CARBON BILLIONAIRES

The investment emissions of the world's richest people

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The world's richest people emit huge and unsustainable amounts of carbon and, unlike ordinary people, 50% to 70% of their emissions result from their investments. New analysis of the investments of 125 of the world's richest billionaires shows that on average they are emitting 3 million tonnes a year, more than a million times the average for someone in the bottom 90% of humanity. The study also finds billionaire investments in polluting industries such as fossil fuels and cement are double the average for the Standard & Poor 500 group of companies. Billionaires hold extensive stakes in many of the world's largest and most powerful corporations, which gives them the power to influence the way these companies act. Governments must hold them to account, legislating to compel corporates and investors to reduce carbon emissions, enforcing more stringent reporting requirements and imposing new taxation on wealth and investments in polluting industries.

The methodology note and dataset used are available on the Oxfam Policy and Practice website.

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Cover photo: Parched ground in Badin District, Sindh Province, Pakistan, July 2019. The district experiences frequent floods and drought-like conditions due to water scarcity, changing rainfall patterns and land degradation caused by sea intrusion, which are reducing agricultural productivity. Credit: Khaula Jamil/Oxfam Australia.

1 CLIMATE AND INEQUALITY, AND WHY INVESTMENT MATTERS

INTRODUCTION

Extreme inequality and wealth concentration undermine the ability of humanity to stop climate breakdown. Very rich people emit huge and unsustainable amounts of carbon and have an outsized influence over our economy. Unlike with ordinary people, 50% to 70% of the emissions of the world's richest people are the result of their investments.[1] They hold extensive stakes in many of the largest and most powerful corporations in the world – large enough stakes to influence the actions taken by these corporations.

The true scale of the investment emissions of these individuals is not systematically calculated or reported. However, using new analysis based on publicly available data, Oxfam calculates that the annual carbon footprint of the investments of just 125 of the world's richest billionaires in our sample is equivalent to the carbon emissions of France, a nation of 67 million people. This represents an average of 3.1 million tonnes per billionaire, which is over one million times higher than 2.76tonnes[2] – the average for someone in the bottom 90% of humanity.

Emissions from billionaire lifestyles, including their private jets and yachts, are thousands of times the average person's, which is itself unacceptable and unsustainable. But if we include emissions from their investments, then their carbon emissions are over a million times higher.

Our analysis also found billionaires had an average of 14% of their investments in polluting industries, such as fossil fuels and materials like cement. This is twice the average for investments in the Standard and Poor 500 group of corporates. Only one billionaire in the sample had investments in a renewable energy company.

Investments billionaires make help shape the future of our economy, for example by backing high carbon infrastructure, locking in high emissions for decades to come. Our study found that if the billionaires in the sample moved their investments to a fund with stronger environmental and social standards, it could reduce the intensity of their emissions by up to four times.

The role of corporates and investors in making cuts to carbon emissions that are needed to stop global warming of more than 1.5°C will be a hot topic at the upcoming 27th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Egypt. Yet despite the

corporate spin, their actions fall far short of what is actually needed to stop catastrophic climate breakdown.

Governments should tackle this issue with data, regulation and taxation. They must systematically report on the emissions of different income groups in society, instead of relying on averages which obscure carbon inequality and undermine effective policy making.

Governments must regulate investors and the corporate sector so that long-term sustainability and the reduction of inequality are put ahead of delivering ever higher returns to wealthy shareholders. They should compel corporations and their rich investors to systematically cut their carbon emissions far more drastically if we are to avoid climate breakdown.

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Governments must tax rich people more to radically reduce inequality and wealth concentration, to reduce unsustainably high emissions by rich people and to reduce their power and influence over our fossil fuel-fired economy. This could also raise trillions of dollars for nations hit hardest by climate disaster. The revenue could also help advance a green and fair transition at the global level. Further, additional top-up taxation should be levied on wealth generated from polluting industries and fossil fuels to deter investments in these industries and drive a faster transition.

INEQUALITY AND CLIMATE CHANGE: WHY IT MATTERS

There is a growing body of analysis looking at the relationship between economic inequality and climate change – specifically, at the role of the richer sections of every society in generating the carbon emissions that are contributing to climate breakdown.[3,4,5,6]

In 2021, research conducted by Oxfam and the Stockholm Environment Institute (SEI) revealed that the richest 1% (around 63 million people) alone were responsible for 15% of cumulative emissions and that they were emitting 35 times the level ofCO2e compatible with the 1.5°C by 2030 goal of the Paris Agreement.[7] Similar findings have been reported by economists Thomas Piketty and Lucas Chancel.[8] Another study drew on public records to estimate that in 2018 emissions from the private yachts, planes, helicopters and mansions of 20 billionaires generated on average about 8,194 tonnes of carbon dioxide (CO_2e).[9] By contrast, any individual among the poorest one billion people emits around 1.4 tonnes of CO_2 each year.[10]

More recently, Twitter accounts tracking private jet travel have brought the issue of carbon inequality to public attention with revelations that, in a matter of just minutes, billionaires are emitting more CO_2 than most people will emit in a year.[11]

The billionaire space race has highlighted how a single space flight can emit as much CO_2 as a normal person will in their lifetime.[12] Adding fuel to the fire, this same group of people have the resources to avoid the consequences of climate change, which will be felt most heavily by the poorest people.

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These findings are important because the relationship between inequality and climate change has major implications for climate policy making. To meet the globally agreed target of keeping global warming to less than 1.5°C, there need to be very significant cuts to the carbon emissions that humans produce. This will require profound changes to economies worldwide and dramatic changes in public policy.

