



SCIENCE-BASED TARGETS

WTTC × HARVARD
LEARNING
INSIGHTS

WORLD
TRAVEL &
TOURISM
COUNCIL



HARVARD
T.H. CHAN

SCHOOL OF PUBLIC HEALTH

WTTC × HARVARD
**LEARNING
INSIGHTS**

SCIENCE-BASED TARGETS

Setting science-based targets
in Travel & Tourism

OVERVIEW

THE IMPACTS OF A CHANGING CLIMATE are apparent worldwide. For the global community to avoid irreversible damage to prosperity, people and planet, temperature rise must be limited to 1.5°C above pre-industrial levels. This requires halving global greenhouse gas emissions by 2030 and meeting net-zero emissions by 2050. Science-based targets have become the globally accepted standard for companies setting carbon reduction targets.

Targets are considered **science-based** if they align with the latest climate science on meeting the goals of the 2015 Paris Agreement¹. This agreement saw almost 200 countries sign up to keep global warming well below 2°C above pre-industrial levels, pursuing efforts to hold it at no more than 1.5°C. As stated in the 2018 Intergovernmental Panel on Climate Change Special Report on Global Warming², the transition to a sustainable, low carbon economy must be accelerated globally to hold warming to 1.5°C.

The contribution of the Travel & Tourism sector to the **global carbon footprint** is well recognised and the necessity to cut its greenhouse gas emissions has been highlighted in several international agreements (Djerba³ & Davos⁴ Declarations). Travel & Climate action is a clear priority for Travel & Tourism and one it has begun to address given its contribution to greenhouse gas emissions through transport, accommodation, and other tourist activities. The sector needs to focus on **greenhouse gas emissions** associated with its specific products and services in setting science-based targets.

Businesses are working on their science-based targets with clear plans to reduce their emissions. To date, across all business sectors 1,295 companies have registered their actions, with 634 having set science-based targets and 462 setting ambitions for a 1.5C future⁵. Among those, **member companies of the World Travel & Tourism Council are leading the way.**

In the lead-up to COP26 in November 2021⁶, businesses are committing publicly to a net-zero, 1.5°C target and the Travel & Tourism sector can, and has begun to, make its full contribution to this ambition.

While tourism is mentioned in many Nationally Determined Contributions⁷ as a big concern, not enough has yet been done. Industry must do more, but governments must align their policies so that at the international level we can collectively work to increase ambition.

“Climate change is outpacing us, outpacing our collective ability to get a handle on it. Unfortunately, this reality did not go away with COVID-19. It remains an enormous threat to the Travel & Tourism sector, both in the short- and long-term. Unlike COVID-19, however, it is a threat we can clearly see coming. It is advertised daily; let’s heed the warning.

“The Travel & Tourism sector has an enormous role to play and can have, through its actions, positive impacts; it is imperative that we rebuild the tourism sector in a safe, equitable and climate-friendly manner and so ensure tourism regains its position as a provider of decent jobs, stable incomes and the protection of our cultural and natural heritage.”

Patricia Espinosa, head of UNFCCC



INTRODUCTION

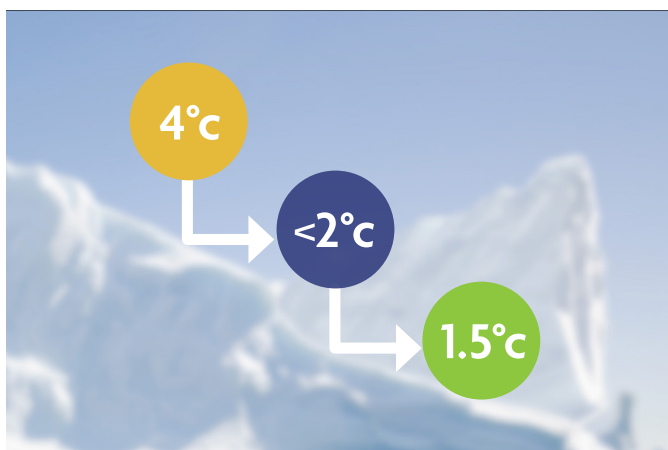
TRAVEL & TOURISM has grown continuously over the past few decades and in 2019, prior to the COVID-19 pandemic, supported one in 10 jobs globally and represented 10.4% of global gross domestic product (GDP), generating significant benefits in terms of socioeconomic development and job creation worldwide.

