emissions footprint over time. In mitigation hierarchies, reduction is the first action companies should take in relation to carbon emissions. Science Based Targets initiative (SBTi) requires companies to enact carbon reductions prior to any offsets or removals "counting" towards climate-action strategies.

Carbon removals physically remove carbon from the atmosphere and store in via various methods, for example, via direct air capture and storage (DAC) or bioenergy carbon capture and storage (BECCs). Similar to carbon offsets, carbon removals in best practice should be pursued as part of a holistic carbon mitigation strategy and in parallel with carbon reductions.

Decarbonization is the reduction of all GHG emissions, including CO2.

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere, with key contributors including Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), and fluorinated gases. Reducing GHGs could limit global warming to a level that would prevent dangerous interferences with the climate system. For a single, comparable value for GHG emissions, the total emissions of all emitted gasses can be converted to CO2-equivalent (CO2e).

The Greenhouse Gas Protocol is a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). It provides standards, guidance, tools, and training for business and government to measure and manage climate-warming emissions. GHG Protocol categorizes GHG emissions into three scopes:

- **Scope 1** covers direct emissions from controlled business operations such as fuel combustion, operation of vehicles, and fugitive emissions.

- **Scope 2** covers indirect emissions resulting from the generation of purchased electricity, steam, and heating and cooling consumed by a company.

- **Scope 3** includes all other indirect emissions that occur in a company's value chain such as purchased goods and services, business travel, waste disposal, investments, leased assets, and franchise activities. Calculating scope 3 emissions is more challenging than calculating scopes 1 and 2, and data are usually of a lower quality than scopes 1 and 2 due to challenges in gathering input from value-chain partners.

Net-zero emissions is a step beyond carbon neutrality, as the term applies to the full scope 1, 2 and 3 emissions. In best practice, net zero (as defined by SBTi) involves the maximum feasible reduction of emissions (90 percent physical absolute reduction across all scopes by 2050 at the latest for cross-sector pathway), with goals aligned to a 1.5°C science-based target. It also includes the removal of remaining GHGs with carbon removals. Although offsetting can play a subsidiary role, it should be complementary to real reduction.

The Science Based Targets initiative (SBTi) defines and promotes best practices in reducing emissions and setting net-zero targets in line with climate science. SBTi is the leading organization that provides clearly defined cross-sector and sector-specific (e.g., for aviation and road transport) guidance. The SBTi notes that the Intergovernmental Panel on Climate Change warned that global warming must not exceed 1.5°C to avoid the catastrophic impacts of climate change. To achieve this, cross-sector GHG emissions must halve by 2030, and drop to net zero by 2050.

Accelerating the Transition to Net-Zero Travel:
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Sustainability: Travel's New Frontier

Global warming is visibly affecting lives and industries across the globe. Extreme temperatures are rapidly becoming the norm across most regions, and July 2022 was the sixth warmest July since global record keeping began in 1880.[1] While virtually all industries both contribute to the problem of climate change and are impacted by it, the travel and tourism sector is arguably unique. It not only accounts for a large and growing share of greenhouse gas (GHG) emissions—between 8 to 11 percent of global GHG emissions in 2019[2]—but is one of the most difficult sectors to decarbonize given the scale and variety of change required. However, there is a pathway to net zero, and committing to it should be a top priority to avoid the worst climate outcomes.

1   Jeff Masters and Bob Henson, "July 2022: Earth's 6th warmest July on record," Yale Climate Connections, August 12, 2022.

2   "A net zero roadmap for travel & tourism: Proposing a new target framework for the travel & tourism sector," World Travel & Tourism Council, November 2021.

A Large, Growing Contributor to Global Emissions

Travel and tourism is a global and diverse sector spanning transport, accommodation, retail, food and beverage, and tourism activities. It's also growing rapidly: likely making the industry an even more significant source of global GHG emissions in the future.[3] For example, air travel alone is predicted to account for 12 to 27 percent of global emissions by 2050,[4] and that may be conservative as research continues to quantify the impact of non-CO2 emissions like contrails (vapor trails that leave pollutants in the atmosphere). The current consensus is air transport's total climate impact could

potentially be between two and four times more than previously estimated.[5]

Changing this likely growth trajectory requires companies follow best-practice emissions target setting. The Science Based Targets initiative (SBTi) asserts that limiting global warming to a 1.5°C increase requires cross-sector GHG emissions halve by 2030 and drop to net zero by 2050, with companies across industries needing to reduce their emissions by an average of 4.2 percent a year.[6] In short, a science-based, long-term, net-zero target for cross-sector pathways requires a 90 percent absolute reduction across all emissions scopes in individual company emissions (Exhibit 1).

3   "Tourism's carbon emissions measured in landmark report launched at COP25," UNWTO, December 4, 2019.

4   "Business travel GHG emissions analysis," World Resources Institute, September 15, 2021.

5   Sid Perkins, "Tourism is four times worse for the planet than previously believed," Science, May 7, 2018.

6   "SBTi corporate manual," Science Based Targets, December 2021; "SBTI corporate net-zero standard," Science Based Targets, October 2021.

EXHIBIT 1

SBTi's Net-Zero Standard requires companies to set both near-term and long-term science-based targets, neutralize residual emissions

1 Near-term science-based targets: 5-10 year emission reduction targets in line with 1.5-degree pathways

2 Long-term science-based targets: targets to reduce emissions to a residual level in line with 1.5-degree scenarios by no later than 2050 (typically requiring reduction of ~90%)

3 Neutralization of residual emissions: counterbalance residual emissions through permanent carbon removals

4 Beyond value chain mitigation: in the transition to net-zero, mitigate emissions beyond own value chain, e.g. through credits from jurisdictional REDD+

● GHG emissions (abatement within the value chain)　　● Abatement or removals beyond a company's value chain　　● Removals　　◆ Net-zero emissions

Source: SBTi's Corporate Net-Zero Standard; team analysis

Why Reducing Emissions Is So Hard

Travelers generate emissions driving to airports, flying to destinations, taking cruises, staying in hotels, and eating out at restaurants. The sheer breadth of ways the travel and tourism sector contributes to GHG emissions—transport and building-related emissions are the primary contributors—underscores the industry's net-zero challenge, especially around technological and cost issues.

After all, ways of decarbonizing transport and building-related emissions in the near- to mid-term are well known, such as electrifying road vehicles, converting to sustainable aviation fuel (SAF) or increasing building energy efficiency. Yet it's easier said than done. Companies are currently limited in what they can feasibly pursue due to infrastructure limitations and the exorbitantly high cost of fuels or materials. And while building-related emissions are hard to abate due to a combination of factors, the number of properties requiring updates and optimization itself causes challenges. To illustrate, a typical passenger trip as shown in Exhibit 2 would account for ~5% of the total typical carbon footprint, or ~17% of total transport emissions, for a person in the US.[7]

7   "What Is Your Carbon Footprint?" The Nature Conservancy, https://www. nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/, accessed 16 Sep, 2022

EXHIBIT 2

Emissions from a representative trip, kg CO2e

Roundtrip flights from Cleveland to Boston ► **355**

~$300 miles of driving rental car around destination ► **191**

~$220 on drinks and restaurants ► **141**

~$140 on intercity rail tickets ► **94**

2 nights in full-service hotel ► **65**

~$50 on taxi to and from airport ► **14**

4 hours spent on laptop booking trip ► **<1**

Source: McKinsey Catalyst Zero, team analysis and assumptions

"[US] domestic and international travel activity is expected to grow by around 85 percent cumulatively between 2016 and 2030, likely making the industry an even more significant source of global GHG emissions in the future"

Doing More to Achieve Net Zero by 2050

There's no shortage of companies pledging to fight global warming. Globally, more than 3,500 organizations across all industries have set emission-reduction targets, including airlines, hotels, restaurants, and those providing leisure and tourism services.[8] Yet many travel and tourism companies commit to reach net zero without a plan in place to reduce emissions. As a result, sub-sectors have varying levels of maturity when it comes to the amount of decarbonization they have achieved and the governance around their sustainability efforts, resulting in varying preparedness to reach net zero (Exhibit 3).

External stakeholders may increasingly require full transition plans from companies, including the expected physical reductions they'll commit to. A focus on reducing a company's actual emissions (physical mitigation), rather than relying on removal credits, may also become the norm

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8   "Companies taking action," Science Based Targets initiative (SBTi) website, accessed September 2022.

given the focus on physical reduction in the prioritization of carbon mitigation hierarchies, and supply constraints and market immaturity for carbon removals that make it difficult to source large volumes.

Setting and committing to sustainability targets may also be a path to growth when a company is able to link decarbonization to its customer-value proposition. "[The] environmental performance really is probably the defining differential there," said Intrepid Travel co-founder and chairman Darrell Wade. "I look at Intrepid and other companies who have taken a leading stance on sustainability, and we tend to be growing faster and be more profitable."

"External stakeholders may increasingly require full transition plans from companies, including the expected physical reductions they'll commit to"

EXHIBIT 3

Comparison of sector ESG maturity based on CDP reporting

		Airlines	Rental Cars, Road and Rail	Hotels, Restaurants and Leisure
■ MORE MATURE ■ LESS MATURE				
Target setting: • Are any emissions targets set? • Are emissions targets science–based and SBT–validated? • What scope coverage do targets have?		■	■	■
Governance • Are employees incentivized on climate target progress? • Does the organization use carbon pricing?		■	■	■
Combined maturity score		■	■	■

Source: 2020 CDP responses for Airlines (n=23), Road and Rail (n=25), and Hotels, Restaurants, and Leisure (n=25) sectors (PIC level 3 sector definition)

Curbing Emissions Is Difficult but Necessary

Decarbonizing the travel sector is difficult. "The travel industry faces a variety of challenges," said Expedia Group's VP of global social impact and sustainability, Aditi Mohapatra, "from the need to drive change across highly diverse actors globally—from multi-national brands to many small businesses and local entrepreneurs—to a lack of market-ready, zero-carbon technologies for certain key sectors like aviation, to traveler confusion around what 'sustainability' really means."

Yet reaching net-zero by 2050 is becoming a top priority—driven by stakeholder pressure—and there are paths to achieve that goal. And while the ideal scenario has the entire travel and tourism sector progressing in its decarbonization efforts at the same pace, those acting sooner are likely to gain a competitive advantage over their peers (see "Sustainability is a stakeholder priority").

