Travel Smart

Benchmarking global corporate flyers on leadership towards purposeful travel

May 2022

Key Findings

The pandemic has upturned long-held ideas about the necessity of air travel and the inevitability of travel-related greenhouse gas emissions. We are now in a moment, possibly brief, where the crisis of a global pandemic has created the opportunity for companies to realise that by reducing corporate air travel they can take responsibility for their emissions while reducing their costs. In the current context of the urgency of reducing oil dependency, one of the most feasible ways to do so is to maintain lower levels of flying experienced during the pandemic. The International Energy Agency's 10-point plan to reduce oil use highlights the significant contribution reducing business flights can make. This mutually beneficial scenario is made possible by, among other things, the necessity of working from home in the last few years. The ease by which many employees and customers have adapted to being home and flying less reveals that those long-held ideas no longer stand, and that curbing our flying habits to reduce greenhouse gas (GHG) emissions is not only possible, but a once-in-a-lifetime opportunity to lock in reductions in global corporate flying.

This study, based on data collected to the best of Stand.Earth Research Group and Transport & Environment (T&E's) ability, has scraped the surface of this new reality, revealing that company commitments and reporting are still in early stages of development. Current targets are not yet sufficient to reduce GHG emissions in line with 1.5°C warming scenarios and reporting is fuzzy and unstandardized. Nevertheless, there is room for optimism: a meaningful and long-term reduction target of 50% in corporate air travel emissions is possible in this decade and the companies that are most needed for this to happen have the means and the recent experience with corporate air travel reductions to achieve this. Over a dozen leading businesses have pledged to reduce their travel emissions by 50% or more, while twice that number have committed to pledges of less than 50%.

This study aims to shed light on where companies are in terms of their business travel commitments, air travel reduction targets, timelines, and reporting. By creating a database of companies using air travel for work, the study is able to compare commitments, look at emissions over time, and rank companies based on their progress and performance. The final product is a ranking of 230 companies based in Europe and the US. Each company has been attributed a final grade of A to D, according to their business travel reduction targets and reporting levels.

The ranking allows us to clearly identify the specific, immediate opportunities for companies to innovate their policies and enhance their performance.

1. The majority of companies that are currently reporting business or air travel emissions, have only broad emissions reduction commitments. This provides an opportunity for these companies to further improve their climate commitments, by refining them to include ambitious air travel reduction commitments and timelines, in line with the reductions they experienced in 2020. They can also ensure they consistently report air travel emissions using the most accurate method possible.

2. On the one hand, a number of companies have emission reduction commitments that include business travel reduction commitments, while reporting on their business travel. For these companies, reporting out their air travel separately would enhance transparency. This should not be an additional burden, because most companies will already be calculating emissions from each mode of transport to arrive at the total for business travel. On the other hand, a number of companies who are reporting their air travel emissions, have only broad commitments with no specific business travel or air travel reduction targets. As they are already tracking air travel, this provides an opportunity to define specific air travel targets.

3. For major emitters who are also laggards (companies with a D score) - with the technology sector having the biggest share (including companies like Microsoft, IBM and Google) - a number of these companies do not make the leadership circle in the ranking because they predominantly lack business travel commitments and reduction targets, even while disclosing their emissions. Others lack the transparency in reporting required for them to take a leading role. While they must do more to achieve the same results than a much smaller company, they can also marshall far more resources to make the shift happen. Here there is still an early mover opportunity for leadership that can have a big impact.

4. Companies which have intensity targets, should adopt absolute reduction targets. Intensity targets (in tCO_2/employee) are not as meaningful as absolute reductions, and cannot be treated as equal. Companies who commit to intensity targets may still grow their workforce and their absolute emissions and thus worsen their climate impact.

5. Transparency in reporting, and specifically reporting on corporate air travel, must be improved with more standardisation and rigour. This is needed to enhance the state of knowledge in order to meaningfully assess air travel emissions and monitor success. Governments can provide support by mandating disclosure of corporate travel emissions. They can also ensure that corporate climate commitments address emissions from corporate travel.

1. Introduction

Global air travel accounts for an estimated 2% of global carbon emissions and is predicted to account for 12-27% of emissions by 2050[1]. At over 900 million tonnes of CO_2 in 2018, aviation would rank 6th when compared to the highest emitting countries[2]. And this does not take into account the non-CO_2 effects of aviation. According to the European Union Aviation Safety Agency (EASA), the total climate heating impact of aviation is up to three times that of its CO_2 alone, due to the other (non-CO_2) gases released at high altitude[3].

Business travel is a huge part of aviation's climate problem. It accounts for about 15 - 20% of global air travel, or about 154 million Mt CO_2 in 2019[4]. Despite making up a minority of of passenger numbers, business travel typically accounts for between 60% and 70% of airline revenues[5]. 'Super flyers' or 'frequent flyers' are responsible for a large portion of business air travel[6], making the sector a target for emissions reduction efforts.

Until 2020, emissions from commercial flights were increasing faster than originally predicted[7]. However, the world has been rocked by the global COVID-19 pandemic, and air travel declined in ways that were previously seen as impossible. Business travel spending declined by 52% in 2020, from 1.4 trillion USD in 2019 to 694 billion USD in 2020[8]. The International Air Transport Association (IATA) reported that commercial aviation accounted for 905 million metric tons of CO_2 in 2019, but a year later, that number dropped to 495 million[9].