All public policies have distributional impacts, which are felt differently by different income groups. This is equally true for policies to reduce carbon emissions. It follows that if we want to reduce emissions fairly, then policies need to be designed that at the very least do not unfairly penalize low-income groups but, more importantly, are designed to ensure that those who emit the most carbon also do the most to reduce those emissions.

However, the major and growing responsibility of wealthy people for overall emissions levels is very rarely considered in climate policy making. For example, the standard debate about carbon taxes has been about a flat rate for everyone, which would automatically mean that those with the least income pay a higher proportion of their resources, unless they are compensated in some way for the higher costs.

Perhaps one of the worst examples of 'inequality-blind' climate policy making was in France in 2018, when the government increased its carbon tax, which is a flat tax, to raise an additional €4bn. At the same time, it scrapped a wealth tax on the richest that was raising a similar amount. This led to nationwide protests led by the 'yellow vest' movement.[13]

CARBON EMISSIONS AND INVESTMENTS – WHY DOES THIS ISSUE MATTER?

Every person on earth emits carbon, but the sources of these emissions change the further up the income scale you move. A person's total carbon footprint can be divided into personal consumption emissions, emissions through government spending and emissions linked to investments.

For the majority of society, people's emissions from investments are minimal. But for the richest in society this is reversed, with emissions from investments becoming the biggest source – for the top 1%, between 50% to 70% of their emissions, according to one estimate.[14] This mirrors income inequality, where the majority of people derive their incomes from work but the richest derive most of theirs from returns on their investments.

This paper begins with the world's very richest people and examines the scale of their investment portfolios in order to make an estimate of their investment emissions.

This matters for two reasons: firstly, it is important to have an accurate understanding of the true scale of the emissions generated by the richest people in our society and the role that these emissions are playing in climate breakdown. Our research shows that while the personal consumption emissions of billionaires can be a thousand times higher than those of ordinary citizens, emissions from billionaire investments can be a million times higher than normal people.

Secondly, by looking at how the richest behave as investors, we can demonstrate not just their role as consumers of carbon but also their role as wealth holders who own, control, shape and financially profit from production processes that release greenhouse gases (GHGs) into the atmosphere.

Ordinary citizens often do not have a lot of control over their energy choices, particularly those in low- or middle-income groups. Poor public transport options can mean that people are forced to drive to work, for example.

In contrast, investors can choose where they put their money. They can choose to put it into fossil fuel industries or other highly polluting activities, or into the activities of other corporate actors that are clearly failing to do enough to reduce their carbon emissions. The decisions that investors make now can potentially determine our emissions for decades to come – for instance, bad decisions on infrastructure investments can commit us to high levels of GHGs far into the future.

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Rich people are not only higher emitters because of their investments; but, because investment emissions are a matter of choice, they have a responsibility to use their power to bring a rapid end to fossil fuel extraction and use and a rapid and dramatic reduction in the carbon emissions of the corporates in which they are invested.

Box 1: A wealth tax could contribute to addressing urgent climate finance needs

Climate finance is a lifeline for developing countries and poor communities and it should be urgently mobilized based on responsibility and capacity to pay, including through a wealth tax on the richest. Such a tax could raise hundreds of billions of dollars to help and protect those already suffering the impacts of catastrophic climate change.

Ahmed Mohamud, a pastoralist from Wajir, Kenya, told Oxfam: 'There are no cows left. They all died. We have a few camels and goats that have survived the drought, but we are afraid we might lose them if the drought continues. We are afraid that people will start dying of famine as there is no food.'[15]

Average mortality levels from floods, drought and storms over the past decade are 15 times higher for countries that are highly vulnerable to climate change – such as Mozambique, Somalia, Nigeria, Afghanistan and Haiti – compared with regions and countries that have low vulnerability, such as the UK, Australia, Canada and Sweden.[16] Yet these countries did not cause the crisis – countries in the Global North account for 92% of excess global carbon emissions, and as a result 92% of excess damages.[17]

Large-scale climate finance is needed to support communities to shift to renewable energy, to adapt to a changing climate and to recover and rebuild their lives and livelihoods after disasters. The United Nations Environment Programme estimates that adaptation costs for developing countries will rise to US$300bn per year by 2030.[18] Africa alone will need around $600bn between 2020 and 2030.[19] In addition, it is estimated that the cost of losses and damages caused by climate change in developing countries will reach between $290bn and $580bn by 2030.[20] A recent study found that climate change has destroyed over one-fifth of the wealth of the most vulnerable 20 countries since 2000.[21] To mitigate emissions, developing countries will require trillions of dollars in start-up costs to transition to sources of renewable energy. Because developed economies have already used up the global carbon budget, leaving no room for emissions consistent with a safe atmosphere, poorer countries have to transition to renewable energy at an earlier stage of their development.

In spite of these needs, the Global North has committed only to $100bn a year in climate finance for mitigation and adaptation, but not for loss and damage. It has not delivered even this amount in full, and most of what it has delivered has been in the form of loans, pushing developing countries into more debt and further exacerbating the suffering of peoples and communities affected by the climate crisis.[22]

Developed economies need to significantly increase their climate finance commitments to developing countries to the tune of trillions of dollars to cover the costs of mitigation and adaptation and of loss and damage. One part of the solution would be a wealth tax on billionaires, to account for their impacts on affected communities. In the absence of dedicated finance to address the impacts of climate change in lower-income countries, the cost often falls on households – plunging countries into debt distress and people into poverty, increasing deaths and reversing development gains.

THE ROLE OF INVESTORS IN FIGHTING CLIMATE CHANGE

During company engagement, shareholders should take a position on environmental, social and governance (ESG) issues and demand that the targeted corporates improve their practices over time. This can be a powerful lever to reduce the carbon footprint of large companies.

