Working paper

A fair share of climate finance?

An appraisal of past performance, future pledges and prospective contributors

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Acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
AIIB	Asian Infrastructure Investment Bank
BR	Biennial Review
CIF	Climate Investment Funds
CO_2	carbon dioxide
COP	Conference of the Parties
DAC	OECD Development Assistance Committee
EU	European Union
GCF	Green Climate Fund
GEF	Global Environment Facility
GNI	gross national income
GNP	gross national product
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IsDB	Islamic Development Bank
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
MDB	multilateral development bank
MIGA	Multilateral Investment Guarantee Agency
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
SIDS	small island developing states
tCO_2	tonnes of carbon dioxide
UNFCCC	United Nations Framework Convention on Climate Change
UK	United Kingdom
US	United States
V20	Vulnerable Twenty Group

Executive summary

Developed countries have committed to providing and mobilising $100 billion of climate finance each year between 2020 and 2025. However, they fell short of this target in 2020 and 2021, and look likely to do so again in 2022. To date, failure to deliver on the climate finance goal has been laid at the feet of developed countries collectively, with little analysis going into which ones are primarily responsible for the gap, or even what constitutes a 'developed country'.

This paper provides new evidence to apportion responsibility for the climate finance gap. We hope that our analysis will be able to enhance the accountability of those countries that are currently not providing a fair share of climate finance, thereby stimulating greater collective ambition. We further hope that the ideas this paper puts forward will be able to support the articulation of the new climate finance goal in order to improve both the quantity and the quality of climate finance going forward.

First, we allocate responsibility for the $100 billion goal among developed countries. For the purposes of this analysis, we define 'developed countries' narrowly as Annex II countries to the United Nations Framework Convention on Climate Change (UNFCCC), a definition that dates back to 1992 but is nonetheless the only relevant explicit country categorisation under the climate accords. To allocate responsibility among these countries, we use the methodology that we developed in the lead-up to 26th Conference of the Parties (COP26), which defines each country's fair share based on their gross national income (GNI), cumulative territorial emissions since 1990 and population size (Colenbrander et al., 2021). In this paper, we apply our approach to more recently available climate data as well as to developed countries' climate finance commitments going forward to 2025.

We find that only seven countries provided and mobilised their fair share of climate finance in 2020 (see Table ES1): Sweden, France, Norway, Japan, the Netherlands, Germany and Denmark. Meanwhile, looking forward to 2025, only four countries have made climate finance commitments commensurate with their fair share: Norway, Sweden, France and Japan. Germany and Denmark come very close (and may fall short only because of the specific framing of their climate finance pledges), while the Netherlands has made generous near-term commitments.

The US is overwhelmingly responsible for the climate finance gap. Having provided just 5% of its fair share in 2020, the US should ideally have provided and mobilised billions more to enable climate action in developing countries. Australia, Canada, Italy and Spain are also notable laggards, in both absolute and relative terms (see Figure ES1). Looking forward to 2025, the pledges Australia, Canada and the US have made continue to fall far short of their fair share. By comparison, Italy and especially Spain have shown a welcome increase in climate finance ambition.

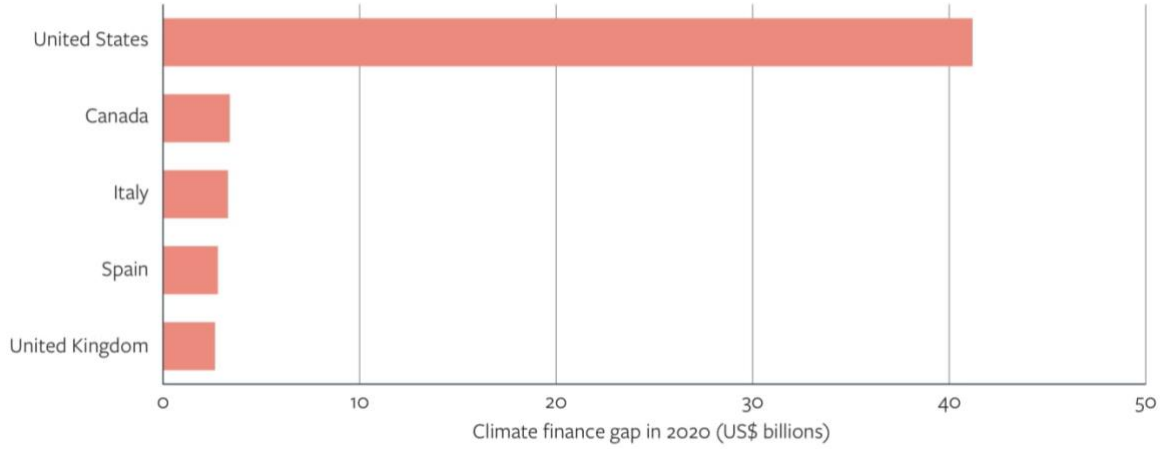
Table ES 1 Scorecard of progress towards Annex II countries' fair share of the $100 billion climate finance goal, 2020 and 2025.

2020	Fair share (US$ billions)	Climate finance provided (US$ billions)	Progress towards providing fair share (%)
Sweden	0.91	1.47	161%
France	5.39	8.66	161%
Norway	0.58	0.9	154%
Japan	11.89	16.09	135%
Netherlands	1.76	2.14	122%
Germany	8.33	9.91	119%
Denmark	0.62	0.62	101%
Switzerland	0.94	0.68	72%
Finland	0.56	0.33	60%
UK	5.84	3.2	55%
Austria	0.82	0.44	53%
Belgium	1.13	0.59	52%
Ireland	0.52	0.19	37%
Iceland	0.04	0.01	37%
New Zealand	0.43	0.15	36%
Luxembourg	0.09	0.03	31%
Italy	4.73	1.43	30%
Australia	2.93	0.68	23%
Spain	3.43	0.64	19%
Canada	4.13	0.74	18%
Portugal	0.69	0.07	10%
Greece	0.78	0.06	8%
US	43.48	2.3	5%

2025	Fair share (US$ billions)	Climate finance provided (US$ billions)	Progress towards providing fair share (%)
Norway	0.58	1.7	292%
Sweden *	0.91	1.89	206%
France	5.39	7.9	147%
Japan	11.89	14	118%
Netherlands	1.76	Commitment does not address FY 24/25	
Germany	8.33	8.18	98%
Denmark	0.62	0.6	97%
Ireland	0.52	0.35	68%
UK	5.84	3.7	63%
Spain	3.43	2.03	59%
New Zealand	0.43	0.23	54%
Switzerland	0.94	0.46	49%
Finland	0.56	0.26	46%
Italy	4.73	2.01	42%
Belgium	1.13	0.35	31%
US	43.48	11.4	26%
Canada	4.13	0.85	20%
Australia	2.93	0.3	10%
Luxembourg *	0.09	Commitment does not address FY 24/25	
Austria *	0.82		
Portugal *	0.69		
Greece *	0.78		
Iceland	0.04		

Note: Countries in dark green are providing their fair share of climate finance. Colours thereafter come in quartile increments: light green, paying 75–100% of their fair share; yellow, paying 50–75% of their fair share; orange, paying 25–50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2020 commitments. The Netherlands has a high ranking based on its FY 22/23 climate finance commitment.
Source: Authors' calculations.

Figure ES1 The five countries primarily responsible for the climate finance shortfall in 2020



Source: Authors' calculations

The findings in Table ES1 and Figure ES1 illustrate the shortfall from $100 billion accounting only for Annex II countries' bilateral and multilateral contributions. These understate a country's climate finance flows, as they do not include multilateral development bank capital outflows and private finance mobilisation. Nonetheless, our findings usefully reveal the vast disparities in countries' climate finance contributions and pledges relative to their fair share.

Recognising that the quality of climate finance is important as well as its quantity, we offer four metrics to assess the quality of developed countries' climate finance provision: levels of concessionality, the balance between mitigation and adaptation finance, the balance between bilateral and multilateral finance, and the risk of double-counting. France and Japan – which both provided their fair share in 2020 – stood out for the relatively poor quality of their climate finance. These countries provide a very high share of their resources bilaterally and as loans, with only a small fraction going to climate change adaptation.

Climate finance is just one part of developed countries' international public finance portfolio. It was always intended to be new and additional to official development assistance (ODA), which serves other purposes. We therefore undertake an additional analysis to determine which developed countries were providing a fair level of international public finance, benchmarking their 2019 provision of ODA against 0.7% of GNI and their 2019 provision of climate finance against their fair share of the $100 billion goal (as determined by our own methodology).

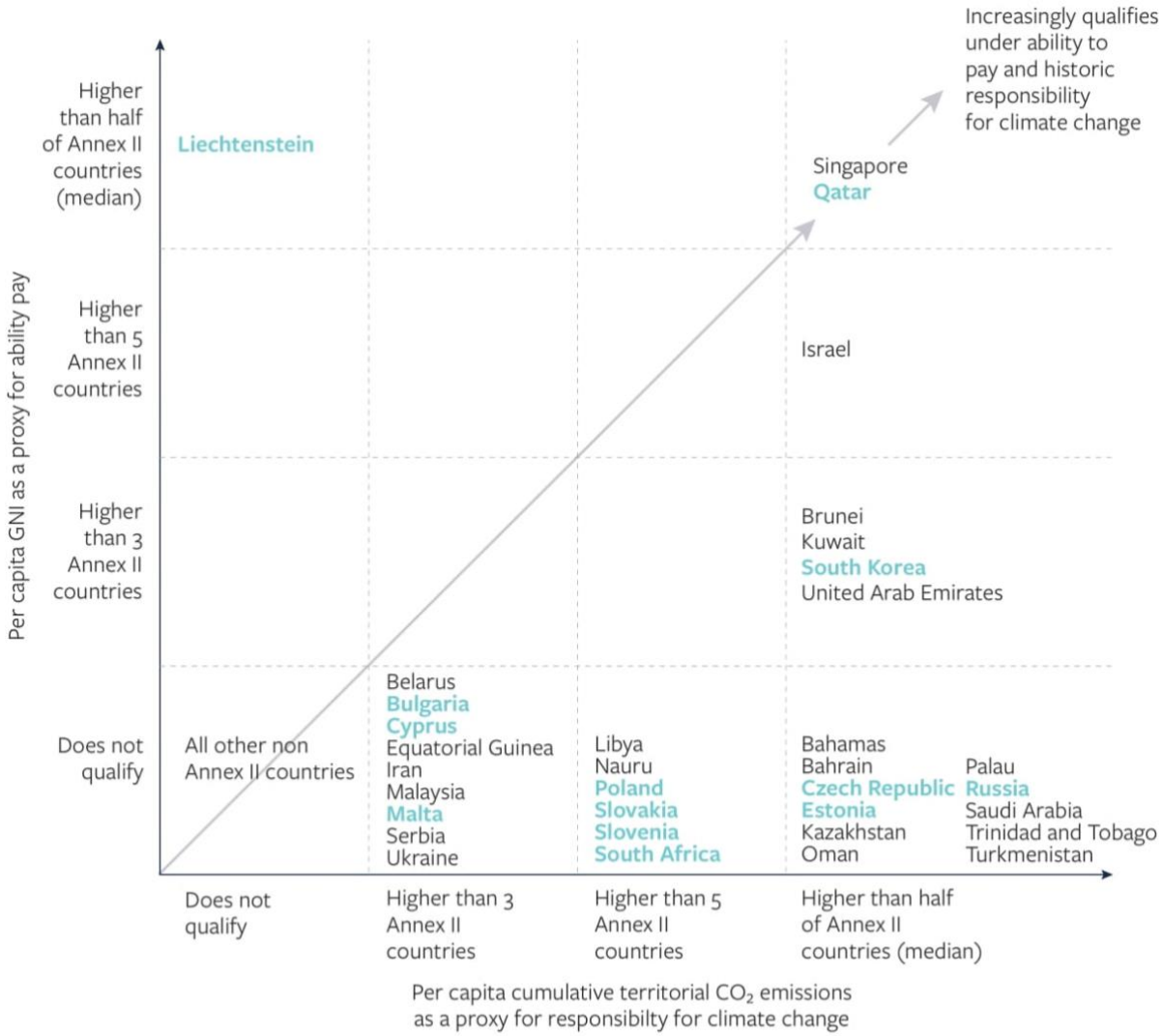
Once again, we find that the US is the most significant laggard in both absolute and relative terms. The country provides just 17% of its fair share of international public finance, accounting for $160 billion of the global shortfall of $300 billion. Most of the remaining gap can be attributed to the same countries that fall significantly short on international climate finance, including large economies like Australia, Canada, Italy and Spain. However, Japan – which provides its fair share of climate finance (see Table ES1) – is near the bottom of the league table in terms of its broader envelope of international public finance.

The analyses above all focus on Annex II countries but the climate accords actually commit ‘developed countries’ to provide and mobilise climate finance. In the absence of a legal definition of ‘developed countries’ within the UNFCCC, we offer two possible metrics to assess which countries could contribute climate finance. First, we consider countries’ ability to pay as captured by per capita GNI. Second, we consider countries’ historical responsibility for climate change as captured by per capita cumulative territorial emissions since 1990. We benchmark non-Annex II countries against Annex II countries using three different thresholds, identifying which ones have higher per capita incomes and/or cumulative emissions than (1) three Annex II countries, (2) five Annex II countries and (3) half of the Annex II countries.

Using these two metrics and three thresholds, we generate a list of countries that should arguably consider providing and mobilising international climate finance (see Figure ES2). The list is dominated by Small Island Developing States, oil producers and former economies in transition. Many of these countries are highly vulnerable to either the physical or the transition risks associated with climate change. Strikingly, China does not qualify under our criteria. Our findings underscore the need for a nuanced dialogue around expanding the contributor base, informed by the principle of common but differentiated responsibilities and respective capabilities.

Two countries would be eligible to provide climate finance even if we applied the highest threshold to both our metrics: Qatar and Singapore have per capita incomes and per capita cumulative emissions higher than is the case for half of the Annex II countries. If we lower the threshold to five Annex II countries, Israel also qualifies (its per capita emissions are above half of those of Annex II countries and its per capita income is above that of five Annex II countries). Brunei, Kuwait, South Korea and the United Arab Emirates exceed at least three Annex II countries on both metrics. Given both their ability to pay and their historic responsibility for climate change, there is a strong case for these seven countries to now contribute climate finance.

Figure ES2 Potential additional climate finance contributors



Countries in blue provide climate finance either bilaterally or through contributions to the Adaptation Fund, Climate Investment Funds, the European Union budget, the Green Climate Fund or the Global Environment Facility. See Table 7 for more details.
Note: Axis should be read from least to highest threshold to clear to be qualified as a potential provider of climate finance. The last threshold 'above half of Annex II countries' corresponds to the median of Annex II countries' CO_2 and GNI per capita.