Now, as companies and economies recover and adapt, the pandemic-induced decline can be used as a wake-up call to build back better, make robust emissions reductions targets, and change travel

[1] McCain, M et al., World Resources Institute, Business Travel GHG Emissions Analysis, September 2021, https://files.wri.org/d8/s3fs-public/2021-09/business-travel-ghg-emissions-analysis.pdf?VersionId=04XNWfiQ8YhfjI3NkACq0PH VrBS_bmjC

[2] The ICCT, CO2 emissions from commercial aviation, September 2019, https://theicct.org/publication/co2-emissions-from-commercial-aviation-2018/

[3] European Union Aviation Safety Agency (EASA), 2020, https://www.easa.europa.eu/document-library/research-reports/report-commission-european-parliament-and-council

[4] McKinsey & Company, The Travel Industry Turned Upside Down Report, September 2020, https://www.mckinsey.com

[5] Bloomberg, U.S. Airlines Face End of Business Travel as They Knew It, July 2020, https://www.bloomberg.com/news/articles/2020-07-20/u-s-airlines-face-the-end-of-business-travel-as-they-knew-it?sref=M2YKkTZ6

[6] Transport & Environment, 1% super emitters responsible for over 50% of aviation emissions, 2020 https://www.transportenvironment.org/discover/1-super-emitters-responsible-over-50-aviation-emissions/

[7] IPCC, Aviation and the Global Atmosphere Report, 1999, https://archive.ipcc.ch/ipccreports/sres/aviation/index.php?idp=0

[8] Global Business Travel Association (GBTA), Business Travel: Full Recovery Expected by 2025, February 1, 2021. https://www.gbta.org/blog/business-travel-full-recovery-expected-by-2025/

[9] IATA, Industry Statistics Fact Sheet, October 2021, https://www.iata.org/en/iata-repository/pressroom/fact-sheets/industry-statistics/

behaviour. In the current context of the urgency of reducing oil dependency, one of the most feasible ways to do so is to maintain lower levels of flying experienced during the pandemic. Of the 64.4 Mtoe reduction in total EU oil consumption in 2020 compared to 2019, 37% was due to the drop in international aviation, despite only representing 6.3% of transport oil consumption.

The Global Business Travel Association (GBTA) predicts that business travel will recover to 2019 spending by the end of 2024[10]. On the other hand, sustainability professionals at 100 global businesses expect that their company's overseas travel in the next two to three years will significantly come down compared to pre-COVID-19 levels[11]. This could mean a potential decline in international business trips of up to 40 percent. In Europe, for example, short haul trips might be impacted meaningfully as employers commit to virtual and high-speed-rail alternatives[12].

It is difficult to know whose prediction is more accurate, but what is clear is that if old habits return, it will be harder to break them. A short window exists right now to encourage companies to adopt emissions reductions targets and lock in the lower emissions habits they have acquired during the pandemic.

The measures to achieve such a reduction will be an interplay between actions by large corporate flyers and actions by governments. Large corporate flyers can confirm, and in fact some already are confirming, that they won't return to pre-Covid levels of travel. Corporate climate commitments should be transparent about how they intend to reduce flying. However, governments should respond to such falling demand, not with continued subsidies to prop up a return to pre-Covid demand[13], but with a downward revision of forecasts for future growth, and recognising that the sector can and should be smaller. Governments and other public bodies should equally cut back on their own carbon intensive travel.

This study comes at a time where companies and governments are considering a new approach to corporate travel, and how to be smarter about how we work and how we connect. This study aims to illuminate where companies are in terms of their business travel commitments, air travel reduction targets, timelines, and reporting. By creating a database of the companies travelling the most for work, the study is able to compare commitments, look at emissions over time, and rank companies based on their progress and performance. The final product is a ranking of 230 companies from Europe and the US. Each company has been attributed a final grade of A to D, according to their business travel reduction targets and reporting levels.

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[10] Ibid.

[11] McKinsey & Company, The Travel Industry Turned Upside Down Report, September 2020, https://www.mckinsey.com

[12] Ibid.

[13] The Irish Times, Irish airports to get €90m to lure back airlines following effects of Covid, 2021 https://www.irishtimes.com/business/transport-and-tourism/irish-airports-to-get-90m-to-lure-back-airlines-following-effects-of-covid-1.4745934

2. Questions & Answers: Methodology

1. **How did you rank the companies? How did you end up with the letters A, B, C and D?**

The ranking grades 230 US, UK and European companies according to nine indicators, relating to emissions reduction targets, reporting and air travel emissions. Each indicator was broken down into varying levels of success, which gave a company a specific amount of points. For example, for the first indicator on commitment (i.e. does a company have a reduction commitment and does it specifically mention business air travel), a company was awarded 0 points for no target, 0.5 points for a broad emissions reduction target, 1 point for a business travel emissions reduction target, and 1.5 points for an air travel emissions reduction target. For certain indicators, points could be subtracted, to penalise companies. For a detailed overview of the nine indicators and how many points were attributed for each level of success, please refer to Table 4.

With a minimum score of -1 and a maximum score of 12.5, the companies were then categorised according to their final scores as either A, B, C or D (see Table 5). Companies have different scores within the band.

2. **How did you pick the 230 companies?**

The first set of companies were chosen by selecting the top 50 companies in Business Travel News's (BTN) Top 100 Corporate Flyers List from 2021. As BTN's list primarily contains U.S. based companies, we added the top 5-10 companies in Austria, Netherlands, Belgium, France, Ireland, Italy, Germany, the Netherlands, Poland, Portugal, Spain, and the UK (based upon emissions commitments, targets or reporting) to expand the database's geographic range. To ensure we included companies that are conscious of business travel emissions, we also added any company located in Europe and North America who had a mention of "business travel" in their Science Based Target Initiative (SBTi) commitment. Finally, we also added the top companies in each country by market capitalization as well as the top companies in each country, and Europe more broadly, from the industries that tend to fly the most (i.e. pharmaceuticals and consulting), even if they had no emissions commitments, targets, or reporting.

The company database is roughly 75% European companies and 25% U.S. companies.

3. **Why does the database of companies focus on the US, UK and the EU?**

The choice of the 230 companies is explained in question 2. Whilst this ranking offers a comprehensive view of the commitments and reporting of a wide range of companies based on available data, we are aware that these results are not entirely representative of the global state of business travel. Research and data has shown that a significant portion of business travel is done by companies based in Asia, which were excluded from this study. One report estimates that almost a

third of business travellers are based out of China[14]. Consequently, to establish a more complete picture of business travel and its emissions, a broader geographic scope could be added to a future edition of the ranking, depending on data availability.