One of the World Travel & Tourism Council's (WTTC) three strategic pillars, '**Sustainable Growth**', recognises the importance of leadership in achieving a sustainable and climate neutral future⁸. The challenge for Travel & Tourism is to find ways to support sustainable growth whilst delivering against climate targets.

The goal of preventing "dangerous anthropogenic interference with the climate system"⁹ requires significant reductions in global greenhouse gas (GHG) emissions¹⁰. In 2015, the international community defined a common vision for people, planet, and prosperity through the adoption of the 2030 Agenda, which represented a landmark agreement to address climate change¹¹.

By adopting the **Paris Agreement**, countries committed to hold global average temperature increase well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase even further to 1.5°C. However, the collective sum of all national commitments on climate change accounts for only around one third of the total reductions needed to keep the world on a path to an increase below 2°C (Figure 1).

Figure 1: Science-based Targets (adapted from Carbon Trust¹²)





THE CASE FOR CHANGE IN TRAVEL & TOURISM

TRAVEL & TOURISM is under significant threat from the effects of climate change, especially from extreme weather events that can lead to increasing insurance costs and safety concerns, as well as from water shortages, the loss of biodiversity and damage to assets and attractions in destinations. Many of the nations highly dependent on Travel & Tourism are Small Island Developing States, with the sector representing over 90% of total GDP in Macau, 74% in Aruba and over 50% in the Maldives and the British and US Virgin Islands¹³. Moreover, a recent UN report notes that impacts in some territories would fall disproportionately on women and informal workers¹⁴.

Continued climate-driven degradation and disruption to cultural and natural heritage will negatively affect the Travel & Tourism sector, harm the attractiveness of destinations, and reduce economic opportunities for local communities. Transport connectivity, which is typically an important prerequisite for Travel & Tourism, accounts for three quarters of the sector's CO₂ emissions. Transport-related emissions are forecast to account for 5.3% of all human-made CO₂ emissions by 2030, up from 5% in 2016^{15, 16, 17}.

Travel & Tourism companies have a clear responsibility to help the world transition to a low-carbon economy and science-based targets are a way for companies to address this challenge. Science-based targets reflect the level of action needed globally and translate this to an individual company level. A GHG emissions target can be considered 'science-based' if the emissions reductions it requires are in line with keeping the global temperature increase well below 2°C compared to pre-industrial temperatures.



SCIENCE-BASED TARGETS

SCIENCE-BASED TARGETS are based on the concept of a **global carbon budget**. By accounting for the GHG emissions put into the atmosphere since the Industrial Revolution began, and understanding how these affect the climate, it is possible to calculate the maximal level of emissions that would enable global warming levels to remain below 2°C. **Science-based targets are powerful tools that allow businesses to align themselves with the commitments made under the Paris Agreement.**

The Science-based targets' approach involves combining carbon emission trajectories, from the Intergovernmental Panel on Climate Change (IPCC), with allocation algorithms to distribute a share of the global emissions budget to the operations of an organisation. **Setting science-based targets is a recognised way to prove a Travel & Tourism company is doing its fair share and more.**

Knowing the different sources of GHG emissions from across the economy, society, and natural sources allows **reduction pathways** to be determined. When this is done at an organisational level, it is considered a science-based target. This means that a business is able to demonstrate its contribution to achieving the ambitions of the Paris Agreement. When considering the timeline, trajectories to 2050 with interim goals can be useful to drive delivery against the targets, creating a sense of urgency and driving innovation.

The Science-Based Targets initiative (SBTi¹⁸), a partnership between CDP, UN Global Compact, the World Resources Institute, and the World-Wide Fund for Nature (WWF), developed one of the most widely used of these tools, namely the Sectoral Decarbonisation Approach (SDA). This methodology enables companies to set science-based targets based on the required decarbonisation trajectory of their sector or the sectors in which they each operate. This builds upon climate change mitigation scenarios developed by the IPCC and the International Energy Agency (IEA), which are based on the best available science and analysis from around the world. These same scenarios underpin national and international policy decisions on climate change. The SBTi acts as a global gatekeeper for science-based targets.