The methods we use to assess whether individual countries could provide climate finance, and – if so – how much, are all based on normative choices, which we hope will inform and catalyse public debate. Definitions, criteria-setting and norms reflect power relations at a given time, and the climate negotiations are no exception. Determining the fair share of climate finance of each developed country and identifying which additional countries could or should contribute will be a fiercely contested process. We further hope that this new evidence base will be able to support advocacy and diplomatic efforts to ratchet up ambition, particularly among those countries that are currently not providing their fair share of climate finance.

Finally, we hope that the ideas this paper puts forward will be able to support articulation of the new climate finance goal in order to improve both the quantity and the quality of climate finance going forward. At stake is a functional international climate regime, capable of acknowledging and resolving issues that jeopardise trust, cooperation and action.

1 Introduction

The provision and mobilisation of climate finance by richer countries is widely seen as critical to enabling and incentivising climate action by poorer countries. Financial assistance is considered important in *symbolic* terms*,* as a means of recognising unequal historic responsibilities for rising global temperatures; in *relational* terms*,* as a means of building trust and cooperation across national borders; and in *instrumental* terms, through making new and additional funding available for climate action in countries with severe resource constraints.

Consequently, developed countries committed to:

> *a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance* (UNFCCC, 2009).

This promise of climate finance was part of the Copenhagen Accord, produced in 2009 at the 15th Conference of the Parties (COP15) to the United Nations Framework Convention on Climate Change (UNFCCC). At subsequent COPs, in Paris in 2015 and Katowice in 2018, Parties agreed to maintain the $100 billion a year target until 2025, when they would adopt a new collective quantified climate finance goal – with a floor of $100 billion a year.

Despite there being over a decade in which to ramp up climate finance, the $100 billion a year goal was missed in 2020 and 2021 and is likely to be missed again in 2022 (Wilkinson and Flasbarth, 2021). Responsibility for the shortfalls in climate finance provision has been laid at the feet of developed countries collectively, jeopardising future cooperation and joint ambition on climate change. In particular, failure to deliver on past climate finance commitments has meant that negotiations for the new climate finance goal – which commenced officially at COP26 – have had an inauspicious start.

One factor contributing to the missed goal has been the lack of clear responsibilities for climate finance. The Copenhagen Accord and its successors commit developed countries collectively to deliver the $100 billion a year. However, the climate accords leave three critical questions unanswered. First, how much should each individual developed country be contributing towards this target? Second, which states should be considered ‘developed countries’ for the purposes of climate finance provision and mobilisation? And third, what counts as climate finance and how can we compare countries’ different contributions and commitments?

Our paper offers indicative answers to all three questions. In Section 2, we present the methodology we published in the lead-up to COP26 (Colenbrander et al., 2021) to assess each country’s fair share of the $100 billion floor, and apply this to the latest data on climate finance contributions and commitments. The resulting league

tables rank developed countries according to their progress towards meeting their fair share between 2017 and 2020, as well as whether the commitments they have made going forward are sufficient. We further offer four metrics to evaluate the quality of climate finance and compare different countries' performance in recent years.

In Section 3, we sense-check whether these resources are indeed new and additional by looking at the scale and composition of each country's broader international public finance envelope. By considering official development assistance (ODA) as well as climate finance, we can see whether the overall resource envelope from richer countries has increased to keep pace with new challenges and new commitments – or whether development assistance is being rebadged as climate finance. Importantly, we are not arguing for a stronger distinction between climate and development finance. Rather, we would advocate for a joined-up approach, whereby all ODA is Paris-aligned and then new and additional resources are made available for dedicated climate action.

In Section 4, we propose possible criteria to assess which non Annex II countries could contribute climate finance. The climate accords currently require 'developed countries' to provide and mobilise climate finance but do not prescribe which countries might be considered 'developed'. While such fluidity is very much in keeping with the principles of national determination and common but differentiated responsibilities and respective capabilities, it arguably also allows individual countries to hide behind collective climate (in)action. Section 4 therefore shines a light on which countries are stepping up to provide climate finance voluntarily and which other countries should perhaps begin to do so.

In all cases, our proposed criteria reflect normative and technical choices but would translate into financial responsibilities. They should therefore be the subject of public debate and political negotiations, which these findings are intended to inform and provoke. In the absence of methodologies and criteria for defining climate finance responsibilities agreed through a multilateral process, we hope that our findings will support climate diplomacy and advocacy, particularly to celebrate those countries that are stepping up on climate finance and to enhance accountability for those that are not delivering their fair share.

2 Which countries are falling short on climate finance?

In this section, we evaluate which developed countries provided their fair share of climate finance in 2019 and 2020; which countries have committed to doing so going forward to 2025; and the quality of their respective climate finance contributions and commitments. We apply a methodology developed and published last year to apportion responsibility among developed countries for the annual $100 billion climate finance goal (Colenbrander et al., 2021). Governments and civil society organisations widely used the findings of this to identify opportunities to increase ambition and enhance accountability on climate finance before COP26 in Glasgow. In response to demand from policy-makers, campaigners and journalists, this paper provides an updated assessment of developed countries' progress towards their fair share using more recent data on climate finance flows and new data on countries' climate finance commitments to 2025.

Our appraisal focuses on progress towards the goal of $100 billion a year. Given that developed countries are likely to fall short of this target between 2020 and 2022, alternative climate finance targets have been proposed for this period. For example, Ministers of Finance of the Vulnerable Twenty Group have called for developed countries to commit to a minimum of $500 billion between 2020 and 2024 (V20, 2021), and civil society organisations have called for developed countries to provide and mobilise $600 billion between 2020 and 2025 (Farand, 2021). In both cases, advocates call for larger contributions in later years to make up for early shortfalls. However, given that the purpose of this section is to strengthen accountability rather than champion specific reforms, we have chosen to benchmark countries' progress towards their fair share of the annual $100 billion in specific years, rather than towards the aggregate figure.

Our appraisal also focuses narrowly on the provision rather than the mobilisation of climate finance. Provision of climate finance typically refers to resources supplied by developed countries' governments – that is, public funds – whether as grants or as loans. Mobilisation of climate finance typically refers to resources from private entities that become available as a result of donors' activities, for example through guarantees or subordinate debt from public funds. In 2019, developed countries mobilised $14 billion of private climate finance (OECD, 2021a), which played a significant role in closing the climate finance gap. There is an ongoing debate around what proportion of the $100 billion goal should be met through provided versus mobilised climate finance.

Box 1 Developed countries and Annex II countries in this report

The UNFCCC has historically divided countries into three main groups. Annex I Parties are industrialised countries that were members of the Organisation for Economic Co-operation and Development (OECD) in 1992, plus the European Community (now the EU) as a discrete entity and countries with economies in transition (Russia, the Baltic States and several Central and Eastern European states). Annex II Parties[1] comprise the same list excluding those countries with economies in transition.[2] Non-Annex I Parties are all countries not included in Annex I.

In 2009, so-called 'developed countries' committed to jointly mobilise $100 billion a year by 2020 to address the needs of 'developing countries'. The Copenhagen Accord does not refer to Annex II and non-Annex II countries but also fails to define 'developed' or 'developing' countries and thereby ensure clarity on the contributor base.

This loose wording was a necessary political compromise. Since countries were categorised under the UNFCCC in 1992, the world has changed significantly. Many countries have subsequently joined the OECD and/or the EU, which groupings were the original justifications for identifying Annex II countries.[3] Other countries have not joined the OECD but have seen significant increases in incomes and/or emissions; indeed, many have become significant providers of international concessional finance, although with no explicit obligation to provide climate finance. In parallel, the language in the climate accords around countries' responsibilities has become increasingly differentiated, particularly with respect to finance (Pauw et al., 2019) – but has not been concretised into updated country categories.

For the sake of simplicity and transparency, we apportion responsibility for the $100 billion goal among Annex II countries. We therefore, in the absence of an updated definition, effectively treat the term 'developed countries' as equivalent to 'Annex II countries'. In Section 4, we recognise how countries' self-differentiation is changing by identifying non-Annex II countries that have voluntarily provided climate finance. In this way, we acknowledge the evolving language of the climate accords and seek to enhance accountability among Parties to the UNFCCC.

2.1 Methodology

We use three metrics to assess each developed country's fair share of the climate finance goal:

[1] Australia, Austria, Belgium, Canada, Denmark, the EU (formerly the European Community), Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the UK and the US. Turkey was originally an Annex II country but was removed at its own request at COP7 in Marrakech.

[2] Belarus, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Liechtenstein, Lithuania, Malta, Monaco, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine.

[3] Chile, Colombia, Czech Republic, Estonia, Israel, South Korea, Latvia, Lithuania, Mexico, Poland, Slovakia and Slovenia.

1. gross national income (GNI) in current US dollars for 2020 (World Bank, 2022a) as a proxy for ability to pay

2. cumulative territorial carbon dioxide emissions ($GtCO_2$) between 1990 and 2020 (calculated[4] using Friedlingstein et al., 2022) as a proxy for historic responsibility for climate change

3. population in 2020 (World Bank, 2022b), which is the simplest form of assessing 'fair share' as it allocates equal responsibility for climate finance to all people living in developed countries.

While imperfect, these metrics each offer an indicative benchmark to explore individual countries' responsibility for climate finance. Our own preferred indicator of these three would be cumulative territorial emissions.

We developed a composite indicator that uses all three of these metrics. We then calculated a proportion of each country's economy, emissions and population as a proportion of developed countries' total, and used these percentages to indicate each country's fair share of the $100 billion a year target. The composite indicator is an average of each country's share of developed countries' collective GNI, cumulative territorial emissions and population – that is, the composite indicator gives each of the three metrics equal weight. Appendix 1 presents the country-level data for these three different indicators. For more details on our fair share methodology, please see Colenbrander et al. (2021).

There is considerable debate about what constitutes climate finance, given the lack of a commonly agreed and precise definition under the UNFCCC. The Copenhagen Accord states it should be 'scaled-up, new and additional, predictable and adequate' and can encompass 'public and private, bilateral and multilateral, including alternative sources of finance' (UNFCCC, 2009). Consequently, assessment of progress towards the $100 billion a year goal relies on self-reporting.

We use climate-related finance data (i.e. ODA tagged as having climate as a significant or principal objective) from the OECD Development Assistance Committee (DAC) as a proxy for climate finance flows in 2019 and 2020, as updated data from the UNFCCC is not yet available. Under the OECD DAC system, countries self-report their total volume of ODA according to an agreed methodology. They also report whether they distributed this ODA through bilateral or multilateral channels. For bilateral finance flows, countries then self-report the proportion of the ODA that has climate change as a significant or principal objective. For multilateral finance flows, international organisations self-report the share of finance received by bilateral donors allocated for climate projects (i.e. 'imputed multilateral contribution'), so that it is attributable to the individual bilateral donor in the OECD DAC statistics. The OECD data captures climate-related loans at their face value, rather than as their grant equivalent, so the data used does not reflect the accurate scale of donor countries' underlying fiscal commitment. We consider how the characteristics of the OECD DAC reporting system affect our analysis and donor countries' incentives in more detail below.

[4] Conversion calculation from carbon to carbon dioxide using the recommended coefficient as per Friedlingsten et al., 2022

The COP26 Presidency (2021) compiled the data on countries' climate finance commitments for the 2021–2025 period.

The EU is also a significant provider of climate finance. We attribute its past and projected climate finance flows to its Member States in proportion to their contribution to the EU budget in 2019 (see Appendix 2 for more details). Note that the EU attributed a share of its climate finance flows to the UK in 2019, given that the latter did not leave the bloc until 2020.

Multilateral development banks (MDBs) are also significant providers of climate finance. Importantly, outflows from the MDBs typically exceed inflows from shareholders because they can draw on retained earnings, raise additional resources on capital markets and provide loans from grant resources, thereby increasing total flows of concessional finance. However, outflows are consequently difficult to attribute precisely to a specific provider year on year (OECD, 2018). As such, this study understates climate finance provided and mobilised by countries that channel more resources through multilateral organisations. We therefore draw readers' attention to the significant difference between inflows and outflows – Bos and Thwaites (2021) estimate that climate finance outflows from the MDBs attributable to Annex II countries in 2018 totalled $21.5 billion, against climate finance inflows worth $4.7 billion[5] – and emphasise that channelling resources to MDBs can increase the total volume of climate finance reaching recipient countries.

Recognising that quality is as important as quantity, we assess developed countries' climate finance provision against four metrics in Section 2.3: grant equivalence of climate finance (Oxfam, 2020), attribution of climate-related ODA (OECD, 2020), disbursal of climate finance through multilateral channels (OECD, 2022) and the balance between adaptation and mitigation (Bos and Thwaites, 2021). We note that none of these metrics is a perfect proxy for 'quality'. For example, grants, loans, guarantees and other finance instruments all have valuable roles to play in supporting climate change mitigation and adaptation. However, understanding levels of concessionality gives us a good indication of a donor's fiscal effort and therefore including the grant equivalent of climate finance contributions is pertinent to enhanced accountability. Section 2.3 elaborates on the purpose of each metric and the performance of individual countries.

As outlined in Box 1, our analysis throughout Section 2 focuses narrowly on climate finance provision by Annex II Parties, although we recognise that the Copenhagen Accord and its successor refer to 'developed countries' instead.

2.2 Progress towards countries' fair share of the $100 billion a year goal

[5] Bos and Thwaites (2021) present raw multilateral climate finance inflows reported to the UNFCCC to be worth $6,559 million in 2018 (Table 5) and multilateral climate finance inflows excluding the MDBs to be worth $1,860 million that same year (Table 6). This suggests that MDB climate inflows were worth $4,699 million, and thus that climate finance outflows were 4.6 times greater.

First, let us consider which countries provided their fair share of climate finance between 2017 and 2020, and which fell short. Table 1 shows which countries are primarily responsible for the climate finance shortfall over the past three years.

Table 1 Scorecard of progress towards Annex II countries' fair share of the $100 billion climate finance goal (2017–2020).