4. Where does the data come from?

The data is based on a variety of sources, including the Carbon Disclosure Project (CDP) database, the SBTi database, company ESG reports, annual reports, sustainability reports, press releases, and other company-authored media that outlined commitments and targets. If no commitment or emissions data was found, the company was determined to have no publicly reported business/air travel emissions related commitments and targets.

5. How much weight do you give to each indicator?

Nine indicators were used in the ranking. Each indicator was broken down into varying levels of success, which gave a company a specific amount of points. For example, for the first indicator on commitment (i.e. does a company have a reduction commitment and does it specifically mention business air travel), a company was awarded 0 points for no target, 0.5 points for a broad emissions reduction target, 1 point for a business travel emissions reduction target, and 1.5 points for an air travel emissions reduction target. For a detailed overview of the nine indicators and how many points were attributed for each level of success, please refer to Table 4.

6. Are A and B passing grades and C and D failing?

The Smart Travel Ranking does not offer a pass or fail grade. It aims to shine a light on best practices for reduction of corporate travel emissions. Absolute air travel reduction targets and air travel emissions reporting are considered leadership values, expressing transparency and willingness to reduce carbon emissions from corporate air travel.

The grade D was given to those companies who do not disclose their emissions (even at the Scope 3 level) or disclose their business travel emissions but are major emitters with no specific commitments and reduction targets related to business travel.

Out of 230, 8 companies (3% of the ranking) got A grades and 30 companies got a B score (13%). The majority of companies (142 or 62%) got a C and 50 (or 22%) got a D.

[14] Shell International BV in collaboration with Deloitte, Decarbonising Aviation: Cleared for Take-off Industry Perspective, 2021, https://www.shell.com/promos/energy-and-innovation/v1/decarbonising-aviation-cleared-for-take-off/_jcr_content.stream/1632757263451/e4f516f8d0b02333f1459e60dc4ff7fd1650f51c/decarbonising-aviation-industry-report.pdf

7. **What does the total score mean? What is the top score and why do some companies get a negative grade?**

The total score is the addition of points given to each company for the nine indicators. A company will gather many points for absolute air travel reduction targets and air travel emissions reporting. A maximum score of 12.5 represents a company who has made a business travel commitment more than one year ago that includes an absolute (as opposed to intensity) air travel emissions reduction target greater than 50% before 2030. For top marks, a company must also be reporting on their emissions for the past 3 years. Points are deducted for not disclosing emissions and for being a major emitter (e.g. having emissions above 280,000 tCO2).[15] The minimum score (-1) represents a company who has no emissions reduction commitments and targets and no reporting.

8. **Have the 230 companies received the ranking and have you engaged with them on the results?**

All companies will have been contacted before the launch of the ranking. Any company wishing to submit additional data is free to do so. We will then revise the ranking for future editions.

9. **Are all the companies with the same grade (A, B, C, D) equal or do some perform better than others on reducing corporate travel?**

Each company will get a total score, which depends on their corporate travel emissions reduction target, their accuracy of reporting and their emissions levels. Depending on the total score, a company will be attributed an A, B, C or D letter.

An A letter corresponds to a score of 9.5 points or over. A company with the letter B has a total score ranging from 6 to 9. The letter C was given to all those companies with a score between 2.5 and 5.5. And the lowest grade, D, was for all companies scoring lower than 2.5 points.

10. **What do you consider a big emitter for corporate travel? And why do some companies emitting a lot for business flying still rank highly in the ranking?**

In the Smart Travel Ranking, a major emitter was considered to have emissions above 280,000 tCO_2 in 2019. The cut-off at 280,000 tCO_2 represents the top 1/3 of all companies by their 2019 or 2020 reported emissions. If companies were considered major emitters, they lose one point. However, major emitters could have ambitious reduction pledges and have been reporting on their air travel emissions for a long time, for which they will have received high marks.

11. **What is the difference between air travel and business travel in the ranking?**

[15] The cut-off at 280,000 tCO_2 represents the top 1/3 of all companies by their 2019 or 2020 reported emissions.

Business travel covers employee travel for business-related activities in different types of vehicles owned or operated by third parties - air, train, bus, car, etc. -, as well as hotel stays. Air travel refers exclusively to employee travel by aircraft owned or operated by third parties.

12. Why is an absolute target better than an intensity target for corporate travel?

Intensity targets (in tCO_2/employee) are common, and are not as meaningful as absolute reductions. Companies who commit to intensity targets may still grow their absolute emissions, and thus their climate impact, if they extend their workforce.

For any more information about the ranking, please read the Methodology and Results sections in this briefing. For any further queries about the ranking or the campaign more generally, please contact our Corporate Travel Campaign Manager, Denise Auclair *(denise.auclair@transportenvironment.org).*

3. Data collection and company selection methodology

This section is largely inspired by the report "Reducing Corporate Air Travel Emissions" commissioned by Transport and Environment to Stand.Earth Research Group's to investigate the scale of the corporate travel emissions of major US, UK and EU companies and their commitment in reducing them. We brought some (minimal) change to the content of the report to make it as relevant as possible.

Data collection consisted of three stages: establishing the list of companies to consider, researching their corporate emissions commitments, and determining their air travel emissions.

