THE CLIMATE EQUITY REFERENCE PROJECT APPROACH TO EQUITY BENCHMARKING

The *Climate Equity Reference Project* (CERP) approach to equity benchmarking is built upon the core equity principles of the UNFCCC. These principles have been nicely summarized[1] as follows:

1. **A precautionary approach to adequacy**, referring to the collective obligations of countries to undertake and support urgent and adequate global action to prevent dangerous impacts of climate change and provide effective adaptation to unavoidable impacts, without which there can be no justice. (Article 3.3: "The Parties should take precautionary measures to anticipate, prevent and minimize the causes of climate change and mitigate its adverse effects.")

2. **Common but differentiated responsibility and respective capability (CBDR+RC)**, in which obligations to take action and provide support, and rights to receive such support, are accepted as functions of both historical and current emissions, and of capability to act. (Article 3.1: "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.")

3. **The right to sustainable development**, which we understand as the right of all countries to not just lift their people out of poverty, but also to provide their citizens with sustainable and universalizable living standards. By sustainable we mean "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." By universalizable, we mean living standards that could be made available to the citizens of all countries. (Article 3.4: "The Parties have a right to, and should, promote sustainable development.")

The *Climate Equity Reference Calculator*[2] models the CERP approach to equity benchmarking. It allows the user to select a global mitigation pathway of a specified level of ambition, thereby determining the size of the global mitigation need – the mitigation gap – that is then taken to be fairly shared among countries according to the UNFCCC principles of equity.[3] It also allows the user to estimate the global adaptation need, which is (for the moment) taken to include the loss & damage need.

More precisely, a *Calculator* user selects equity-related settings relating to responsibility and capability, and other key parameters. These settings, taken together, define an "equity benchmark". This benchmark is then used (see the discussion below) to calculate national "fair share" of the global climate-related effort. Again, this effort includes not only mitigation (though most all of our attention is necessarily focused on mitigation) but also adaptation and loss & damage.

The obvious reality is that people have different conceptions of how "fair shares" should be defined. It is precisely for this reason that a transparent framework for articulating and calculating fair shares, in terms of the stated UNFCCC principles and in a comparable manner, can be tremendously illuminating and helpful. It can increase our common understanding of what climate fairness actually means from different perspectives. It can clarify the kinds of international climate

1 This summary was done by the Equity/Effort-sharing Working Group of the Climate Action Network. See *The Core Convention-based Equity Principles*, a CAN position paper of September 2013. This discussion paper contains much more information of how the Working Group has defined the Convention's core equity principles, and what kinds of indicators it sees as appropriate to their measurement. http://climatenetwork.org/sites/default/files/can_convention-based_indicators_sept2013.pdf

2 https://calculator.climateequityreference.org/

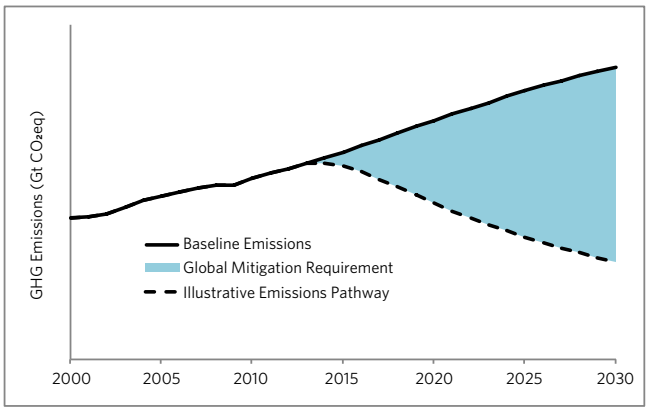
3 This mitigation gap is defined relative to a global business-as-usual emissions path. Effort-sharing frameworks (unlike resource-sharing frameworks that divide up, say, a fixed emissions budget) require emissions baselines, because an "effort" must be measured against a business-as-usual pathway that reflects "no effort" or "no policies." In the CERP framework, calculations are based on a set of national no-effort baselines that rely as heavily as possible on existing, widely-known and well-vetted national projections for all key indicators (i.e. population projections, GDP projections, carbon intensity projections) updated for recent history. For more on this, see *Definition, Sourcing, and Updating of the Emissions Baselines* (https://climateequityreference.org/calculator-information/gdp-and-emissions-baselines). Also note that, as with global mitigation pathways, the *Calculator* can be adapted to support any well-define set of national business-as-usual pathways. Please contact us if you're interested in exploring alternative mitigation pathways or business-as-usual pathways (feedback@climateequityreference.org).

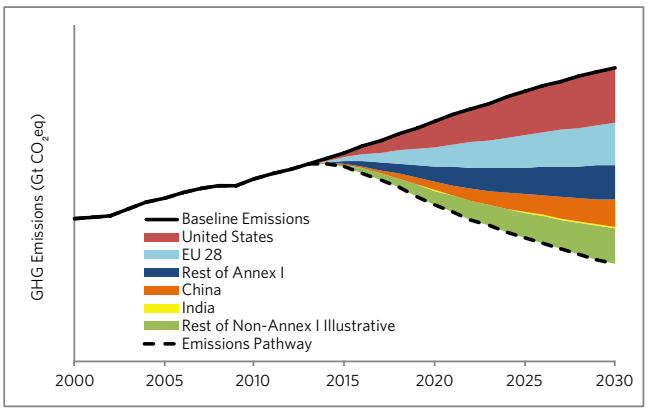
arrangements that might be widely accepted as being fair enough by a wide set of actors, and thus serve as foundations for the large-scale cooperation that will be necessary in the years ahead. And it can help us to understand the kinds of equity assessment that can help move us towards such arrangements.