		2017–2018 average		2019		2020	
	Fair share	Climate finance provided	Progress towards providing fair share	Climate finance provided	Progress towards providing fair share	Climate finance provided	Progress towards providing fair share
	US$ billions	US$ billions	%	US$ billions	%	US$ billions	%
Sweden	0.91	1.372	150%	1.15	126%	1.47	161%
France	5.39	4.854	90%	6.49	120%	8.66	161%
Norway	0.58	1.082	186%	0.82	140%	0.9	154%
Japan	11.89	9.372	79%	7.52	63%	16.09	135%
Netherlands	1.76	1.23	70%	1.93	110%	2.14	122%
Germany	8.33	9.236	111%	10.05	121%	9.91	119%
Denmark	0.62	0.452	73%	0.78	126%	0.62	101%
Switzerland	0.94	0.601	64%	0.65	69%	0.68	72%
Finland	0.56	0.281	50%	0.38	68%	0.33	60%
UK	5.84	2.812	48%	2.9	50%	3.2	55%
Austria	0.82	0.388	47%	0.58	70%	0.44	53%
Belgium	1.13	0.611	54%	0.74	65%	0.59	52%
Ireland	0.52	0.199	38%	0.25	47%	0.19	37%
Iceland	0.04	0.013	35%	0.02	46%	0.01	37%
New Zealand	0.43	0.071	17%	0.13	31%	0.15	36%
Luxembourg	0.09	0.051	57%	0.05	61%	0.03	31%
Italy	4.73	1.195	25%	1.27	27%	1.43	30%
Australia	2.93	0.477	16%	0.64	22%	0.68	23%
Spain	3.43	0.787	23%	0.89	26%	0.64	19%
Canada	4.13	0.697	17%	0.91	22%	0.74	18%
Portugal	0.69	0.091	13%	0.11	15%	0.07	10%
Greece	0.78	0.072	9%	0.08	10%	0.06	8%
US	43.48	1.856	4%	2.14	5%	2.3	5%

Note: Countries in dark green are providing their fair share of climate finance. Colours are thereafter in quartile increments. Light green, paying 75–100% of their fair share; yellow, paying 50–75% of their fair share; orange, paying 25–50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2020 commitments. Data for 2017–2018 was provided as average to be consistent with the reporting in our first fair share report (see Colenbrander et al., 2021)

Source: Authors' calculations using data from World Bank (2022a, 2022b) and Friedlingstein et al. (2022).

Seven countries provided their fair share of climate finance in 2020: Sweden, France, Norway, Japan, the Netherlands, Germany and Denmark. Their fulfilment of their fair share of the $100 billion target is especially commendable given the limits of our methods – that is, the fact that we have not included private finance mobilisation or attributed MDBs' capital outflows, and have therefore understated their climate finance contributions. (This methodological choice also substantively explains the difference between the figures on total climate finance in Table 1 and the OECD's annual assessment of total climate finance provision by developed countries.) Indeed, Germany, Norway and Sweden have been providing their fair share of climate finance since 2017 – well before the deadline of 2020 set in the Copenhagen Accord.

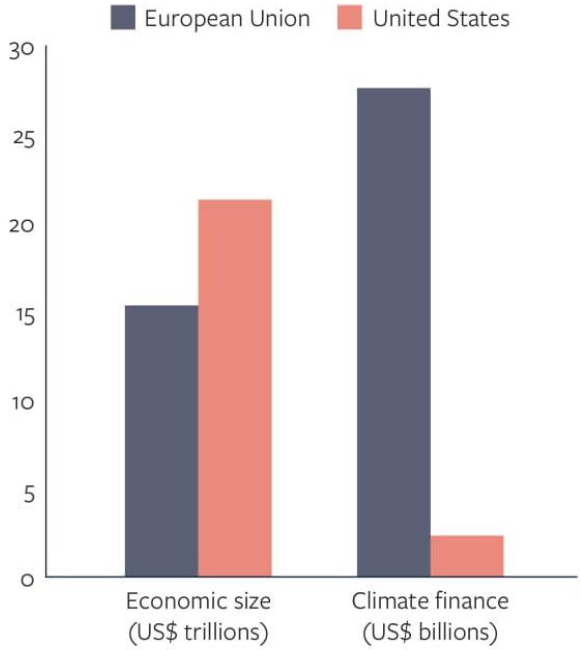
While achieving our quantitative benchmark, we note that France and Japan do not perform well on quality of finance. In particular, a large proportion of their climate finance is provided as loans rather than grants, implying a smaller fiscal commitment than the face-value figures above. If we take concessionality into account, Denmark and the Netherlands would be at the top of Table 1. See Section 2.3 and Oxfam (2020) for more details.

Over two-thirds of developed countries fell short of their fair share of climate finance in 2020.

In relative and absolute terms, the US is responsible for the vast majority of the climate finance gap. The country is an outlier among Annex II countries for its population size, economic heft and historical contribution to climate change.

Although its economy is 40% larger than the EU's ($21.3 trillion compared with $15.3 trillion in 2020 (World Bank, 2022a)), it provided one-twelfth as much climate finance ($2.3 billion compared with $27.65 billion (EU, 2021)) (see Figure 1).[6] The US economy is four times larger than that of Japan, five times larger than that of Germany, seven times larger than that of the UK and eight times larger than that of France – yet it has provided less climate finance than any of them.

Figure 1 Climate finance provided by the EU and the US in 2020



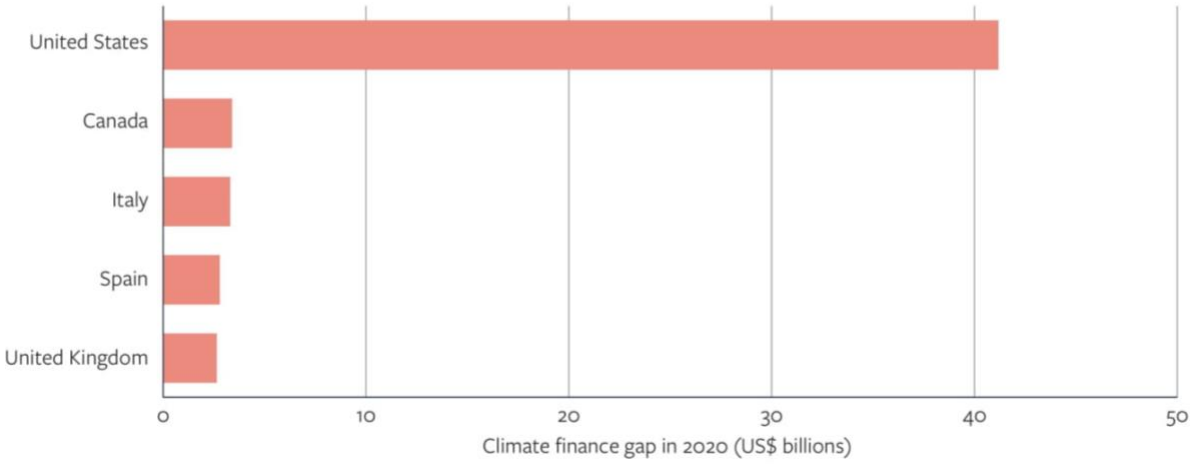
Source: Authors' calculations based on EU (2021), OECD DAC (2021a) and World Bank (2022a)

[6] The EU reporting includes climate finance from the European Development Fund and from the European Investment Bank, whereas the US figures do not include any MDB capital outflows or private finance mobilised.

Other notable laggards in absolute terms include Australia, Canada, Italy and Spain, which each provided less than a third of their fair share and accounted for a shortfall of at least $2 billion (see Figure 2) – although MDB capital outflows and private finance mobilised would have partially closed this gap. The UK is making much more progress towards providing its fair share, but its economic size, population and historical emissions mean that it accounts for a similar shortfall.

New Zealand stands out for its steady progress towards its fair share, although it was still providing less than half as of 2020. Austria, Belgium, Finland, Ireland and Luxembourg are notable for the significant decline in their climate finance provision in 2020 relative to 2019 levels.

Figure 2 The five countries primarily responsible for the climate finance shortfall in 2020



Source: Authors' calculations

Second, let us consider which countries are planning to provide their fair share of climate finance going forward to 2022 and 2025. Table 2 shows which countries have not yet made sufficient commitments.

Table 2 Scorecard of progress towards Annex II countries' fair share of the $100 billion climate finance goal (2022, 2025).

		2022		2025	
	Fair share based on a composite index, US$ billions	**Climate finance commitments, US$ billions**	**Progress towards providing a fair share of climate finance, %**	**Climate finance commitments, US$ billions**	**Progress towards providing a fair share of climate finance, %**
Norway	0.58	1.09	187%	1.7	292%
Sweden *	0.91	Commitment does not address FY 21/22		1.89	206%
France	5.39	7.9	147%	7.9	147%
Japan	11.89	14	118%	14	118%
Netherlands	1.76	1.81	103%	Commitment does not address FY 24/25	
Germany	8.33	5.82	70%	8.18	98%
Denmark	0.62	0.6	97%	0.6	97%
Ireland	0.52	0.2	38%	0.35	68%
UK	5.84	3.7	63%	3.7	63%
Spain	3.43	1.71	50%	2.03	59%
New Zealand	0.43	0.23	54%	0.23	54%
Switzerland	0.94	Commitment does not address FY 21/22		0.46	49%
Finland	0.56	0.26	46%	0.26	46%
Italy	4.73	2.01	42%	2.01	42%
Belgium	1.13	0.35	31%	0.35	31%
US	43.48	Commitment does not address FY 21/22		11.4	26%
Canada	4.13	0.85	20%	0.85	20%
Australia	2.93	0.3	10%	0.3	10%
Luxembourg *	0.09	Commitment does not address FY 21/22		Commitment does not address FY 24/25	
Austria *	0.82				
Portugal *	0.69				
Greece *	0.78				
Iceland	0.04				

Note: Countries in dark green have committed to provide their fair share of climate finance. Colours are thereafter in quartile increments. Light green, paying 75–100% of their fair share; yellow, paying 50–75% of their fair share; orange, paying 25–50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2025 commitments.

* No new commitment outside of EU budget earmarked for climate finance.

Source: Authors' calculations using data from COP26 Presidency (2021).

First, it is important to highlight those developed countries that have not made new climate finance commitments according to the COP26 Presidency (2021): Austria, Greece, Iceland, Luxembourg and Portugal. While the EU countries listed above will pay some climate finance via their contribution to the EU budget in 2022 and 2025 (see Appendix 2 Apportioning the EU's climate finance contribution for their estimated contributions), they have not made national commitments in their own names. Iceland, which is not an EU country, has not made public any new commitment to climate finance for 2022 and 2025. As Table 2 shows, the country usually pays about a third of what it should. Article 9.5 of the Paris Agreement requires developed countries to communicate *ex-ante* information about their projected levels of public climate finance every two years (UNFCCC, 2015). The reticence of these countries to make new climate finance commitments is also disappointing given that the climate accords have long underscored the importance of long-term, adequate and predictable funding.

More positively, Norway and Sweden plan to remain generous providers of climate finance. If they keep their promises, France and Japan will also number among the most generous donors in terms of the face value of their climate finance envelope, although they fare markedly less well when we consider the grant equivalent (again, see Section 2.3). Germany and Denmark also deserve recognition for committing climate finance flows roughly commensurate with their fair share.

The US, Canada and Australia continue to lag on climate finance (see Figure 3). Given their large economies, populations and historical territorial emissions, their inadequate commitments are very significant in absolute as well as relative terms. Italy's low climate finance pledge is notable for the same reason, although it is making much more progress towards its fair share. The climate finance gap in 2022 is forecast to be up to $8 billion (OECD, 2021b). The US would singlehandedly fill this gap several times over if it were to deliver its fair share; Australia, Canada and Italy could also collectively cover the shortfall should they all provide their fair share. We note that these inadequate pledges are consistent with these four countries' inadequate domestic climate action targets: Australia and Canada's Nationally Determined Contributions remain 'highly insufficient', whereas those of Italy and the US are 'insufficient' (Climate Transparency, 2021).

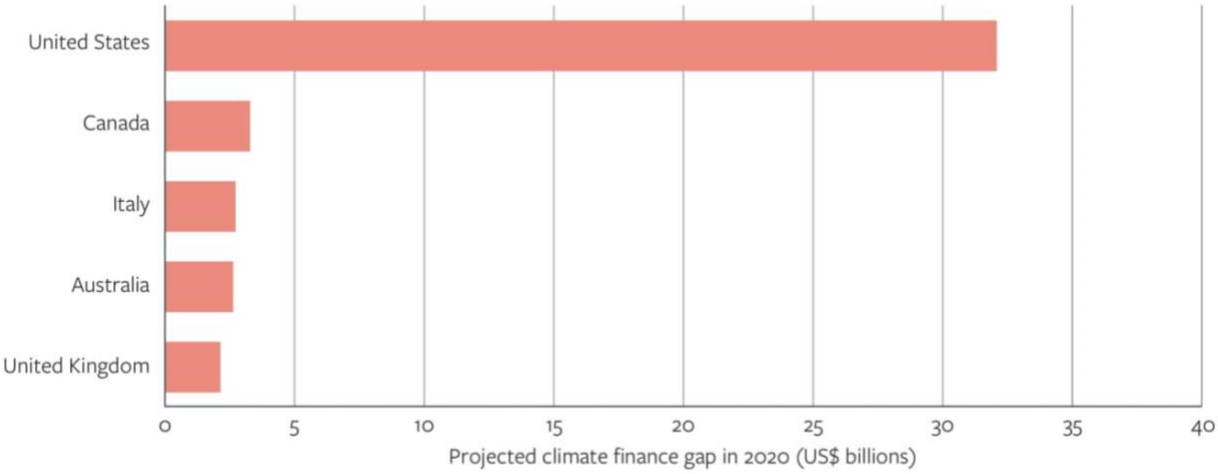
Belgium, Finland and Switzerland are all planning to pay less than half their fair share in 2022. While this is inequitable given their high per capita incomes and cumulative territorial emissions, the economies and population sizes of these countries mean their shortfall is not as large (around the $0.5–1 billion mark per year) compared with the gap that the inadequate pledges of Italy, the US, Canada and Australia have generated.

Ireland, the UK, Spain and New Zealand see a step change in climate finance commitments for 2025, albeit from a lower base over the 2018–2020 period. Italy is increasing its pledge marginally, and by 2025 is still committing to less than half its fair share.

It is important to highlight that countries may have defined their climate finance pledges differently. For example, France and Japan seem to be committing constant volumes of climate finance to 2025, whereas Belgium, Finland, Germany and Switzerland are pledging a smaller amount relative to 2020 (see Table 1). However,

this is likely because we are not comparing like with like: countries' climate finance pledges are unlikely to be structured in the same way that they report their contributions to the OECD DAC or in their UNFCCC Biennial Reports (BRs). For example, Germany's new commitment seems to narrowly describe direct budgetary support in 2022 and 2025, which its development agencies (such as the German Development Bank, KfW) have significantly leveraged in the past. It is therefore difficult to robustly compare past and projected climate finance flows, and it will be necessary to pay close attention to the OECD's annual report and the UNFCCC BRs to assess the quality of countries' climate finance.