A successful story of shareholder engagement is at ExxonMobil Corporation where US hedge fund Engine No. 1 led a campaign to replace board members because of the company's inability to manage the risk of its business operations to climate change. In 2021, Engine No. 1 decided to shake up Exxon's board by proposing four alternate directors to the company's board, all of which have climate, sustainable investing, and/or experience with industries in transition. The hedge fund initiated this action because, in part, it felt that Exxon was not adjusting to the impacts of climate change and transitioning fast enough. At Exxon's annual meeting in 2021, with support from California State Teachers' Retirement System and other large institutional investors three of the four alternate candidates won board

seats to Exxon's 12-member board in place of the candidates Exxon presented.[23]

Where shareholder engagement fails, investors can decide to disinvest. When shareholder engagement did not produce satisfactory results for Dutch pension fund ABP, which held stakes worth nearly €15bn in the coal, oil and gas sectors, it decided to disinvest from companies producing these fossil fuels by end of the first quarter of 2023.[24] There has been an increase recently in investment funds linked to ESG principles, with their combined value growing from $169bn in 2019 to $350bn in 2021.[25]

Individuals are being urged to reduce their carbon footprints not just through their personal consumption emissions – for example, by taking fewer flights or cutting down on meat – but also through their investments. UK pension schemes fund approximately 330m tonnes of carbon emissions every year[26] and an individual's pension pot finances 23 tonnes of CO_2 emissions annually.[27] The scale of the pension market has led campaigns such as Make My Money Matter to urge individuals to make their pensions 'green' to 'cut your carbon 21x more than going veggie, giving up flying and switching energy provider'.[28]

The UK government is introducing measures that will require pension schemes to measure and publish their climate commitments, to encourage savers to invest in more sustainable funds.[29] EU legislation requires pension funds to take environmental risks into account in their investments.[30] A range of initiatives have pushed financial institutions to publish net zero transition plans; however, to date there has been no equivalent focus on high-net-worth individuals.

With $52tn in total invested in pension funds in seven leading economies – 45% of this held in equities[31] (investments in corporates) – there are clearly massive opportunities to leverage the power of investment towards funding sustainable businesses. To put the scale of what is needed into perspective, getting on track for net zero by 2050 will require $4tn of investment in the transition to clean energy.[32]

INEQUALITY OF OWNERSHIP

Corporates are predominantly owned by the richest in society. In the USA, the richest 1% account for 54% of household equity wealth.[33] In South Africa, the richest 1% own more than 95% of bonds and corporate shares, with the richest 0.01% owning 62.7%.[34] In the UK, the wealthiest 10% own 46% of all pension wealth, while the poorest 10% own less than 1%.[35]

We also know that global wealth is highly concentrated among billionaires: the top 10 billionaires own more wealth than the bottom 40% of humanity.[36] As a percentage of global gross domestic product (GDP), billionaire wealth increased to 13.9% in 2021.[37] In our study, the sample of 125 billionaires collectively own $2.4tn in company equity. By comparison, the total value of 2,000 of the largest corporates in the world is $76.5tn,[38] the market capitalization of all listed corporates is $93.69tn,[39] and $23.4tn is invested in corporates by pension funds in seven countries.[40]

We also know that global wealth is highly concentrated among billionaires: the top 10 billionaires own more wealth than the bottom 40% of humanity.

Billionaires as individuals also hold large stakes in businesses – often larger than some of the world's largest asset management companies, which manage the investments of millions of people. With the exception of large institutional investors, it is rare for institutional investors to own more than 10% of any given company. Of the 199 investments tracked in our dataset, 68 had ownership stakes of above 50%, giving the owners a controlling stake.

Given the scale and concentration of billionaire investment in the corporate economy, and the influence that investors can have over company strategies on climate change, there is a strong rationale for examining the investments that billionaires currently hold and their impacts on the environment.

RESEARCH APPROACH

Oxfam began with a list of the 220 richest people in the world according to the Bloomberg Billionaire list (as of August 2022) and worked with data provider Exerica to identify a) the percentage ownership held by these billionaires in corporations and b) the scope 1 and 2 emissions of these corporations.

To calculate the investment portfolios of individual billionaires, we used analysis by Bloomberg, which provides detailed breakdowns of the sources of billionaire wealth, to calculate what percentage of each business billionaires own.[41] For scope 1 and 2 emissions we accessed information reported by the company, derived from either its most recent sustainability report or from CDP disclosures.[42]

There are international standards to calculate the carbon footprint of a company, such as the Greenhouse Gas Protocol, which provides the world's most widely used GHG accounting standards.[43] The emissions associated with a company's activities are commonly divided into three categories called 'scopes':

- Scope 1 emissions are direct emissions from the company's operations, e.g. emissions from company vehicles.
- Scope 2 emissions are indirect, where the emissions take place elsewhere, e.g. energy purchased to heat buildings or operate machinery.[44]
- Scope 3 emissions are all other indirect emissions: this includes everything from emissions in the company's supply chains to employee commuting, to the use by consumers of the products it sells.

Corporations should report on all three types of emissions – but in our analysis, which began with 220 billionaires and 604 companies, 338 (56%) did not report scope 1 and 2 emissions and 461 (76%) did not report scope 3 emissions. Those that did not report scope 1 and 2 emissions were excluded from our database.

In order to focus on the investments where billionaires have the most influence, we also removed any investments where the equity stake held by

billionaires was less than 10%. 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.[45] In addition, 34% of the billionaires in our sample own over 50% of the business concerned, giving them de facto control over these corporations. That said, regardless of the size of investment, owning any number of shares in a company, either directly or through an asset manager, gives a degree of influence.

Our final database at the end of this process contained 183 corporates, with investments by 125 billionaires worth a total of $2.4tn. With the list of corporates and the equity stakes the billionaires own, the corporates' scope 1 and 2 emissions of CO_2 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 tonnes of CO_2 equivalent (CO_2e), we therefore allocated 500 tonnes CO_2e to billionaire X.