According to the SBTi, as of March 2021, there were 1,295 companies taking action, of which 634 have set science-based targets with 462 committed to a 1.5°C future¹⁹.

The SBTi has rigorous criteria that must be met for a company's target to be recognised as science-based and includes the following categories:

- **Emissions boundary:** there are certain emissions which must be included
- **Timeframe:** set a base and target years and regularly update progress to date
- **Ambitions:** level of ambition, absolute versus intensity targets, method of validity, combined scope targets
- **Scope 2:** approaches to indirect emissions and renewable energy targets
- **Scope 3:** consider other indirect emissions along a company's value chain
- **Reporting:** public reporting against targets must be annual

While an organisation of any size can set science-based targets, the complexity of target setting, and the level of expertise needed to deliver results over the long-term has meant that most work has been done in larger companies and corporates. **Where science-based targets are set they need to be part of the wider sustainability strategy of the business.**

Table 1 provides detail on some exemplary WTTC members that have already established science-based targets, under the SBTi, thus making their commitments public.

Table 1: Examples of World Travel & Tourism Council members that have set Science-Based Targets (SBT)

WTTC Member	Science-Based Targets Set	Date
The Coca Cola Company	Reduce absolute Scopes 1, 2, and 3 GHG emissions by 25% by 2030 from a 2015 base year. The targets covering GHG emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 2°C .	August 2019
Ecolab	Reduce absolute Scopes 1 and 2 GHG emissions by 50% by 2030 from a 2018 base year. Commits that 70% of its suppliers by emissions covering purchased goods and services, capital goods, upstream transportation and distribution, business travel, and downstream transportation and distribution will set science-based targets by 2024. The targets covering GHG emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 1.5°C .	May 2020
Hilton	Reduce Scopes 1 and 2 GHG emissions by 61% per square meter by 2030 from a 2008 base year. Work with franchisees to reduce their Scope 3 GHG emissions by 52% per square meter by 2030 from a 2008 base year. The targets covering GHG emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 2°C .	April 2018
Iberia	Committed to set a net-zero target in line with business ambition for a 1.5°C future.	November 2019
Intercontinental Hotel Group	Reduce absolute Scope 1, 2 and 3 GHG emissions from its owned, leased and managed hotels by 15% by 2030 from a 2018 base year. Reduce Scope 3 GHG emissions from franchised hotels by 46% per square meter by 2030 from a 2018 base year. The targets covering GHG emissions from company operations (scopes 1 and 2) are consistent with reductions required to keep warming to 2°C .	February 2020
Intrepid Travel	Reduce absolute Scopes 1 and 2 GHG emissions by 71% by 2035 from a 2018 base year. Reduce Scope 3 GHG emissions from offices by 34% per full-time equivalent staff member and from trips by 56% per passenger day by 2035 from a 2018 base year. The targets covering GHG emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 1.5°C .	September 2020
Meliá Hotels International	Reduce absolute Scopes 1 and 2 GHG emissions by 13% by 2023 and 51% by 2035 from a 2018 base year. Reduce absolute Scope 3 GHG emissions by 6% by 2023 and 21% by 2035 from a 2018 base year. The targets covering GHG emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to below 2°C .	August 2019

ACCOR, MGM RESORTS, THE HONG KONG & SHANGHAI HOTELS, LTD have all committed to SBT, with targets yet to be set.

GHG = greenhouse gas emissions. **Scope 1** covers direct emissions from owned or controlled sources. **Scope 2** covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. **Scope 3** includes all other indirect emissions that occur in a company's value chain.



GREENHOUSE GAS EMISSIONS SCOPES

Using the **Greenhouse Gas (GHG) Protocol**²⁰, the most widely used international accounting tool, GHG emissions are categorised into three groups or scopes (see Table 2). Science-based targets must be company-wide for scopes 1 and 2 GHG and may include scope 3.

