

---

# CARBON BILLIONAIRES

Methodology note

---

# 1. METHODOLOGY FOR DATA COLLECTION

Oxfam worked with a data provider, [Exerica](#), to identify:

- The equity stakes in companies that the richest 220 individuals in the world are invested in (we had initially selected the richest 200 but increased the size of the sample to take account for the number of billionaires whose ownership positions we could not identify).
- The scope 1 & 2 emissions of those companies.

Exerica determined the equity stakes individuals hold by using the Bloomberg Billionaires Index<sup>1</sup> - Oxfam usually uses the Forbes billionaire list but chose the Bloomberg list for this study as they have in-depth analysis of asset ownership. The percentage ownership of each company was determined either by dividing the investment value by the market cap on the day our analysis was conducted (the Bloomberg Index is updated daily) or from the narrative description Bloomberg provides.

For scope 1 & 2 emissions we used information reported by the company, this is derived from either the most recent sustainability report or from CDP disclosures. Where reported, location-based scope 2 emissions are used, where only market-based emissions are provided, we have deferred to these figures. Location based emissions reflect the grid where the energy is purchased, market based takes into account the energy the company is purchasing. While both are important information, we prioritise location based as that is the emissions physically going into the air.<sup>2</sup>

We have provided a source via hyperlink to where this data was sourced.

We also supplemented this data with data from the Science Based Targets Initiative.<sup>3</sup>

We filtered the data down to our final dataset by removing:

1. Removing entries where we were unable to identify the equity stakes billionaire held in a company.
2. Where the company did not report scope 1 and 2 emissions.
3. Where the stake held by billionaires was 10% and less. We chose the 10% threshold based on the definition used by the U.S. Securities and Exchange Commission (SEC) of a principal shareholder, as these shareholders are considered to have significant influence over a company.

With the list of corporates and the equity stakes the billionaires own, the corporates' scope 1 and 2 emissions of CO<sub>2</sub> were then allocated to their owners based on their equity stake. For example, if billionaire X owned 50% of company Y, whose scope 1 and 2 emissions were 1,000 tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e), we therefore allocated 500 tons CO<sub>2</sub>e to billionaire X.

The dataset we started with before filtering is referred to as the 'original list', the dataset after the filtering is referred to as the 'final sample'.

The public dataset can be found on the [Oxfam Policy and Practice website](#).

## 2. SUMMARY OF ANALYSIS

	Number	Percentage	Unit
Total billionaire carbon footprint	392,870,097		tonnes of co2e
Average billionaire footprint	3,142,961		tonnes of co2e
Value of the billionaire's investments	2,420,102,050,934		USD
Number of investments (includes companies counted more than once when held by different billionaires)	199		
Number of investments above 50%	68		
Percentage of investments above 50%	34%		
Billionaires not reporting scope 1 & 2 emissions from original list	338	56%	
Billionaires not reporting scope 3 emissions from original list	461	76%	
Billionaire reporting scope 1 & 2 emissions from original list	266	44%	
Billionaires reporting scope 3 emissions from original list	143	24%	
Number of final sample companies who do not report scope 3 emissions	87	48%	
Number of final sample companies who do report scope 3 emissions	96	52%	
Number of companies in original list	604		
Number of billionaires in original list	220		
Number of companies in final sample	183		
Number of billionaires in final sample	125		
Tons of co2e emitted per \$1m invested	162.34		tonnes of co2e
Number of final sample companies	53	29%	

who have science-based targets			
Number of final sample companies who have net zero commitments	29	16%	

### 3. STAT CALCULATIONS

- 1. The emissions from the investments of one of the billionaires in our sample is a million times higher than the average person in the bottom 90% of humanity.**

Emission from the investments of the 125 billionaires in our sample is 392,870,097 tons of CO2e.

The average emissions of a billionaire in our sample is 3,142,961 tonnes of CO2e.

The average per capita emissions of someone in the bottom 90% is 2.76 tonnes of CO2e- this data is taken from the work done by Oxfam and the Stockholm Environment Institute.<sup>4</sup> So the investment emissions of a typical billionaire in our sample are 1,138,000 times higher than someone in the bottom 90% of humanity.

The actual figure for total billionaire emissions will be higher still as this does not include emissions from consumption.

France's total emissions in 2020 including LULUCF was 384,791,530 tonnes of CO2e according to the OECD.<sup>5</sup>

- 2. Each of these billionaires would have to circumnavigate the world almost 16 million times in a private jet to create the same emissions.**

The average emissions of a billionaire in our sample is 3,142,961 tonnes of CO2e.