All corporates were provided with an opportunity to comment on our findings, and we have also published the database where the original public sources of the data can be found.

RESEARCH FINDINGS

We analysed the dataset based on the total scope 1 and 2 carbon emissions of the corporates, the intensity of these emissions relative to the size of investment, the sectors the investments are in, and how many of them are taking action to transition from a carbon-based economy. Where data were available, we benchmarked this with indices such as the S&P 500 (an index of the largest US corporates), which are popular guides for individuals investing in the stock market, and pension funds by way of comparison.

TOTAL EMISSIONS

- The billionaires in our sample fund 393m tonnes of CO_2e per year, and the average emissions for each billionaire's investment are 3m tonnes of CO_2e. By way of comparison, the average UK pension pot funds 23 tonnes of CO_2e.[46]
- For every million dollars invested by the billionaires in our sample, 162.34 tonnes of CO_2e are emitted each year. By comparison, for every million dollars invested in a fund that tracks the S&P 500, 86 tonnes of CO_2e are emitted.[47]

SECTORS

- 24% of billionaire investments in our sample are in the consumer discretionary sector, with 18% in consumer staples and 11% in financials. In terms of high-polluting industries, 7% of investments are in energy and 7% in materials. By comparison, energy corporates make up 4.7% of the S&P 500 and materials make up 2.5%.[48]
- There is one renewable energy company in our sample.

REPORTING

- The original list of 220 billionaires are invested in a total of 604 companies; of these corporations, 266 (44%) report scope 1 and 2 emissions and 143 (24%) report scope 3 emissions.
- In our sample of 125 billionaires and 183 companies (all of which report scope 1 and 2 emissions), 96 companies (52%) also report scope 3 emissions.
- In the S&P 500, by comparison, 71% of companies report scope 1 and 2 emissions while 43% report scope 3 emissions.[49]

SCIENCE-BASED TARGETS

- Fifty-three of the 183 corporates in our sample (29%) are working with the Science Based Targets initiative (SBTi)[50] and have committed to, or have set targets, to reduce their emissions in line with climate science.
- Twenty-nine of the 183 corporates (16%) have made net zero commitments.

RESEARCH DISCUSSION

SCALE OF EMISSIONS

The scale of the emissions from the investments of the billionaires in our sample is very large: 393m tonnes of CO_2e in total, which is equivalent of the annual carbon emissions of France, a nation of 67 million people.

To put that into perspective, each of these billionaires would each have to circumnavigate the world almost 16 million times in a private jet to create the same emissions. It would take 1.8 million cows to emit the same levels of CO2e as each of the 125 billionaires. Almost four million people would have to go vegan to offset the emissions of each of the billionaires.

Carbon inequality

Annual per capita emissions[51]	**Tonnes CO_2e**
Bottom 50%	1.6
Top 10%	31.2
Top 1%	110
Top 0.1	467
Top 0.01%	2,531
Average personal consumption emissions from sample of 20 prominent billionaires[52]	8,190
Average billionaire investment emissions from sample	3,142,961

CHOICE OF INVESTMENTS

Consumers, especially those in low- and middle-income groups, do not have much choice about their carbon consumption: they are usually locked into carbon-intensive infrastructure.[53] Someone who rents the place they live in has little control over their emissions from heating, for example. The wealth of all but the richest in society is likely to be held in their property, and as such there is little ability to have influence over the emissions of their wealth.

On the other hand, the wealthiest have a choice about where they invest their wealth, which makes it all the more important to examine the carbon intensity of their investments. To put the intensity of investment emissions into perspective, 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 they were placed into an illustrative low-carbon-intensity equity fund, this could reduce emissions by up to four times. If billionaires made careful and strategic investments with their enormous wealth, this could potentially turn their assets into a net positive for the environment.

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INFLUENCE OF BILLIONAIRES IN THEIR INVESTMENTS

Holding shares in a company is increasingly becoming a common tool for use in company engagement. Oxfam America, for example, holds a range of shares in large corporations and engages investors to encourage corporations to take action to reduce material risks associated with pressing environmental and social concerns. Large asset managers and pension funds also increasingly use their investments to put pressure on corporates.

However, despite billionaires holding very large positions in corporates, usually much larger than those of pension funds or asset managers, there are only a few examples of them using their wealth to fight climate change.

One is technology billionaire Mike Cannon-Brookes, who appears in our database. He took up a significant holding in Australian energy company AGL to prevent it from splitting up, which would have allowed it to continue operating coal power plants for another two decades.[54] There are also examples of billionaires making investments in corporates that seek to make an environmental and social difference. The most striking recent example is that of Yvon Chouinard, the billionaire owner of sportswear brand Patagonia, who has put the company's ownership into a trust that will benefit environmental efforts and declared that 'Earth is our only shareholder'.[55]

Overall, examples of activism and impact investing appear to account for a very small proportion of the overall investments that billionaires in our sample make.

THE DIFFERENT WAYS OF COUNTING EMISSIONS FROM INVESTMENTS

Box 2: Measuring the emissions of investments: different approaches and methodologies

Calculations of the emissions of individual income groups can be calculated top down or bottom up; top-down approaches use observations from micro-data to model whole of economy numbers- this is the approach taken by both Oxfam and the Stockholm Environmental Institute in our previous research and by Lucas Chancel and the World Inequality Lab. They apply this approach to the amount of emissions linked to investments, with Chancel using inequality data to calculate the rising proportion of emissions linked to investments the wealthier you are; with the top 1% typically seeing around 50% to 70% of their emissions related to investments.[56]

The approach taken in this paper instead takes a bottom-up approach; for the billionaires we can get accurate microdata on their individual investments in different corporates and work out their what level of carbon emissions they represent. This is similar to the bottom-up estimates of Barros and Wilk where they took micro data on a sample of billionaires, looking at their yachts, private jets, houses etc to give an estimate of their carbon emissions through consumption.