Fair shares of global efforts

The CERP framework supports an infinitely gradated number of equity benchmarks, all of which, as noted above, are defined in terms of the UNFCCC's core equity principles. Also note that, critically, these benchmarks are designed to clarify national fair shares of *global* needs, not national domestic efforts. Indeed, the whole point of the CERP exercise is to show how each country's total efforts (whether undertaken at home or abroad) can be meaningfully assessed against one or another definition of its fair share.

This is illustrated by the following graphs, which show how a mitigation gap is partitioned into mitigation fair shares that are assigned to individual countries on the basis of their responsibility and capacity.





It's also important to note that a nation's fair share of the global mitigation effort may be quite different from its domestic mitigation potential (and here we mean both techno-economic potential and emission reductions associated with consumption and lifestyle changes). For wealthy and high emitting countries (i.e., those with high capability and responsibility), any reasonably defined national fair share will generally exceed the country's domestic mitigation potential, and in some cases even exceed its domestic emissions. For poor and low emitting countries (i.e., those with low capability and/or responsibility), domestic emissions – which is to say the national potential for curbing global emissions – may greatly exceed the country's fair share of the global mitigation effort. For countries with middle-range incomes and emissions, domestic mitigation potential and fair share may be more closely correlated.

What this clearly demonstrates is that international finance and technology support is absolutely critical. Otherwise, the wealthier countries will be saddled with greater mitigation obligation than they could possibly discharge, and poorer countries will be left with a great mass of unexploited mitigation options and unfunded adaptation needs. This would be an untenable situation rendering the pursuit of any ambitious global mitigation pathway quite impossible. For this reason, it only makes sense to consider fair shares in terms that include both domestic reductions and support for climate action in other countries.

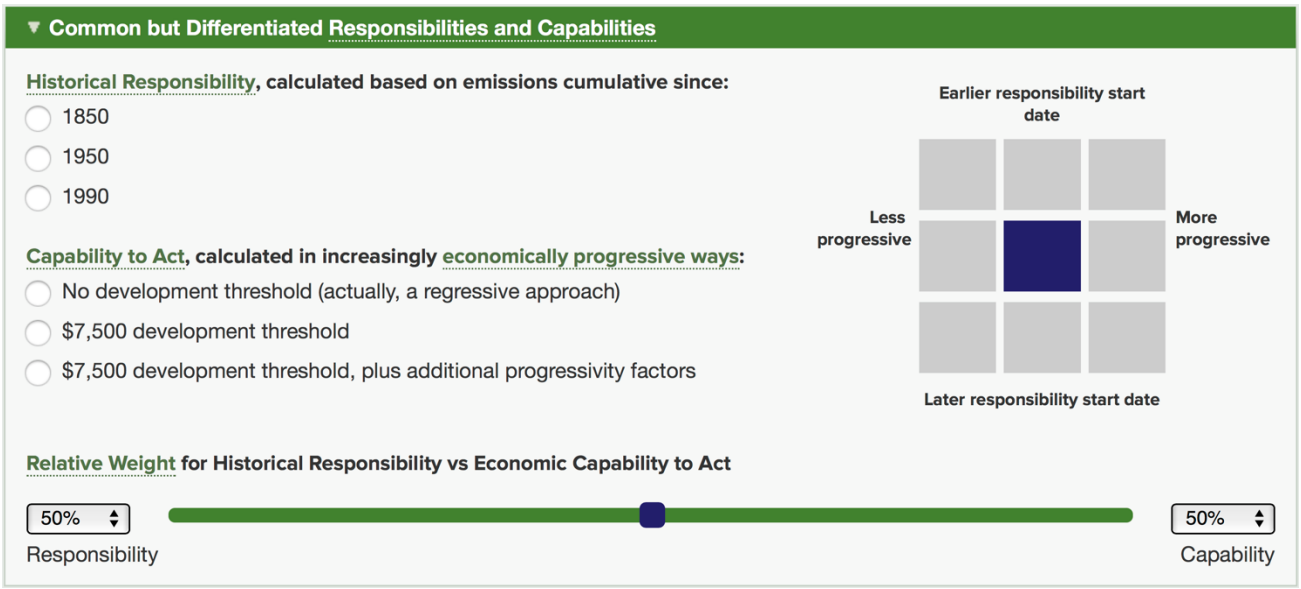
Equity benchmarks

The *Calculator* supports a wide range of settings and parameters (any group of which defines an equity benchmark), which it uses to calculate a fair share of the total global effort (however defined) for each country. Below, as a guide to the resulting equity model, we're going to discuss a small set of indicative benchmarks.

Note first that each benchmark is defined in terms of responsibility and capability. These core equity notions are represented in a transparent way using explicitly defined quantitative indicators: capacity is defined using indicators that reflect income, and responsibility is defined using indicators that reflect cumulative GHG emissions. Various ethical perspectives on these two underlying equity notions are possible, so the *Calculator* presents the user with various settings and choices relating to how to interpret responsibility and capacity.