Figure 3 The five countries primarily responsible for the projected climate finance shortfall in 2025



Source: Authors' calculations

Figure 4 Countries that have pledged the most significant progress towards their fair share of climate finance in 2025, relative to 2020 levels

Note: The figures are in percentage points, i.e. Norway's new climate finance commitment equates to an increase of 138 percentage points of the annual funds it should be providing using our methodology.
Source: Authors' calculations

The discrepancy between some countries' pledges relative to their track records underscores the need for better climate finance data, with more consistent mechanisms for pledging and reporting. It is worth reiterating two key data limitations that mean that Tables 1 and 2 above *understate* a country's climate finance contribution relative to its fair share.

1. **Data on private climate finance mobilisation by country is not included**. The MDBs estimate that in 2020 they directly mobilised $5.91 billion and indirectly mobilised $25.8 billion of private finance (AfDB et al., 2021). The OECD estimates that developed countries mobilised private climate finance worth $14 billion in 2019, the latest year for which data is available (OECD, 2021a). Whichever number is more robust, it is clear that not enough private finance was mobilised to close the gap to the $100 billion target. However, if it were possible to attribute these contributions at the country level, countries would be making more progress towards their fair share of climate finance.

2. **Data on climate finance outflows from multilateral organisations is not included.** The OECD DAC data includes bilateral climate finance and the climate share of national contributions to international organisations, as outlined in Section 2.1. However, as outlined in Section 2.1, multilateral outflows to developing countries typically exceed inflows from developed countries. Our analysis therefore understates climate finance provided by countries that channel more resources through multilateral organisations, such as Australia, Belgium, Finland, Greece and Portugal. Table 3 presents the proportion of climate finance channelled through bilateral versus multilateral channels is presented in Table 3. See Bos and Thwaites (2021) for a methodology attributing climate finance outflows back to Annex II providers, providing a useful indication of their individual contributions from a recipient perspective.

We also recognise that Tables 1 and 2 reflect only the quantity of climate finance and not its quality. There are many ways to assess the quality of climate finance, including transparency, concessionality, accessibility, predictability and ownership, as the next sub-section explores.

2.3 Quality of climate finance provision

We recognise that the quality, as well as the quantity, of climate finance is important. Poor-quality climate finance constrains developing countries' ability to use resources effectively to deliver mitigation and adaptation. In this sub-section, we offer some metrics that will enable readers to assess the quality of developed countries' climate finance provision.

A glance at the 'traffic light' scheme in Table 3 demonstrates that no country excels across all these measures. However, France and Japan stand out for the relatively low quality of their climate finance: a large share is provided as loans, there is a risk of overcounting and very little is channelled through the multilateral system or to adaptation. These countries' poor performance with respect to the quality of climate finance is worth bearing in mind when reflecting on the rankings relating to the

quantity of climate finance in Tables 1 and 2. A detailed explanation of each metric is provided below.

Table 3 Scorecard of the quality of international climate finance against different metrics.

	Grant-equivalent of bilateral climate finance as share of reported value (2017-18)	Attribution of ODA with a 'significant' climate component (2017-18)	Share of climate finance disbursed through multilateral channels (2019)	Share of climate finance allocated to adaptation (2018)
Australia	100%	30%	25%	37%
Austria	Not analysed	50%	54%	18%
Belgium	Not analysed	Did not report	55%	52%
Canada	69%	30%	40%	21%
Denmark	100%	50%	29%	29%
Finland	Not analysed	Project-level	49%	30%
France	27%	Did not report	25%	19%
Germany	49%	50%	19%	20%
Greece	Not analysed	40%	100%	42%
Iceland	Not analysed	100%	9%	52%
Ireland	Not analysed	Did not report	58%	42%
Italy	Not analysed	40%	82%	29%
Japan	52%	Project level: 0% or 100%	16%	8%
Luxembourg	Not analysed	Did not report	60%	32%
Netherlands	100%	40%	34%	41%
New Zealand	Not analysed	Did not report	19%	41%
Norway	Not analysed	40%	26%	8%
Portugal	Not analysed	N/A	94%	43%
Spain	41%	50%	89%	19%
Sweden	100%	40%	37%	41%
Switzerland	Not analysed	40%	36%	41%
UK	99%	Project-level	30%	38%
US	73%	Did not report	33%	14%

Notes and sources:

Grant equivalence of climate finance: Colours are in quartile increments – countries in dark green provide the grant equivalence of 75–100% of their reported climate finance contributions; yellow provide 50–75%; orange provide 25–50%; red provide less than 25%. Data source: Oxfam (2020).

Attribution of climate-related ODA: Countries in dark green claimed 30% of significantly climate-related ODA as climate finance; light green, 40%; yellow, 50%. Countries in red either did not report or claimed up to 100% of significantly climate-related ODA as climate finance. Source: OECD (2020).

Disbursal of climate finance through multilateral channels: Colours are in quartile increments: countries in dark green channel 75–100% of their climate finance through multilateral channels; light green, 50–75%; yellow, 25–50%; orange, less than 25% through multilateral sources. We have not used red as the provision of resources through bilateral channels may not be preferred by developing countries (more below) but is not inherently an inferior choice. It will always depend on the calibre of the agency in question. Data source: Authors' calculations using OECD (2022) data.

Balance between adaptation and mitigation: Countries in dark green allocate 40–60% of their climate finance exclusively to adaptation; light green, 30–40%; yellow, 20–30%, orange, 10–20%. Countries in red allocate less than 10% of their climate finance to adaptation. Data source: Bos and Thwaites (2021).

2.3.1 Grant equivalence of climate finance

We first assess the grant equivalence of developed countries' reported climate finance contributions. Grant equivalence describes the value of the resources that are actually being provided to a developing country, recognising that donors recover some or all of the finance that they provide as loans. While the loose wording of the Copenhagen Accord permits developed countries to report the face value of their climate finance provisions, grant equivalence is a more robust way to measure their real fiscal effort. From a developing country's perspective, the choice of financing mechanism also has implications for their total debt levels: climate finance provided as loans deepens developing countries' debt levels, adding further inequity to the unfairness of climate change (Pettinotti et al., 2022).

Oxfam has highlighted the need to assess the grant equivalence rather than face value of climate finance commitments, and the second column in Table 2 is drawn from its pioneering *Climate Finance Shadow Report* (2020). This data reveals that France in particular provides most of its bilateral climate finance as loans, so the underlying budgetary commitment is likely to be only around a quarter of the figure presented in Tables 1 and 2. Germany, Japan and Spain also provide only around half of the resources implied in their climate finance reporting, given that they will recover much of these resources as developing countries repay the loans. By comparison, Australia, Denmark, the Netherlands, Sweden and the UK provide 100% of their bilateral climate finance as grants.

2.3.2 Attribution of climate-related ODA

It is useful to consider the share of climate-related ODA that developed countries choose to report as climate finance, in order to be able to assess whether they are overreporting their contributions. As Box 2 in Section 3 shows, each country marks its bilateral ODA according to whether it is significantly intended to target climate change (Rio Marker 1); is principally intended to target climate change (Rio Marker 2); or does not target climate change at all (OECD, n.d.). Countries then usually apply a coefficient to determine what proportion of ODA tagged with Rio Markers is counted as climate finance. We have taken a normative position that it is more ethical to report a smaller share of these activities as climate finance, particularly those considered to be significantly rather than principally related to climate change.

The OECD (2020) surveys national governments to assess how countries apply the Rio Markers. In the case of development assistance scored as principally focused on climate change using Rio Marker 2, most countries apply a fixed coefficient of 100%. The exceptions are Switzerland, which applies a fixed coefficient of 85%, and Finland and the UK, which make this decision on a project-by-project basis.

There is more variation in the coefficient that Annex II countries apply to development assistance scored as significantly focused on climate change using Rio Marker 1. Most countries apply a coefficient between 30% and 50%, with Australia and Canada standing out for applying the lower bound. Iceland and Japan stand out for applying a coefficient of 100%, although for Japan this varies among individual projects: sometimes it is 0% and sometimes 100%. In 2017–2018, it reported around two-thirds of its projects tagged with Rio Marker 1 to the UNFCCC (OECD, 2020). In other words, Iceland and Japan report all the funds for some if not all projects with a

significant climate component – even if they are not principally focused on climate change – as climate finance.

2.3.3 Disbursal through bilateral and multilateral channels

Developed countries that channel climate finance through multilateral agencies may increase the total volume of finance reaching developing countries. As outlined above, this is because they can provide loans from grant resources; in addition, MDBs can draw on retained earnings and raise additional resources on capital markets because they are backed by the sovereign guarantees of their shareholders (this option is not open to multilateral climate funds). MDBs' ability to increase outflows relative to their inflows has played an important role in bridging the climate finance gap.

From the perspective of developing countries, there are often additional advantages to multilateral climate finance. Multilaterals are perceived to be less subject to political capture by donors, creating greater scope for the allocation of climate finance according to country needs or potential for impact. Multilaterals are considered to bring valuable technical skills and better facilitate knowledge-sharing across geographies. Multilateral agencies are also regarded as more responsive and flexible than their bilateral counterparts. While there is not always robust evidence to substantiate these perceptions, there is evidence that developing countries often prefer finance disbursed through multilateral channels (Gulrajani, 2016).

For these reasons, we have taken a normative position that developed countries should channel a higher proportion of their climate finance through multilateral institutions. With this assumption, Greece, Italy, Portugal and Spain all stand out for the large share of resources that they have channelled through the multilateral system. This finding also suggests that Tables 1 and 2 understate the value of these countries' climate finance contributions in particular, if the volume of flows is considered from a recipient perspective rather than in terms of providers' financial effort.

2.3.4 Balance between adaptation and mitigation

Climate change mitigation substantively if not primarily yields global benefits, whereas climate change adaptation primarily yields local benefits. Channelling climate finance to adaption accordingly responds primarily to the needs of developing countries, as opposed to the global imperative of minimising the extent of climate change. For this reason, many countries have underscored the importance of increasing the share of climate finance allocated to adaptation in order to enhance climate equity and justice. Within the climate accords, Article 9.4 of the Paris Agreement states that 'The provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation' (UNFCCC, 2015).

Given that the climate accords provide no further specificity, we define a balance between mitigation and adaptation as having a minimum of 40% of climate finance flow to each. Table 3 presents the share of each country's climate finance that flows exclusively to adaptation, drawn from Bos and Thwaites (2021). By this metric, Belgium, Greece, Iceland, Ireland, the Netherlands, New Zealand, Portugal, Sweden and Switzerland are all achieving a balance between mitigation and adaptation finance. Japan and Norway stand out for the very small fraction of climate finance

allocated to adaptation (8% each), but in absolute terms the shortfall of adaptation finance can also be substantially attributed to Canada, France, Germany, Spain and the US, all large donors that allocate over 75% of their climate finance to mitigation.

We also note that many countries allocate significant climate finance to 'cross-cutting' climate action – that is, programmes and projects that advance both mitigation and adaptation. If these resources are taken into account, most countries have a greater balance between the two goals – although Norway and Japan are still the laggards, allocating just 15% and 13% of climate finance to adaptation and cross-cutting purposes, respectively.

3 Which countries are falling short on international public finance?

Climate finance is meant to be ‘new and additional’. The principle of additionality in the UNFCCC remains ill-defined (Bodnar et al., 2015). However, the principle enshrined in Article 4 of the UNFCCC is widely understood to mean ensuring that increases in climate finance do not take place at the expense of other streams of bilateral and multilateral public resources, such as humanitarian assistance. In other words, the intention behind climate finance was not a reallocation of the total pot of international public finance – moving international public funds away from development issues to address climate goals – but the creation of a larger total pot of international public finance in response to new global challenges.

Importantly, we are not arguing for a stronger distinction between climate and development finance. We advocate for a joined-up approach, whereby other international public finance is Paris-aligned, and then additional international public finance is provided to meet climate goals. The total envelope of international public finance should therefore increase in order to make it possible to truly deliver on the ‘new and additional’ commitment of the UNFCCC system. Hence, the following section suggests a benchmark for international public finance, based on a fair provision of development assistance and a fair share of climate finance for each developed country.

3.1 Methodology

We define a fair provision of ODA to be 0.7% of gross national income (GNI). The target of 0.7% of gross national product (GNP) was proposed by the Pearson Commission in 1969 and endorsed in a UN resolution in 1970. GNI replaced GNP in 1993. OECD DAC members widely accept 0.7% as an appropriate (if long-term) goal for ODA, with the exception of Switzerland and the US (OECD, 2016).

We then understand climate finance to be new and additional to this level of ODA provision. As Section 2 outlined, we have calculated each country’s fair share of the $100 billion goal based on their GNI, cumulative territorial emissions and population. As a floor, each country should therefore be providing international development worth 0.7% of its GNI plus climate finance at least equal to its fair share of the $100 billion goal.

We first estimate how much ODA countries are providing. However, disentangling ODA and climate finance presents some methodological challenges, given the joint reporting system. Box 2 provides an introduction to the nuts and bolts of how ODA

and climate finance statistics used in our estimates are compiled, and their associated challenges.

Box 2 Disentangling ODA and climate finance statistics

ODA describes international public finance to promote the economic development and welfare of developing countries, including government funding for humanitarian assistance. ODA and climate finance are two streams of international support with some fundamental differences (see Table 4) but, the lack of clear boundaries between climate and development measures and the lack of a commonly agreed definition for climate finance mean they overlap significantly in terms of data reporting.

OECD DAC member countries report their ODA provision every year to the OECD DAC Creditor Reporting System following an established methodology for reporting international aid. Since 2018, ODA flows are reported on a grant equivalent basis (which better tracks the net transfer of resources from developed to developing countries) in addition to continuing to report on a cash basis (i.e. the face value of non-grant instruments including loans and guarantees).

As part of their ODA reporting, the OECD DAC members that are also Annex II countries or that voluntary provide climate finance report any ODA with a climate-related element. In other words, some ODA is tagged as having climate change as a significant or principal objective within the broader dataset of ODA. Many Parties to the UNFCCC then use this data as the basis for reporting climate-specific finance flows to the UNFCCC in BRs using a Common Tabular Format. These have become the most used figures internationally for ‘climate finance’ and have come to account for progress towards the $100 billion goal.

To derive climate-specific finance figures, the majority of developed countries apply fixed coefficients to ‘discount’ activities tagged as climate ODA using the OECD DAC Rio Markers. Most count 100% of the ODA that principally seeks to respond to climate change as climate finance. Table 6 presents the coefficients that countries apply to ODA that significantly responds to climate change. Only Finland, Japan and the UK adopt a bottom-up approach, whereby they estimate the percentage of climate contribution project by project (Gualberti and Lewkowitz, 2021). This generally yields more accurate estimates, except for in the case of Japan, which attributes either 0% or 100% to individual activities; in other words, it either reports the full amount to the UNFCCC or does not report the activity at all. Countries then also include other non-ODA climate funding in the numbers they submit to the UNFCCC. We contrast countries’ reports of climate finance data to the OECD DAC and in their UNFCCC BRs in Table 6.