That's because if companies are not prepared to act on sustainable actions—or if the 1.5ºC budget is breached—they may be viewed as higher-risk investments. External stakeholders may place intense pressure on companies, as we have seen in other sectors, with those seen as decarbonization risks treated similarly to those with poor credit ratings today. In general, the perspective on risk is shifting from purely financial to a focus on operations and long-term sustainability.

Four Strategies to Accelerate Decarbonization

This report offers four practical, actionable strategies travel and tourism companies can employ to define and prioritize decarbonization initiatives:

1. Identify and sequence decarbonization initiatives

2. Partner to accelerate decarbonization of business travel

3. Close the "say-do" gap among leisure travelers

4. Build new sustainable travel businesses for the future

Each strategy could be pursued separately or in parallel, depending on a company's goals, circumstances, resources, and capabilities. However, the first strategy—which incorporates the marginal abatement cost curve pathways framework—could become part of a company's planning processes to ensure its own operations are decarbonized as a priority, and become an enabler for the other strategies.

Strategies 2 and 3 may help support decarbonization costs by engaging organizations or individuals that spend on travel in innovative partnerships or encouraging them to pick more sustainable options.

Strategy 4 opens new business-building opportunities for companies to explore in a net-zero world, helping them to either decommission portions of the core businesses that are hard to abate (for example, by exiting short-haul flight routes in favor of electric buses), or expand into new revenue-driving sectors (for instance, through partnering with charging infrastructure players to better enable rental car customers to charge on the go).

Companies can gauge whether they're on track with a starting-point action checklist for each strategy, provided at the end of the report.

SUSTAINABILITY IS STAKEHOLDER PRIORITY

Companies are likely to face pressure to act from customers, employees, regulators and government entities, and investors.

Customers are focusing on emissions when making travel decisions. For instance, 48 percent of the top 50 US organizational travel spenders have set, or committed to set, science-based targets.[1] Leisure travelers are following. McKinsey's consumer sentiment survey spanning 5,500 travelers in 13 countries found emissions are now the top concern of respondents in 11 of the 13 countries polled. More than half the respondents were "really worried" about climate change and aviation should become carbon neutral in the future, while 36 percent plan to fly less to reduce their climate impact.[2]

Employees are increasingly conscious of environmental, social, and governance (ESG) topics. Sustainability is high on the list of employee priorities—a Unily census shows 65 percent are more likely to work for a company with a strong environmental policy.[3] Sustainability matters. Morale and employee loyalty were 55 percent and 38 percent higher respectively in companies with strong environmental programs compared to those without.[4]

Regulators and government entities are also focusing keenly on sustainability policies. The EU has lifted its 2030 emissions-reduction target to 55 percent from 50 percent through a new Green Deal.[5] South Africa in 2019 became the first African country to introduce a carbon tax, joining 57 nations that have done so globally.[6] The French government banned short-haul flights which had train or bus alternatives, and the German government plans to double the tax levied on short flight tickets.[7] And the US Inflation Reduction Act contains countless measures for the transport and hospitality sectors, including potential subsidies on renewable fuels, electric vehicles, and much more.[8]

Investors are also paying attention to sustainability. Currently, 36 percent of all managed assets are sustainable, but the ESG debt market could swell to $11 trillion by 2025.[9] More than 700 global investors are pushing for carbon neutrality by 2050 as part of Climate Action 100+.[10] Meanwhile, almost half of US investors want to divest from companies without ESG goals.[11]

Companies are setting the bar higher for themselves. Around 80 percent of the world's largest corporations used Global Reporting Initiative Standards in their 2018 reports,[12] while more than 600 companies signed the UN Carbon Neutral Now Pledge, including big tech and air travel companies.[13] And around 500 companies have signed the Glasgow Declaration on Climate Action in Tourism.[14]

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1   "Companies taking action," Science Based Targets initiative (SBTi) website; 2020 corporate travel 100, Business Travel Network, October 2020.

2   Mishal Ahmad, Frederik Franz, Tomas Nauclér, and Daniel Riefer, "Opportunities for industry leaders as new travelers take to the skies," McKinsey, April 5, 2022.

3   Leyla Acaroglu, "Future of the sustainable workplace in the age of COVID-19 and climate change," Unily.

4   Tensie Whelan and Carly Fink, "The comprehensive business case for sustainability," Harvard Business Review, October 21, 2016.

5   "Fit for 55," European Council.

6   Mmatlou Kalaba, "South Africa's carbon tax matters—for the economy and tackling climate change," University of Pretoria, July 29, 2019.

7   "France moves to ban short-haul domestic flights," BBC, April 12, 2021; "Germany plans to nearly double taxes on short-haul flights," Reuters, October 15, 2019.

8   "OMB analysis: The social benefits of the Inflation Reduction Act's greenhouse gas emission reductions," Office of Management and Budget, August 2022.

9   "ESG assets rising to $50 trillion will reshape $140.5 trillion of global AUM by 2025, finds Bloomberg Intelligence," Bloomberg, July 21, 2021; Simon Jessop, "Sustainable investments account for more than a third of global assets," Reuters, July 19, 2021.

10   "Climate Action 100+ net zero company benchmark shows an increase in company net zero commitments, but much more urgent action is needed to align with a 1.5°C future," ClimateAction100+, March 30, 2022.

11   "Companies failing to act on ESG issues risk losing investors, finds new PwC survey," PwC, 2021.

12   GRI Standards, https://www.globalreporting.org/standards/, accessed Sept 2022

13   Georg Kell, "The remarkable rise of ESG," Forbes, July 11, 2018; "Our participants," United Nations Climate Change.

14   "Glasgow Declaration on Climate Action in Tourism surpasses 500 signatories," United Nations World Tourism Organization, April 22, 2022.

STRATEGY 1:
Identify and Sequence Decarbonization Initiatives

Methods for decarbonizing operations are well known. The challenge is understanding the strategic tradeoffs and choosing the most efficient and effective pathway.

Carbon accounting practices are widespread, and the primary levers companies can pull to decarbonize their operations are relatively easily identifiable. Yet developing a plan to meet near-term and long-term science-based emissions targets can be daunting. Which initiatives should be invested in given the limited resources available? Should a company prioritize options that are most impactful on the carbon baseline? Or should it adopt those that are highly visible to external stakeholders?

To truly impact decarbonization, companies need to ensure limited resources of capital and talent are allocated effectively through a robust planning process. Utilizing the marginal abatement cost curve (MACC) pathway framework can help, and this section addresses three core challenges travel companies face when planning decarbonization journeys:

1. Understanding the costs and abatement potential of initiatives in different pathways

2. Determining the optimal sequencing of initiatives based on cost and abatement

3. Analyzing strategic tradeoffs of different implementation pathways

We'll use a hospitality industry example to illustrate the process, as this sub-sector faces unique challenges around decarbonization because of the large volume of businesses that produce scope 3 emissions, or emissions resulting from activities not within a company's direct control. "Our business model means we franchise or manage 99 percent of the hotels in our estate," said IHG Hotels & Resorts CEO Keith Barr. "Achieving reduced emissions requires close partnerships with our hotel owners—and they need detailed information that highlights both the challenges and opportunities for each property in reducing its carbon footprint."

Reducing Emissions: A Hospitality Example
There are numerous potential routes to net zero that a company can take. A pathway, or scenario, is a single, hypothetical route that a company could take to implement initiatives and can result in differing cost and abatement profiles. A pathway can be explored via the MACC framework to understand the costs and abatement potential it would offer, as well as the strategic tradeoffs of differing implantation scenarios (see "How to read a MACC chart").

> *"Carbon accounting practices are widespread, and the primary levers companies can pull to decarbonize their operations are relatively easily identifiable. Yet developing a plan to meet near-term and long-term science-based emissions targets can be daunting"*

HOW TO READ A MACC CHART

A MACC framework can be used to understand the costs and abatement potential of various pathways. The MACC chart, which is a unique data presentation, is at the heart of the framework. Individual initiatives can be compared within the chart based on their height and width. "No regrets" initiatives are typically those that are the widest (that is, the greatest abatement potential) and the lowest on the y-axis (that is, the lowest cost and/or greatest savings potential) (Exhibit 4).

EXHIBIT 4

How to read a MACC

Exemplary marginal abatement cost curve (MACC)

Abatement cost, $ / cumulative tCO2e abated

Y-axis, or height of bars, shows cumulative abatement cost per lever per tonne of carbon abated in a defined pathway (i.e., $/tCO2e)

Width of bars corresponds to abatement potential – the wider the bar, the greater the carbon abatement

Levers are sorted by increasing abatement costs per tonne of abated carbon

Positive y-axis bars indicate net-positive costs

Unabated emissions

Negative y-axis indicates levers are cost savings

Individual bars represent individual levers at one site to reduce emissions

Cumulative emissions, cumulative tCO2e

X-axis, or width of bars, shows cumulative abatement potential of each lever in a defined pathway (i.e., tonnes of carbon)

Hotels provide a unique example for exploring the development of a MACC pathway. More than three quarters of a hotel company's GHG emissions are scope 3, resulting from the activities of property owners and operators (included in franchisees category) and suppliers outside of its direct control. Exhibit 5 shows the typical baseline emission profile of a hotel chain.