Note also that *not all the benchmarks that can be defined in this framework can be plausibly defended as fair*. Some responsibility settings, some capability settings, some global mitigation pathways, and some estimates of adaptation need are in fact patently unfair. And yet, in the CERP framework, benchmarks can be defined in terms of such settings, and the results can be illuminating.

We'll return to this critical point, but first let's look at some indicative equity benchmarks. Here's how the *Calculator's* Equity Settings panel expresses the key choices that define them (and do note that if a *Calculator* user clicks past the above panel, they will get a richer set of controls reflecting other choices, allowing the user to define many more cases).



Note that while the equity benchmarks are defined in terms of a country's responsibility and capability, the user has the flexibility to select the relative weighting of each. If one considers the two to be equally foundational principles, one can weight them equally (50% capability: 50% responsibility). If one considers capability to be of primary importance and responsibility to not require separate consideration, one can select a weighting of 100% capability : 0% responsibility (and vice versa). Or, one can choose anywhere in between. The indicative examples we show below include benchmarks that combine responsibility and capability on an equal basis, as well as examples that weight one or the other at 100%.

A bit more on progressivity

As is customary in discussions of fair effort-sharing, we define *capability* in terms of national income. Just as income is considered in a progressive manner in national tax policy; it can be considered in a progressive manner for the purposes of defining capability. And, as in tax policy, the key question is *how progressively to account for income?* Here are four indicative choices.

- The **"No Progressivity"** setting in which there is no income threshold below which individual income is exempted from national capability, either on the basis of a poverty exclusion or a development exclusion. In such a case, when calculating capability, each dollar of income – even for the poorest of the world's people – counts as much as each dollar of the world's richest. This approach is inconsistent with the at least mildly progressive perspective that virtually all societies have adopted for the purpose of income taxation, and is impossible to justify in equity terms.

- The **"Low Progressivity"** setting in which an income threshold is set, one that, while not high enough to be judged progressive in any meaningful sense, is significantly higher than 0. For example, $2,500 has been used to define a useful indicative "Low Progressivity" case.

- The **"Medium Progressivity"** setting in which the income threshold is significantly higher than $2,500. Rather, in "Medium Progressivity" cases, the income threshold is set at $7,500 (approximately $20/day). This level is just a bit above a global poverty line that reflects empirical observations, so it should actually be taken as a low estimate

of "medium" progressivity, and can reasonably be said to represent a "development threshold" below which income is legitimately prioritized for basic living requirements.

- The **"High Progressivity"** setting in which the income threshold is set at the same "development threshold" level of $7,500 as in the "Medium Progressivity" case, with income above this threshold counting toward national capability at a steadily rising rate, until it reaches an luxury threshold (set for this analysis at $50,000), above which all income is counted towards national capability. These settings increase the overall progressivity of the income calculation just as a graduated tax schedule raises the progressivity of an income tax. Note that this is not an extravagantly progressive setting; the $50,000 figure falls below the income of the highest earning "one percent" of the global population.

A bit more on responsibility

As is customary in discussions of fair effort-sharing, we define responsibility in terms of a country's cumulative emissions. The key setting here is the "responsibility start year" from which historic emissions are included in the reckoning of a country's responsibility. Here are three indicative choices:

- **"Responsibility since 1990."** This corresponds roughly to the time when negotiations for an international legal agreement to limit GHGs began in earnest and the risks of rising GHGs were acknowledged by the IPCC. The 1990 date is difficult to defend, given that the UN Framework Convention was itself being negotiated at that time, and its authors cannot reasonably be said to have had 1990 in mind when they inscribed the term "historical" into the text. Still, the 1990 case is arguably fair, but *only* in cases where the benchmark includes capability weighting. This is because historical responsibility before 1990 is highly correlated with national capability.

- **"Responsibility since 1950."** This date marks a useful middle setting. It defines a period in which the climate threat was known, in which responsibility is comprehensible in terms of human lifetimes, reflects roughly the useful lifetimes of much infrastructure, and avoids some of the historical discontinuities that occur when, for example, wars remake national boundaries.

- **"Responsibility since 1850."** This date defines responsibility as cumulative emissions since a date that roughly corresponds to the time at which carbon dioxide emissions from fossil fuel combustion reached significant levels. This is also the earliest date for which plausible emissions data exist.

The user can make additional choices that influence the calculation of a country's responsibility. One is which greenhouse gases to include when accounting of a country's historical emissions. The indicative calculations shown below are based on emissions of fossil carbon dioxide and non-CO_2 "Kyoto basket" GHGs, and exclude land-use emissions, though the *Calculator* gives the user the choice of including or excluding non-CO_2 GHGs and land-use emissions.

Another important consideration is whether a country's responsibility should be calculated on the basis of production-based or consumption-based accounting. Here we use production-based accounting, which reflects actual emissions within a country's territory. The *Calculator* offers the option to account for emissions on a consumption basis (whereby emissions generated in the production of goods are attributed to the country that consumes those goods).

And finally, there is the choice to exclude emissions corresponding to consumption below a particular income threshold (say because they arise from the provision of basic needs). This is entirely analogous to the treatment of progressivity on the capability side.