Table 4 Characteristics and key differences between ODA and international climate finance

	Official development assistance	International climate finance
Purpose	Economic development and welfare	Climate change mitigation and adaptation
Target	National target of 0.7% GNI	International target of $100 billion (floor) by 2020
Contributor obligation	Aid/solidarity	Historical responsibility
Accounting basis	Grant equivalent	Face value; new and additional
Contributors	OECD DAC members	UNFCCC Annex II countries, 'developed countries'
Recipients	Low and middle income countries only	UNFCCC Non-Annex I countries
Data	OECD DAC Creditor Reporting System	OECD DAC Creditor Reporting System, UNFCCC Biennial Reports and BAs

Source: Authors.

As Section 2.1 discussed, we use the OECD DAC data on climate-related ODA to proxy climate finance in this report because this data is updated on an annual basis. By contrast, the UNFCCC BRs are usually updated every two years – but Parties have been granted extra time to accommodate the enhanced transparency framework of the Paris Agreement, thus there has not yet been an update to the Fourth BRs (2017–2018). The estimates for ODA and climate finance in this section, and throughout this report, therefore utilise the same source of data: the OECD DAC Creditor Reporting System. To calculate developed countries' ODA provision (as distinct from their climate finance provision), we subtracted climate-related ODA from the total ODA per country. This step avoided double-counting.

As with climate finance, the EU is a significant provider of ODA. We attribute its contributions to its Member States in proportion to their contribution to the EU budget (see Appendix 2 for more details).

We then estimated how much ODA each developed country should be providing through calculating 0.7% of its GNI (OECD Data, 2022; St. Louis Fed, 2022).[7]

So the ODA shortfall for each country is equal to 0.7% of GNI minus ODA provided (cash basis) minus Climate-related ODA (cash basis). A numerical example for Australia in 2019 is:

- 0.7% of GNI = $9.16 billion
- ODA provided = $2.89 billion
- climate-related ODA = $0.64 billion
- ODA shortfall = $5.63 billion.

[7] Iceland's GNI estimates were taken from the St. Louis Fed as neither the OECD nor the Icelandic statistical office reported this information.

Finally, we combined our analysis of ODA provision and targets with our analysis of climate finance provision and fair share, as presented in Section 2. Each country's fair share of international public finance is therefore the sum of 0.7% of its GNI plus its fair share of the $100 billion climate finance goal. The results show the total volume of international public finance that should contributor countries should provide – we call this the 'fair share of international public finance' – and the overall shortfall in funding.

For consistency with Section 2, we focus on Annex II countries (which are also all members of the OECD DAC). We recognise that some non-Annex II countries are members of the OECD DAC that provide ODA and/or voluntarily provide climate finance.

3.2 Progress towards countries' fair share of international public finance

Using the ODA target of 0.7% of GNI and the climate finance goal of $100 billion a year as benchmarks for finance flows to developing countries, the total shortfall in international public finance amounted to over $300 billion in 2019.

Table 5 details countries' progress towards paying their fair share of international public finance; Figure 5 shows those most responsible for the gap. For the most part, countries that fall significantly short of their fair share of climate finance also fall short of providing a fair level of development assistance: Australia, Canada, Greece, Italy, Portugal, Spain and the US.

Conversely, Sweden and Norway – countries that provide their fair share of climate finance – are also delivering their fair share of development assistance, and consequently their fair share of international public finance. Denmark comes very close to providing its fair share, with the small shortfall attributable primarily to ODA rather than climate finance.

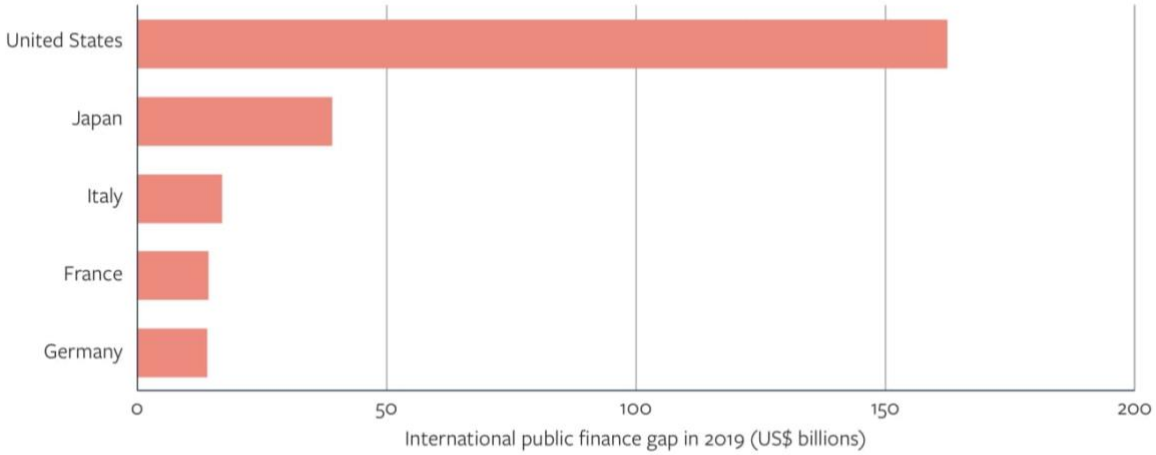
When we look across ODA and climate finance, there are four notable outliers. First, Luxembourg pays only about half of its fair share of climate finance and yet contributes its fair share of international public finance. It thus provides a volume of ODA so much higher than the 0.7% target that it offsets the country's inadequate climate finance provision. Second, France, Germany, Japan and the Netherlands – all relatively generous climate finance contributors, at least in terms of the face value of their flows – fall short on their total envelope of international public finance. While this does not confirm that ODA is being reallocated away from development and humanitarian purposes towards climate-related objectives, it does show a very substantial shortfall in ODA provision relative to these countries' strong performance on climate finance. In these contexts, there is therefore a need to significantly increase the volume of ODA provided to be meeting their fair share of international public finance.

Table 5 Scorecard of progress towards countries' fair share of international public finance, 2019

	Fair share of international public finance (US$ billions)	International public finance provided (US$ billions)	Progress towards fair share of international public finance (%)
Norway	3.16	4.3	136%
Luxembourg	0.43	0.51	119%
Sweden	4.95	5.68	115%
Denmark	3.08	2.89	94%
Netherlands	8.95	6.19	69%
UK	28.65	19.36	68%
Germany	41.75	27.68	66%
Switzerland	5.11	3.1	61%
Finland	2.51	1.41	56%
Belgium	5.54	2.93	53%
France	28.99	14.68	51%
Ireland	2.86	1.28	45%
Austria	4.42	1.64	37%
Iceland	0.21	0.06	29%
New Zealand	1.98	0.55	28%
Italy	23.43	6.38	27%
Canada	16.94	4.53	27%
Spain	17.22	4.14	24%
Australia	12.09	2.89	24%
Japan	50.83	11.72	23%
Greece	3.04	0.58	19%
Portugal	3.23	0.61	19%
US	195.44	32.98	17%
Total	464.78	156.08	34%

Source: Authors' calculations using OECD DAC (2022).

Figure 5 The five countries primarily responsible for the shortfall of international public finance in 2019



Source: Authors' calculations

3.3 Sensitivity analysis of countries' progress towards their fair share of international public finance

To ensure the robustness of our analysis, we carried out a simple sensitivity analysis against the progress reported in Table 5 to account for the fact that we are using climate-related ODA as a proxy for climate finance. Since climate-related ODA is still development assistance, national governments may argue it should count towards their overall ODA contributions as well as their climate finance contributions, whereas we have disentangled the two (see Section 3.1 for details).

We calculated the ratio between climate finance data that countries reported to the UNFCCC through their BRs (which are the figures most used internationally for climate finance, as detailed in Box 2) in 2018 – the latest available data – and the climate-related ODA data they submitted to the OECD DAC in the same year. We then applied these coefficients to the OECD DAC's 2019 climate-related ODA data to obtain a range of climate finance provided per country. This methodology was adopted to account for the difference between the UNFCCC and OECD DAC statistics that countries submit, adjusting for the different reporting frequencies of the two datasets and to enhance consistency throughout this publication. Table 6 shows this range.

Table 6 Sensitivity analysis of climate finance provision, 2019

US$ billions	Fair share of the $100 billion goal (US$ billions)	Climate finance provided in 2019 according to OECD DAC (US$ billions)	Ratio of UNFCCC BR climate finance/OECD DAC climate-related ODA, 2018 (%)	Climate finance provided in 2019, using OECD DAC data and applying UNFCCC BR/OECD DAC 2018 ratio (US$ billions)
Australia	2.96	0.64	56%	0.36
Austria	0.81	0.58	91%	0.53
Belgium	1.12	0.74	63%	0.46
Canada	4.16	0.91	53%	0.48
Denmark	0.61	0.78	72%	0.56
Finland	0.57	0.38	60%	0.23
France	5.37	6.49	194%	12.58
Germany	8.29	10.05	89%	8.91
Greece	0.78	0.08	116%	0.09
Iceland	0.03	0.02	134%	0.02
Ireland	0.59	0.25	111%	0.28
Italy	4.75	1.27	120%	1.52
Japan	11.77	7.52	103%	7.76
Luxembourg	0.12	0.05	283%	0.15
Netherlands	1.77	1.93	73%	1.41
New Zealand	0.42	0.13	52%	0.07
Norway	0.59	0.82	71%	0.58
Portugal	0.7	0.11	101%	0.11
Spain	3.45	0.89	163%	1.46
Sweden	0.91	1.15	46%	0.52
UK	5.87	2.9	74%	2.13
US	43.42	2.14	109%	2.34

Source: Authors' calculations using OECD (2022) and UNFCCC BRs.

It is noticeable that most countries report lower numbers to the UNFCCC compared with the OECD DAC. This is understandable as, when reporting to the UNFCCC, countries start off from the data they have already submitted to the OECD DAC to narrow down further the 'climate component' of investments and projects to abide by the principle of 'new and additional' to the best of their capacities, resulting in lower estimates of climate finance. However, some countries, such as France, Greece, Ireland, Italy, Japan, Luxembourg, Spain and the US, have reported higher values to the UNFCCC by then adding non-ODA climate finance.

To account for the range in climate finance estimates, Table 7 updates Table 5 to provide a sensitivity analysis of countries' progress towards their fair share of international public finance. While most countries' performance worsens moderately as a result, France stands out as its progress increases from 51% to 72%. This is explained by the fact that it has reported almost twice the volume of climate finance to the UNFCCC than it has to the OECD DAC. Ireland, Iceland, Italy, Spain and Japan also see a slight improvement in their performance, though they are still far from contributing their fair share of international public finance.

Table 7 Scorecard of progress towards countries' fair share of international public finance, 2019 – sensitivity analysis

				Applying the results of the UNFCCC BR sensitivity analysis	
	Fair share of international public finance	International public finance provided – OECD DAC	Progress towards fair share of international public finance	International public finance provided – OECD DAC 2019 data plus UNFCCC BR / OECD DAC ration in 2018	Progress towards fair share of international public finance
	(US$ billions)	(US$ billions)	(%)	(US$ billions)	(%)
Norway	3.2	4.3	136%	4.1	128%
Sweden	5.0	5.7	115%	5.1	102%
Luxembourg	0.5	0.5	114%	0.6	136%
Denmark	3.1	2.9	94%	2.7	87%
Netherlands	9.0	6.2	69%	5.7	63%
UK	28.7	19.4	67%	18.6	65%
Germany	41.7	27.7	66%	26.5	64%
Switzerland	5.1	3.1	60%	2.9	57%
Finland	2.5	1.4	56%	1.3	50%
Belgium	5.5	2.9	53%	2.7	48%
France	29.0	14.7	51%	20.8	72%
Ireland	2.9	1.3	44%	1.3	45%
Austria	4.4	1.6	37%	1.6	36%
Iceland	0.2	0.1	31%	0.1	34%
New Zealand	2.0	0.6	28%	0.5	25%
Italy	23.4	6.4	27%	6.6	28%
Canada	17.0	4.5	27%	4.1	24%
Spain	17.2	4.1	24%	4.7	27%
Australia	12.1	2.9	24%	2.6	22%
Japan	50.7	11.7	23%	12.0	24%
Greece	3.0	0.6	19%	0.6	20%
Portugal	3.2	0.6	19%	0.6	19%
US	195.4	33.0	17%	33.2	17%

Source: Authors' calculations using OECD (2022) and UNFCCC BRs.

4 Which other countries are and could be providing climate finance?

Since countries were categorised as Annex I, Annex II or non-Annex I under the UNFCCC in 1992, the world has changed significantly. Perhaps the most pertinent changes for the purposes of climate finance negotiations are that many countries have achieved significant increases in per capita incomes and have emitted greenhouse gases at an increased rate. Thus, many countries now have much greater ability to provide and mobilise climate finance, while also having much greater responsibility for global warming.

Yet the climate accords have not kept pace with the profound changes in the global economy and associated patterns of emissions over the past 30 years. There has been only one change to Annex II membership. Turkey was initially listed as an Annex II country but was formally removed from this list after COP7 in Marrakech in 2001, after it cited ‘special conditions’ that distinguished it from other industrialised nations (Talu and Kocaman, 2019). More recently, the climate accords have moved away from using the Annex country categories towards language such as ‘developed’ and ‘developing’ countries. However, these terms have not been defined, making it difficult to identify which additional countries should be providing and mobilising climate finance.

The starting point for this section is therefore the need for greater debate around which countries are providing, or should provide, climate finance. Many non-Annex II countries recognise the importance of international climate finance and have therefore provided and mobilised funds in the past. We recognise these countries’ leadership and solidarity on climate finance in Section 4.1. However, there are possibly other countries that now have greater ability to pay and more historic responsibility for climate change but that may not be stepping up on climate finance. In Section 4.2 we seek to catalyse debate around which additional countries should be providing and mobilising climate finance through exploring possible criteria and candidates.

4.1 Recognising additional climate finance contributors

Many non-Annex II countries already provide and mobilise international climate finance to support so-called developing countries to reduce their emissions or adapt to climate change. Under the UNFCCC, and subsequent decision texts, these

countries are not expected to provide climate finance. Their willingness to pay arguably reveals a domestic ethical position, particularly a sense of shared responsibility for promoting and enabling global climate action.

In Table 8, we identify non-Annex II countries that voluntarily provide climate finance through selected bilateral, regional or multilateral channels. This is not a comprehensive list. For example, we have focused only on contributions to the four largest multilateral climate funds, although there is a plethora of additional funds of smaller size (Climate Funds Update, 2022a).

Table 8 Non-Annex II countries providing and mobilising climate finance through selected channels.