EXHIBIT 5

~76% of hotel and lodging players' emissions are concentrated in scope 3, mostly in franchises

GHG emissions by source, based on CDP emissions data, % of total, emission profile based on 17 players – normalized by revenue
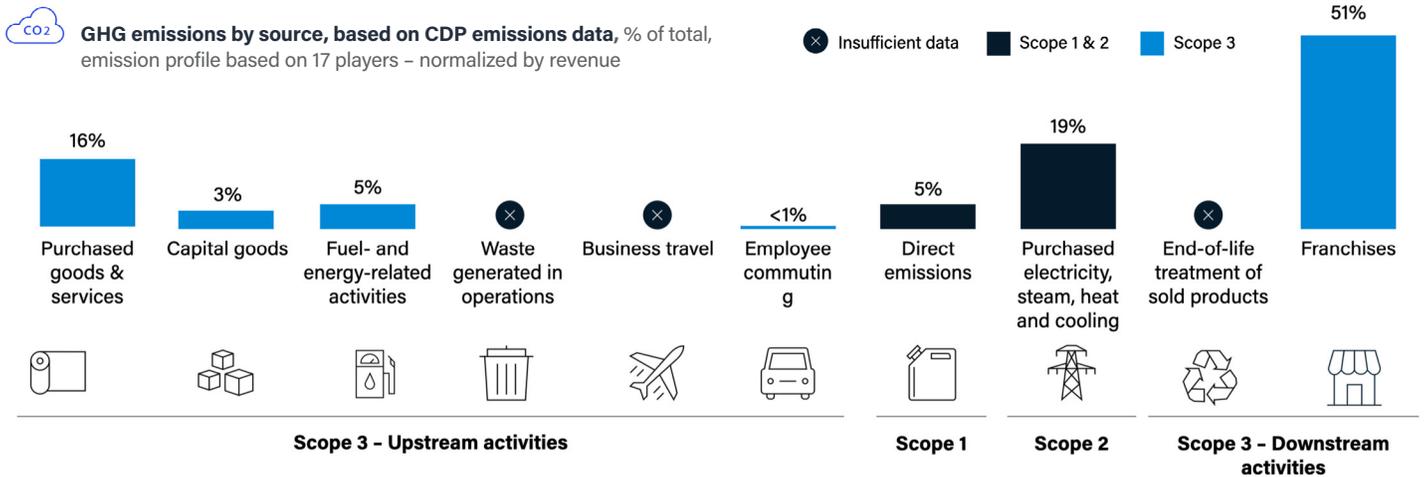
⊗ Insufficient data   ■ Scope 1 & 2   ■ Scope 3

Source	%
Purchased goods & services	16%
Capital goods	3%
Fuel- and energy-related activities	5%
Waste generated in operations	⊗
Business travel	⊗
Employee commuting	<1%
Direct emissions	5%
Purchased electricity, steam, heat and cooling	19%
End-of-life treatment of sold products	⊗
Franchises	51%

Scope 3 – Upstream activities | Scope 1 | Scope 2 | Scope 3 – Downstream activities

Note: Scope 1 and 2 emissions are provided as single totals by CDP. Scope 3 emissions with negligible emissions or insufficient peer data have been omitted.

Source: McKinsey Catalyst Zero, CDP

Primary initiatives to decarbonize a hotel's emissions can vary by scope (Exhibit 6) and include managing energy intelligently; designing new and upgraded infrastructure to be more energy efficient; procuring, producing, and storing renewable energy to support the grid transition; and electrifying systems to the fullest ability possible.

EXHIBIT 6

Representative levers to decarbonize hospitality (non-exhaustive)

Scope	Source of emission	Decarbonization levers
Scope 3 upstream	Purchased goods & services	Purchase sustainably produced furniture, towels, sheets, certified paper etc. Engage service providers with sustainability agenda for laundry, cleaning, catering Promote vegan/vegetarian menus
	Fuel- and energy-related activities	Incentivize fuel and energy efficient production with suppliers
Scope 1	Direct emissions	Implement efficiency measures, e.g., building efficiency and insulation, controls/automation, regular maintenance Convert property vehicles to BEVs
Scope 2	Purchased electricity, steam, heat and cooling	Reduce energy/electricity consumption, e.g., LED lighting, high-efficient appliances Incentivize/engage guests in energy-conscious action Source electricity from renewables and increase energy efficiency of buildings
Scope 3 downstream	Franchises	Develop programs and management tools to support franchises on their decarbonization journey

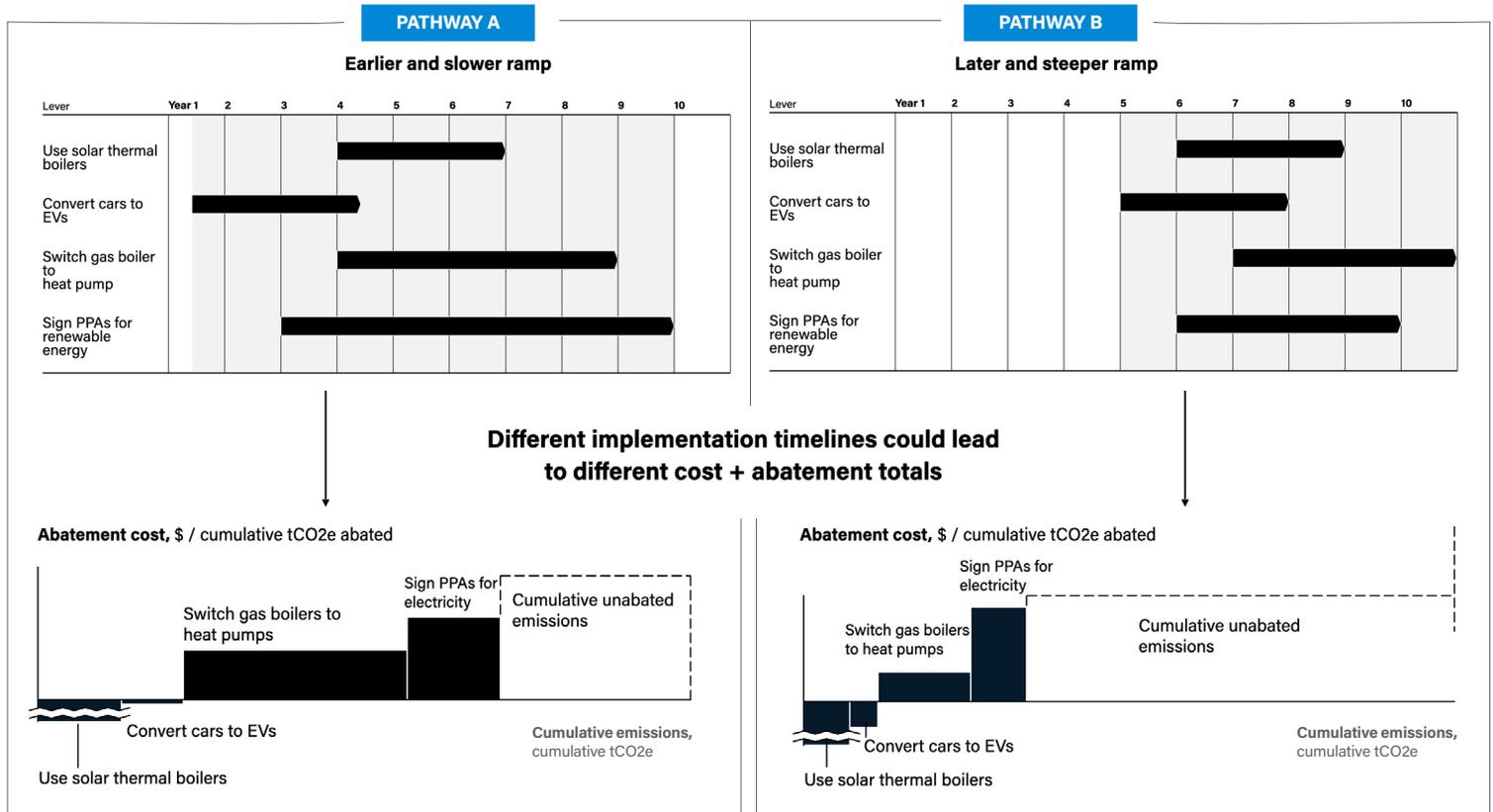**Source**: McKinsey Catalyst Zero, CDP

Understanding the Costs and Abatement Potential of Initiatives in Different Pathways

Developing a decarbonization plan is an iterative process grounded in the sizing of initiatives. A pragmatic approach could be to explore two or three potential implementation routes to get to net zero which can be refined over time. This analysis could form the basis for strategic discussions on the cost-benefit tradeoffs for each pathway (Exhibit 7).

"To truly impact decarbonization, companies need to ensure limited resources of capital and talent are allocated effectively through a robust planning process."

EXHIBIT 7

Representative pathway examples

PATHWAY A
Earlier and slower ramp

PATHWAY B
Later and steeper ramp

Different implementation timelines could lead to different cost + abatement totals

Abatement cost, $ / cumulative tCO2e abated

Cost and abatement may vary by pathway. By zooming in on a single lever a hotel may decide to implement, it becomes clearer how different pathways can affect sizing over time. As an example relevant for most hotel properties, procuring renewable electricity certificates (RECs) could be a part of a scope 2 decarbonization initiative plan. As shown in Exhibit 8, companies can choose in pathway A to start purchasing

RECs earlier and ramp up slower, creating a higher net cost, but lower cumulative emissions over time. In pathway B, companies could choose to start purchasing RECs later for a lower net cost but achieve much higher net emissions.

EXHIBIT 8

Single lever sizing example: Purchasing Renewable Electricity Certificates (RECs) for a single property

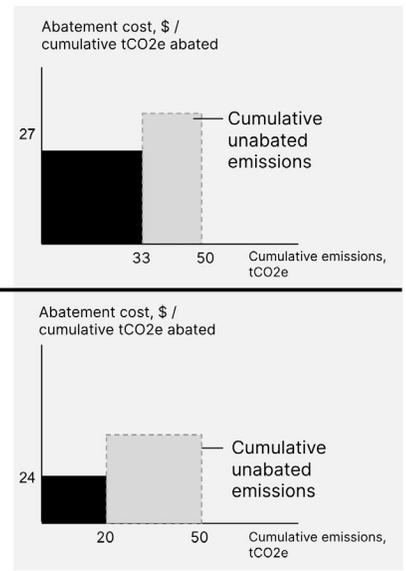Legend: Emissions of property (tCO2e) / Abatement cost ($)

Simplified example of abatement cost calculation by pathway — **Resulting lever sizing**

Pathway	Year 1 (Baseline)	Year 2	Year 3	Year 4	Year 5	Cumulative
Pathway A *Earlier start, slower ramp*	10	5 *(-5)*	2 *(-8)*	0 *(-10)*	0 *(-10)*	17 tCO2e (-33tCO2e)
	0	184	254	267	216	($920) ($27/tCO2e average)
Pathway B *Later start, quicker ramp*	10	10	10	0 *(-10)*	0 *(-10)*	30 tCO2e (-20 tCO2e)
	0	0	0	267	216	($482) ($24/tCO2e average)

Resulting lever sizing (Pathway A): Abatement cost, $ / cumulative tCO2e abated. 27. Cumulative unabated emissions. 33, 50. Cumulative emissions, tCO2e

Resulting lever sizing (Pathway B): Abatement cost, $ / cumulative tCO2e abated. 24. Cumulative unabated emissions. 20, 50. Cumulative emissions, tCO2e

Disclaimer: REC prices can vary widely based on geography and market conditions. Data shown is representative only

Source: McKinsey Catalyst Zero

Analyzing cost and emissions abatement in different pathways enables the hotel to assess the strategic tradeoffs. For example, an initiative in pathway A may be more expensive, but enables the offering of a "green" property to business travelers at a higher rate. Alternatively, an initiative in pathway B could be less expensive cumulatively, but result in higher unabated emissions which could lead to negative investor sentiment or regulatory implications. Regardless of the decision, analyzing pathways in this way enables the hotel leadership team to assess the cost-benefit tradeoffs of the decision more clearly.