These various choices are reflected on the Calculator's introductory settings panel (shown above), and as follows:

- The responsibility side of a benchmark (if there is one) can be set in terms of a 1850, 1950, or 1990 responsibility start date.
- The capability side of a benchmark (if there is one) can be defined in terms of zero, medium, and high progressivity (as described above).

And, the user may set any possible weightings of the two principles, including:

- Benchmarks that are defined by a combination (here 50/50) of responsibility and capability.
- Capability-only benchmarks (in which the weighting of responsibility is dialled down to 0).
- Responsibility-only benchmarks (in which the weighting of capability is dialled down to 0).

All of these benchmarks (and many more, if the user proceeds to the richer underlying set of controls) can be expressed within the CERP framework. This is true despite the fact that, normatively, the choices between them can be quite stark. A highly-progressive, capacity-only benchmark that is calculated in a manner that takes internal national income inequality into account reflects an entirely different ethical perspective than a responsibility-only benchmark that is indifferent to income inequality and calculated in terms of an 1850 responsibility start date. Yet both can be expressed in terms of dynamic responsibility and capability indicators.

Equity assessment: the CSO Equity Review coalition's equity range

What do benchmarks like these mean in practice? How can they be used to inform the negotiations? To help "ratchet up" the overall level of ambition? These are big questions that involve both political and normative judgements. What we can say is that equity modeling can help make such judgements explicit and transparent, and by so doing can facilitate coherent engagement, reasoned negotiation and, we hope, convergence towards broadly shared understandings about the scale of the national actions that can plausibly be considered to be "fair."

We show how this can work by recounting the process that led to the report *Fair Shares: A Civil Society Equity Review of the INDCs*[4] released in the run-up to Paris. As the CSO Equity Review coalition formed to undertake this initiative, it became quickly clear its constituent organizations held a broad range of views of equity, and could not expect to settle on one definitive equity benchmark. They were, however, committed to the dialogue, and as a matter of practicality, agreed to an "equity band" defined by high and low benchmarks that spanned their range of equity perspectives.

After considerable deliberation, the coalition agreed to define an equity band as follows:

- It would reflect with balance the principle of common but differentiated responsibilities and respective capabilities. For this reason, it would be defined in terms of benchmarks that weighted responsibility and capacity equally.
- The responsibility dimension of the equity band would be bracketed by the responsibility start dates 1850 and 1950.
- The capability dimension of the equity band would be spanned by the "medium progressivity" and "high progressivity" choices as described above.

The coalition further agreed that a responsibility start date as recent as 1990, and definitions of capability that were "Low" progressivity, were ethically indefensible and unfair, and were to be excluded from the equity band. However, a 1990 / "Low progressivity" benchmark was still judged to be politically salient, so it would be informative and useful to include it in the analysis.

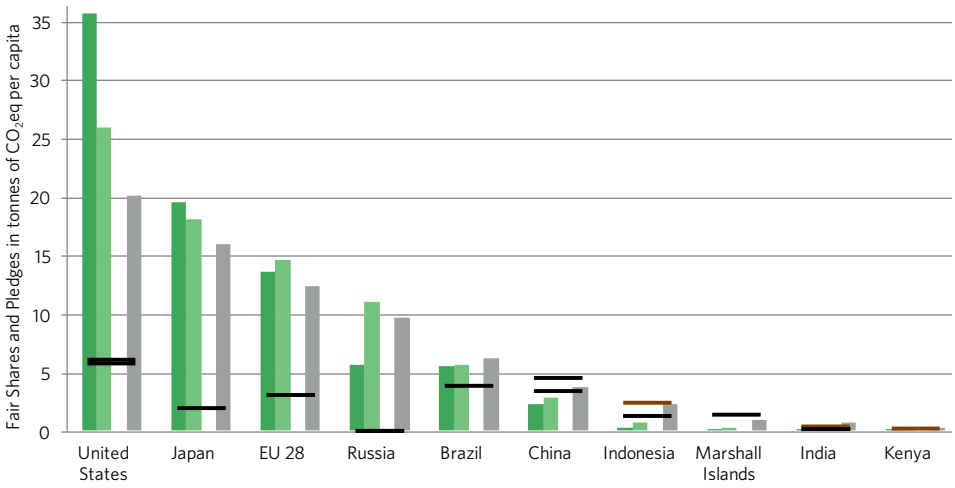
The result can be seen in Figure 5 of the pre-Paris report, below, where the national equity band is represented by the two green bars (shown here in per-capita terms) selected by the above decisions. This figure includes the 1990 / Low Progressivity benchmark, which is shown (in gray) for purposes of comparison.

The most valuable lesson of this exercise was that, despite the wide range of view represented by the equity band, and the inclusion of a benchmark *well outside* of the equity band, the results were still strikingly clear. Each country's pledge could still be clearly assessed relative to the *entire span* of the benchmarks, and on that basis each country could be judged to be either a leader or a laggard.