Channel	Countries
Provision of climate finance through bilateral channels	According to OECD DAC: Czech Republic, Hungary, Poland, Slovakia, Slovenia, South Korea
	According to UNFCCC Biennial Reports: List above + Estonia, Latvia, Malta, Monaco
Provision of climate finance through regional institutions	EU budget: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.
Provision of climate finance through multilateral climate funds	Adaptation Fund: Monaco, Poland, Qatar
	Climate Investment Funds (CIF): South Korea
	Global Environment Facility (GEF) (7th replenishment cycle): Argentina, Bangladesh, Brazil, China, Côte d'Ivoire, Czech Republic, Egypt, India, Indonesia, Mexico, Nigeria, Pakistan, Russia, Slovakia, Slovenia, South Africa, South Korea, Turkey.
	Green Climate Fund (GCF): Bulgaria, Chile, Colombia, Cyprus, Czech Republic, Estonia, Hungary, Indonesia, Latvia, Liechtenstein, Lithuania, Malta, Mexico, Monaco, Mongolia, Panama, Peru, Poland, South Korea, Slovakia, Romania, Russia, Vietnam

Sources: OECD DAC (2022), UNFCCC (2022), GCF (2022a), World Bank (2022d), Climate Funds Update (2022b), CIF (2022).

To a certain extent, virtually all countries in the world provide some climate finance because they subscribe to one or more MDBs' shareholdings. While it is difficult to precisely attribute MDBs' climate finance inflows to their outflows, it is useful to illustrate the scale of non-Annex II countries' contributions in the context of discussions around possible additional climate finance contributors.

We used the climate finance provision reported by MDBs in their joint annual report on climate finance (AfDB et al., 2021) and attributed it according to capital subscriptions in the major global or regional MDBs in 2020. We looked at Annex II countries, plus the other five biggest emitters in absolute terms (China, India, Russia, Iran and Saudi Arabia) and in per capita terms (Qatar, Mongolia, Trinidad and Tobago, Brunei and Kuwait). Table 9 shows the amount of climate finance these 10 countries provided in 2020 and compares it against the volume that Annex II countries provided through multilateral channels. Appendix 3 provides details on the methodology.

Table 9 Climate finance provided through MDBs 2020

#	Annex II countries			Non-Annex II countries		
		Cumulative emissions (GtCO2, 1990–2020)	Climate finance (US$ billions, 2020)		Cumulative emissions (GtCO2, 1990–2020)	Climate finance (US$ billions, 2020)
1	Germany	26.9	1.89			
2	France	11.7	1.59			
3				China	195.0	1.35
4	Japan	38.0	1.23			
5	Italy	13.3	1.04			
6	UK	16.1	0.88			
7				India	43.9	0.85
8	Spain	8.9	0.79			
9	US	172.6	0.71			
10	Netherlands	5.2	0.65			
11				Russia	51.5	0.6
12				Saudi Arabia	12.9	0.53
13	Sweden	1.6	0.43			
14	Belgium	3.6	0.41			
15	Canada	16.9	0.37			
16	Austria	2.1	0.31			
17	Switzerland		0.24			
18	Denmark	1.6	0.23			
19	Norway	1.3	0.21			
20				Iran	14.4	0.2
21	Finland	1.8	0.19			
=22	Australia	11.4	0.16	Kuwait	2.1	0.16
24	Ireland	1.2	0.14			
25	Portugal	1.7	0.1			
26	Greece	2.8	0.08			
27				Qatar	1.8	0.033
28	Luxembourg	0.3	0.032			
29				Trinidad and Tobago	1.0	0.031
30				Brunei	0.01	0.030
31	New Zealand	1.0	0.02			
32				Mongolia	0.6	0.005
33	Iceland	0.1	0.002			

Note: All emissions are territorial emissions

Source: Authors' calculations using Friedlingstein et al. (2020), ADB (2020), IBRD (2020), IDA (2020), IFC (2020), MIGA (2020), IDB (2021), AfDB (2022), AIIB (2022), EBRD (2022), IsDB (2022).

Large non-Annex II emitters are already providing substantial climate finance, even if the purported objective of contributing to the MDBs may be developmental rather than to address climate change. As with Annex II countries, there is no strong relationship between cumulative emissions and climate finance provision through the MDBs, but we include cumulative emission data to give a sense of proportion between historical responsibility and financial effort.

4.2 Assessing potential, additional climate finance contributors

Our aim in this sub-section is to foster an evidence-based conversation around which additional countries should provide and mobilise climate finance.

We propose two possible metrics: per capita GNI and per capita cumulative territorial CO_2 emissions. In a similar fashion to the composite indicator we use to calculate each Annex II country's fair share of the climate finance goal, these metrics speak to different ways of understanding responsibility for climate finance. Per capita GNI reflects ability to pay. Per capita cumulative territorial emissions reflect historic responsibility for global warming. We do not suggest these two metrics are definitive but hope that they will prompt a conversation about what would be a fair and evidence-based way of determining additional climate finance contributors.

To assess ability to pay, we use data on per capita GNI in 2020 from the World Bank (2022c). To assess historical responsibility for climate change, we use data on per capita territorial CO_2 emissions between 1990 and 2018 from the World Bank (2022e).

For both metrics, we suggest three thresholds to evaluate when non-Annex II countries could be considered eligible to graduate into climate finance providers:

- when non-Annex II countries have higher per capita GNI or per capita cumulative territorial emissions than *three* Annex II countries
- when non-Annex II countries have higher per capita GNI or per capita cumulative territorial emissions than *five* Annex II countries
- when non-Annex II countries have higher per capita GNI and per capita cumulative territorial emissions than half of Annex II countries.

These thresholds provide increasingly higher bars for non-Annex II countries to clear to qualify as potential contributors.

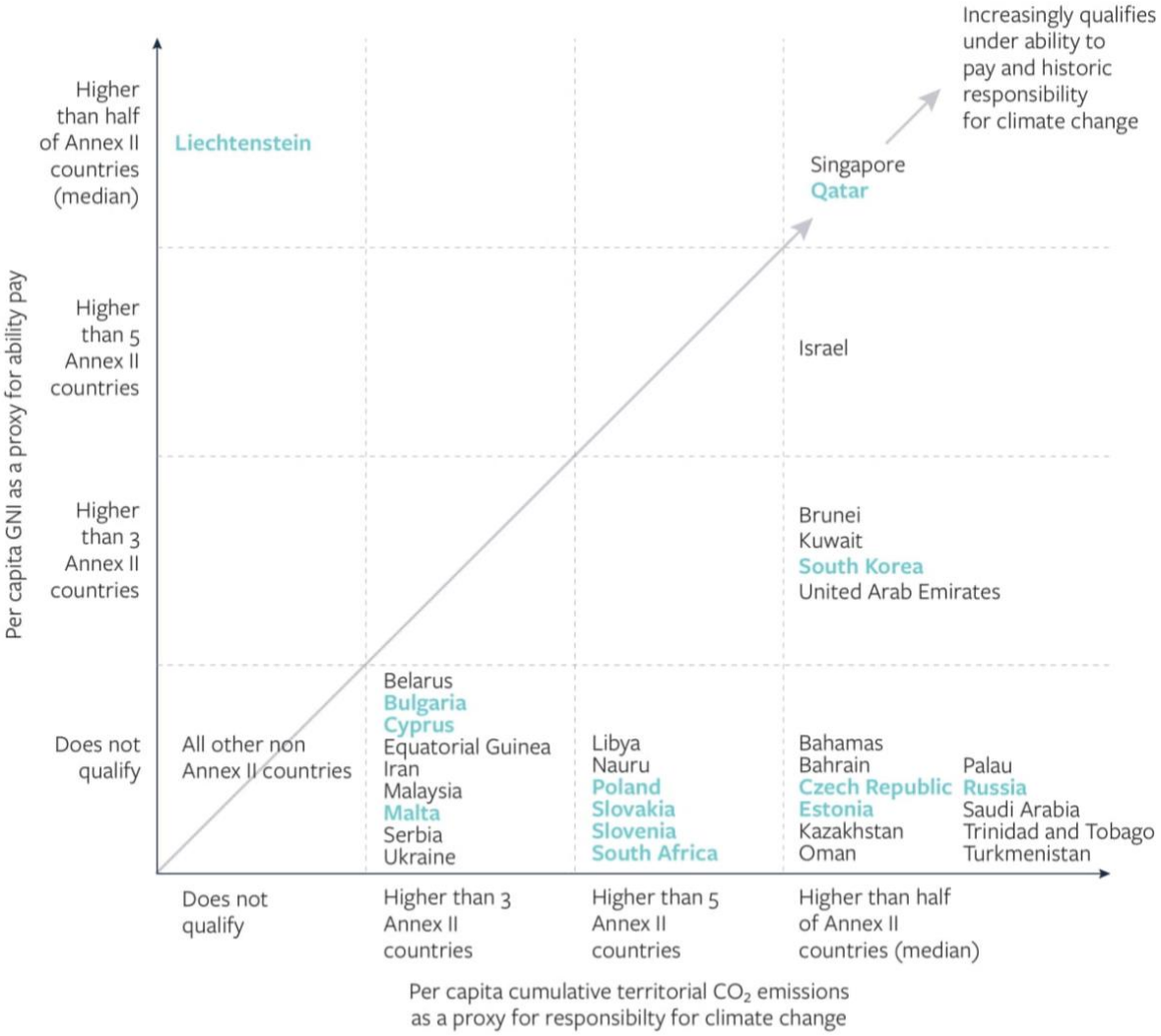
With respect to ability to pay, the three Annex II countries with the lowest per capita income are Greece ($17,572), Portugal ($21,844) and Spain ($27,215). The next two Annex II countries are Italy ($32,160) and France ($39,653) (World Bank, 2022c). The median per capita income threshold corresponds to Austria ($48,534).

With respect to historical responsibility for climate change, the three Annex II countries with the lowest per capita cumulative territorial emissions are Portugal (150tCO_2), Sweden (159tCO_2) and France (164tCO_2). The next two Annex II countries are Switzerland (168tCO_2) and Spain (184tCO_2). The median per capita CO_2 emission threshold corresponds to the UK (239 tCO_2).

Appendix 4 presents lists of countries ranked according to per capita GNI and per capita cumulative emissions.

The results are presented in Figure 6.

Figure 6 Potential additional climate finance contributors



Countries in blue provide climate finance either bilaterally or through contributions to the Adaptation Fund, Climate Investment Funds, the European Union budget, the Green Climate Fund or the Global Environment Facility. See Table 7 for more details.
Note: Axis should be read from least to highest threshold to clear to be qualified as a potential provider of climate finance. The last threshold 'above half of Annex II countries' corresponds to the median of Annex II countries' CO_2 and GNI per capita.

If we focus on ability to pay, we find that three countries – Qatar, Singapore and Liechtenstein – have higher incomes than half of Annex II countries and therefore clear our highest threshold for this metric. Thereafter, Israel has per capita income higher than that of five Annex II countries, whereas four countries – Brunei, Kuwait, South Korea and United Arab Emirates – have higher per capita incomes than at least three Annex II countries. Most of these nations do not currently provide international climate finance. The notable and welcome exceptions are Lichtenstein,

which provided CHF100,000 to the GCF in 2022 (GCF, 2022b); Qatar, which pledged $500,000 to the Adaptation Fund in 2021 and thereby became the first non-Annex II country to support this fund (Adaptation Fund, 2021); and South Korea, which provides substantial climate finance through both bilateral and multilateral channels.

We find a much longer list of countries should be considered eligible for climate finance if we focus on historic responsibility for climate change. Eighteen countries have higher cumulative territorial emissions per person than do half of Annex II countries over the past three decades. A further six have higher territorial emissions than at least five Annex II countries and another nine have emitted more than have three Annex II countries over the same period. Eight of these are members of the EU and provide climate finance through its budget; a number additionally contribute bilaterally and through multilateral climate funds. A further five countries also voluntarily provide climate finance: Lichtenstein, Qatar and South Korea, as discussed in the previous paragraph, plus Russia and South Africa, which have provided climate finance through multilateral climate funds.

A handful of countries would be eligible to provide climate finance using our metrics for both ability to pay and historic responsibility. Qatar and Singapore are the most obvious candidates, given that they have both per capita income and per capita cumulative territorial emissions that are higher than is the case for half of Annex II countries. The next standout candidate is Israel, which has per capita incomes that exceed at those of least five Annex II countries and per capita cumulative territorial emissions above those of half of Annex II countries. Finally, Brunei, Kuwait, South Korea and United Arab Emirates exceed at least three Annex II countries on both metrics. Given both their ability to pay and their historic responsibility for climate change, there is a strong case that these seven countries should now be contributing climate finance.

Certain types of countries are disproportionately represented in Figure 6. First, the list features many Small Island Developing States (SIDS), such as the Bahamas, Nauru, Palau, Singapore, and Trinidad and Tobago. These countries often have a high per capita emissions because their electricity grids depend on inefficient, carbon-intensive technologies (such as diesel generators) as small populations and economies preclude large-scale generation options. Some SIDS therefore have outsized responsibility for climate change relative to their population but are also highly vulnerable to its impacts as they are often low-lying islands that are particularly exposed to climate hazards such as coastal flooding, erosion, storm surge and sea-level rise. It is also worth noting that Singapore is the only SIDS that qualifies on per capita income – that is, with respect to its ability to provide climate finance.

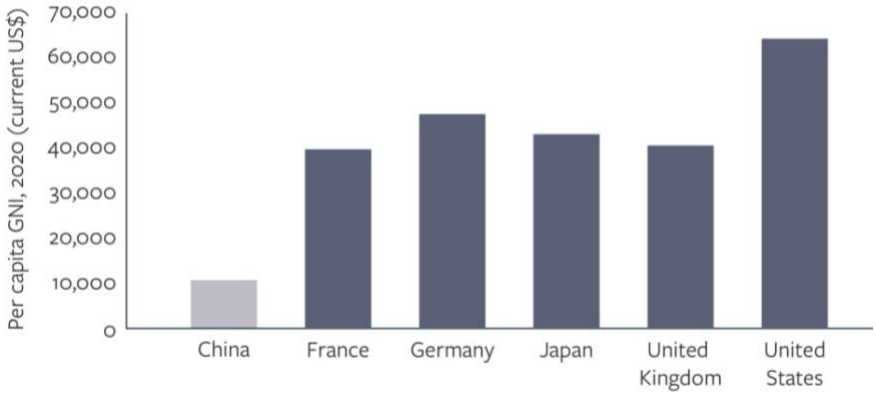
Second, the list features many significant past and current oil exporters: Bahrain, Brunei, Equatorial Guinea, Kazakhstan, Kuwait, Libya, Malaysia, Qatar, Saudi Arabia, Trinidad and Tobago, and United Arab Emirates. Such countries are likely to have carbon-intensive economies because access to cheap fossil fuels enables inefficient energy consumption. Some of these countries also have high income per capita, having used oil revenues to finance human and economic development. These countries therefore have an outsized responsibility for climate change and many also have the ability to pay using our criteria – but the climate accords

recognise that they are also vulnerable to the economic impacts of a low-carbon transition.