Determining the Optimal Sequencing of Initiatives Based on Cost and Abatement

In addition to sizing individual initiatives, travel companies can consider the effect of sequencing their initiatives on decarbonization planning. The order in which initiatives are implemented may affect cost and abatement profiles. For hotels, a key decision may be whether to retrofit deep building infrastructure before or after electrification efforts (such as introducing Internet of Things-based systems to manage heating, ventilation, and air conditioning). For instance, while it may cost more upfront to undertake a deep retrofit at the same time as building electrification, it could result in greater savings from a lifetime cost perspective.

Analyzing Strategic Tradeoffs of Different Implementation Pathways

After all levers have been sized and sequencing considerations taken into account via differing pathway analyses, travel companies can combine analyses into MACC pathway charts. These can help start conversations on the strategic implications of potential pathways.

A hotel would need to consider the tradeoffs of acting sooner rather than later on retrofits, electrification, and energy management (Exhibit 9). In general, procuring renewable electricity will add to net costs given the additional operating expense. Hospitality operators could benefit from considering a combination of retrofits and energy-management initiatives prior to renewable electricity procurement initiatives, to minimize the volume of RECs or power purchase agreements that may have to be signed.
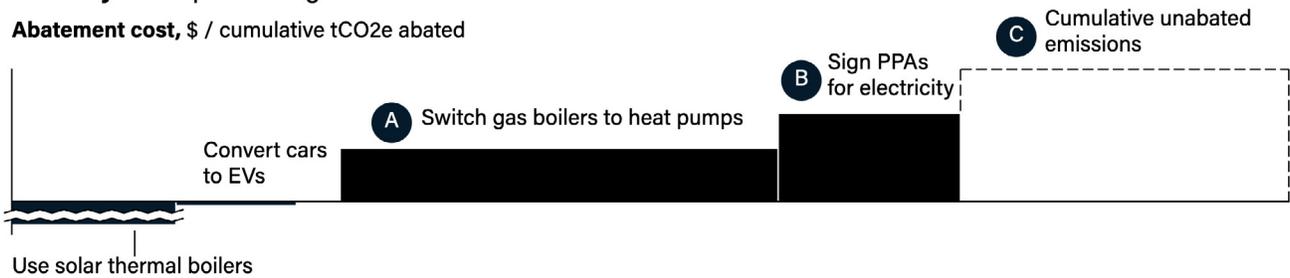
Aviation, rental cars, and mobility services companies have all used the MACC pathway framework as part of assessing, setting, and validating the feasibility of climate targets. When applied in parallel to a target setting or decarbonization
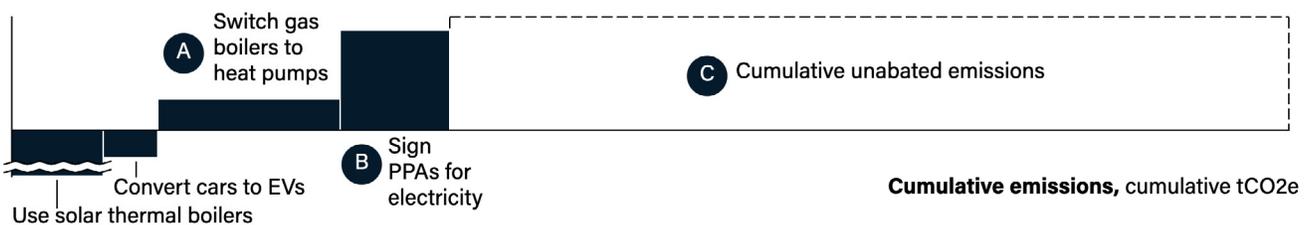
Illustrative Pathway MACCs (non-exhaustive list of potential levers)

Pathway A – Implementing levers **earlier and slower**

Abatement cost, $ / cumulative tCO2e abated

- C Cumulative unabated emissions
- B Sign PPAs for electricity
- A Switch gas boilers to heat pumps
- Convert cars to EVs
- Use solar thermal boilers

Pathway B – Implementing levers **later and faster**

- A Switch gas boilers to heat pumps
- C Cumulative unabated emissions
- B Sign PPAs for electricity
- Convert cars to EVs
- Use solar thermal boilers

Cumulative emissions, cumulative tCO2e

Insights

A For some initiatives, different total emissions and abatement cost profiles may occur due to different implementation action ramps

B For other initiatives, abatement cost profiles may not change dramatically despite differing implementation approaches

C Starting decarbonization earlier can result in lower unabated emissions; greater unabated emissions could pose challenge with external stakeholders

strategy plan, companies can determine tradeoffs of multiple potential paths at once, and feel more confident in their decision making.

Having said that, while the MACC pathway framework is valuable, it's just a tool and has limitations. Companies need to pay attention to underlying assumptions to help ensure transparency, comprehensibility, and accountability for decisions taken based on framework outputs. They can also ensure that the framework is used as a component of a broader strategic assessment.

STRATEGY 2:
Partner to Accelerate Decarbonization of Business Travel

Business travel is a crucial revenue stream for the travel industry—and a major source of GHG emissions. Travel companies can partner with organizations to accelerate both of their decarbonization journeys.

Business travel accounted for $334.2 billion in US-booked domestic and international travel spending in 2019, or 30 percent of total spending.[9] While the COVID-19 pandemic dramatically reduced volumes, it also highlighted business travel's importance to the success of many travel companies: while business travelers account for as few as 10 percent of passengers, they can drive up to 75 percent of airline earnings due to their greater willingness to purchase higher class or refundable fares.[2] Similarly, many hotels rely on business travelers to book rack rates, and hotels near convention centers, for example, rely on business travelers to drive up occupancy.

Yet business travel is emission heavy—in Europe, business travelers are responsible for 30 percent of emissions from travel.[11] In absolute terms, business travel spending in the United States is second only to China, and many organizations driving business travel have set science-based targets or a net-zero goal.[12] For instance, of the top 100 organizations spending on US-booked business air travel in 2019, 75 have made public SBTi or net zero commitments,[13] or 79 percent of

spend. 45 organizations have publicly set a target on or before 2030, which represents 50 percent of spend. This means travel companies can likely expect greater engagement around sustainability in the years ahead as organizations pursue plans to reduce their scope 3 emissions to ensure targets are achieved (Exhibit 10).[14]

> *"While the COVID-19 pandemic dramatically reduced business travel volumes, it also highlighted its importance to the success of many travel companies: while business travelers account for as few as 10 percent of passengers, they can drive up to 75 percent of airline earnings due to their greater willingness to purchase higher class or refundable fares"*

9   "Getting back to business: Navigating the safe return of meetings and their role in economic recovery", US Travel Association, November 2020.

10   Andrew Curley, Rachel Garber, Vik Krishnan, and Jillian Tellez, "For corporate travel, a long recovery ahead," McKinsey, August 13, 2020.

11   Mike Scott, "Can business travel get into a more sustainable flight-path post-Covid?" Reuters, July 15, 2022.

12   BTI outlook annual global report & forecast, Global Business Travel Association, November 2021.

13   2020 corporate travel 100, Business Travel Network, October 2020.

14   "Companies taking action," Science Based Targets initiative (SBTi).

EXHIBIT 10

50% of spend from the top 100 highest spending organizations of business air travel is associated with a public decarbonization commitment on or before 2030

Distribution of US corporate business air travel spend by earliest commitment year[1]
As of September 2022

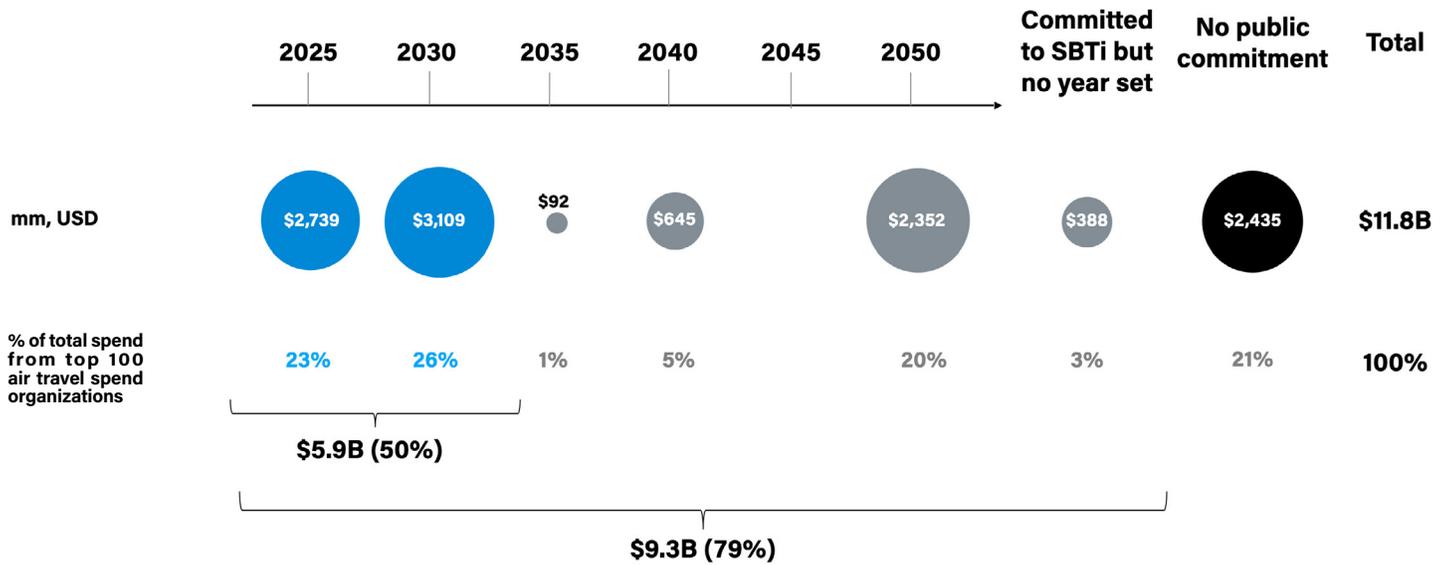|	2025	2030	2035	2040	2045	2050	Committed to SBTi but no year set	No public commitment	Total
mm, USD	$2,739	$3,109	$92	$645		$2,352	$388	$2,435	$11.8B
% of total spend from top 100 air travel spend organizations	23%	26%	1%	5%		20%	3%	21%	100%