3.1. Stage 1: Establishing the list of companies

The first set of companies were chosen by selecting the top 50 companies in Business Travel News's (BTN) Top 100 Corporate Flyers List from 2021.[16] The ranking is based on total business travel spending booked in the United States. BTN gathered this information through industry reports and reached out to individual companies for confirmation on specific numbers. As BTN's list primarily contains U.S. based companies, we added the top 5-10 companies in Austria, Netherlands, Belgium, France, Ireland, Italy, Germany, Netherlands, Poland, Portugal, Spain, and the UK (based upon emissions commitments, targets or reporting) to expand the database's geographic range. To ensure we are capturing a variety of companies that are conscious of business travel emissions, we also added any company located in Europe and North America who had a mention of "business travel" in their Science Based Target Initiative (SBTi) commitment.[17] Finally, we also added the top companies

[16] Business Travel News, BTN's 2021 Corporate Travel 100, September 28, 2021, https://www.businesstravelnews.com/Corporate-Travel-100/2021
[17] Science Based Targets Initiative, "Target Dashboard", accessed January 2022, https://sciencebasedtargets.org/companies-taking-action#table

in each country by market capitalization as well as the top companies in each country, and Europe more broadly, from the industries that tend to fly the most (i.e. pharmaceuticals and consulting), even if they had no emissions commitments, targets, or reporting.[18] Our goal was to create a comprehensive list that includes companies that are conscious of their business travel emissions but also companies that may potentially have large business travel emissions but neither report nor commit to business travel emissions reductions.

3.2. Stage 2: Researching corporate emissions commitments

To establish whether companies are considering the impacts of business travel on climate and environmental concerns, we researched whether each company had an individual commitment and target to decrease their emissions. We checked whether a company had a broad emissions reduction commitment and target (which may or may not include business travel), a specific business travel or air travel emissions commitment and target (i.e. pledging to decrease air travel emissions by 15%), or no emissions reduction commitment or target.

We also noted whether these commitments were approved science-based targets or not. Some companies had multiple overlapping targets set at different dates, but only the most recent target was recorded. Some companies also have simultaneous commitments for different time frames (i.e. -30% emissions by 2025 and net-zero by 2050). In these cases, the target with the most immediate target date was recorded. This information was primarily found by using the latest Climate Change Survey in the CDP database. If a company did not submit a CDP survey or had no explicit commitment, we then looked through the SBTi database, company ESG reports, annual reports, sustainability reports, press releases, and other company-authored media that outlined commitments and targets. If no commitment or emissions data was still not found, the company was determined to have no publicly reported business/air travel emissions related commitments and targets.

3.3. Stage 3: Determining air travel emissions

Finally, in order to compare, evaluate, and analyse the impact of corporate air travel, we collected air travel emissions reporting information for each company that reported some form of Scope 3, business travel, or air travel emissions. Again, these numbers were primarily derived from the CDP database. If emissions numbers were not found through CDP, we looked at a company's reports, press releases, or other materials. If companies had both CDP reporting and emissions figures in their reports, the most specific numbers were taken; if total business travel was reported in CDP and air travel was reported in an annual report, the air travel number was taken. If there was any discrepancy between CDP numbers and company report numbers, the numbers were taken from

[18] McCain, M et al., World Resources Institute, Business Travel GHG Emissions Analysis, September 2021, https://files.wri.org/d8/s3fs-public/2021-09/business-travel-ghg-emissions-analysis.pdf?VersionId=04XNWfiQ8YhfjI3NkACq0PH_VrBS_bmjC

company reports. For a baseline metric of comparison of air travel only, we converted reported Scope 3 and business travel emissions to air travel emissions.

3.3.1. Estimating air travel emissions from business travel emissions

For business travel to air travel emissions conversions, we used data on the average proportion of air travel (AT) emissions to total business travel (BT) emissions. For Europe, 19 companies that reported both business travel and air travel emissions were used to calculate an average proportion of air travel to business travel emissions. This average was based on proportions reported over three years (2018 -2020) and was used as a scaling factor for European companies who only reported business travel emissions. Almost half of the companies (44%) in the list (see Table 1) are banks and consulting firms, where the trend is that a high proportion of business travel emissions come from air travel. Also, half of the companies are based in the UK (44%), suggesting that they also might favour flying over other modes of transport, given their location. Finally, some companies only reported air travel emissions because they offset other travel emissions. This means that the 72% scaling factor should be treated with caution. With additional sampling, this ratio could easily vary between 70-80%. Further research e.g a survey of European companies, would be useful in honing this estimate. Table 1 presents the data collected for the calculation of European BT to AT emissions ratio.

	Business travel (BT) emissions (tCO2)			**Air travel (AT) emissions (tCO2)**			**AT/BT ratio**		
Company	**2020**	**2019**	**2018**	**2020**	**2019**	**2018**	**2020**	**2019**	**2018**
Deloitte	584700	754100	687900	383000	494800	458400	66%	66%	67%
Capegimini	98500	294100	315400	52600	188600	203800	53%	64%	65%
AstraZeneca	80800	282000	218000	29000	210600	152200	36%	75%	70%
Bayer	57000	303000	146000	53000	294000	139000	93%	97%	95%
Swiss Re	22900	63000	61100	22800	62700	60900	100%	99%	100%
PWC	-	65700	60700	-	59100	57600		90%	95%
Siemens	125800	348600	365400	110300	309800	311900	88%	89%	85%
Rio Tinto Group	140000	-	-	100000	-	-	71%		

Ernst & Young	49600	-	-	46600	-	72000	94%		
Johnson Controls	-	-	-	19000	43000	52000			
Daimler AG	12000	70800	0	12000	70700	0	100%	100%	
ICA Gruppen	16300	32000	32700	3300	12500	14300	20%	39%	44%
Raiffeisen Bank International	4600	7600	7000	2500	5200	4300	54%	68%	62%
Prudential plc	-	-	-	2000	6100	21700			
JERONIMO MARTINS SGPS	-	-	-	1100	2300	2000			
Uniqa Insurance Group AG	91	622	0	68	558	0	75%	90%	
Belfius	116	609	681	11	146	170	10%	24%	25%
M&G plc	1300	9100	-	1300	8900	-	96%	99%	
Cundall Johnston and Partners LLP	-	73	96	-	67	74		92%	77%
Average per year							68%	78%	71%
Total average proportion									**72%**

Table 1: Air travel emissions estimates, based on 12 European companies reporting their air travel (AT) proportions of their total business travel (BT) emissions.