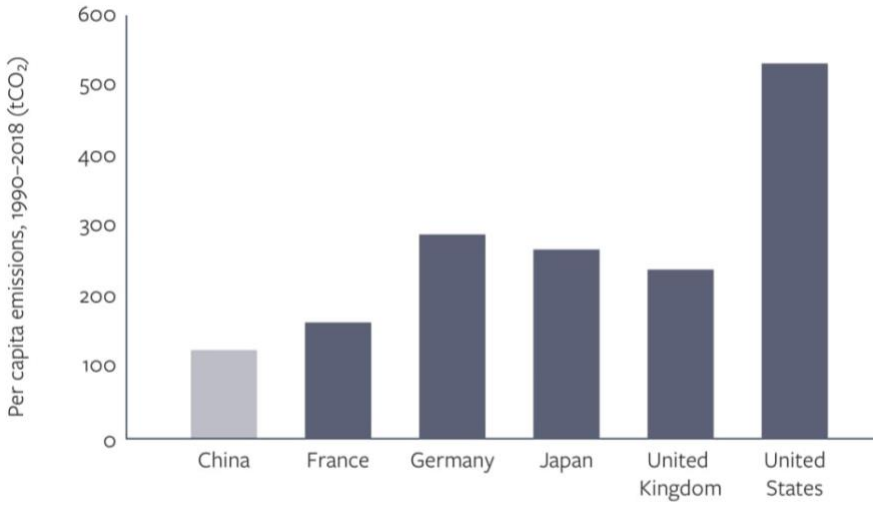
Third, the list features many former economies in transition (Annex I countries), including Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia and Slovenia. These countries all qualify primarily under historic responsibility for climate finance rather than their ability to pay. All now provide climate finance.

It is worth noting one of the most notable absences on this list of countries that should arguably be providing and mobilising climate finance: China. As China is the country with the world's largest population and the highest annual emissions, there is global attention to its climate policies.

Figure 7 Per capita incomes and cumulative territorial emissions of the five largest Annex II countries compared with China



Source: World Bank, 2022c



Source: World Bank, 2022e

However, both per capita incomes and per capita cumulative territorial emissions in China fall below those of any Annex II country (Figure 7).

Our proposed criteria therefore suggest that any negotiations about an expanded contributor base should not initially be focused on China.

Our analysis makes it clear that blanket measures and criteria may not be the most appropriate or equitable way to determine which additional countries should be providing climate finance. However, it also underscores that the contributor base is already evolving, with several non-Annex II countries already voluntarily providing climate finance. This development justifies greater attention to those countries that also have high incomes and CO_2 emissions per person, and whether these countries too should be providing climate finance.

5 Conclusion

In 2009, developed countries committed to mobilise $100 billion of climate finance in 2020. In subsequent climate negotiations, they further agreed to continue mobilising $100 billion a year to 2025, at which point a new collective quantified climate finance goal would be agreed. However, developed nations fell short of this target in 2020 and 2021, and look likely to do so again in 2022 (Wilkinson and Flasbarth, 2021).

This paper provides new evidence to help explain the climate finance gap between 2020 and 2025.

Using the methodology we developed in the lead-up to COP26 (Colenbrander et al., 2021), we have apportioned responsibility for the $100 billion goal among Annex II countries based on their GNI, cumulative territorial emissions (1990–2020) and population size. We have found that only seven of these countries provided their fair share of climate finance in 2020: Sweden, France, Norway, Japan, the Netherlands, Germany and Denmark. Looking forward to 2025, only four countries have made climate finance commitments commensurate with their fair share: Norway, Sweden, France and Japan. Germany and Denmark come very close, and the Netherlands has made generous near-term commitments. In short, the same seven countries will continue doing the heavy lifting on international climate finance.

Responsibility for the vast majority of the climate finance gap can be laid at the feet of the US, which should have provided billions more in 2020. The US is the worst performer in relative as well as absolute terms, providing just 5% of its fair share. Other notable laggards in both absolute and relative terms include Australia, Canada, Italy and Spain. Looking forward to 2025, the pledges made by Australia, Canada and the US continue to fall far short of their fair share. By comparison, Italy and especially Spain have shown a welcome increase in climate finance ambition.

We recognise that the quality of climate finance is also important. We therefore have offered four metrics to assess the quality of developed countries' climate finance provision: levels of concessionality, the balance between mitigation and adaptation finance, the balance between bilateral and multilateral finance, and the risk of double-counting ODA and climate finance. France and Japan – which both provided their fair share in 2020 – stood out for the relatively poor quality of their climate finance. A very high share of their resources is provided bilaterally and as loans, with only a small fraction going to climate change adaptation.

Climate finance is just one part of developed countries' international public finance portfolio. It was always intended to be new and additional to ODA, which serves other purposes. We therefore undertook an additional analysis to determine which developed countries were providing a fair level of international public finance, benchmarking their 2019 provision of ODA against 0.7% of GNI and their 2019

provision of climate finance against their fair share of the $100 billion goal (as determined by our own methodology).

Once again, we found that the US is the most significant laggard in both absolute and relative terms. The country provides just 17% of its fair share of international public finance, accounting for $160 billion of the global shortfall. Most of the remaining gap can be attributed to the same countries that fall significantly short on international climate finance, including large economies such as Australia, Canada, Italy and Spain. However, Japan – which provides its fair share of climate finance – is near the bottom of the league table in terms of its broader envelope of international public finance.

These analyses all focused on Annex II countries, a list defined in 1992. Given the profound changes in levels of economic development and energy use since then, we asked which additional countries should be providing and mobilising international climate finance. Indeed, we noted that many countries were already voluntarily providing climate finance. We proposed two metrics for determining whether countries should provide climate finance: per capita GNI and per capita cumulative territorial emissions, benchmarked against Annex II countries. These metrics are intended to capture countries' ability to provide and mobilise climate finance, and their historic responsibility for climate change.

Benchmarking possible climate finance contributors against the Annex II countries, we have generated a list of countries that should arguably consider providing and mobilising international climate finance. The list is dominated by SIDS, oil producers and former economies in transition. Many of these countries are highly vulnerable to either the physical or the transition risks associated with climate change. Strikingly, China does not qualify as a potential climate finance contributor using either of our criteria. Our findings underscore the need for a nuanced dialogue around determining whether a country should be providing climate finance, informed by the principle of common but differentiated responsibilities and respective capabilities. We suggest that initial conversations about expanding the contributor base focus on countries with both the ability to pay and historic responsibility for climate change, such as Israel, Qatar and Singapore.

The methods that we have used to assess whether individual countries should provide and mobilise climate finance, and how much, are all based on normative but transparent choices, which we hope will inform and catalyse public debate. We further hope that this new evidence base will be able to support advocacy and diplomatic efforts to ratchet up ambition, particularly among countries that are not currently providing a fair share of climate finance. Finally, we hope that the ideas put forward in this paper will be able to support articulation of the new climate finance goal in order to improve both the quantity and the quality of climate finance going forward.

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Appendix 1 Metrics for apportioning responsibility for climate finance

Table 10 Metrics for apportioning responsibility for climate finance

	Gross National Income (2020)		Cumulative CO_2 emissions (1990-2020)		Population		Fair share of the quantitative climate finance goal based on a composite index (%)
	US$ trillions	Share (%)	$GtCO_2$	Share (%)	Millions	Share (%)	
Australia	1.301	2.75%	11.4	3.28%	25.69	2.70%	2.93%
Austria	0.433	0.92%	2.1	0.62%	8.92	0.94%	0.82%
Belgium	0.527	1.12%	3.6	1.05%	11.54	1.21%	1.13%
Canada	1.627	3.44%	16.9	4.93%	38.04	4.00%	4.13%
Denmark	0.368	0.78%	1.6	0.47%	5.83	0.61%	0.62%
Finland	0.274	0.58%	1.8	0.52%	5.53	0.58%	0.56%
France	2.672	5.65%	11.7	3.51%	67.38	7.08%	5.39%
Germany	3.953	8.36%	26.9	7.88%	83.16	8.74%	8.33%
Greece	0.188	0.40%	2.8	0.84%	10.7	1.12%	0.78%
Iceland	0.021	0.04%	0.1	0.03%	0.37	0.04%	0.04%
Ireland	0.324	0.69%	1.2	0.36%	4.99	0.52%	0.52%
Italy	1.912	4.04%	13.3	3.89%	59.45	6.25%	4.73%
Japan	5.348	11.31%	38	11.09%	125.84	13.23%	11.89%
Luxembourg	0.052	0.11%	0.3	0.09%	0.63	0.07%	0.09%
Netherlands	0.898	1.90%	5.2	1.53%	17.44	1.83%	1.76%
New Zealand	0.208	0.44%	1	0.30%	5.08	0.53%	0.43%
Norway	0.379	0.80%	1.3	0.39%	5.38	0.57%	0.58%
Portugal	0.225	0.48%	1.7	0.51%	10.3	1.08%	0.69%
Spain	1.289	2.73%	8.9	2.58%	47.36	4.98%	3.43%
Sweden	0.558	1.18%	1.6	0.47%	10.35	1.09%	0.91%
Switzerland	0.725	1.53%	1.3	0.39%	8.64	0.91%	0.94%
UK	2.723	5.76%	16.1	4.72%	67.22	7.07%	5.84%
US	21.287	45.01%	172.6	50.57%	331.5	34.85%	43.48%
Total developed countries	$47,292 trillion	100%	341 $GtCO_2$	100%	1,006 million	100%	100%

Source: Authors' calculations based on Friedlingstein et al. (2020); World Bank (2022a and b).

Appendix 2 Apportioning the EU's climate finance contribution

The EU has been a significant provider of climate finance over the past decade. Looking forward, it has pledged that its climate finance contribution will exceed €28 billion over the period 2021–2027, excluding climate finance provided and mobilised by the European Investment Bank and EU Member States. We have assumed these funds will be disbursed at a constant rate over the seven-year period.

We attribute climate finance flows from the EU to its member Annex II countries in proportion to their contribution to the EU budget in 2019 (EU, 2019).

Table 11 Apportioning the EU's climate finance contribution

	Share of EU budget (%)	Annual attribution of EU climate finance over the 2019–2025 period (US$ millions)
Austria	2.60%	122.74
Belgium	4.60%	219.62
Denmark	2.10%	100.36
Finland	1.70%	78.06
France	17.10%	806.64
Germany	23.00%	1,088.78
Greece	1.30%	62.34
Ireland	1.90%	88.49
Italy	12.80%	607.26
Luxembourg	0.30%	13.46
Netherlands	5.80%	275.17
Portugal	1.40%	68.36
Spain	9.20%	434.59
Sweden	2.90%	137.79

Source: Authors' calculations based on EU, 2019.

Appendix 3 Calculations of climate finance through MDBs

To calculate the potential climate finance contribution of the biggest non-Annex II emitters, we identified first the top five absolute emitters and the top five per capita emitters in 2020 using data from Friedlingstein et al. (2022). Table 12 shows the top 10 absolute and top 10 per capita emitters and highlights the top five non-Annex II countries in their respective categories.

Table 12 Ten largest emitters in total (left) and per capita (right), 2020

	Top 10 absolute emitters (2020)	$MtCO_2$		Top 10 per capita emitters (2020)	tCO_2
1	China	10,668	1	Qatar	37
2	US	4713	2	New Caledonia	30
3	India	2442	3	Mongolia	27
4	Russia	1577	4	Trinidad and Tobago	25
5	Japan	1031	5	Brunei	23
6	Iran	745	6	Kuwait	21
7	Germany	644	7	Bahrain	21
8	Saudi Arabia	626	8	Curacao	20
9	South Korea	598	9	Saudi Arabia	18
10	Indonesia	590	10	Kazakhstan	16

Note: Annex II countries are highlighted in yellow. We excluded New Caledonia as it is a French territory.
Source: Friedlingstein et al. (2022).

We then used the share of capital subscriptions that each of these countries made in the major MDBs (reported from annual reports and financial statements) to estimate their share of each MDB's climate finance outflows in 2020. Data on MDBs' climate finance outflows were taken from the 2020 Joint Report on Multilateral Development Banks' Climate Finance (AfDB et al., 2021). Table 13 shows these calculations.

Table 13 MDB capital subscriptions of selected non-Annex II countries and associated attribution of climate finance outflows, 2020

MDB Capital subscription (%)								
Top 5 emitters	**WBG**	**AIIB**	**AfDB**	**ADB**	**EBRD**	**IDGB**	**IsDB**	
China	2.76%	30.72%	1.20%	6.43%	0.10%	0.07%		
India	1.81%	8.63%	0.29%	6.32%	0.03%			
Russia	1.67%	6.74%			4.04%			
Iran	0.74%	1.63%					8.25%	
Saudi Arabia	1.95%	2.62%	0.20%				23.50%	
Top 5 per capita emitters	**WBG**	**AIIB**	**AfDB**	**ADB**	**EBRD**	**IDGB**	**IsDB**	
Qatar	0.03%	0.62%					7.18%	
Mongolia	0.01%	0.04%		0.02%	0.01%			
Trinidad and Tobago	0.08%					0.43%		
Brunei	0.05%	0.05%		0.35%			0.25%	
Kuwait	0.61%		0.45%				6.92%	
MDB climate finance outflows (US$ million)								
	WBG	AIIB	AfDB	ADB	EBRD	IDBG	IsDB	
Climate finance outflows	22,016	1,199	2,095	5,326	3,859	3,431	261	
Climate finance contributions (US$ milllion)								
Top 5 emitters	**WBG**	**AIIB**	**AfDB**	**ADB**	**EBRD**	**IDBG**	**IsDB**	**Total**
China	608	368	25	342	4	3		1,350
India	398	103	6	336	1			846
Russia	367	81			156			603
Iran	163	20					22	204
Saudi Arabia	429	31	4				61	526
Top 5 per capita emitters	**WBG**	**AIIB**	**AfDB**	**ADB**	**EBRD**	**IDBG**	**IsDB**	
Qatar	7	7					19	33
Mongolia	3	1		1	0			5
Trinidad and Tobago	17	-				15		32
Brunei	11	1		19			1	31
Kuwait	135	-	9				18	162

Source: ADB (2020), IBRD 2020), IDA (2020), IFC (2020), MIGA (2020), IDB (2021), AfDB (2022), AIIB (2022), EBRD (2022), IsDB (2022).