4 http://civilsocietyreview.org/report

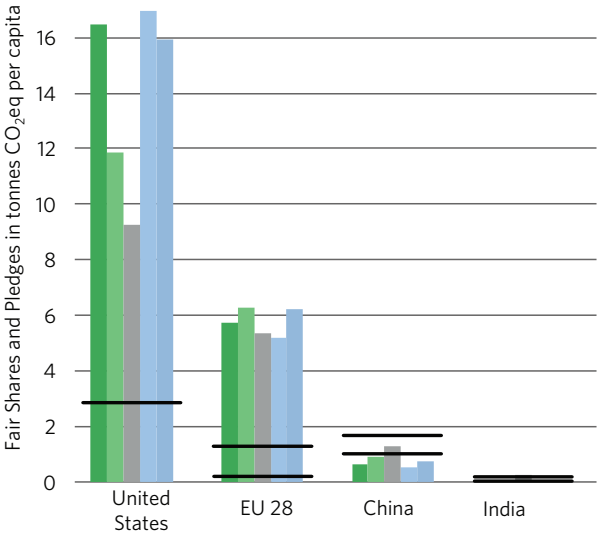
FIGURE 5. PER CAPITA MITIGATION COMPARISONS

Comparison of mitigation fair shares and INDC pledges (in tonnes of CO_2eq per capita of mitigation below baseline in 2030) and selected levels of development indicators



Per Capita Fair Shares and Pledges in 2030 (tonnes of CO_2eq per capita below baseline)										
1850 / High Progressivity	35.7	19.6	13.6	5.6	5.5	2.3	0.2	0.09	0.04	0.05
1950 / Medium Progressivity	25.9	18.0	14.6	11.0	5.7	2.8	0.8	0.27	0.24	0.14
1990 / Low Progressivity	20.1	15.9	12.4	9.6	6.1	3.8	2.2	0.95	0.73	0.28
INDC Pledge*	5.8	1.9	3.1	0**	3.9	3.4	1.2	1.4	0.2	0.2
INDC Pledge*	6.1					4.5	2.4		0.3	

The equity assessment debate is only beginning, and is not of course confined to this project. But this project does clearly demonstrate the potential for fruitful learning that is rooted in this kind of approach. For example, the second CSO Equity Review coalition report (released during COP22 in 2016), *Setting the Path towards 1.5°C*[5], includes two new benchmarks, designed explicitly to clarify the relative impact of capability and responsibility.



Fair Shares and Pledges in 2020 (tonnes of CO_2eq per capita below baseline)				
1850 / High Progressivity	16.5	5.7	0.6	0.01
1950 / Medium Progressivity	11.9	6.3	0.9	0.06
1990 / Low Progressivity	9.2	5.4	1.3	0.24
C only / High Progressivity	15.9	6.2	0.8	0.01
HR only / 1850 start date	17.0	5.2	0.5	0.00
Low End of Pledge Range	2.9	0.2	1.0	0.03
High End of Pledge Range		1.3	1.7	0.18

Figure 3. Comparison of mitigation fair shares and pledges

5 http://civilsocietyreview.org/report2016

It does this by providing two additional benchmarks, one of which weights capability at 100% and responsibility at 0%, and one of which weights responsibility at 100% and capability at 0%. These benchmarks are illustrated in Figure 3 from *Setting the Path*, above.

The capability-only and responsibility-only benchmarks are, of course, the ones shown here in blue. Note that the example responsibility-only benchmark is calculated relative to 1850 and is thus a "deep history" benchmark, while the capability-only benchmark is calculated in "high progressivity" terms.

Note also how the dark green bar falls evenly between the two blue bars – a direct consequence of its 50/50 responsibility and capability weighting. If a 1990 responsibility-only benchmark and a Low progressivity capacity benchmark were added to the above chart, the grey bar would fall evenly between them.

Finally, note the key message from this exercise. Contrary to widespread belief, a central result of any equitable approach to global effort sharing – that the wealthy countries must provide significant levels of support to developing countries – is not a simple consequence of the historical responsibility approach. The capability-only benchmark just as strongly conveys this same result. (This is particularly true for wealthy countries with relatively low carbon intensities – think northern Europe). The point is that capacity-only and responsibility benchmarks can themselves be strong or weak, and that this matters.

The lesson

What's the point? That the power of this approach comes from how it allows us to escape the pseudo-debate between, on the one hand, the claim that equity is an entirely subjective matter, a mere battle of opinions, and, on the other hand, the claim that one or another equity approach is the precisely "right one." It does this by providing a quantitative framework within which explicit choices between well-specified approaches – e.g. more or less progressive responsibility and capability indexes – can be assessed and compared without being over-specified and reified. While this inevitably yields ranges instead of precise numbers, it also yields higher confidence, as a consequence of generating understandable results that transparently and traceably express explicit ethical-political choices.

To sum up: no particular equity benchmark is inherently part of the CERP framework proper. Rather this framework is intended help users articulate specific conceptions of equity, relate them to fundamental equity principles, and derive useful quantitative results from them, by for example using them to assess national pledges. In walking through these steps, users make very specific and transparent choices, which the CERP framework is set up to facilitate, codify, and illuminate.

The *CSO Equity Review* was, as far we know, the first attempt, by a fairly diverse group, to negotiate shared climate equity benchmarks. We consider it a success, and a useful validation of the claim that equity assessment can in fact be extremely helpful.

ASSESSING THE FINANCE PLEDGES

In this report, unlike our pre-Paris report, we can for the first time include developed country finance pledges in our equity assessments. This is important because, in addition to deep domestic emissions cuts, developed countries must support international climate action if they are to do their fair share overall.[6,7]

In order to assess finance pledges alongside emissions reductions pledges, we need to estimate the emissions reductions the pledged finance could deliver in developing countries. This section of this Appendix describes the methodology we

6 Typically, we find that developed countries' fair shares exceed, often very substantially, the emissions reductions that are possible within their borders. On the other hand, the reductions that are possible, and necessary, in developing countries are often larger, sometime much larger, than their fair share. As a result, developed countries have the "dual obligation" of 1) reducing emissions at home and 2) supporting developing countries as they seek to implement reductions in excess of their own fair shares.