For U.S.-based companies who only reported business travel emissions, an estimation of air travel to business travel proportion was derived from a model based on the 2001 National Household Travel

Survey from the U.S. Bureau of Transportation statistics.[19] This survey produced statistics on the proportion of air travel versus road travel for different distance ranges as shown below in Table 2. This data was the only viable reference found and several attempts were made to create suitable estimates of the proportion of air travel emissions in business travel emissions reporting for U.S. companies.

Domestic Road & Air Travel Proportions		
Distance Range (miles)	**Proportion Personal Vehicle**	**Proportion Air Travel**
50-99	97%	3%
100-249	94%	6%
250-499	67%	33%
500-749	36%	64%
1500+	10%	90%
International	0%	100%

Table 2: Proportions of road and air travel for U.S. companies, based on length of trip. International distance range added by SRG

To build a model of estimated emissions, median trips were derived from each distance range and multiplied by the % of road and air travel respectively for that range, as well as the emissions factors for passenger vehicles (kg-CO_2/vehicle/mile) and air travel (kg-CO_2/passenger/mile) and the distribution of trips for that range (derived and estimated from the same BTS report).[20] For road travel, the total was divided by the average number of passengers per vehicle as reported by BTS. This was to calibrate the result with the overall estimate that air travel emissions are around 3.5 times as high per passenger than other business travel emissions.[21]

The average of each road and air emissions over total emissions yielded a suitable estimate for the proportion of air travel emissions in reported business travel emissions. However, given the age of

[19] United States Department of Transportation, Bureau of Transportation Statistics, National Household Travel Survey Long Distance Business Travel Quick Facts, May 31, 2017,

www.bts.gov/statistical-products/surveys/national-household-travel-survey-long-distance-business-travel-quick

[20] US EPA, GHG Emission Factors Hub, April 2021,
https://www.epa.gov/sites/default/files/2021-04/documents/emission-factors_apr2021.pdf

[21] UK BEIS (UK Department for Business, Energy and Industrial Strategy), Greenhouse Gas Reporting: Conversion Factors 2020. Accessed Jan 25, 2022 www.gov.uk/government/collections/government-conversion-factors-for-companyreporting

the underlying data set and the growth in air travel in the interim years, this proportion should be treated as a very conservative estimate.[22]

The resulting scaling factor (77%) was applied to determine air travel emissions from business travel emissions for US based companies.[23] For companies that did not explicitly report air travel emissions, but who estimated their own proportion of air travel emissions in ESG reports, these proportions were used instead of the calculated proportions.

3.3.2. Estimating air travel emissions from Scope 3 emissions

For companies that reported only Scope 3 emissions, we researched each company individually and found reporting that allowed us to make an estimate of the proportion of their Scope 3 emissions that come from air travel. For example, in an annual report, some companies would estimate business travel as a percentage of the company's total emissions and this percentage would be used to estimate business travel in our database. For some companies, this required using the spend-based method from the Greenhouse Gas Protocol.[24] This was used to calculate air travel emissions based on reported spending using environmentally-extended input output (EEIO) emissions factors for CO_2 and other GHGs supplied by the U.S. Environmental Protection Agency (EPA) for air transportation (commodity code 481) as of 2018.[25] The 'spend-based' method is not as accurate as the other two methodologies suggested by the CDP (fuel consumption and distance based methods), and is only suggested for use if the other two methods are not feasible.[26] These numbers should be treated very cautiously.

3.4. Data gaps and solutions

The largest data issues centred around the difficulty in establishing and comparing air travel emissions between companies. Specifically, not all companies reported their business/air travel

[22] McCain, M et al., World Resources Institute, Business Travel GHG Emissions Analysis, September 2021, https://files.wri.org/d8/s3fs-public/2021-09/business-travel-ghg-emissions-analysis.pdf?VersionId=04XNWfiQ8Yhfjl3NkACq0PH VrBS_bmjC

[23] Reuters reported that 90% of business travel emissions are for air travel, but the study was not able to corroborate this figure nor find the source of the statistic, despite inquiring with Reuters and conducting a detailed search. Jamie Freed and Rajesh Kumar Singh, "Analysis: Corporate Business Travel 'Carbon Budgets' Loom for Airlines", Reuters, October 11, 2021, www.reuters.com/business/aerospace-defense/corporate-business-travel-carbon-budgets-loom-airlines-2021-10-10/

[24] World Resources Institute & World Business Council for Sustainable Development, Technical Guidance for Calculating Scope 3 Emissions (version 1), 2013. Category 4 "Upstream Transportation and Distribution", https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter4.pdf; Category 6 "Business Travel", https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter6.pdf

[25] EPA, US Environmentally Extended Input-Output (USEEIO) Models, accessed January 2022, https://www.epa.gov/land-research/us-environmentally-extended-input-output-useeio-models

[26] World Resources Institute & World Business Council for Sustainable Development, Category 6 "Business Travel", Technical Guidance for Calculating Scope 3 Emissions (version 1), 2013. https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter6.pdf

emissions and companies that did report used different methodologies and reporting years. For example, there are three different approved methods for calculating air travel emissions based on either fuel consumption, distance travelled, or overall spend, listed in decreasing order of accuracy. In addition, some companies report emissions for fiscal, rather than calendar, years which can vary greatly across companies and qualifies temporal comparisons. Moreover, as there is no centralised and publicly available database that collects company level emissions, it is possible that some of the largest corporate flyers are not included in this list as they might not be one of the largest companies in a country, they might not be in a industry that is known to have a lot of business travel, and they might not report their emissions or make commitments.

In addition, these results are not representative of the global state of business travel. Research and data has shown that a significant portion of business travel is done by companies based in Asia, which were excluded from this study. One report estimates that almost a third of business travellers are based out of China.[27] Consequently, to establish a more complete picture of business travel and its emissions, more geographic variety is needed.