$5.9B (50%)

$9.3B (79%)

Exhibit 10 - 1   Inclusive of self-defined and SBTi-aligned near and long-term targets

Source: BTN 2020 Corporate Travel 100, SBTi, press search

Achieving these commitments will be extremely challenging, especially as most of these organizations are expected to grow. Unless there's a conscious effort to reduce travel per employee, that growth will likely increase both the number of employees and the amount of travel, working against efforts to decarbonize.
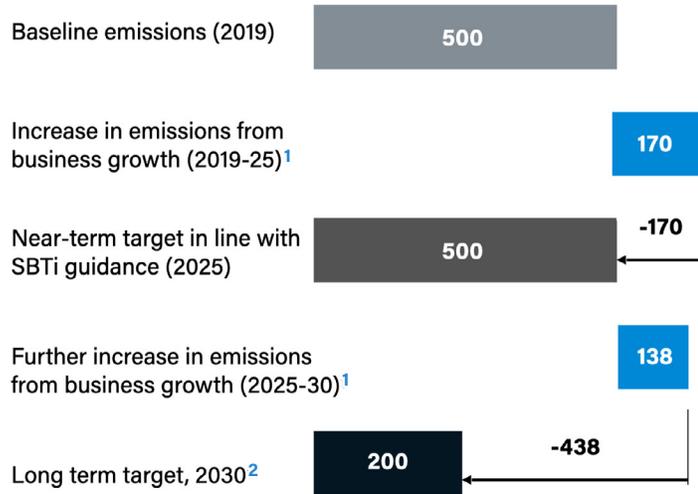
In a post-COVID world, emissions from business travel per employee can be reduced, but organizations will need help from travel companies to do so. If more sustainable options are not available, organizations may reduce overall business travel per employee by substituting travel with hybrid or remote work technology or choosing less carbon-intensive travel service providers (Exhibit 11).

"If the top 100 organizations based on business travel air spend were to utilize SAF to abate their full air travel emissions, demand for SAF— assuming a 70-80 percent emissions reduction—would be 18 to 20 times the annual 2018 US production of 4.5 million gallons."

EXHIBIT 11

Organizations committing to reduce emissions from business travel have a number of levers to pull

Business travel decarbonization commitments of an illustrative large corporate, tCO2e

Examples of levers to reduce business travel emissions

Baseline emissions (2019)	500
Increase in emissions from business growth (2019-25)[1]	170
Near-term target in line with SBTi guidance (2025)	500　-170
Further increase in emissions from business growth (2025-30)[1]	138
Long term target, 2030[2]	200　-438

Switch to EV/PHEVs for rentals, taxis, and rideshare

Reduce trips per FTE

Set up "green" hotels program

Implement individualized carbon budgets

Convert short-haul flights to rail

SAF/renewable fuel offtake agreements

Exhibit 11 - 1　Assuming FTE growth of 5% per annum

Exhibit 11 - 2　Assuming 60% reduction versus baseline year - illustrative - corporates long term target reduction percent might vary from 0 to 90% based on the percent of scope three emission comes from business travel

Capturing the Partnership Opportunity

Estimated emissions from all US-booked business air travel in 2019 was around 50 million metric tons of CO2e.[15] The top 100 organizations based on air travel spending account for 17 percent of these emissions, or around 8-9 million metric tons of CO2e annually. If these organizations were to utilize sustainable aviation fuel (SAF) to abate their full air travel emissions, demand for SAF— assuming a 70-80 percent emissions reduction—would be 18 to 20 times the annual 2018 US annual production of 4.5 million gallons.[16] This dramatic potential rise in demand could help further support SAF market development.

15　2020 corporate travel 100, Business Travel Network, October 2020; McKinsey Catalyst Zero, Spend-based air travel emissions factor.

16　US Energy Information Administration, "Petroleum and other liquids," accessed September 15, 2022: *https://www.eia.gov/dnav/pet/pet_cons_psup_a_EPJK_VPP_mbbl_a.htm.*; UK DEFRA Emissions Factors for Advanced Users, 2021

By working together to reduce emissions from business travel, both travel companies and organizations driving business travel can make progress and achieve their respective carbon-emission commitments. There are several opportunities for travel companies to encourage this type of collaboration:

✓ By creating opportunities for corporations to support travel organizations' use of renewable energy or sustainable fuels for business travel hotels and transportation. For example, JetBlue's Sustainable Travel Partners program helps corporations reduce their business travel emissions and meet their own sustainability targets. "Through the purchase of JetBlue SAF certificates, corporate customers enable JetBlue to expand its usage of SAF by helping cover the price premium between conventional and sustainable aviation fuel," said JetBlue director and head of sustainability and ESG Sara Bogdan.

✅ By negotiating rates and deals with business travel clients to increase the use of, and revenue generated from, lower-carbon options. For example, travel companies and organizations could agree on a higher rate or rate structure for more carbon intense booking selections, offsetting the cost of implementing decarbonizing technology across products.

✅ By collaborating to develop business travel booking platforms that align with travel policy and increase the visibility of preferred sustainability products or services. Travel companies could also ensure data transparency so corporations can accurately measure their carbon emissions from travel.

✅ By coordinating with organizations on updating internal policies to ensure employees are steered towards more sustainable options.

Most examples of these partnerships between organizations and the travel sector are seen in the aviation industry given its emissions intensity. However, hospitality and ground transportation companies can anticipate similar expectations from their corporate customers. Such partnerships could reduce overall travel emissions and help offset the incremental cost of capital to reduce emissions (Exhibit 12).

"Business travel is emission heavy—in Europe, business travelers are responsible for 30 percent of emissions from travel"

EXHIBIT 12

Many examples of corporate and travel company partnerships for decarbonization are focused on SAF supply

NOT EXHAUSTIVE

Partnership program	Corporates Involved	Program type Volume, %	Program commitment
Alaska Airlines' SAF partnerships	1 corporate	%-based	MoU between Alaska/SkyNRG Company: Goal of Net-zero by 2040
American Airlines' SAF partnerships	1 corporate	Volume-based	Use 9m gallons of SAF by 2023 Procure 10m gal. from Prometheus by 2025
Board Now (SkyNRG)	7 corporates	Volume-based	Produce 100k metric tons (26m gallons) of SAF/p.a./plant
Delta Airlines' SAF partnerships	5 corporates	%-based	10% of Delta's jet fuel will be SAF by 2030 Company: Net-zero by 2050
EcoSkies Alliance (United)	21 corporates	Volume-based	3.4m gallons of SAF in 2021 Company: Net-zero by 2050
KLM's SAF partnerships	3 main corporates	%-based	Develop and purchase 19.5m gal. of SAF p.a. until 2030
SAFinity (Rolls Royce)	Business aviation customers	%-based	Goal of enabling the sectors RR operates in to reach net-zero carbon emissions by 2050
Shell Aviation and Amex Global Business Travel alliance	GBT corporate partners can buy SAF	%-based	Company: Both companies have targets of net-zero emissions by 2050
Sustainable Aviation Buyers Alliance (SABA)	10 founding corporate buyers	Volume-based	No announced target yet, but RMI is hoping for 2 billion gallons of SAF purchased by 2025
JetBlue SAF Partnership	4 corporates	Volume-based	10% of JetBlue's jet fuel will be SAF by 2030

STRATEGY 3:
Close the "Say-do" Gap Among Leisure Travelers

Leisure travel accounted for about 70 percent of the $1.13 trillion spent on US-booked domestic and international travel in 2019.[1] While a majority of these travelers say they want to travel more sustainably, they need encouragement to actually do so.

....

1   "Getting back to business: Navigating the safe return of meetings and their role in economic recovery", US Travel Association, November 2020.

Travelers are increasingly conscious of their carbon footprint and are eager for sustainable travel options. A Booking.com survey in 2021 found 61 percent of travelers said the COVID-19 pandemic made them want to travel more sustainably, with 81 percent of travelers expressing a desire to stay in sustainable accommodation in the upcoming year compared with 74 percent in 2020 and 62 percent in 2016.[17]

....

17   "Sustainable travel report 2021", Booking.com, June 2021.

A subset of consumers say they want to take action. A McKinsey survey of 5,500 travelers in 13 countries found 36 percent plan to fly less to reduce their climate impact. The same survey found up to 40 percent of leisure travelers were willing to pay slightly more for carbon-neutral flight tickets,[18] while another survey found almost half were willing to pay more to travel with a service provider committed to sustainability (Exhibit 13).[19]
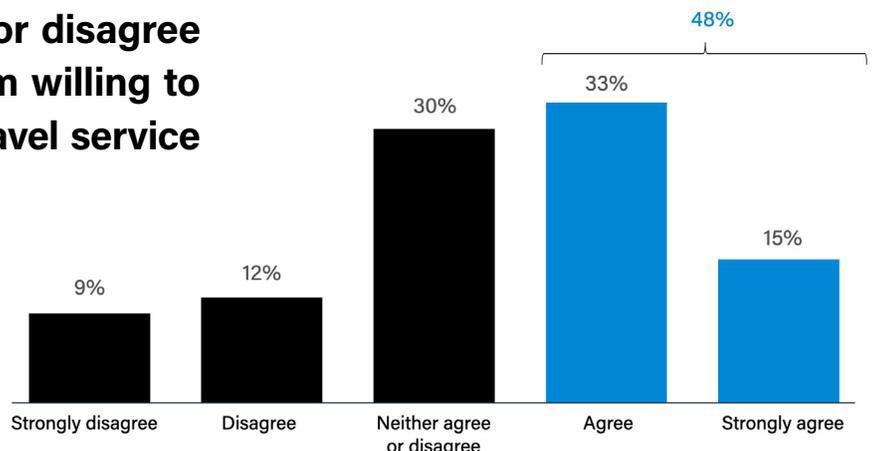
....