7 For our pre-Paris report we were not able to include finance pledges because developed countries are not making pledges for financial support as far out as the 2025 or 2030 mitigation pledges that all countries are making.

followed to make this estimation, based on data from the International Energy Agency (IEA)[8], the Organization for Economic Co-Operation and Development (OECD)[9], developed countries' public announcements[10] and Oxfam research[11] into climate finance.

As a starting point, we use 1) the public announcements that developed countries have been making over the course of 2015 and 2) the useful roadmap that they have recently collectively published to show how they will reach their $100 billion commitment in 2020[12] (Fig. 1). Developed countries suggest that they expect to reach their $100bn commitment as a combination of bilateral public climate finance, public climate finance delivered through the multilateral financial system and private sector co-financing leveraged through the former two public channels. The total amount of public climate finance that developed countries expect to deliver in 2020 is $66.8 billion.

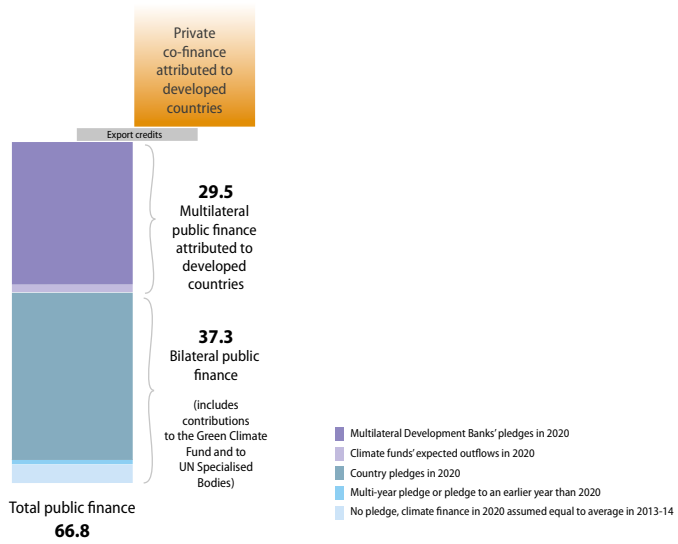


Figure 1. The $100billion roadmap. (Source: OECD 2016)

However, developed countries' reporting on climate finance shows a well-established practice of "over-reporting" climate finance, for example by reporting the face value rather than the grant equivalent value of concessional loans[13], or by reporting the full value of a development project instead of its climate relevant portions only. The OECD research that underpins the developed countries roadmap shows that developed countries are continuing this sort of over-reporting. For this reason, we need to estimate the amount of real, climate-specific net assistance that is implied by the announced amounts.

8 IEA (2014) *World Energy Investment Outlook. Special Report*. Paris: OECD Publishing; International Energy Agency. https://www.iea.org/publications/freepublications/publication/WEIO2014.pdf

9 OECD (2016) *2020 Projections of Climate Finance Towards the USD 100 Billion Goal. Technical Note*. Paris: Organisation for Economic Co-operation and Development (OECD). http://www.oecd.org/environment/cc/oecd-climate-finance-projection.htm

10 UNFCCC (2015) *List of Recent Climate Funding Announcements*. http://newsroom.unfccc.int/financial-flows/list-of-recent-climate-funding-announcements; Furthermore, additional finance pledges are contained in table 1 of Australia; United Kingdom; et al. (2016) *Roadmap to US$100 Billion*. http://dfat.gov.au/international-relations/themes/climate-change/Pages/climate-finance-roadmap-to-us100-billion.aspx

11 Oxfam (2016) *Climate Finance Shadow Report 2016: Lifting the Lid on Progress Towards the $100 Billion Commitment*. Oxford: Oxfam. http://oxf.am/ZuGp

12 *Roadmap to US$100 Billion*, op. cit.

13 Developed countries (as evidenced, for example, in their *Roadmap to $100 Billion*, op. cit.) hold the view that their commitment is to "mobilize" climate finance, and that this means that the face value of financial instruments is the appropriate measure. See, for example, the methodological description of the OECD's *2020 Projections of Climate Finance* (op. cit.) which states that "pledges are all assumed to be in nominal values, like the USD 100 billion commitment" (p. 13). Here, we are not making any political judgement about this perspective, however, for the purpose of our analysis it is appropriate to only consider the grant-equivalent part of concessional loan finance. This is because only the grant portion represents an effort by the developed country providing the loan (since the non-concessional part is an effort undertaking by the recipient country, through re-paying the loan) and therefore only that fraction is appropriate to count toward a developed country's fair share of the global effort.

To that end, we use Oxfam's recent analysis of climate finance provided by developed countries and the OECD roadmap to estimate this number (Fig 2). Given that Oxfam calculates a range of $18 to $34 billion of total net climate-specific finance, and an amount of $8 to $16 billion for adaptation, we derive a range of $10 to $18 billion, of which we use the central value of $14 billion in 2020 for simplicity.