Both methodologies demonstrate clearly that the further you get up the income scale, the more important emissions from investments become in your overall carbon footprint.

LIMITATIONS OF THIS RESEARCH

Our research is reliant on data that corporates publish themselves and such data are often not externally verified in the same way that financial accounts are – only around half of the companies on the S&P 500, for example, use independent verification of climate data.[57] There are also particular challenges relating to scope 3 climate reporting, which are discussed in the next section.

There is also an inherent risk of bias in our sample, given the voluntary nature of reporting on climate data: the corporates which report this information may be those that perform better or are in less polluting industries. Given that our sample is limited to just the very richest billionaires, who were selected based on the size of their wealth and on available data, it is not possible to generalize the findings across all billionaires.

The assets and stakes in corporates that billionaires hold are often shrouded in secrecy, and we have depended on the research conducted for Bloomberg's billionaire list. Depending on the jurisdiction, there may be reporting requirements for ownership in corporates, but often the Bloomberg research has made estimates based on the best information that is publicly available. We have sought to mitigate the risk of errors by providing all corporates with the opportunity to comment on the data that we have published. There is also a risk that there are investments made by billionaires that are not listed by Bloomberg and so are not included in our database. In addition, the database does not take into account the emissions that may be funded by investments through other financial instruments.

The research tracks only the absolute amount reported emissions – it does not assess any social or other environmental impacts of corporate conduct. For example, it does not track whether any emissions reductions may have been achieved through projects that take away land from food production or that violate Indigenous People's rights.

2 WHY OUR CALCULATIONS UNDERESTIMATE THE SCALE OF BILLIONAIRES' INVESTMENT EMISSIONS

There are two reasons why, in general, public data on the emissions of corporate actors are major underestimations.

Firstly, most corporate reporting is voluntary, and most is not of adequate quality. There are international standards and guidelines for measuring climate data, such as the Greenhouse Gas Protocol; however, as one analysis points out, 'poor sustainability performers prefer low-quality sustainability disclosure to disguise their true performance'.[58] This means that there is a systematic underestimation by corporates of their reported emissions. For instance, using data from carbon analytics company Carbon4 Finance, Oxfam France calculated that the reported emissions of French bank Credit Agricole was four times lower than independent calculation (620 million tonnes of CO2e vs. 143 million tonnes of CO2e in 2020).[59]

Secondly, for most corporates, the majority of emissions (on average 75%[60]) are indirect scope 3 emissions. Scope 3 emissions from the oil and gas sector are even higher, accounting for about 88% of total emissions.[61] A low-carbon economy cannot be achieved without addressing these emissions.

Even though climate reporting has improved, most corporates still do not disclose their scope 3 emissions or do so only partially. In particular, private companies trail behind publicly listed companies in their reporting. Research published in May 2022 by Bain & Company and CDP shows that fewer than half (49%) of the private corporates that disclose through CDP report scope 1 and 2 emissions, while only 29% of private corporates report on any category of scope 3 emissions.[62]

Even though climate reporting has improved, most corporates still do not disclose their scope 3 emissions or do so only partially.

This leads to false conclusions about corporate carbon footprints. The scope 1 & 2 emissions of an oil company, for example, may be limited to the extraction and refining of oil and fail to consider emissions when the oil is used. It can also give a false picture of the true source of emissions, where producers of raw materials, often in the Global South, are unfairly penalized. For example, for companies producing aluminium for use in smartphones and other technology products, all the emissions are ascribed to their primary activity. If scope 3 emissions were correctly calculated, however, the corporates selling the end products would have much higher emissions.

While reporting scope 3 emissions is currently voluntary under the Greenhouse Gas Protocol, there are signs that this may be changing, which could expose corporates that ignore their scope 3 emissions, along with

their investors. In the UK, reporting of one type of scope 3 emission is already compulsory for certain corporates.[63]

Legal pressure is also influencing change. A court in The Netherlands recently ruled that Shell must cut the group's CO_2 emissions by 2030, to a net 45% below 2019 levels across the whole of the group's energy portfolio, to include scopes 1, 2 and 3.[64]

Even when corporates publish their carbon footprints in full, these can still be significant underestimations. For instance, a technology company may report its scope 3 emissions and include in that calculation the emissions from factories in its supply chain but not how the products sold are used by consumers. Once again, this makes the case not just for full reporting but also for independent assessment and verification.

In this study, which began by looking at the 604 corporates owned by the richest 220 billionaires, 44% of corporates were found to be disclosing scope 1 and 2 emissions while only 24% were reporting scope 3. In our final sample, just 52% of companies reported scope 3 emissions, which prevented us from including them in our overall calculations, meaning that our estimates are likely to significantly underestimate the carbon footprint of billionaires' financial assets.

If there was an obligation for corporates to report scopes 1, 2 and 3, the scale of emissions from billionaire investments would be much larger. For instance, Oxfam France has calculated the carbon footprint of the financial wealth of 63 French billionaires, based on the reporting of scopes 1, 2 and 3 by their corporates. The analysis showed that, with at least 152m tonnes CO_2e in a year, the financial assets of these 63 French billionaires emit as much carbon as Denmark, Finland and Sweden combined.[65]

3 THE ROLE OF CORPORATES IN CLIMATE BREAKDOWN

In recent years, corporates have made many high-profile net zero pledges, but in fact most of them are way off track in terms of setting climate transition plans. Transition plans are a fundamental part of what is needed from corporate governance to decarbonize the economy and to allow investors, including billionaires, and other stakeholders to assess a company's progress in reaching ambitious climate goals.