To calculate the emissions of a private jet circumnavigating the earth (40,075 km) we used a Cessna Citation XLS – a popular private jet – which burns 857 litres of aviation fuel per hour on average<sup>7</sup>. Aviation fuel emits 2.52 kg of CO2 per litre with a multiplier of 1.9 to reflect the effect on non-CO2 emissions<sup>8</sup> - this means that the Cessna Citation XLS emits 4.1 tonnes of CO2 per hour. The airplane has a max speed of 816 kph and so would take 49 hours to circumnavigate the world (not accounting for fuel stops and assuming the aircraft maintains maximum speed.) The aircraft would therefore emit 202 tonnes of CO2e for every circumnavigation. 3,142,961 divided by 202 is 15,596.

- 3. It would take 1.8 million cows to emit the same level as an average billionaire in our sample.**

A single cow emits 70kg of methane per year<sup>9</sup> which equates to 1.75 tonnes of CO<sub>2</sub>e using the 25x multiplier.<sup>10</sup> 3,142,961 divided by 1.75 is 1,795,978.

**4. Almost 4 million people would have to go vegan to offset the emissions of an average billionaire in our sample.**

The average reduction per person per year of a vegan diet is 0.8 tonnes of CO<sub>2</sub>e.<sup>11</sup> 3,142,961 divided by 0.8 is 3,928,701.

**5. If the billionaires in our sample moved their investments to a fund that simply followed the S&P 500 for example, then the intensity of their emissions would be reduced by half. If it was placed into an illustrative low carbon intensity equity fund it could reduce them by up to 4 times.**

162.34 tonnes of CO<sub>2</sub>e are emitted for every \$1 million invested by the billionaires in our sample. A tracker fund following the S&P 500 emits 75 tonnes of CO<sub>2</sub>e.<sup>12</sup> An example low carbon intensity fund – the Parnassus Core Equity Fund – emits 40 tonnes of CO<sub>2</sub>e.

**6. A study of 20 well known billionaires found that in less than two hours, on average they emit the same amount of carbon with their private yachts, planes, and mansions, as someone in the bottom 50% emits in a whole year**

A study by Beatriz Barros and Richard Wilk found that in 2018 the emissions from the private yachts, planes, helicopters and mansions of 20 billionaires generated on average about 8,194 tons of carbon dioxide equivalent.<sup>13</sup> There are 8760 hours in a year and so they are emitting 0.94 tons CO<sub>2</sub>e an hour. Chancel estimates that someone in the bottom 50% emits 1.4 ton of CO<sub>2</sub>e annually.<sup>14</sup>

In the research findings section, we attempt to provide a reference point to the investments of billionaires –for example the emissions per million dollars invested in the S&P 500 are given as a reference to billionaire emissions. These reference points are not inferring any causality or correlations but are included to help put perspective on the figures.

## 4. PUBLIC INFORMATION

We have made our sample dataset public with the following information:

- Name of billionaire
- Name of company
- Company country of domicile
- Investment carbon footprint of billionaire for company (Scope 1+2), Kt CO<sub>2</sub>e
- Billionaire's share of ownership
- Value of billionaire investment USD bn

- Scope 1+2 (Location-Based) Kt CO2e
- Scope 1+2 (Market-Based) Kt CO2e
- Scope 1 Kt CO2e
- Scope 2 Location -Based Kt CO2e
- Scope 2 Market -Based Kt CO2e
- Time period

We are not making our original list public, the scope 3 emissions or SBTi data public as we did not give companies the opportunity to comment on that data. Analysis that requires this information cannot be replicated from the public source. Billionaires and companies from China and Hong Kong have been aggregated (not individually listed) due to local legislation. We endeavoured to provide every company with the opportunity to comment on the factual information in the dataset and report.

# NOTES

<sup>1</sup> <https://www.bloomberg.com/billionaires>

<sup>2</sup> <https://www.wri.org/insights/scope-2-changing-way-companies-think-about-electricity-emissions>

<sup>3</sup> <https://sciencebasedtargets.org/companies-taking-action>

<sup>4</sup> L. Chancel, T. Piketty, E. Saez, G. Zucman, et al (2022). World Inequality Report, World Inequality Lab. <https://wid.world/document/global-carbon-inequality-1990-2019-wid-world-working-paper-2021-22/>

<sup>5</sup> [https://stats.oecd.org/Index.aspx?DataSetCode=AIR\\_GHG](https://stats.oecd.org/Index.aspx?DataSetCode=AIR_GHG)