- **Scope 1** covers direct emissions from owned or controlled sources by the reporting company. For example, emissions from burning fuels, such as natural gas, for heating or petrol to fuel cars.
- **Scope 2** covers indirect emissions from the generation of purchased electricity, steam, heating, and cooling consumed by the reporting company.
- **Scope 3** covers all other indirect emissions that occur in a company’s value chain from suppliers or customers.

Table 2: Greenhouse Gas Emission Scopes

Scope 1	Scope 2	Scope 3
<ul style="list-style-type: none"> • Fuel combustion • Company vehicles 	<ul style="list-style-type: none"> • Purchased electricity, heat & steam 	<ul style="list-style-type: none"> • Purchased goods & services • Business travel • Employee commuting • Waste disposal • Use of sold products • Transportation & distribution

Scopes 1 and 2 are relatively simple for the company to manage directly while the majority of GHG emissions and cost reduction opportunities for Scope 3 lie outside the company’s operations. The carbon emissions reduction potential of most businesses exists in direct energy use and relates to energy efficiency. The GHG Protocol Scope 2 Guidance²¹ allows companies to account for their purchase of renewable and low carbon electricity.

Most organisations developing science-based targets find that addressing Scope 3 emissions is their biggest challenge. However, the SBTi requires that if Scope 3 emissions make up over 40% of total emissions, at least two-thirds of a company’s Scope 3 emissions must be included in the target.

Measuring Scope 3 emissions enables businesses to:

- Assess where the emission hotspots are in their supply chain
- Identify resource and energy risks in their supply chain
- Identify which suppliers are leaders and which are laggards in terms of their sustainability performance
- Identify energy efficiency and cost reduction opportunities in their supply chain
- Engage suppliers and assist them to implement sustainability initiatives
- Improve the energy efficiency of their products
- Positively engage with employees to reduce emissions from business travel and employee commutes

For Travel & Tourism, it will be necessary to account for both the direct and indirect or embodied GHG emissions from products and services²². The indirect carbon footprint arises from the non-use phases of a product or service and are referred to as the life cycle carbon requirements²³.

Complex tourism products or services, such as holiday package tours, present challenges for isolating the different parts, with some positing that the majority of the carbon impacts from a tourism company are likely to lie in the supply chain²⁴; similar conclusions were drawn for hotels²⁵.

The GHG intensity concept creates a ratio of environmental damage to economic value created and is useful in comparing different economic sectors²⁶. However, in national accounts tourism is typically not measured as an economic sector in its own right because it is a demand-driven rather than an output-defined sector. As such, results for transportation, entertainment services and accommodation can be determined, but not the share attributable to tourists. Existing techniques for environmental assessment of tourism impacts are immature, with few appraisal methods available^{27, 28, 29}.