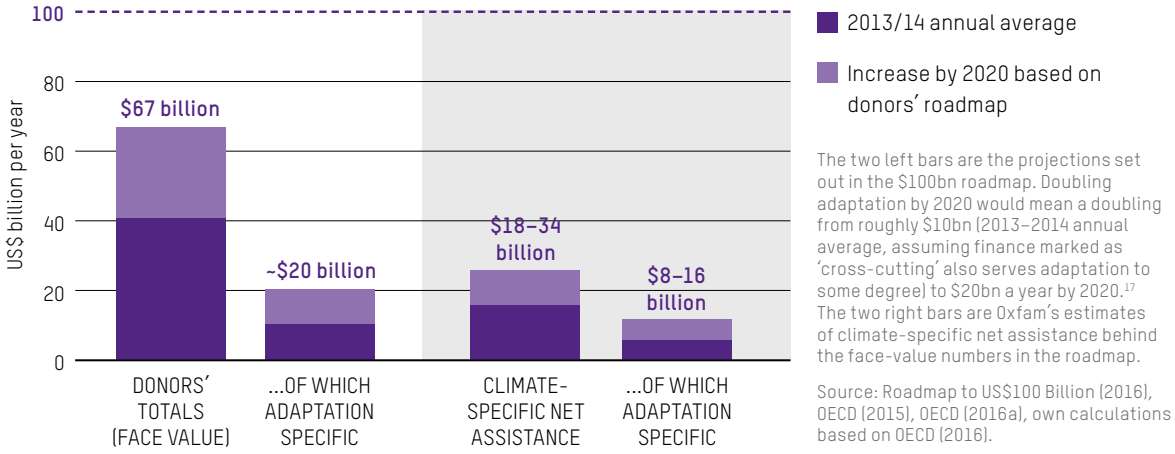


Figure 2. Oxfam's estimate of the "Real Numbers" behind the $100bn roadmap (Source: Oxfam 2016)

This $14 billion is the amount of public finance that developed countries are expected to really provide in grant-equivalent terms in 2020 for emissions reductions, both bilaterally and through the multilateral financial institutions. From their roadmap document, we also note the expectations of developed countries that their climate finance contributions will leverage private sector co-finance. The roadmap and its underlying OECD research reports that, historically, developed countries' climate finance leveraged roughly $0.35 of private sector co-finance for every $1 of public assistance. Developed countries also declared their intent to increase this leverage ratio and for this reason, as well as for reasons of simplicity, we use a leverage ratio of $1 leveraged for each $1 of public finance. This gives us a *generous* estimate of a total of $28 billion of total finance provided or mobilized by developed countries for emissions reductions in developing countries in 2020.

We then combine this amount with information of the International Energy Agency's to estimate the emissions reductions impact that this amount could achieve. Specifically, we use the incremental investments needed in the energy sector that is required in the IEA's "450ppm scenario" (a very weak 2°C scenario) compared to the IEA's baseline scenario, which is $375 billion in 2020. Since we also know that the 2020 emissions from the energy sector in the 450ppm scenario are 3.2Gt CO2 lower than in the baseline scenario, we can conclude that the $28 billion derived earlier could achieve mitigation of around 240Mt in 2020.[14]

The analogue calculation can be made based on individual pledges of countries. Table 1 shows the results of that analysis: We start with the finance pledges for 2020 communicated by or calculated for[15] developed countries' bilateral finance (A). In a second step, we add climate finance expected to be delivered through multilateral development banks and climate funds, where we assume (in absence of suitably detailed data) that each developed country's share (D) of the total is equal to the share of their "imputed multilateral contributions"[16] of the total multilateral climate finance in the 2013-2014 period

14 $28 billion is about 7.5% of the $375billion, and 7.5% of 3.2Gt CO2 is 240Mt CO2.

15 Where countries announced climate finance pledges that specifically mentioned a level for the year 2020, we use that number directly. Several countries' announcements do not only contain information about the pledged 2020 climate finance level but also about how the scale-up of that finance will occur over the next few years. We utilize that information about the rate of scale-up to calculate the 2020 finance pledge level for pledges that are expressed as multi-year pledges. This implies a higher estimate of 2020 pledges compared to the OECD's *2020 Projections* (op. cit.) note, which assumes a constant level of finance across the years covered by multi-year pledges. Finally, for countries which have not made an announcement that covers 2020 but have made announcements for earlier years, we assume their contribution level to remain constant through 2020. If no announcements are made at all, we assume a contribution level of zero for the countries in question – a difference to the OECD methodology which assumes instead that in such cases the previous contribution level will be maintained. However, for the collective climate finance of developed countries, we use the slightly OECD/roadmap figures ($37.3 billion in bilateral finance) as our starting point, as opposed to the sum of the amounts we attribute to individual countries.

16 "Climate-related imputed multilateral contributions are an estimation of the share of the core contributions to multi-purpose organisations that is used for climate-related activities. It is a two-step estimation. First, the proportion of the activities

(B, C). Finally, as with our global calculations, we apply the ratio of climate-specific net assistance to reported finance as well as the mitigation-adaptation split that we derived from Oxfam's research (F); double the amount to account for our generous assumption of private sector co-finance (G, H) to obtain the total amount of finance that can be said to represent the developed countries' effort; and estimate the possible emissions reductions in developing countries implied by that level of funding (I).