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In March 2022, CDP found that, of the 13,000+ corporates that disclosed in 2021 – between them accounting for 64% of global market capital ($64tn) – just one-third (4,002) were developing a low-carbon transition plan. Fewer than 35% of corporates' emissions reductions targets are what CDP consider credible and only 1,164 organizations have set science-based targets (SBTs) validated by the SBTi. Moreover, a paltry 1% of corporates (135) reported on all 24 of the CDP key indicators associated with a credible climate transition plan.[66] None of the G7 countries have a corporate sector that is aligned with the Paris agreement's goal of limiting global warming to 1.5°C.[67]

Often the high-profile commitments made by corporates do not stand up to scrutiny. The flurry of net zero goals that depend on offsetting are at best a distraction from the need to take short-term measures to reduce corporates' emissions and have the potential to derail climate action. For instance, in 2021 Oxfam revealed that using land alone to remove the world's carbon emissions to achieve 'net zero' by 2050 would require at least 1.6bn hectares of new forests, an area equivalent to five times the size of India.[68]

Too many corporations are hiding behind unreliable, unproven and unrealistic carbon removal schemes in order to claim that their 2050 climate change plans will be 'net zero'. At the same time, they are failing to cut emissions quickly or deeply enough to avert catastrophic climate breakdown. Their sudden rush of 'net zero' promises are over-dependent on using vast swathes of land in low-income countries to plant trees in order to remove carbon from the atmosphere. This will likely exacerbate global inequality and poverty.

Too many corporations are hiding behind unreliable, unproven and unrealistic carbon removal schemes in order to claim that their 2050 climate change plans will be 'net zero'.

Failure to act will harm the global economy, including for corporations themselves. A choice to invest fully in ecological transition now will prove to be beneficial and strategic in the longer term. The cost of inaction will be far greater than any investment: a study by Oxfam and Swiss Re Institute estimates that the G7 countries will lose 8.5% of GDP a year, or nearly $5tn wiped off their economies, within 30 years if temperatures rise by 2.6°C.[69]

An analysis of 163 industries and their supply chains found that over half of the world's GDP – $44tn of economic value generation – is moderately or highly dependent on nature and its services and as a result is exposed to

risks from nature loss. As nature loses its capacity to provide such services, for instance due to climate change, these industries could be significantly disrupted.[70]

In parallel, an analysis carried out by CDP in 2020 of the 900 largest European corporates estimated that €125bn of investment in the transition was needed in 2019 alone.[71] Yet if the cost of transition seems significant, the cost of inaction is even higher. All business stakeholders – employees, consumers, customers, local authorities, investors – are waiting for an ecological shift on the part of corporates.

In the transition towards a sustainable economy, some economic activities, such as the extraction of fossil resources, are set to largely disappear. Other sectors will have to radically transform their business by phasing out the most polluting activities. Corporates have everything to gain by identifying and anticipating now the risks associated with climate change that will sooner or later affect their activities. Yet they are reluctant to put on the table the means necessary to begin a credible ecological transition.

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Delaying the transition also means making employees pay. The disappearance of some economic activities and the transformation of the model of production will have an impact on 80 million jobs, according to the International Labour Organization.[72] We must anticipate, plan and support transition packages for jobs that will disappear. It is necessary to plan as of now the reorientation of the jobs threatened, via training and protection.

Delaying the transition means making the most vulnerable, who will be hardest hit by climate change, pay the cost of inaction. By favouring an economic model based on short-term profitability, there is a great risk that corporates will force employees or subcontractors in their value chains to bear the cost of the transition, via wage moderation or even job cuts, to maintain their margins.

4 POLICY RECOMMENDATIONS FOR GOVERNMENTS

REGULATE CORPORATIONS AND INVESTORS TO COMPEL THEM TO RADICALLY REDUCE CARBON EMISSIONS

Governments must do more to create a policy environment that supports a green transition. They should regulate to compel corporates to set strong and binding science-based targets to reduce carbon emissions to within the 1.5°C limit and must demand greater transparency and a unified and higher standard of reporting.

To speed the transition away from fossil fuels, investments in new fossil fuel extraction and use and in highly polluting industries should be strictly regulated and indeed banned in many instances. This can be complemented with steeply progressive rates of taxation (see below).

At present no state in the world compels corporates to reduce their carbon footprints, but there is room for optimism. Corporate climate reporting is slowly becoming a requirement under public regulation in the EU and the USA. In March 2022, the US SEC published its proposals for climate disclosure by corporates – which, when finalized, may include scope 3 emissions and also demand detailed information on how corporates intend to achieve their emissions reduction targets.[73] On 21 June 2022, the Council of the European Union and the European Parliament reached a provisional political agreement on the new Corporate Sustainability Reporting Directive (CSRD), which would – after the European Financial Reporting Advisory Group (EFRAG) process – require corporates included under the scope of the CSRD to report on their carbon footprints and their transition plans, taking into account their value chains and related financial and investment plans, with short- and medium-term and absolute emissions reduction targets, with a view to achieving carbon neutrality by 2050 at the latest.[74] The plenary of the European Parliament and the Council of Ministers of the EU are expected to formally approve the provisional agreement before the end of the year. Yet the first report, with the new set of standards, will not be due until 2025.

GOVERNMENTS MUST REGULATE CORPORATES IN THREE WAYS:

DISCLOSURE

As demonstrated in this report, it is still too seldom that corporates calculate and disclose the whole of their carbon footprints. The first step is to create real space for carbon transparency. Corporates should be compelled to:

- provide full disclosure of scope 1, scope 2 and scope 3 emissions by intensity and in absolute value across operations and supply chains, with independent verification;
- ensure ongoing reporting on progress towards reduction targets.