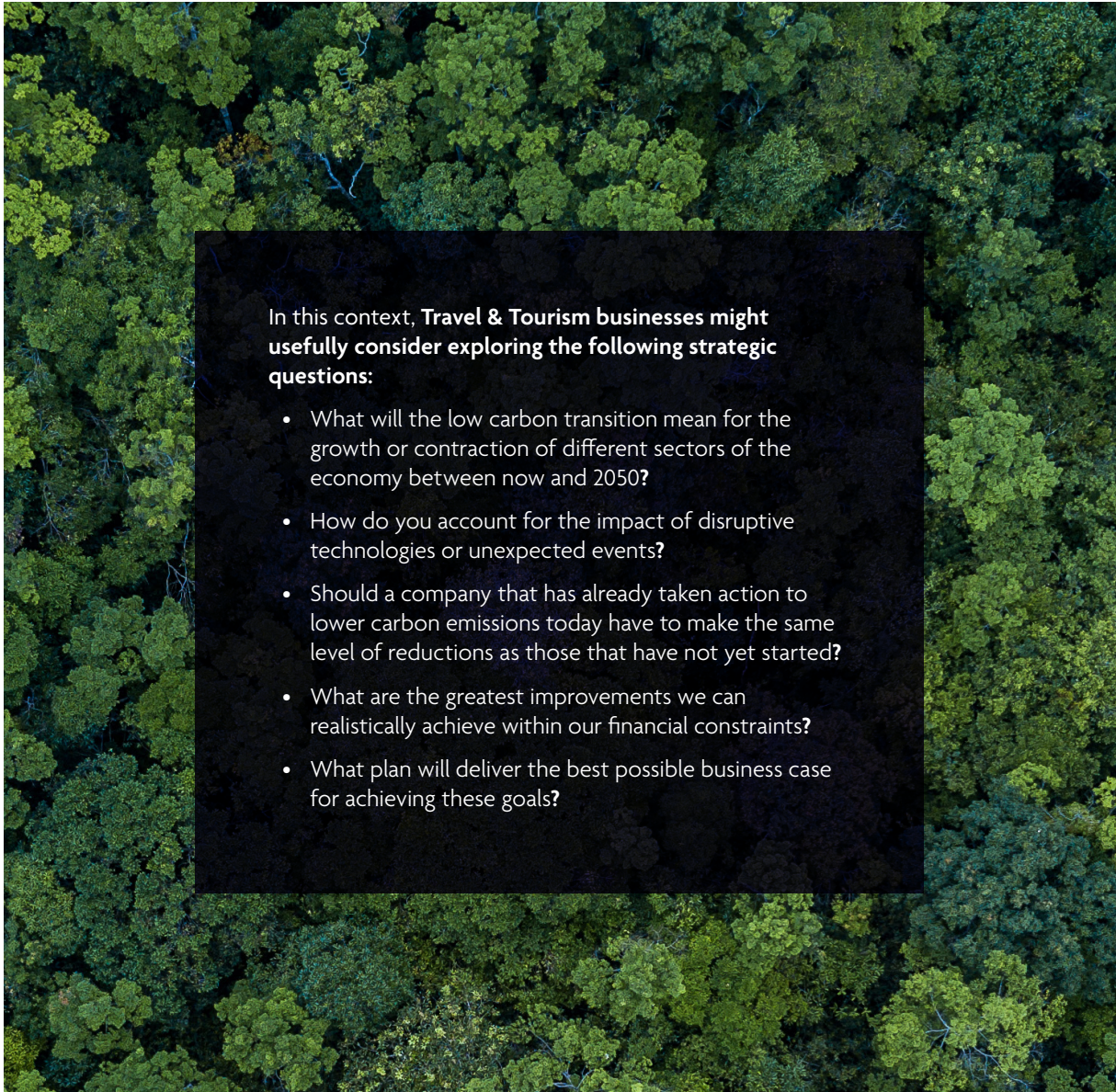
CONCLUSION + ACTION PLAN

TRAVEL & TOURISM is uniquely connected with people and places and thus vulnerable to the ravages of climate change. Setting science-based targets and embracing a low carbon pathway are key goals for the sector. The commitment of Travel & Tourism to a carbon neutral future is clear in its commitments to lowering GHG emissions and reaching climate neutrality by 2050 but there is more work to be done.

For Travel & Tourism to continue to deliver sustained prosperity, the betterment of people and planet will need to be balanced with climate action across the sector. In adopting the Paris Agreement in 2015, a shared global objective is to work collectively to limit global temperature increase in this century to well below 2°C compared to pre-industrial levels and strive for a 1.5°C future. Climate action is also central to fulfilment of the Sustainable Development Goals (SDG), under SDG 13 and core to delivery of the goals. By acting to protect people and planet over the long-term, the Travel & Tourism sector can create and sustain shared value, making its fullest contribution to fulfilling the SDGs and a world where “no-one will be left behind” Agenda 2030³⁰.

In taking a leadership position on sustainability issues and committing to science-based targets linked to long-term company value creation, **actions the Travel & Tourism business³¹ might consider include:**

1. Demonstrating a leadership position in the market and securing reputational advantage
2. Aligning business strategy with global commitments under the Paris Agreement
3. Engaging internal and external stakeholders and creating shared purpose and alignment
4. Driving innovation and competitive advantage
5. Anticipating regulatory risks and future regulations, including carbon-pricing schemes
6. Driving direct operational cost savings and reduces resource use
7. Improving access to capital and communicating long-term plans for investors and regulators



In this context, **Travel & Tourism businesses might usefully consider exploring the following strategic questions:**

- What will the low carbon transition mean for the growth or contraction of different sectors of the economy between now and 2050?
- How do you account for the impact of disruptive technologies or unexpected events?
- Should a company that has already taken action to lower carbon emissions today have to make the same level of reductions as those that have not yet started?
- What are the greatest improvements we can realistically achieve within our financial constraints?
- What plan will deliver the best possible business case for achieving these goals?