18   Mishal Ahmad, Frederik Franz, Tomas Nauclér, and Daniel Riefer, "Opportunities for industry leaders as new travelers take to the skies," McKinsey, April 5, 2022.

19   Sustainability and remote work shaping the future of travel: A consumer perspective, Skift Research, February 2022.

EXHIBIT 13

Percent of travelers that agree or disagree with the following statement: I'm willing to pay higher rates/fare to use a travel service provider who demonstrates environmental responsibility

N = 4037 in 5 countries

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
9%	12%	30%	33%	15%

48%

....

Source: "Sustainability and remote work shaping the future of travel: A consumer perspective", Skift Research, February 2022.

Yet despite this growing interest in sustainable travel services and products, most travelers have not paid a premium for a more sustainable option. A Skift survey of 1,011 respondents for this report found only 14 percent of travelers have willingly paid more for such an option,[20] suggesting a large gap between what leisure travelers say they want to do and their actions. This substantial "say-do" gap could hinder the sustainable travel transition: for example, a 2022 Swiss study found when presented with the option to buy carbon offsets for flights, only around 5 percent of consumers did so—resulting in a mean carbon offset purchase of only around €1 per flight.[21]

Close the "Say-do" Gap Among Leisure Travelers

There are multiple root causes behind this "say-do" gap. While travel companies can't fix it alone, they can take bold moves to shape future industry standards and help travelers overcome barriers to acting (and many booking platforms have begun to do so). For instance, research on travelers' willingness to pay for sustainability provides insights on some clear social, environmental, and physical barriers to reducing carbon emissions when traveling. Additionally, the field of behavioral science sheds light on barriers that may prevent consumers from taking action.[22]

First, the lack of information on sustainable travel can unnerve travelers: some seven in ten consumers report feeling overwhelmed when exploring sustainable travel options.[23] This can be heightened by confusion around "greenwashing" and the impact of different options, which explains why two-thirds of consumers want more information from lodging and transportation providers about navigating sustainability options (Exhibit 14).[24]

Second, 49 percent of travelers believe there aren't enough sustainable options. In addition, they may be confusion about existing options, and they are often hard to identify.[25]

....

20   "US Travel Tracker Survey," Skift Research, August 2022.

21   Sebastian Berger, Andreas Kilchenmann, Oliver Lenz, and Francisco Schlöder, "Willingness-to-pay for carbon dioxide offsets: Field evidence on revealed preferences in the aviation industry," Global Environmental Change, March 2022, Volume 73, Number 102470.

22   "Nudge to action: Behavioural science for sustainability," UNEP, March 3, 2017.

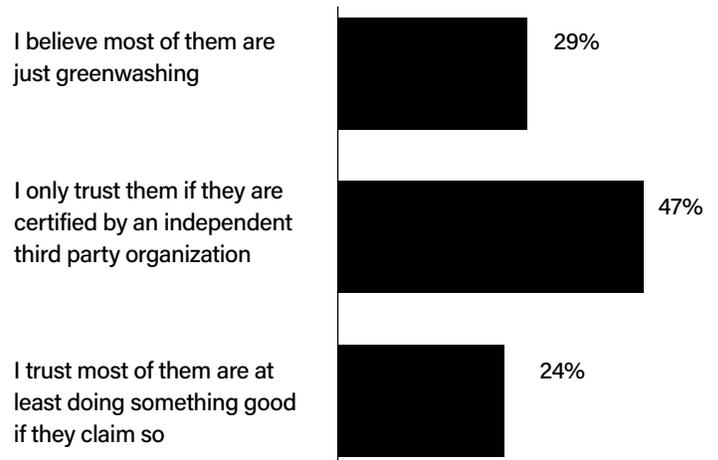23   Sustainable travel study, Expedia Group, April 2022.

24   Ibid

25   Sustainable travel report 2021, Booking.com, June 2021; Sustainable travel study, Expedia Group, April 2022.

Response to the following question: How much do you trust travel service providers who claim they are committed to sustainable practices?

N = 4037 in 5 countries

I believe most of them are just greenwashing	29%
I only trust them if they are certified by an independent third party organization	47%
I trust most of them are at least doing something good if they claim so	24%

Source: "Sustainability and remote work shaping the future of travel: A consumer perspective", Skift Research, February 2022.

Third, 74 percent of travelers say sustainable travel services and products cost too much,[26] which may in part be due to the way sustainable services and products are presented. For instance, sustainable aviation fuel (SAF) or carbon offset options are often presented as an add-on at the end of the booking journey, so they come across as another charge. Other sustainable options are presented as part of premium services or products like luxury hotels that may be more sustainable than older or less-expensive lodging options.

Finally, sustainability needs to compete with other booking considerations. For instance, in air travel, travelers rank sustainability in sixth place, after price, connection quality, airplane seat comfort, cabin crew and service, and minimizing plastic waste.[27]

....

26   Ibid.

27   Mishal Ahmad, Frederik Franz, Tomas Nauclér, and Daniel Riefer, "Opportunities for industry leaders as new travelers take to the skies," McKinsey, April 5, 2022.

Travel websites show some of the barriers travelers face. Options that are less carbon intensive may not be marketed as sustainable, may not be placed where consumers expect to find them, or may not present enough information for informed decision making. For instance, in our review only one major hotel brand offered sustainable booking options, and only two airlines displayed options as part of the booking process (at the end). While four other airlines had some sustainability purchase options, these were either difficult to find or not presented in the booking journey.

Car rental companies are making progress by offering electric vehicles (EVs) or hybrid cars. For example, Hertz partnered with Tesla to purchase 100,000 EV sedans and with Uber to rent up to half of those to ride-hail drivers. However, car rental companies do not always provide information on the carbon-emissions impact of choosing a less carbon-intensive vehicle. Finally, most travel sites don't provide carbon emissions information—even those with some sustainable offerings (Exhibit 15).

EXHIBIT 15

Today booking journeys lack options and information for consumers booking in the US

Based on scan of 40 different travel players across sectors

	Hotel[4]	Airline[2]	Car Rental[3]	Booking platform, tour operator, OTA[5]
Sustainable offering available[1]	1/10	3/10 +3 offer offset options	5/10	7/10
	Hotel	Airline[6]	Car Rental[7]	Booking platform, tour operator, OTA[8]
Carbon emissions presented in booking journey	0/10	0/10	1/10	3/10
	Hotel	Airline	Car Rental[10]	Booking platform, tour operator, OTA[11]
Behavioral science techniques applied to the booking journey[9]	0/10	0/10	1/10	1/10

Exhibit 15 - 1   Includes green certified hotels, EV rental options, SAF, relatively lower emission flights;
Exhibit 15 - 2   All 3 offer SAF purchase options; 4 have options through a separate website/purchase journey than flight; 2 have options after the flight booking journey;
Exhibit 15 - 3   All 5 have EV rental options;
Exhibit 15 - 4   1 has green labeled hotels with filter option;
Exhibit 15 - 5   2 have badges for sustainable hotel options only; 1 has sustainable options only for rental cars; 4 have sustainable booking options for two to three booking journeys, 1 not included has green hotel information after selecting a hotel; none present offset, SAF, or reforestation options;

Exhibit 15 - 6   6 include emissions information when purchasing an offset or SAF;
Exhibit 15 - 7   1 has grades assigned to vehicles based on emissions info provided;
Exhibit 15 - 8   3 have emissions information for flight options;

Exhibit 15 - 9   Examples include placement of emissions information or ranking of booking options;
Exhibit 15 - 10   1 consistently lists EV options at the top;
Exhibit 15 - 11   1 has emissions information in line and same size as price

Three Considerations for Travel Companies When Encouraging Sustainable Purchases

Travel companies can offer opportunities to book or purchase sustainable travel services or products, provide information, and use behavioral science techniques such as nudging to encourage leisure travelers to make sustainable purchase decisions in line with what they say they want to purchase. Specific ideas include:

1. Clearly provide options for less carbon intense travel services or products within the booking journey

Companies can more clearly provide options for less carbon intensive travel and offset purchase within the booking journey, providing transparency that demystifies their emissions impact and creates trust with travelers.

The pricing structure of these sustainable travel products and services need to be appealing to consumers, while commercially viable. One way of achieving this is by offering variable pricing based on a traveler's stated preferences so they decide how much to pay. Another option is offering a one-time fee for ongoing decarbonization, knowing consumers are more likely to pay a one-time fee than a small amount each time they purchase a sustainable product.

For ground transportation, providing more sustainable options could mean offering EV vehicles for rent or hire, like Uber Green and Lime scooters. For hotels and lodging, it may range from sourcing and sharing more low-emissions or even net-zero hospitality options to creating and marketing sustainability membership programs that provide the identification of and discounts to sustainable travel options. Airlines could provide the option to offset emissions from their flight—for example, through reforestation or general carbon offsets, or via a donation to community projects. Some airlines, such as KLM, allow travelers to combine SAF and offsets, while others such as Ryanair offer offsets alone.

2. Contextualize and inform on carbon footprint and emissions
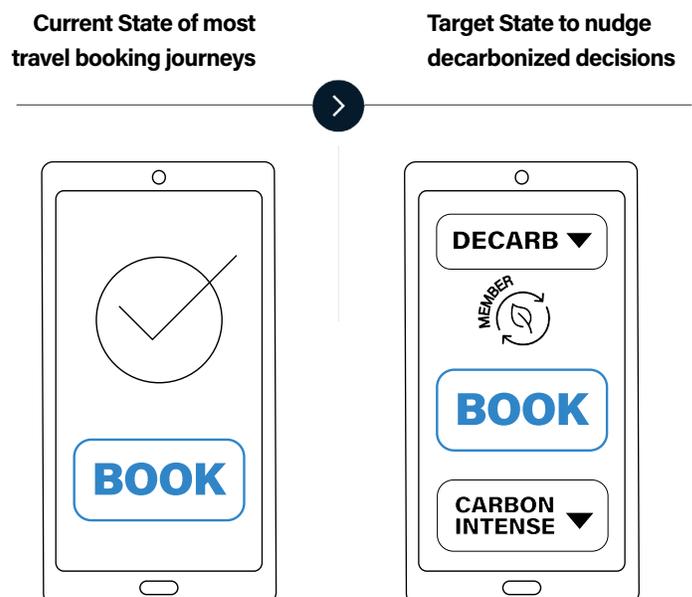
We reviewed 40 travel company booking journeys in the US and just four provided carbon-emissions context and information. This may be because it can be difficult to provide

information using a consistent method for measurement of impact and present it in a way that does not deter travel demand. "One of the biggest hurdles in promoting sustainable travel is developing a consistent approach to measuring the environmental impact of someone's travel choices," said Google vice-president of travel Richard Holden. "Our hypothesis is that people need to trust the information they're seeing before they take action, and consistency across platforms is part of how we build that trust."