AMBITION AND TARGETS

Corporates must set ambitious science-based targets with a clearly defined path to reduce emissions in line with the Paris Agreement goals and limiting warming to below 1.5°C. This means that governments must compel corporates to:

Corporates must set ambitious science-based targets with a clearly defined path to reduce emissions in line with the Paris Agreement goals and limiting warming to below 1.5°C.

- adopt and implement science-based GHG reduction targets. Targets are considered to be 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement, which means halving emissions by 2030;
- have time-bound plans for implementing targets and aligning investments and business models with SBT climate targets;
- have governance and pay structures that reflect overall climate objectives and break with the short-term prioritization of shareholder payouts which underpin climate inaction. Among other measures, this means:
    - ensuring that remuneration for senior executives is tied to the achievement of the company's climate targets/ambitions;
    - ensuring that no dividend payments are made for as long as the company fails to achieve an emissions trajectory compatible with the objectives of the Paris Agreement.

PLAN FOR A JUST TRANSITION

In order to build a new economy that is equitable, thriving and regenerative, corporates must seize the chance to transition away from today's extractive, carbon-intensive model, and do that fairly. Governments should compel corporates to prepare for a just transition by developing plans that secure the future livelihoods of workers and affected communities. This includes plans to:

- protect workers' rights and livelihoods while investing in the creation of green jobs and reskilling and retraining the workforce;
- recognize and address the company's impact on inequality by paying a living wage, limiting CEO/worker pay ratios and paying a fair share of taxes;

- base this transition on meaningful social dialogue and stakeholder engagement. A transition can come with human rights risks that should not be ignored;
- set out a time-bound plan and a budget to help communities, especially the most marginalized ones, address the impacts of climate change.

REGULATE TO REDUCE THE PRIMACY OF MAXIMIZING RETURNS FOR WEALTHY SHAREHOLDERS

All around the globe rising inequalities are fracturing societies, and the stark realities of climate change demand that large corporations fundamentally change the way that they conduct their business. Yet around the world the primary, overwhelming focus for corporates is to do all that they can to deliver the maximum financial returns to their wealthy shareholders. Short-term approaches focused on maximizing returns create a kind of tunnel vision for large corporations, where longer-term issues are ignored and brushed aside. In the case of climate inaction, this has been referred to as the 'tragedy of the horizon'.[75]

Short-term approaches focused on maximizing returns create a kind of tunnel vision for large corporations.

The role of the private sector will be pivotal in addressing the challenges of climate change and the objectives of the Paris Agreement, with investments by corporates needing to increase dramatically, but in the current system this is unattainable. A focus on short-term maximization of profits is hampering the climate transition by deprioritizing corporates' investments in the low-carbon transition of their businesses.

Governments must develop ambitious legislation to counter market pressures and push corporations to realign their paths towards more sustainable models. This means that governments should go beyond compelling corporates to reduce their carbon emissions to more fundamentally reshape corporate governance and incentives in order to prioritize social well-being and sustainability. This could include actions such as supporting the solidarity economy by incentivizing the creation and expansion of cooperatives and other types of stakeholder-oriented enterprise.[76] Governance and ownership of corporations must also be reformed, for instance introducing employee representation on boards and profit-sharing and employee ownership plans.

INTRODUCE A WEALTH TAX WITH A POLLUTION TOP-UP ELEMENT

Governments should tax wealth in order to reduce the numbers of very rich people in our society and their power. This will help to dramatically reduce the cumulative emissions of the richest and raise billions of dollars that can be used to help countries cope with the brutal impacts of climate breakdown and the losses and damages incurred. In addition to greater general taxation of the richest, additional, steep rates of top-up taxation should be implemented on wealth generated from polluting industries.

There is little doubt that the very richest in our society are emitting far more carbon than is sustainable if we are to remain below 1.5°C of warming. The data on their huge carbon footprints only strengthen this case further. Rich people are huge and unsustainable emitters of carbon: the top 1% emit more than the bottom 50% of humanity and their share of global emissions

is growing the fastest. It follows that significantly reducing the concentration of wealth that they hold will have a major impact on reducing overall levels of emissions. A key way to do this is to significantly increase the amount of tax paid by the richest people. The levels of tax they pay have fallen sharply in recent decades, and now billionaires often pay lower rates of tax than ordinary workers. There is already a compelling case for increasing the taxes paid by the very richest to much higher levels, to reduce the deeply harmful concentration of wealth and to raise vital revenue to protect and support ordinary people.

If we are to avoid climate breakdown, we need a lot fewer very rich people in the world and a much more even distribution of wealth. For all these reasons, greater taxation of the total wealth of rich people is essential in achieving greener and fairer taxation, and one that can raise trillions of dollars that can in part be used to protect and support those hit hardest by climate change and to help fund developing countries to protect their communities and adapt.

If we are to avoid climate breakdown, we need a lot fewer very rich people in the world and a much more even distribution of wealth.

Beyond taxing all wealth, there is a very strong case for using top-up taxation to deter investments in those economic activities that are doing the most to harm the environment and hasten climate breakdown. Such a tax has been proposed by economists Thomas Piketty and Lucas Chancel, who calculate that, globally, an additional tax rate of 10% on polluting assets owned by billionaires could raise at least $100bn a year.[77] It would also help to discourage investors from putting their money into polluting industries.