In order to then assess the domestic emissions reduction pledges of the wealthy countries alongside their finance pledges, we add this additional mitigation to their domestic emissions reduction pledges as shown with dotted lines in Figures 1 and 2 of the Report.

Table 1. Estimate of developed countries' 2020 climate finance and its mitigation impact

country	face value amounts, mitigation and adaptation					grand equivalent, mitigation only			estimated mitigation impact
	bilateral (pledged)	multilateral			total	public (bilat. + multilat.)	private co-finance (est.)	total	
	$ million in 2020	$ million in 2013-14	% of 2013-14 total	$ million in 2020	$ million in 2020	$ million in 2020	$ million in 2020	$ million in 2020	Mt CO_2eq in 2020
	A	B	C	D	E	F	G	H	I
Australia	175	215	2.3%	678	854	179	179	358	3.1
Canada	613	337	3.6%	1,065	1,678	352	352	703	6.0
EU, of which	17,612			17,591	35,203	7,378	7,378	14,756	126
EU institutions[17]	*2,466*	*0.2*	*0.002%*	*1*	*2,467*	*517*	*517*	*1,034*	*8.8*
Austria	*112*	*136*	*1.5%*	*429*	*541*	*113*	*113*	*227*	*1.9*
Belgium	*68*	*195*	*2.1%*	*616*	*685*	*143*	*143*	*287*	*2.4*
Cyprus	*0.4*	*n/a*	*n/a*	*n/a*	*0.4*	*0.1*	*0.1*	*0.2*	*0.001*
Czech Republic	*5*	*5*	*0.1%*	*16*	*21*	*4*	*4*	*9*	*0.1*
Denmark	*42*	*116*	*1.2%*	*367*	*409*	*86*	*86*	*171*	*1.5*
Estonia	*1*	*n/a*	*n/a*	*n/a*	*1*	*0.2*	*0.2*	*0.5*	*0.004*
Finland	*156*	*155*	*1.7%*	*490*	*646*	*135*	*135*	*271*	*2.3*
France	*5,608*	*443*	*4.7%*	*1,400*	*7,008*	*1,469*	*1,469*	*2,938*	*25.1*
Germany	*4,486*	*940*	*10.1%*	*2,971*	*7,457*	*1,563*	*1,563*	*3,126*	*26.7*
Hungary	*1*	*n/a*	*n/a*	*n/a*	*1*	*0.2*	*0.2*	*0.3*	*0.003*
Ireland	*45*	*23*	*0.2%*	*73*	*118*	*25*	*25*	*49*	*0.4*
Italy	*896*	*321*	*3.4%*	*1,014*	*1,909*	*400*	*400*	*800*	*6.8*
Latvia	*0.4*	*n/a*	*n/a*	*n/a*	*0.4*	*0.1*	*0.1*	*0.2*	*0.001*
Lithuania	*0.02*	*n/a*	*n/a*	*n/a*	*0.02*	*0.005*	*0.005*	*0.009*	*0.0001*
Luxembourg	*79*	*14*	*0.1%*	*43*	*122*	*26*	*26*	*51*	*0.4*
Malta	*0.02*	*n/a*	*n/a*	*n/a*	*0.02*	*0.005*	*0.005*	*0.01*	*0.0001*
Netherlands	*740*	*200*	*2.1%*	*633*	*1,373*	*288*	*288*	*576*	*4.9*
Poland	*2*	*4*	*0.05%*	*13*	*15*	*3*	*3*	*6*	*0.1*
Portugal	*3*	*2*	*0.02%*	*7*	*9*	*2*	*2*	*4*	*0.03*
Slovenia	*4*	*3*	*0.03%*	*8*	*12*	*3*	*3*	*5*	*0.04*
Spain	*1,009*	*124*	*1.3%*	*391*	*1,401*	*294*	*294*	*587*	*5.0*
Sweden	*59*	*405*	*4.3%*	*1,279*	*1,338*	*280*	*280*	*561*	*4.8*
United Kingdom	*1,830*	*2,480*	*26.6%*	*7,840*	*9,670*	*2,027*	*2,027*	*4,053*	*34.6*
Iceland	10	2	0.0%	6	16	3	3	7	0.1
Japan	12,928	1,014	10.9%	3,206	16,134	3,381	3,381	6,763	57.7
Liechtenstein	0.1	n/a	n/a	n/a	0.1	0.01	0.01	0.02	0.0002
Monaco	0.4	n/a	n/a	n/a	0.4	0.1	0.1	0.2	0.002
New Zealand	49	19	0.2%	59	108	23	23	45	0.4
Norway	449	235	2.5%	744	1,193	250	250	500	4.3
Switzerland	33	210	2.3%	664	697	146	146	292	2.5
United States	800	1,736	18.6%	5,487	6,287	1,318	1,318	2,635	22.5
Others	4,630	n/a	n/a	n/a	4,630	970	970	1,941	16.6
Total	**37,300**			**29,500**	**66,800**	**14,000**	**14,000**	**28,000**	**239**

undertaken by the multilateral organisation that aim to address climate change is calculated. Second, this proportion is applied to the country's core contributions, to estimate the climate-related share of their core contributions" (OECD, *2020 Projections*, op. cit., note 10 p. 14)

17 Excluding European Investment Bank