Travel companies could build trust with consumers by adhering to and presenting industry standards (see "Advancing sustainability through industry standards"), and by providing transparency on price, emissions, and costs. For example, apparel company Everlane breaks down the cost of goods to show the premium included for fair labor and sustainable supply practices. The founder of G Adventures, Bruce Poon Tip, said its goal in providing transparency was putting a "program in place that involves our customers in the whole process, so they understand what we're doing and how they're involved in it and make it part of the customer journey."

EXHIBIT 16

Today booking journeys lack options and information for consumers booking in the US

Current State of most travel booking journeys

Target State to nudge decarbonized decisions

To dispel the idea that the decisions of individual travelers can't have a positive impact, companies could communicate the tradeoffs of purchasing decisions. They could explain the differences between types of carbon emissions, their consequences, and the real-world impact that reducing them could have. Sharing the positive impact consumers can have on climate change may also motivate them to make sustainable choices.

One way to put this strategy into practice, for instance, is by clearly displaying options in a revamped online booking journey. This can lead consumers to choose less carbon-intensive travel options (Exhibit 16).

Online travel agencies have made strides in providing sustainable options and informing consumers and, while it's too early to measure the impact of these initiatives, the preliminary results are promising. For example, Skyscanner, which displays the CO_2 emissions of flights with Travalyst, had roughly 10 million travelers choose lower-emission flights in 2019. This grew by 58 million in two years and is forecast to double annually.[28]

3. Prompt consumers through behavioral science

Aligning consumers' travel choices with their ambitions—helping them do what they say they want to do—could be helped by the use of nudge theory to break down behavioral barriers. For instance, what if sustainable travel choices and destinations were not only prominently marketed, but less sustainable options were actively demoted in terms of visibility? What if carbon offsetting was the default option, rather than something travelers must opt into? What if carbon emissions associated with different choices were more clearly displayed, something Bookdifferent.com does next to price of booking options?

Companies may also incentivize consumers with direct and immediate benefits, such as social recognition and loyalty perks. They could offer sustainably branded products consumers can use to virtue signal, and develop loyalty program perks that reward decarbonizing choices. Companies could also recommend membership programs where benefits scale as customers make choices that lead to decarbonization.

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28   "Travel with a conscience," Skyscanner, https://www.skyscanner.com/environment, accessed Sept 2022

ADVANCING SUSTAINABILITY THROUGH INDUSTRY STANDARDS

Common industry accounting standards for environmental metrics not only help generate consumer support. They also assist travel companies in identifying and acting on emission-reduction levers, as well as working with corporations to achieve their sustainability goals.

Yet the carbon accounting standard landscape today can be fragmented and unclear. Even though the vast majority of companies use the GHG Protocol to calculate carbon inventories, there can be lack of clarity on required primary data quality, where companies should source emissions factors to ensure like-for-like comparisons, and what lifecycle stages to include. Companies are faced with tough choices on what calculation methodologies to use, creating confusion across the industry—and for customers trying to discern what's truly a sustainable choice.

The potential impact collaboration could bring to the travel sector is highlighted by industry associations such as the WBCSD Pathfinder Initiative1, which seeks to support greater emissions data transparency for scope 3 emissions, and IATA CO2 Connect2, which aims to harmonize aviation sector emissions reporting. Common, like-for-like reporting supports both the travel sector's decarbonization goals and customers' desire for more information.

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1   "WBCSD launches new Pathfinder to enable Scope 3 emissions transparency and accelerate decarbonization," WBCSD, March 4, 2021.

2   "IATA CO2 Connect," IATA.

Applying these insights to travel program design and marketing techniques could alter consumers' decisions to be more sustainable, something the public sector has deployed with great success in transportation. In Japan, for example, companies shared information about carbon emissions and health effects to heighten the focus on the negative impact of some travel methods. They also offered goal-setting techniques to help commuters follow through on their sustainable-travel intentions and provided personalized information (occasionally based on multi-day travel diaries) on travel planning. The result? Carbon emissions fell by 19 percent.[29]

To make these booking journey changes while maintaining a great customer booking experience, travel companies will need to use a methodical approach. A dedicated task force armed with digital, consumer insights, and sustainability expertise can work across the organization to understand and develop specific changes. The cross-functional team can test and refine potential changes with smaller sample groups in each segment before broad implementation to ensure a smooth customer booking journey.

"61 percent of travelers said the COVID-19 pandemic made them want to travel more sustainably, with 81 percent of travelers expressing a desire to stay in sustainable accommodation in the upcoming year"

- Booking.com 2021 survey source in section

29   "Nudge to action: Behavioural science for sustainability", UNEP, https://www.unep.org/news-and-stories/story/nudge-action-behavioural-science-sustainability, accessed Sept 2022

STRATEGY 4:
Build New Sustainable Travel Businesses for the Future

The significant challenge of transitioning to net zero also presents an opportunity for companies to build resilience, future-proof their businesses, and generate new revenue streams by developing green products and services.

Global investment in a net-zero future is accelerating. The McKinsey Global Institute estimates capital spending on physical assets for energy and land-use systems in the net-zero transition between 2021 and 2050 will amount to about $275 trillion. Technological innovation could reduce capital costs for net-zero technologies faster than expected.[30] 92 percent of business leaders surveyed recently see new-business building as an opportunity to address climate change.[31] Additionally, leaders expect half of their companies' revenue five years from now will come from products, services, or businesses that do not yet exist.

Opportunities exist in every sector, but the largest are in transport and buildings, positioning travel and tourism players to pioneer green business solutions (Exhibit 17).

30   "The net-zero transition: What it would cost, what it could bring," McKinsey Global Institute, January 2022.
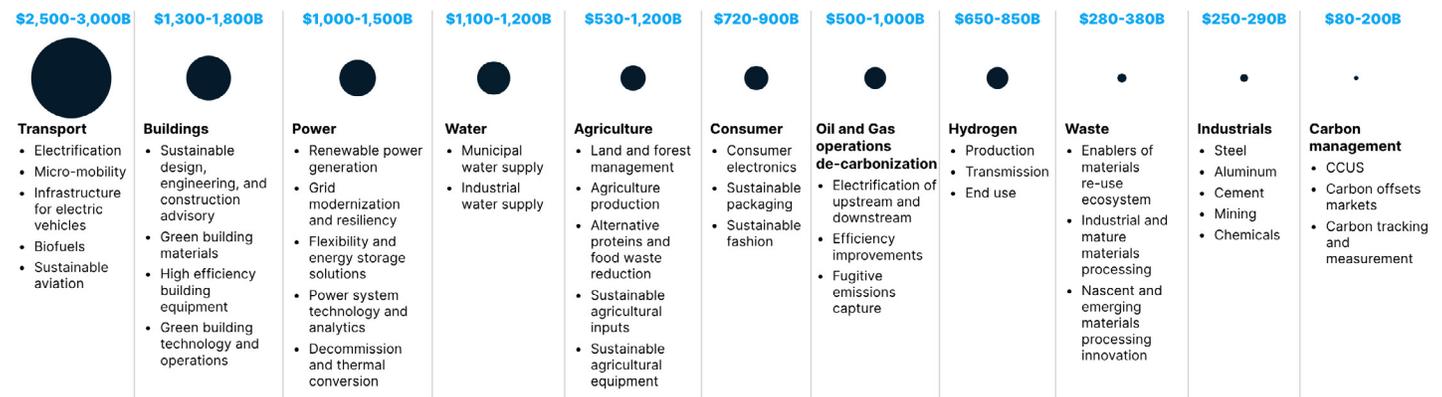
31   "2021 global report: The state of new-business building", McKinsey, December 6, 2021.

EXHIBIT 17

Opportunity by sector

Investable themes – addressable market size in 2030, including venture, PE, and infra capital ($B)

PRELIMINARY, NOT EXHAUSTIVE

$2,500-3,000B	$1,300-1,800B	$1,000-1,500B	$1,100-1,200B	$530-1,200B	$720-900B	$500-1,000B	$650-850B	$280-380B	$250-290B	$80-200B
Transport	**Buildings**	**Power**	**Water**	**Agriculture**	**Consumer**	**Oil and Gas operations de-carbonization**	**Hydrogen**	**Waste**	**Industrials**	**Carbon management**
• Electrification • Micro-mobility • Infrastructure for electric vehicles • Biofuels • Sustainable aviation	• Sustainable design, engineering, and construction advisory • Green building materials • High efficiency building equipment • Green building technology and operations	• Renewable power generation • Grid modernization and resiliency • Flexibility and energy storage solutions • Power system technology and analytics • Decommission and thermal conversion	• Municipal water supply • Industrial water supply	• Land and forest management • Agriculture production • Alternative proteins and food waste reduction • Sustainable agricultural inputs • Sustainable agricultural equipment	• Consumer electronics • Sustainable packaging • Sustainable fashion	• Electrification of upstream and downstream • Efficiency improvements • Fugitive emissions capture	• Production • Transmission • End use	• Enablers of materials re-use ecosystem • Industrial and mature materials processing • Nascent and emerging materials processing innovation	• Steel • Aluminum • Cement • Mining • Chemicals	• CCUS • Carbon offsets markets • Carbon tracking and measurement

Note: Market size is defined as estimated capital expenditures related to infrastructure, equipment, products needed to meet forecasted market demand; in some cases this market size refers to addressable market spend for products and services (e.g., sustainable agricultural products, carbon use and storage)

Source: Michael Birshan, Stefan Helmcke, Sean Kane, Anna Moore, and Tomas Nauclér, "Playing offense to create value in the net-zero transition", April 13, 2022

New-business building offers a chance to launch a portfolio of new potential sources of green revenue. Companies can make the most of core assets and capabilities to create new products, services, or business models. Future offerings are still hard to envision as the net-zero transition accelerates, but there are already several emerging that companies may explore building themselves or partnering to develop:

AVIATION

→ Airlines could take an active part in the sustainable aviation fuel (SAF) or novel propulsion value chain by directly supporting the scaling of production facilities and technologies with producers. For example, they could co-invest with guaranteed offtake volumes of SAF at defined rates or with pre-orders for new zero-emission aircraft programs. "If you can scale [SAF] up, drive economies to scale and build a real industry, that's how you make it economic and competitive," said United Airlines CEO Scott Kirby. "Our goal is to invest—not assuming that the prices are going to be at this price forever, but assuming that we can drive economies to scale and get the price down and make it economic to eventually be competitive with fossil fuels."