To estimate the overall World Bank Group's share of capital subscription, we added the capital subscription of each country into the International Bank for Reconstruction and Development, the International Development Association, the International Finance Corporation and the Multilateral Investment Guarantee Agency and calculated their share of the World Bank Group's capitalisation.

Table 14 Estimation of the World Bank Group's overall share of capital subscription

MDB capitalisation (US$ million)						
	IBRD	**IDA**	**IFC**	**MIGA**	**Total**	
MDB capitalisation	288,002	267,529	19,567	1,920	577,017	
Capital subscription 2020 (US$ million)						
Top 5 emitters 2020	**IBRD**	**IDA**	**IFC**	**MIGA**	**Total**	**% of WBG capital**
China	14,311	1,098	471	60	15,940	2.80%
India	9,171	424	785	58	10,438	1.80%
Russia	8,023	749	784	60	9,616	1.70%
Iran	4,218	24	11	18	4,271	0.70%
Saudi Arabia	8,023	2,766	389	60	11,237	1.90%
Top 5 per capita emitters 2020	**IBRD**	**IDA**	**IFC**	**MIGA**	**Total**	
Qatar	168		13	3	183	0.03%
Mongolia	82		1	1	84	0.01%
Trinidad and Tobago	407	2	31	4	445	0.10%
Brunei	286		-	-	286	0.05%
Kuwait	2,344	1,055	115	18	3,532	0.60%

Source: ADB (2020), IBRD (2020), IDA (2020), IFC (2020), MIGA (2020).

Appendix 4 Metrics for countries' eligibility to provide climate finance

Table 15 Countries ranked by per capita GNI, 2020

Country	Per capita GNI (current US$, 2020)	Country	Per capita GNI (current US$, 2020)
Liechtenstein	184,978	UK	40,514
Bermuda	110,200	France	39,653
Switzerland	83,979	United Arab Emirates	36,238
Luxembourg	82,174	Kuwait	36,171
Norway	70,397	Italy	32,160
Ireland	65,003	South Korea	31,841
US	64,213	Brunei	28,270
Denmark	63,125	Spain	27,215
Iceland	57,507	Malta	25,866
Sweden	53,891	Slovenia	25,296
Singapore	52,488	The Bahamas	23,840
Netherlands	51,485	Estonia	23,136
Australia	50,624	Czech Rebublic	22,135
Finland	49,617	Portugal	21,844
Qatar	49,065	Saudi Arabia	20,554
Austria	48,534	Lithuania	19,647
Germany	47,540	Cyprus	19,173
Belgium	45,684	Slovakia	19,050
Israel	43,727	Bahrain	18,965
Canada	42,775	St. Kitts and Nevis	18,824
Japan	42,498	Latvia	17,732
New Zealand	40,826	Greece	17,572

Note: GNI data for Estonia, Japan, Kuwait, New Zealand, Syria and Turks and Caicos is for 2019. Cuba, Liechtenstein and Yemen GNI data is for 2018. Venezuela is for 2014.
Source: World Bank (2022a; 2022b).

Table 16 Countries ranked by per capita territorial cumulative CO_2 emissions, 1990–2018

Country	Cumulative territorial emissions in t of CO_2 per capita 1990–2018
Qatar	1,032.90
United Arab Emirates	731.25
Bahrain	653.6
Luxembourg	632.71
Kuwait	615.38
US	530.01
Australia	488.49
Canada	462.1
Brunei	448.52
Saudi Arabia	395.31
Trinidad and Tobago	385.82
Estonia	378.39
Oman	342.26
Kazakhstan	339.14
Czech Republic	331.49
Palau	328.79
Russia	322.41
Finland	310.09
Belgium	295.78
Turkmenistan	290.78
Netherlands	290.35
Germany	290.25
South Korea	285.31
Denmark	275.13
Ireland	274.84
Singapore	269.57
Japan	268.37
Israel	245.42
UK	239.04
Poland	238.81
Austria	232.42
Libya	229.88
Greece	227.83
Norway	223.18
Nauru	215.57
The Bahamas	213.88
South Africa	211.88
New Zealand	211.39
Iceland	208.07
Slovakia	207.04
Italy	202.76
Cyprus	199.88
Ukraine	197.19
Serbia	191.43
Spain	183.87
Belarus	182.66
Bulgaria	181.14
Liechtenstein	173.86
Malta	170.07
Equatorial Guinea	169.21
Malaysia	169.2
Switzerland	168.06
France	163.95
Venezuela	162.54
Sweden	159.15
Seychelles	158.82
Hungary	152.24
Antigua and Barbuda	152.19
Barbados	151.19
Portugal	149.67

Note: Annex II countries are highlighted in yellow. Only countries with per capita cumulative territorial emissions higher than the lowest Annex II emitter (Portugal) are included on this list.
Source: World Bank (2022e).

Appendix 5 Accessible tables

Table 1 Scorecard of progress towards Annex II countries' fair share of the $100 billion climate finance goal (2017–2020).

		2017–2018 average		2019		2020	
	Fair share	Climate finance provided	Progress towards providing fair share	Climate finance provided	Progress towards providing fair share	Climate finance provided	Progress towards providing fair share
	US$ billions	US$ billions	%	US$ billions	%	US$ billions	%
Sweden	0.91	1.372	150%	1.15	126%	1.47	161%
France	5.39	4.854	90%	6.49	120%	8.66	161%
Norway	0.58	1.082	186%	0.82	140%	0.9	154%
Japan	11.89	9.372	79%	7.52	63%	16.09	135%
Netherlands	1.76	1.23	70%	1.93	110%	2.14	122%
Germany	8.33	9.236	111%	10.05	121%	9.91	119%
Denmark	0.62	0.452	73%	0.78	126%	0.62	101%
Switzerland	0.94	0.601	64%	0.65	69%	0.68	72%
Finland	0.56	0.281	50%	0.38	68%	0.33	60%
UK	5.84	2.812	48%	2.9	50%	3.2	55%
Austria	0.82	0.388	47%	0.58	70%	0.44	53%
Belgium	1.13	0.611	54%	0.74	65%	0.59	52%
Ireland	0.52	0.199	38%	0.25	47%	0.19	37%
Iceland	0.04	0.013	35%	0.02	46%	0.01	37%
New Zealand	0.43	0.071	17%	0.13	31%	0.15	36%
Luxembourg	0.09	0.051	57%	0.05	61%	0.03	31%
Italy	4.73	1.195	25%	1.27	27%	1.43	30%
Australia	2.93	0.477	16%	0.64	22%	0.68	23%
Spain	3.43	0.787	23%	0.89	26%	0.64	19%
Canada	4.13	0.697	17%	0.91	22%	0.74	18%
Portugal	0.69	0.091	13%	0.11	15%	0.07	10%
Greece	0.78	0.072	9%	0.08	10%	0.06	8%
US	43.48	1.856	4%	2.14	5%	2.3	5%

Note: Countries in dark green are providing their fair share of climate finance. Colours are thereafter in quartile increments. Light green, paying 75–100% of their fair share; yellow, paying 50–75% of their fair share; orange, paying 25–50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2020 commitments. Data for 2017–2018 was provided as average to be consistent with the reporting in our first fair share report (see Colenbrander et al., 2021)

Source: Authors' calculations using data from World Bank (2022a, 2022b) and Friedlingstein et al. (2022).

Table 2 Scorecard of progress towards Annex II countries' fair share of the $100 billion climate finance goal (2022, 2025).

		2022		2025	
	Fair share based on a composite index, US$ billions	**Climate finance commitments, US$ billions**	**Progress towards providing a fair share of climate finance, %**	**Climate finance commitments, US$ billions**	**Progress towards providing a fair share of climate finance, %**
Norway	0.58	1.09	187%	1.7	292%
Sweden *	0.91	Commitment does not address FY 21/22		1.89	206%
France	5.39	7.9	147%	7.9	147%
Japan	11.89	14	118%	14	118%
Netherlands	1.76	1.81	103%	Commitment does not address FY 24/25	
Germany	8.33	5.82	70%	8.18	98%
Denmark	0.62	0.6	97%	0.6	97%
Ireland	0.52	0.2	38%	0.35	68%
UK	5.84	3.7	63%	3.7	63%
Spain	3.43	1.71	50%	2.03	59%
New Zealand	0.43	0.23	54%	0.23	54%
Switzerland	0.94	Commitment does not address FY 21/22		0.46	49%
Finland	0.56	0.26	46%	0.26	46%
Italy	4.73	2.01	42%	2.01	42%
Belgium	1.13	0.35	31%	0.35	31%
US	43.48	Commitment does not address FY 21/22		11.4	26%
Canada	4.13	0.85	20%	0.85	20%
Australia	2.93	0.3	10%	0.3	10%
Luxembourg *	0.09	Commitment does not address FY 21/22		Commitment does not address FY 24/25	
Austria *	0.82				
Portugal *	0.69				
Greece *	0.78				
Iceland	0.04				

Note: Countries in dark green have committed to provide their fair share of climate finance. Colours are thereafter in quartile increments. Light green, paying 75–100% of their fair share; yellow, paying 50–75% of their fair share; orange, paying 25–50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2025 commitments.

* No new commitment outside of EU budget earmarked for climate finance.

Source: Authors' calculations using data from COP26 Presidency (2021).

Table 3 Scorecard of the quality of international climate finance against different metrics.

	Grant-equivalent of bilateral climate finance as share of reported value (2017-18)	Attribution of ODA with a 'significant' climate component (2017-18)	Share of climate finance disbursed through multilateral channels (2019)	Share of climate finance allocated to adaptation (2018)
Australia	100%	30%	25%	37%
Austria	Not analysed	50%	54%	18%
Belgium	Not analysed	Did not report	55%	52%
Canada	69%	30%	40%	21%
Denmark	100%	50%	29%	29%
Finland	Not analysed	Project-level	49%	30%
France	27%	Did not report	25%	19%
Germany	49%	50%	19%	20%
Greece	Not analysed	40%	100%	42%
Iceland	Not analysed	100%	9%	52%
Ireland	Not analysed	Did not report	58%	42%
Italy	Not analysed	40%	82%	29%
Japan	52%	Project level: 0% or 100%	16%	8%
Luxembourg	Not analysed	Did not report	60%	32%
Netherlands	100%	40%	34%	41%
New Zealand	Not analysed	Did not report	19%	41%
Norway	Not analysed	40%	26%	8%
Portugal	Not analysed	N/A	94%	43%
Spain	41%	50%	89%	19%
Sweden	100%	40%	37%	41%
Switzerland	Not analysed	40%	36%	41%
UK	99%	Project-level	30%	38%
US	73%	Did not report	33%	14%

Notes and sources:

Grant equivalence of climate finance: Colours are in quartile increments – countries in dark green provide the grant equivalence of 75–100% of their reported climate finance contributions; yellow provide 50–75%; orange provide 25–50%; red provide less than 25%. Data source: Oxfam (2020).

Attribution of climate-related ODA: Countries in dark green claimed 30% of significantly climate-related ODA as climate finance; light green, 40%; yellow, 50%. Countries in red either did not report or claimed up to 100% of significantly climate-related ODA as climate finance. Source: OECD (2020).

Disbursal of climate finance through multilateral channels: Colours are in quartile increments: countries in dark green channel 75–100% of their climate finance through multilateral channels; light green, 50–75%; yellow, 25–50%; orange, less than 25% through multilateral sources. We have not used red as the provision of resources through bilateral channels may not be preferred by developing countries (more below) but is not inherently an inferior choice. It will always depend on the calibre of the agency in question. Data source: Authors' calculations using OECD (2022) data.

Balance between adaptation and mitigation: Countries in dark green allocate 40–60% of their climate finance exclusively to adaptation; light green, 30–40%; yellow, 20–30%, orange, 10–20%. Countries in red allocate less than 10% of their climate finance to adaptation. Data source: Bos and Thwaites (2021).

Table 5 Scorecard of progress towards countries' fair share of international public finance, 2019

	Fair share of international public finance (US$ billions)	International public finance provided (US$ billions)	Progress towards fair share of international public finance (%)
Norway	3.16	4.3	136%
Luxembourg	0.43	0.51	119%
Sweden	4.95	5.68	115%
Denmark	3.08	2.89	94%
Netherlands	8.95	6.19	69%
UK	28.65	19.36	68%
Germany	41.75	27.68	66%
Switzerland	5.11	3.1	61%
Finland	2.51	1.41	56%
Belgium	5.54	2.93	53%
France	28.99	14.68	51%
Ireland	2.86	1.28	45%
Austria	4.42	1.64	37%
Iceland	0.21	0.06	29%
New Zealand	1.98	0.55	28%
Italy	23.43	6.38	27%
Canada	16.94	4.53	27%
Spain	17.22	4.14	24%
Australia	12.09	2.89	24%
Japan	50.83	11.72	23%
Greece	3.04	0.58	19%
Portugal	3.23	0.61	19%
US	195.44	32.98	17%
Total	464.78	156.08	34%

Source: Authors' calculations using OECD DAC (2022).

Table 7 Scorecard of progress towards countries' fair share of international public finance, 2019 – sensitivity analysis

				Applying the results of the UNFCCC BR sensitivity analysis	
	Fair share of international public finance	International public finance provided – OECD DAC	Progress towards fair share of international public finance	International public finance provided – OECD DAC 2019 data plus UNFCCC BR / OECD DAC ration in 2018	Progress towards fair share of international public finance
	(US$ billions)	(US$ billions)	(%)	(US$ billions)	(%)
Norway	3.2	4.3	136%	4.1	128%
Sweden	5.0	5.7	115%	5.1	102%
Luxembourg	0.5	0.5	114%	0.6	136%
Denmark	3.1	2.9	94%	2.7	87%
Netherlands	9.0	6.2	69%	5.7	63%
UK	28.7	19.4	67%	18.6	65%
Germany	41.7	27.7	66%	26.5	64%
Switzerland	5.1	3.1	60%	2.9	57%
Finland	2.5	1.4	56%	1.3	50%
Belgium	5.5	2.9	53%	2.7	48%
France	29.0	14.7	51%	20.8	72%
Ireland	2.9	1.3	44%	1.3	45%
Austria	4.4	1.6	37%	1.6	36%
Iceland	0.2	0.1	31%	0.1	34%
New Zealand	2.0	0.6	28%	0.5	25%
Italy	23.4	6.4	27%	6.6	28%
Canada	17.0	4.5	27%	4.1	24%
Spain	17.2	4.1	24%	4.7	27%
Australia	12.1	2.9	24%	2.6	22%
Japan	50.7	11.7	23%	12.0	24%
Greece	3.0	0.6	19%	0.6	20%
Portugal	3.2	0.6	19%	0.6	19%
US	195.4	33.0	17%	33.2	17%

Source: Authors' calculations using OECD (2022) and UNFCCC BRs.