To meet the 2015 Paris Agreement goals, the public and private sectors must come together to meet the emissions reductions targets. The Travel & Tourism sector has limited time for action and a crucial role to play. While companies with science-based targets are already cutting emissions at scale, all businesses must now join them.

Science-based targets show companies how much and how quickly they need to reduce their greenhouse gas emissions to prevent the worst effects of climate change.

ENDNOTES

- 1 <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- 2 <https://www.ipcc.ch/sr15/>
- 3 Djerba Declaration, UNWTO (2003). https://webunwto.s3-eu-west-1.amazonaws.com/imported_images/30967/tunisia_decd-jerba_en.pdf
- 4 Davos Declaration, UNWTO (2007). https://www.gdrc.org/uem/eco-tour/Davos-Declaration_2007.pdf
- 5 <https://sciencebasedtargets.org/>
- 6 <https://ukcop26.org/>
- 7 Nationally determined contributions (NDCs). [https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs#:~:text=Nationally%20determined%20contributions%20\(NDCs\)%20are,the%20impacts%20of%20climate%20change](https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs#:~:text=Nationally%20determined%20contributions%20(NDCs)%20are,the%20impacts%20of%20climate%20change)
- 8 <https://wttc.org/Research/Economic-Impact>
- 9 United Nations (1992). United Nations Framework Convention on Climate Change. <https://unfccc.int/resource/docs/convkp/conveng.pdf>
- 10 IPCC (2007). Climate change 2007: Mitigation. Contribution of working group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. In: Metz, B. et al. (eds.), CUP, UK, <https://www.ipcc.ch/report/ar4/wg3/>
- 11 United Nations General Assembly (2015). Transforming our world: the 2030 agenda for sustainable development. <https://www.refworld.org/docid/57b6e3e44.html>
- 12 <https://info.carboncredentials.com/guide-to-setting-science-based-targets>
- 13 United Nations Conference on Trade and Development (2020). COVID-19 and Tourism: Assessing the economic consequences. <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2810>
- 14 Coke-Hamilton, P. (2020). Impact of COVID-19 on tourism in small island developing states. <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2341>
- 15 World Tourism Organization and International Transport Forum (2019), Transport-related CO2 Emissions of the Tourism Sector – Modelling Results, UNWTO, Madrid. <https://doi.org/10.18111/9789284416660>
- 16 Filimonau, V., Dickinson, J., Robbins, D. & Reddy, M.V. (2013). The role of 'indirect' greenhouse gas emissions in tourism: Assessing the hidden carbon impacts from a holiday package tour. *Transportation Research* 54, 78-91.
- 17 Perch-Nielse, S., Sesartic, A. & Stucki, M. (2010). The greenhouse gas intensity of the tourism sector: The case of Switzerland. *Environmental Science & Policy*, Vol. 13, Issue 2, April 2010, 131-140. <https://doi.org/10.1016/j.envsci.2009.12.002>
- 18 <https://sciencebasedtargets.org/companies-taking-action> The SBTi is a partnership between CDP (<https://www.cdp.net/en>), the United Nations Global Compact (UNGC), World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). The SBTi call to action is one of the We Mean Business Coalition commitments.
- 19 <https://sciencebasedtargets.org/companies-taking-action>
- 20 <https://ghgprotocol.org/>
- 21 https://ghgprotocol.org/scope_2_guidance
- 22 Gössling, S. (2009). Carbon neutral destinations: a conceptual analysis. *Journal of Sustainable Tourism* 17 (1), 17–37
- 23 Frischknecht, R., Althaus, H.J., Bauer, C., Doka, G., Heck, T., Jungbluth, N., Kellenberger, D. & Nemecek, T. (2007). The environmental relevance of capital goods in life cycle assessments of products and services. *Int. J LCA* 12, 7–17
- 24 Berners-Lee, M., Howard, D.C., Moss, J., Kaivanto, K., & Scott, W.A. (2011). Greenhouse gas footprinting for small businesses – the use of input–output data. *Science of the Total Environment* 409 (5), 883–891
- 25 Rosenblum, J., Horvath, A. & Hendrickson, C. (2000). Environmental implications of service industries. *Environmental Science & Technology* 34 (22), 4669-4676
- 26 Huppes, G. & Ishikawa, M. (2005). Eco-efficiency and its terminology. *Journal of Industrial Ecology*, 9 (2005), pp. 43-46
- 27 Hunter, C. & Shaw, J. (2007). The ecological footprint as a key indicator of sustainable tourism. *Tourism Management* 28 (1), 46–57
- 28 Lundie, S., Dwyer, L. & Forsyth, P. (2007). Environmental-economic measures of tourism yield. *Journal of Sustainable Tourism* 15 (5), 503–519
- 29 Schianetz, K., Kavanagh, L. & Lockington, D. (2007). Concepts and tools for comprehensive sustainability assessments for tourism destinations: a comparative review. *Journal of Sustainable Tourism* 15 (4), 369–389
- 30 United Nations General Assembly (2015). Transforming our world: the 2030 agenda for sustainable development. <https://www.refworld.org/docid/57b6e3e44.html>
- 31 <https://www.carbontrust.com/>