→ In developing an ecosystem to scale novel technologies, airlines could also partner with academic institutions. For example, Southwest Airlines has committed $10 million to Yale University's Center for Natural Carbon Capture and Yale's School of the Environment for what CEO Bob Jordan said was "to fund research surrounding innovative natural solutions to mitigate net greenhouse gas emissions."

→ Outside of sustainable fuels, airlines could also consider launching regional or commuter airlines with zero-emission alternative propulsion small aircraft (for example, electric or hydrogen powered) or creating commercial bus services in lieu of short-haul connections. For example, American Airlines created a short-haul bus partnership with Landline to provide travelers with connections to Pennsylvania's smaller airports.[32]

....
32   Nathen Diller, "Your next American Airlines flight could be on a bus," *Washington Post*, April 11, 2022.

HOSPITALITY AND ACCOMMODATION

→ The hospitality sector could transition to new and partnership-based design to provide green offerings and decarbonize construction. "We are transition[ing] to smart green hotels utilizing new technology, eco-design, and innovative partnerships," said Accor chief sustainability officer Brune Poirson. "[Accor is] expanding the use of design standards, performance tools, and the latest green technologies for new hotels while supporting the transition of the existing hotel network to low-carbon infrastructure with green finance options."

→ Similarly, the CEO of Indonesian hospitality and lifestyle brand Potato Head, Ronald Akili, said cross-sector collaboration in low-carbon construction was critical: "We want to lead the way in low-carbon constructional hospitality through using recycled materials and low embodied energy materials like recycled aggregates in concrete and low-carbon steel and interior furnishings."

→ Hotels could also invest in IoT and other decarbonization capabilities and partnerships to better manage building energy usage and sequester carbon. For example, Hilton CEO Christopher J. Nassetta said its commitment to venture capital fund Fifth Wall's Climate Tech Fund would "invest in software, hardware, renewable energy, energy storage, smart buildings and carbon sequestration technologies to decarbonize the $10.5 trillion real estate industry."

→ Another potential hospitality route is the creation a "green certification" standard in cooperation with industry or standard-setters and offer certification services to other hotel properties. WTTC director of sustainability Christopher Imbsen said it was "working on developing a verification system [to validate hotel properties as sustainable] together with partners."

BOOKING PLATFORMS AND DESTINATIONS

→ Booking platforms could specialize in green offerings or position themselves (or sub-brands) as sustainable travel specialists. Booking Holdings CEO Glenn Fogel cited the Travel Sustainable Program and Sustainable Travel Badge on Booking.com. "This proprietary sustainability certification, with over 130,000 properties recognized today,

[makes] it easier for customers to adopt a sustainable travel mindset," Fogel said.
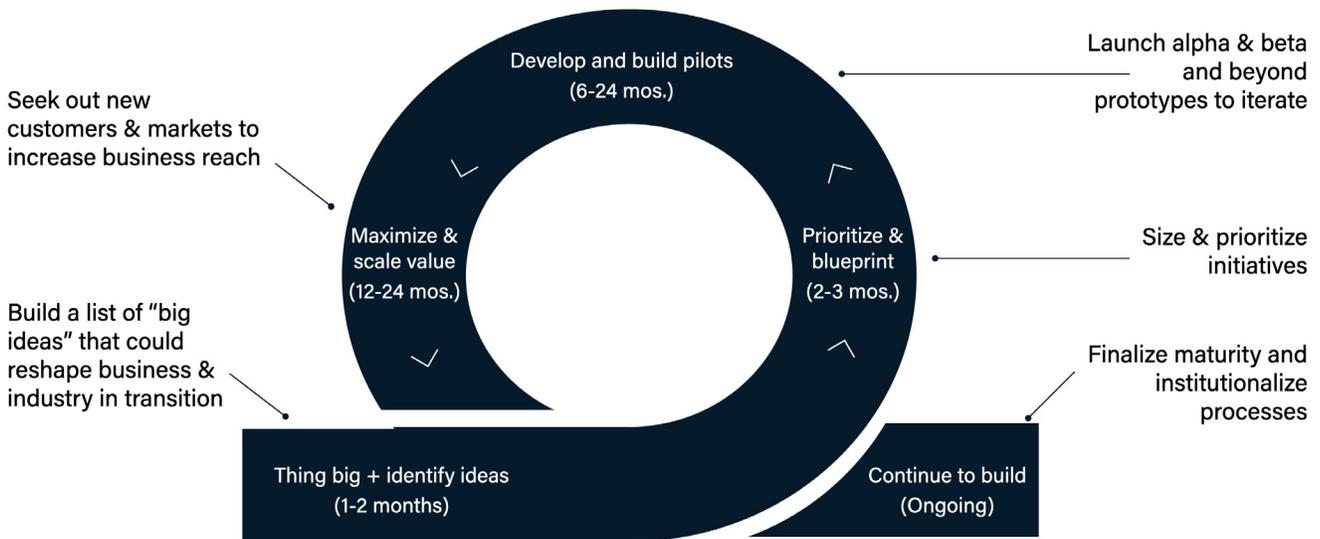
→ Destinations may also have a part to play. As Brad Dean, CEO of Discover Puerto Rico said: "The lack of reliable, relevant benchmarking tools for destinations, which must encompass various industry verticals and many independent businesses and venues, presents a major challenge for destination leaders to measure and monitor performance in this area." Destinations could collaborate to create relevant measurement tools and offer services to quantify environmental impact. Ecotourism could also benefit from a benchmark or rating, where travel platforms and hotels favor companies taking steps to minimize the environmental impact of their tours.

Across the value chain, loyalty and credit-card programs can offer customers a consolidated view of their emissions across travel providers, develop sustainable offerings along the travel customer journey, and reward customers for choosing sustainable options.

Launching these new businesses will likely require companies to launch special initiatives outside of their current core businesses. These teams will need to be empowered to experiment with and learn from short iterations and pilots without the pressure to be immediately profitable. Fortunately, the first examples of travel companies applying green business-building principles show promising results, which should pave the way for others to follow suit. We see successful green business builders use five steps to identify and plan green business-building opportunities (Exhibit 18).

EXHIBIT 18

Potential steps to build sustainable travel businesses

Develop and build pilots (6-24 mos.)

Launch alpha & beta and beyond prototypes to iterate

Seek out new customers & markets to increase business reach

Maximize & scale value (12-24 mos.)

Prioritize & blueprint (2-3 mos.)

Size & prioritize initiatives

Build a list of "big ideas" that could reshape business & industry in transition

Thing big + identify ideas (1-2 months)

Continue to build (Ongoing)

Finalize maturity and institutionalize processes

IS YOUR TRAVEL COMPANY ON TRACK?

GENERAL ENABLERS	NOT PLANNED	PLANNED	DONE
Develop advanced carbon-emission data and measurement capabilities	☐	☐	☐
Support and advocate for consistent industry standards to de-risk consumer offering and messaging changes	☐	☐	☐
Integrate sustainability goals across the organization with an iterative and collaborative operating model (such as agile organizational structure)	☐	☐	☐

STRATEGY 1: *Identify and Sequence Decarbonization*

	NOT PLANNED	PLANNED	DONE
Benchmark ESG strategies or plans against other relevant companies to identify decarbonization levers	☐	☐	☐
Develop continuous carbon-measurement capabilities, including a clear view of scope 3 emissions across the value chain	☐	☐	☐
Define a climate ambition, and commit to best practice targets (for example, science-based targets)	☐	☐	☐
Use the MACC framework to create a plan to decarbonize your own operations	☐	☐	☐
Embed ownership and responsibility for execution of these goals at board and C-suite level	☐	☐	☐
Implement corporate governance measures based on sustainability metrics to integrate carbon-related choices into daily decision making across the organization, for example by setting carbon budgets in the same way that financial KPIs are set	☐	☐	☐

STRATEGY 2: *Partner to Accelerate Decarbonization of Business Travel*

	NOT PLANNED	PLANNED	DONE
Identify your largest business travel customers and embed their sustainability targets into your internal planning	☐	☐	☐
Engage corporate relationship managers on plans for sustainable product or service offerings, highlighting opportunities to partner where available (for example, SAF investments)	☐	☐	☐
Engage corporate customers on potential travel policy changes that would be mutually beneficial for sustainability goals, such as opt-out policies for green housekeeping practices, or raising sustainable train options above short-haul flights on search engines	☐	☐	☐
Engage corporate travel planners for top business travel accounts	☐	☐	☐

STRATEGY 3: *Close the "Say-do" Gap Among Leisure Travelers*

	NOT PLANNED	PLANNED	DONE
Display information on CO2 emissions of travel products	☐	☐	☐
Display information on the sustainability of travel products	☐	☐	☐
Present CO2 emission and sustainability information at the same level as the price	☐	☐	☐
Measure consumer engagement	☐	☐	☐

STRATEGY 4: *Build New Sustainable Travel Businesses for the Future*

	NOT PLANNED	PLANNED	DONE
Conduct a review of your product portfolio and current sustainability capabilities	☐	☐	☐
Create a list of "big ideas" that your company can potentially pursue	☐	☐	☐
Identify the potential abatement, costs, and risks of these big ideas to prioritize the list	☐	☐	☐
Develop plans and assign resources to pursue the top one or two big ideas	☐	☐	☐

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