Our research has shown that most companies report an aggregate business travel figure and some simply report Scope 3 emissions. Thus, we had to make assumptions about the proportion of air travel within total business travel. Some companies did not report their business travel/Scope 3 emissions through the CDP or ESG reports and although we looked for reporting, we do not know conclusively across the whole list of companies whether companies we did not find reporting for chose not to disclose these numbers or did not calculate them at all.

3.5. Sector and geographic breakdown

By design, the company database is roughly 75% European companies and 25% U.S. companies. This is done to ensure that each European country has adequate representation of at least 5-10 companies in the list for their own national efforts. The breakdown by country is skewed by other factors such as representation of major flyers, biggest companies by market capitalization, and the companies that had targets and/or reporting available for analysis. Thus, the UK has the largest geographic share of any country in Europe, being both a hub for finance and consulting as well as a location where several companies have business travel emissions reductions targets and reporting. This is in part due to the UK mandating that large businesses report their annual energy use and greenhouse gas emissions[28]. The UK is followed by France, Germany, and the Netherlands.

[27] Shell International BV in collaboration with Deloitte, Decarbonising Aviation: Cleared for Take-off Industry Perspective, 2021, https://www.shell.com/promos/energy-and-innovation/v1/decarbonising-aviation-cleared-for-take-off/_jcr_content.stream/16 32757263451/e4f516f8d0b02333f1459e60dc4ff7fd1650f51c/decarbonising-aviation-industry-report.pdf

[28] Gov.UK, "Measuring and reporting environmental impacts: guidance for businesses", April 2019 https://www.gov.uk/guidance/measuring-and-reporting-environmental-impacts-guidance-for-businesses#:~:text=From%2012%20April%202019%2C%20quoted,and%20Carbon%20Report

Country	Count	Proportion
United Kingdom	39	17%
France	21	9%
Germany	19	8%
Netherlands	13	6%
Spain	12	5%
Austria	11	5%
Switzerland	10	4%
Belgium	10	4%
Portugal	9	4%
Sweden	6	3%
Italy	6	3%
Ireland	6	3%
Poland	4	2%
Denmark	2	1%
Finland	1	0%
USA	61	27%
Total	**230**	**100%**

Table 3: Country breakdown of companies in the list

Of the companies reviewed for this study, finance is the sector with the most companies represented, followed by tech. Retail and consulting round out the top 4, with a combined accounting of 50% of the companies in the list (see Fig. 1).

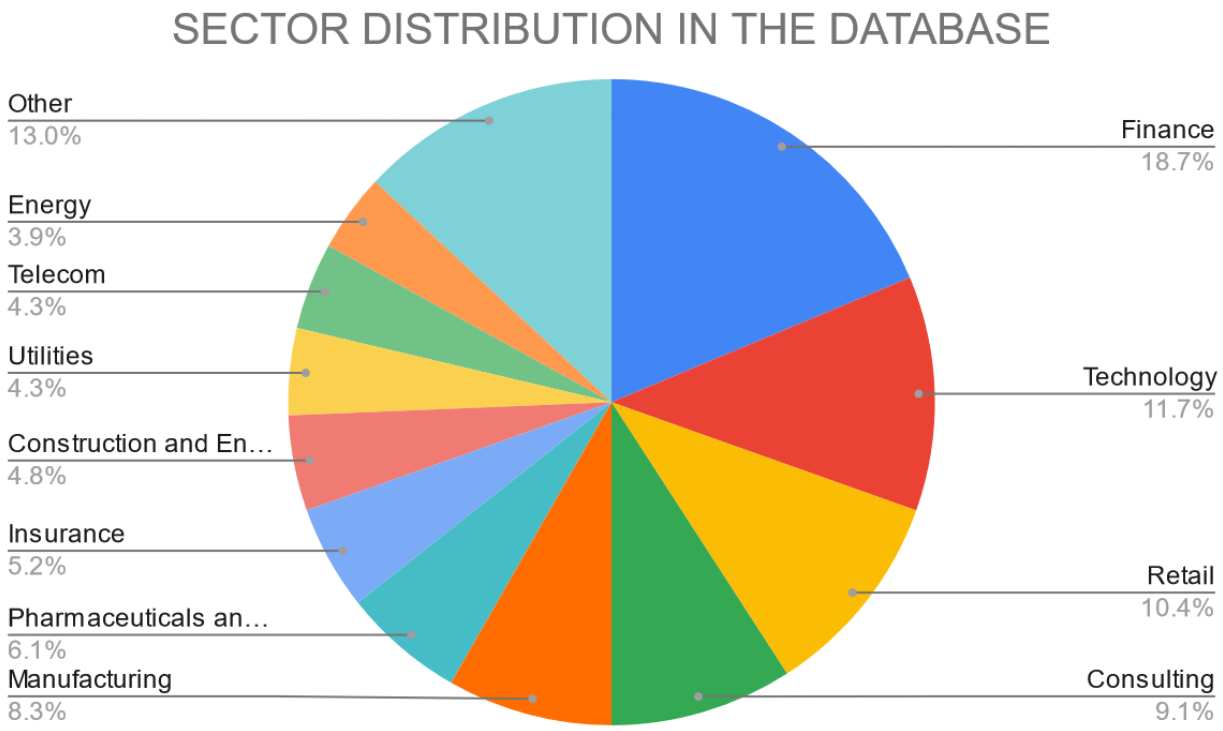

Figure 1: Shares of companies by sector

4. Establishment of a company ranking

A long-table database built from the data collection process included all the companies that were identified and information including: Basic information (Company name, sector, country of headquarters), Commitment information (commitment type, announcement date, reduction target and units, SBTi approval, base year, target year), Reporting information (reporting specificity, emissions reporting 2018 – 2020, source) as well as other information such as BTN data and data on other climate commitments and initiatives. A spreadsheet to devise a company ranking according to their ambition in reducing corporate air travel emissions was also provided. The following section details the different indicators taken into account for the ranking and how the points were attributed.