<sup>6</sup> <https://education.nationalgeographic.org/resource/equator>

<sup>7</sup> <https://www.bbc.co.uk/news/59135899>

<sup>8</sup> <https://www.bbc.co.uk/news/59135899>

<sup>9</sup> <https://www.sciencedaily.com/releases/2019/07/190708112514.htm>

<sup>10</sup> <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>

<sup>11</sup> <https://www.bbc.co.uk/news/science-environment-52719662>

<sup>12</sup> <https://fossilfreefunds.org/fund/invesco-esg-sp-500-equal-weight-etf/RSPE/carbon-footprint/FS0000H3IV/F00001CKVY>

<sup>13</sup> Beatriz Barros & Richard Wilk (2021) The outsized carbon footprints of the super-rich, Sustainability: Science, Practice and Policy, 17:1, 316-322, DOI: 10.1080/15487733.2021.1949847

<sup>14</sup> <https://wid.world/document/global-carbon-inequality-1990-2019-wid-world-working-paper-2021-22/>

This methodology note supports the paper written by Alex Maitland, Max Lawson, Hilde Stroot, Alexandre Poidatz, Ashfaq Khalfan and Nafkote Dabi. Oxfam acknowledges the assistance of Mira Alestig, Jacqueline Persson, Lyndsay Walsh, Hanna Nelson, Lies Craeynest, Irit Tamir, Ruth Mhlanga, Danielle Smith and Kevin May in its production, as well as Lucas Chancel (World Inequality Lab), Nick Robins (London School of Economics and Political Science), Dario Kenner (University of Sussex) and Tim Gore (Institute for European Environmental Policy), for their external review. Oxfam would also like to thank the data provider, Maxim Miller (Exerica). The paper is part of a series written to inform public debate on development and humanitarian policy issues.

For further information on the issues raised in this paper please email [advocacy@oxfaminternational.org](mailto:advocacy@oxfaminternational.org)

This publication is copyright but the text may be used free of charge for the purposes of advocacy, campaigning, education, and research, provided that the source is acknowledged in full. The copyright holder requests that all such use be registered with them for impact assessment purposes. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, permission must be secured and a fee may be charged. Email [policyandpractice@oxfam.org.uk](mailto:policyandpractice@oxfam.org.uk).

The information in this publication is correct at the time of going to press.

Published by Oxfam GB for Oxfam International under ISBN 978-1-78748-988-2 in November 2022. DOI: 10.21201/2022.9684.

Oxfam GB, Oxfam House, John Smith Drive, Cowley, Oxford, OX4 2JY, UK.

## OXFAM

Oxfam is an international confederation of 21 organizations, working with its partners and allies, reaching out to millions of people around the world. Together, we tackle inequalities to end poverty and injustice, now and in the long term – for an equal future. Please write to any of the agencies for further information or visit [www.oxfam.org](http://www.oxfam.org).

Oxfam America ([www.oxfamamerica.org](http://www.oxfamamerica.org))

Oxfam Aotearoa ([www.oxfam.org.nz](http://www.oxfam.org.nz))

Oxfam Australia ([www.oxfam.org.au](http://www.oxfam.org.au))

Oxfam-in-Belgium ([www.oxfamsol.be](http://www.oxfamsol.be))

Oxfam Brasil ([www.oxfam.org.br](http://www.oxfam.org.br))

Oxfam Canada ([www.oxfam.ca](http://www.oxfam.ca))

Oxfam Colombia ([lac.oxfam.org/countries/colombia](http://lac.oxfam.org/countries/colombia))

Oxfam France ([www.oxfamfrance.org](http://www.oxfamfrance.org))

Oxfam Germany ([www.oxfam.de](http://www.oxfam.de))

Oxfam GB ([www.oxfam.org.uk](http://www.oxfam.org.uk))

Oxfam Hong Kong ([www.oxfam.org.hk](http://www.oxfam.org.hk))

Oxfam IBIS (Denmark) ([www.oxfamibis.dk](http://www.oxfamibis.dk))

Oxfam India ([www.oxfamindia.org](http://www.oxfamindia.org))

Oxfam Intermón (Spain) ([www.oxfamintermon.org](http://www.oxfamintermon.org))

Oxfam Ireland ([www.oxfamireland.org](http://www.oxfamireland.org))

Oxfam Italy ([www.oxfamitalia.org](http://www.oxfamitalia.org))

Oxfam Mexico ([www.oxfammexico.org](http://www.oxfammexico.org))

Oxfam Novib (Netherlands) ([www.oxfamnovib.nl](http://www.oxfamnovib.nl))

Oxfam Québec ([www.oxfam.qc.ca](http://www.oxfam.qc.ca))

Oxfam South Africa ([www.oxfam.org.za](http://www.oxfam.org.za))

KEDV ([www.kedv.org.tr](http://www.kedv.org.tr))