ACKNOWLEDGEMENTS

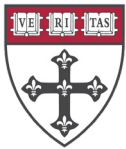
This case study was written by the faculty and scientists of The Harvard T.H. Chan School of Public Health and prepared by the World Travel & Tourism Council (WTTTC).

For more information, please contact:

Dr. Wendy M. Purcell

Harvard T.H. Chan, School of Public Health

wpurcell@hsph.harvard.edu



DESIGN

World Travel & Tourism Council



The World Travel & Tourism Council is the global authority on the economic and social contribution of Travel & Tourism.

WTTTC promotes sustainable growth for the Travel & Tourism sector, working with governments and international institutions to create jobs, to drive exports and to generate prosperity. Council Members are the Chairs, Presidents and Chief Executives of the world's leading private sector Travel & Tourism businesses.

Together with Oxford Economics, WTTTC produces annual research that shows Travel & Tourism to be one of the world's largest sectors, supporting 334 million jobs and generating 10.4% of global GDP in 2019. Comprehensive reports quantify, compare and forecast the economic impact of Travel & Tourism on 185 economies around the world. In addition to individual country fact sheets, and fuller country reports, WTTTC produces a world report highlighting global trends and 25 further reports that focus on regions, sub-regions and economic and geographic groups.

To download reports or data, please visit: wttc.org



WTTC x HARVARD LEARNING INSIGHTS

STRATEGIC PARTNERS



© World Travel & Tourism Council and Harvard Learning Insights: Science-Based Targets – June 2021. All rights reserved.

The copyright laws of the United Kingdom allow certain uses of this content without our (i.e. the copyright owner's) permission. You are permitted to use limited extracts of this content, provided such use is fair and when such use is for non-commercial research, private study, review or news reporting. The following acknowledgment must also be used, whenever our content is used relying on this "fair dealing" exception: "Source: World Travel & Tourism Council and Harvard Learning Insights: Science-Based Targets – June 2021. All rights reserved."

If your use of the content would not fall under the "fair dealing" exception described above, you are permitted to use this content in whole or in part for non-commercial or commercial use provided you comply with the Attribution, Non-Commercial 4.0 International Creative Commons Licence. In particular, the content is not amended and the following acknowledgment is used, whenever our content is used: "Source: World Travel & Tourism Council and Harvard Learning Insights: Science-Based Targets – June 2021. All rights reserved. Licensed under the Attribution, Non-Commercial 4.0 International Creative Commons Licence."



You may not apply legal terms or technological measures that legally restrict others from doing anything this license permits.