4.1. Ranking indicators

The companies were assessed based on the criteria shown in Table 4. With a minimum score of -1 and a maximum score of 12.5, the companies were then categorised according to their final scores as either A, B, C or D (see Table 5). The distribution between the categories was even.

Indicator	Verifier	Score

Commitment *Do they have a reduction commitment ? Does it specifically mention business air travel ?*	No Target	0
	Broad Target	0.5
	BT Target	1
	AT Target	1.5
Target adoption *Have they been committed to these targets for more than a year (since 01/2021) ?*	No target	0
	<12 months	0.5
	>=12	1
Type of target *Is the target an absolute reduction or in tCO_2/employee ?*	None	0
	Intensity	0.5
	Absolute	1.5
% Reduction commitment *How high is their ambition in reducing their emissions?*	No commitment	0
	<25%	0.5
	[25%;-50%[	1
	[50;75%[	2
	>=75%	3
Timeline to target *Do they aim to achieve their target as soon as possible?*	No timeline	0
	>2030	0.5
	2025-2030	1
	<=2025	2
Reporting *Do they report their air travel emissions specifically?*	Insufficient information	-1
	Scope 3 reporting	0.5
	BT reporting	1
	AT reporting	2
Air travel emissions 2019 *Are they a major emitter?*	280ktCO_2+	-1
	150ktCO_2 - 280ktCO_2	-0.5
	Other or no reporting	0
Years of reporting *How many of the last 3 years has the company reported emissions?*	0	0
	1	0.5
	2	1
	3	1.5

Table 4: Ranking criteria and scores

Category	Score
A	>75%
B	50 - 75%
C	25 - 50%
D	< 25%

Table 5: Categories of companies based on their commitment to business travel emissions reductions and reporting

Absolute air travel reduction targets and air travel emissions reporting are considered leadership values, expressing transparency and willingness to reduce carbon emissions from corporate air travel. A maximum score of 12.5 represents a company who has made a business travel commitment more than one year ago that includes an absolute (as opposed to intensity) air travel emissions reduction target greater than 50% before 2030. For top marks, a company must also be reporting on their emissions for the past 3 years. Points are deducted for not disclosing emissions and for being a major emitter (e.g. having emissions above 280,000 tCO_2).[29] The minimum score (-1) represents a company who has no emissions reduction commitments and targets and no reporting.

5. Results

In the section we present the results from Stand.Earth Research Group's report that are the most relevant and present the ranking obtained from the scoring criteria presented above.

5.1. Commitment and reporting analysis

The majority of the companies analysed had broad emissions reduction commitments and targets and reported their business travel (BT) emissions (54%; see Fig. 2). The combination of broad commitments and targets and BT emissions reporting provides a strategic opportunity to push companies to further improve their climate commitments by refining them to include specific air travel travel reduction targets and timelines, as well as ensuring they consistently report air travel emissions using the most accurate methods possible.

Only 1% of the companies in the database had the 'gold standard' (e.g. emissions reduction commitment with a specific air travel target and air travel emissions reporting). These companies included Novo Nordisk (Pharmaceuticals, Denmark), Swiss Re (Finance, Switzerland), and Fidelity International (Finance, UK).

[29] The cut-off at 280,000 tCO_2 represents the top 1/3 of all companies by their 2019 or 2020 reported emissions.

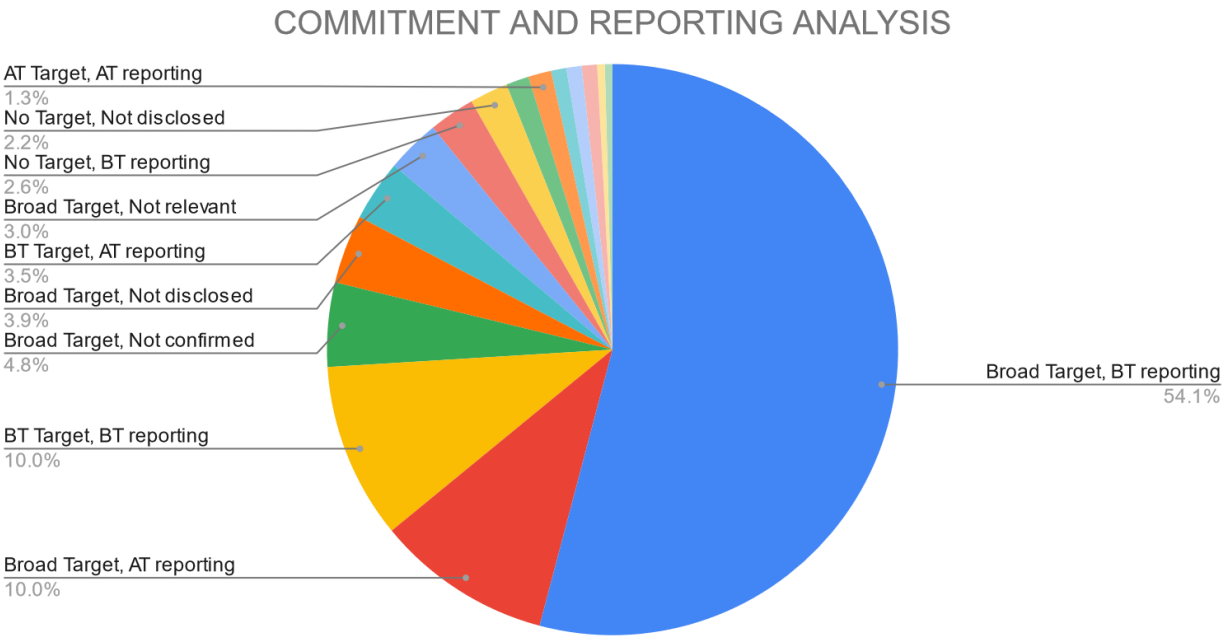

Figure 2: Shares of companies by their business travel emissions commitment and reporting

10% of companies in the database had emissions reduction commitments with business travel reduction targets and business travel reporting. For these companies, reporting out their air travel separately would enhance transparency. Given that most of these companies will use a method that calculates emissions from each mode of transport separately and then adds them up, revealing their air travel emissions should not be an additional burden. This would help to rely less on the scaling factors calculated herein and lead to more accurate analysis. Note, it is likely that one of the reasons air travel emissions reporting was not more common is because the CDP questionnaire only asks for business travel emissions rather than explicitly asking for air travel emissions. Since most companies only report emissions through CDP, there was little incentive for companies to separately report their air travel emissions.