INTRODUCE AGREED MECHANISMS TO TRACK AND REPORT EMISSIONS WITHIN COUNTRIES WHICH TAKE INTO ACCOUNT DISTRIBUTIONAL AND FULL CARBON FOOTPRINTS AND NOT JUST TERRITORIAL EMISSIONS

Currently governments focus on national average emissions in their policy making. These averages are calculated on a territorial basis and do not take into account the carbon emissions of products made elsewhere but consumed within the country. In Europe emissions have been found to be 23% higher when these emissions are taken into account, and per capita emissions for East Asia 8% lower.[78]

Governments are currently failing to properly track or publish estimates of the carbon footprints of different sections of society, which in turn makes it almost impossible to work out the distributional impact of climate policies. There is an urgent need to introduce mechanisms that clearly account for individual emissions levels systematically and on a regular and timely basis.

5 RECOMMENDATIONS FOR CORPORATES, DIRECTORS AND SHAREHOLDERS TO DRIVE CHANGE

While the primary vehicle for sustained and dramatic change in corporate governance, behaviour and actions is regulation, corporates, their directors and their shareholders can also act without waiting for governments to legislate.

RECOMMENDATIONS FOR ALL MAJOR INVESTORS, INCLUDING BILLIONAIRE INVESTORS

Investors have the fundamental power to favour low-carbon companies and activities when they are the principal or controlling shareholders of a company. All major investors should ensure that the companies in their portfolios respect the following principles:

- Improve the way they measure the carbon footprints of their financing and investment portfolios, using credible methodologies such as the Partnership for Carbon Accounting Financials (PCAF) or the SBTi and should aim to measure the scope 3 emissions of companies in these portfolios.
- Investors should commit explicitly to a scenario of a maximum 1.5°C of warming and achieve net zero by 2050. They must translate commitments on climate change into an action plan with concrete reduction targets over the short to medium term, including targets for 2025, 2030 and 2040, to bring portfolios into line with climate objectives.
- Do not finance any new extraction of fossil fuels, coal-fired power generation, or oil from tar sands in high-income countries, including in the Arctic (both onshore and offshore). In lower- and middle-income countries, finance should be limited to projects which demonstrate that the public benefits exceed the costs of extraction, taking into account the risk of potentially stranded assets. Investors must also define a credible phase-out strategy for fossil fuels as a whole.
- If after sustained engagement, dialogue with companies produces no credible results, investors should either consider using their power to replace board of directors at such companies or if dialogue with the company completely breaks down then divestment should be a credible option.

RECOMMENDATIONS FOR COMPANY DIRECTORS

- Regularly requiring management report on climate performance and monitoring to ensure that the company reduces its contribution to climate change.
- Setting robust climate targets for senior management pay.
- Ensuring that climate risk is a priority for the risk management committee at the board level.

Company directors have a crucial role to play in addressing the disruptive effects of climate change on business. The important duty that boards of directors have for long-term stewardship of the corporates they oversee obliges them to ensure that climate risks and opportunities are appropriately addressed. The existing regimes for directors' duties in many jurisdictions, including in the UK and the USA, are conceptually capable of being applied to corporate governance failures in the identification, assessment, oversight and disclosure of climate risks. In the EU, consultation is underway, with the European Commission putting forward a proposal for a Corporate Sustainability Due Diligence Directive introducing limited reforms to the duties of company directors.[79]

Directors of Malaysian corporates, for example, are legally required to incorporate climate change considerations into their decision-making processes, according to a new legal opinion dated 22 July 2022. A failure to do this may represent a breach of a director's legal duties and could expose them to litigation from shareholders or enforcement action from the regulatory authorities.[80]

RECOMMENDATIONS FOR CORPORATIONS

SET AND ADHERE TO CORPORATE CLIMATE OBLIGATIONS

Corporates need to guarantee that they do not harm people or the planet: they must ensure that internationally guaranteed human and environmental rights are respected and that their actions do not stress planetary boundaries. This provides the basis for the duties of directors. Oxfam advocates for corporates to fully commit to adopting climate objectives that are compatible with the objectives of the Paris Agreement:

- Large corporations should publish their scope 1, 2 and 3 emissions (in absolute value) and formulate reduction targets in line with the Paris Agreement, with an intermediate climate goal for 2030 and with a view to reaching carbon neutrality by 2050.

- Corporates must put in place time-bound plans for implementing targets and for aligning investments and business models with SBT climate targets.
- Remove short-term incentives: ensure that corporate compensation is not tied to short-term financial objectives
- Where the pay of CEOs is tied to performance, it should be linked to long-term environmental and social performance criteria, rather than being solely reliant on financial performance criteria and/or shareholder value.
- Compensation based on environmental and social performance criteria plus fixed compensation should represent more than 50% of the total compensation of a CEO.
- Non-financial performance criteria should be directly connected to the company's sustainability strategy. A dedicated and separate part of the CEO's compensation should be based on sector-specific climate emissions reduction targets.

MOVE AWAY FROM A FOCUS ON SHAREHOLDER PAYOUTS AND TOWARDS INVESTMENTS IN SUSTAINABILITY

Oxfam advocates putting an end to profits made by large corporates at the expense of people and the planet. Before profits are distributed to shareholders, either public or private, the impacts of the companies' activities need to be tackled. Specifically, Oxfam advocates for corporates to ensure that all workers are paid a living wage, and that as a company they are on course to meet the objectives of the Paris Agreement.

One way to achieve this, before the distribution of dividends, could be to pay a portion of their annual profits into an ecological and social transition equity reserve account, proportionate to current and future investment needs. Overall, no payments of dividends should take place if corporates fail to respect an emissions trajectory that is compatible with the objectives of the Paris Agreement.

CONCLUSION

Very rich people play a disproportionately large role in our fossil fuel economy, primarily through their investments. The distribution of carbon emissions between different income groups, and in particular the emissions of very high-income groups, is poorly reported and understood.

It is critical that we better understand the role of the very rich in the fossil fuel economy, especially the role of billionaires as owners of and investors in some of the world's largest corporate actors and take urgent action to address the huge scale of their investment-based emissions.

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