Likewise, 10% of the companies had broad commitments with no specific business or air travel reduction targets, but reported their air travel emissions. Since they know the extent of their pollution, the next step for them would be to commit to science-based reduction targets for air travel specifically.

5.2. Ranking

For a complete list of companies, their score and more details on their performance, please see the website. Fig. 3 shows the distribution of companies by category.

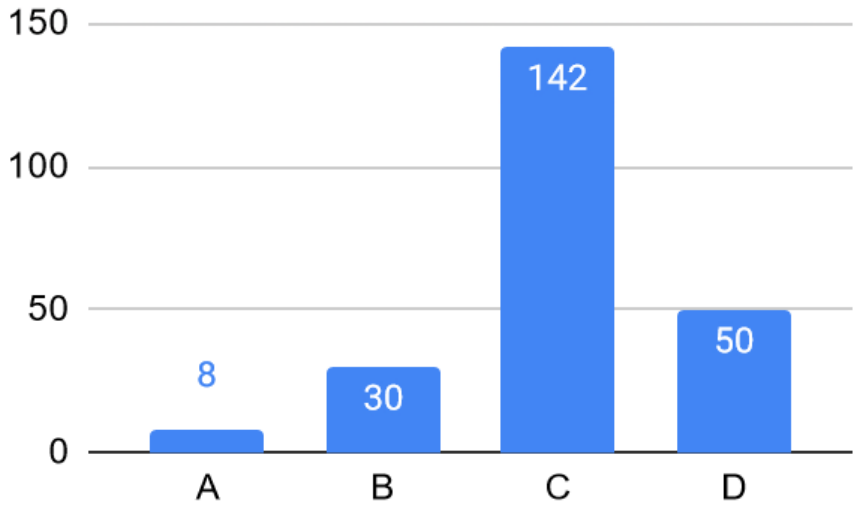

Figure 3: Distribution of categories in the ranking analysis

Category A has the smallest share, only 3% of companies (or 8 companies) made the cut. These include Novo Nordisk, Fidelity International, Swiss Re, Legal & General Group, Zurich Insurance Group, Lloyds Banking Group, Ernst & Young and Crédit Agricole. The financial sector was the most represented in this group, with 6 of 8 companies. All companies have absolute reduction commitments. Four of them have committed to 50% or higher reduction by 2025, one to 100% by 2030 (Legal & General Group) and the other 3 have at least 25% reduction targets by 2030 combined with air travel reporting for at least 3 years. There are no major emitters that qualify as leaders, even if they were not discounted in the ranking for being major emitters.

13% of the companies are Category B. They have absolute or intensity targets between -12% and -55%, with target year until 2030. They also have been reporting business travel or air travel emissions for at least 2 years. Major emitters that are also "B" companies include Deloitte, Bayer, McKinsey & Co., Boston Consulting Group and A1 Telekom[30]. Here companies can build upon their commitments, while stepping up the scale of their efforts.

The majority of the companies in the database are Category C (62%), which is not surprising given that the majority of companies in the commitment and reporting analysis only had broad targets but some level of reporting (see Figure 2). Companies in category C do not have specific business or air travel reduction targets, except two of them with at best Scope 3 reporting. Their reporting varies in specificity and transparency. Most have reported for at least 2 years, showing a commitment to transparency that could be encouraged. Major emitters who are also in Category C include Amazon and Siemens. Amazon has no business or air travel targets and only reported Scope 3 emissions.

30 Only scope 3 emissions are available for this company

Siemens has no business or air travel targets, but reported air travel emissions. Here there is still an early mover opportunity for leadership that can have a big impact.

Finally, 22% of the companies are Category D who either do not disclose their emissions (even at the Scope 3 level) or disclose their business travel emissions but are major emitters with no specific commitments and reduction targets related to business travel (see Table 5). These major emitters, i.e. Volkswagen, Microsoft, Johnson & Johnson, IBM, Google, Facebook and Accenture should show leadership by adopting business travel reduction targets to match their business travel reporting instead of making only broad commitments that include Scope 3 (Table 6). Interestingly, several of these companies are also part of the Climate Group-RE 100, the CDP A-List, the Exponential Roadmap, and the Climate Pledge. Microsoft and Accenture are part of all four. Note that the ranking contains more potential major emitters which could not be classified as such because they did not report more specific emissions than Scope 3.

Company	Country	Reporting	Estimated 2019 emissions (tCO_2)	Ranking score	Commitment type
Volkswagen	Germany	BT reporting	522,523	2	Broad target including Scope 3
Johnson & Johnson	USA	BT reporting	463,088	2	Broad target including Scope 3
Facebook	USA	BT reporting	407,178	2	Broad target including Scope 3
Accenture	Ireland	BT reporting	368,711	1.5	Broad target including Scope 3
IBM	USA	BT reporting	302,842	2	Broad target including Scope 3
Microsoft	USA	BT reporting	302,156	2	Broad target including Scope 3
Google	USA	BT reporting	284,024	2	Broad target including Scope 3

Table 6: Major emitters who are laggards in the ranking due to the lack of reduction targets.

Further information

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