

Climate Action Tracker

Redefining climate action

Explaining the new CAT rating methodology

September 2021





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1 Why has the CAT updated its rating methodology?

When the CAT started in 2009, we rated **ONLY** a government's targets against what would contribute a 'fair share.' Since then, many things have changed. The Paris Agreement has been adopted, we better understand what needs to be done, and yet at the same time, global emissions have continued to rise.

With limited action to reduce emissions so far, the remaining carbon budget is much lower than it used to be 10 years ago and it's now necessary that all countries immediately get on track for full decarbonisation to meet the Paris Agreement 1.5°C temperature goal.

However, according to many fair share assessments, it would be considered fair that some countries continue emitting at high levels. We are now in a situation where these countries can no longer follow a high emissions path, but other, richer countries do need to help them to rapidly decarbonise.

We've also seen that it's not only targets that matter, but the policies that governments put in place to meet those targets. The CAT not only evaluates government targets, but we also provide an estimate of countries' emissions given implemented action (current national policies)¹ and now integrate this information in our rating.

This year, we've expanded our rating system to take a more granular look at what governments are doing at the national level. Our new analysis and rating system provides a much more informative and complete assessment of climate action in each country. It not only looks at targets but also at real action and disentangles what part of the action should be done within the country or outside, with or without support from others.

2 What is the new CAT rating method designed to tell us?

The CAT's new rating method evaluates a broad spectrum of government actions to reduce greenhouse gas emissions in line with the Paris Agreement temperature limit.

Governments should commit to reducing their own emissions and follow through on those commitments by implementing policies that reduce emissions to meet those targets. These actions in a country can be assessed against what is realistic and necessary from a physical and economic basis, usually a globally cost-efficient perspective.

However, for many countries, what is realistic either falls short of what would be expected of them based on principles of fairness, or is beyond what is possible with domestic resources alone. Fair share principles mean that governments need to support each other in achieving the global mitigation goals.

Our new assessment framework therefore combines both fair share and cost-efficient mitigation perspectives to assess the different components of government actions.

With this framework we're able to identify whether:

- ▶ Government promises for action in their country are ambitious with respect to global least-cost mitigation pathways, acknowledging that most developing countries will need support to achieve this level.
- ▶ Government promises for action in their country with their own resources and, if relevant, the financing of action abroad represent a fair contribution to global efforts.
- ▶ Governments are providing sufficient support to others OR are making plans to use support provided by others.
- ▶ Governments are putting in place real policies and action in line with global least-cost mitigation pathways and are on track to meeting their promises.

¹ We consider as 'current policies' those that are likely to have an effect on greenhouse gas emissions. Usually they are adopted by the government and there are also signs that they are in the process of being implemented.

Here we explain in detail the basis for each of these evaluation systems, how we apply them to individual countries, and how the different rating components are brought together to define the overall CAT rating.

The CAT continues to focus its rating on mitigation efforts but recognises that adaptation and support for adaptation and loss and damage are also vital in meeting the Paris Agreement.

3 What is the new rating based on?

The CAT uses two key concepts as the basis for our evaluation of country efforts: fairness, and necessary emissions reductions to meet the Paris Agreement's 1.5°C temperature limit.

3.1 Fairness

To assess fairness, we integrate a range of fair share principles to establish the CAT fair share rating system. Effort-sharing principles include concepts of:

- ▶ Historical responsibility for past emissions
- ▶ The capacity to pay for emissions reductions
- ▶ Potential for reducing emissions
- ▶ Sharing emissions on an equal per capita basis
- ▶ The need for sustainable development.

The CAT fair share rating approach combines quantitative assessments from the literature, supplemented with our own calculations. We developed the approach for the IPCC Fifth Assessment Report (Clarke *et al.*, 2014; Höhne *et al.*, 2014) and have since refined it. This year, we've included some new studies in our literature database and modified how we calculate the fair share ranges – see [here](#) for a detailed description.

The CAT fair share framework defines allowed emissions for each country that, when applied by all countries within a global system, would result in specific warming levels. This allows us to give a fair-share temperature rating for countries' efforts in reducing emissions.

1.5°C compatible fair share emissions allocations for developed countries can be very stringent, and if met through domestic action alone, would imply rapid reductions to around zero in the next decade or less. Developed countries are therefore much more likely to meet their fair share emission allocations by a combination of domestic action and international financial support for mitigation abroad.

Conversely, for many developing countries, their fair share emissions allocation will exceed where their emissions need to be for full decarbonisation aligned with the 1.5°C warming limit, meaning that they should be supported to develop with low emissions and to decarbonise at the pace necessary.

To meet the Paris Agreement 1.5°C temperature goal, all countries need to reduce their emissions to collectively meet global net zero around mid-century. This means it would usually make more sense for developed countries to fulfil their fair shares through a combination of 1.5°C compatible domestic action and the provision of substantial support for emission reductions in developing countries.

3.2 Modelled domestic pathways

We have therefore now added an additional reference framework to our assessment that explores what a government would need to do in a world where emissions are reduced in a globally cost-effective manner.

For the CAT rating system, we downscale the regional results of integrated assessment model, global least-cost scenarios from the IPCC to the national level, based on each country's economic structure, GDP, and population. We call these downscaled scenarios '**modelled domestic pathways**'. See [here](#) for more details.

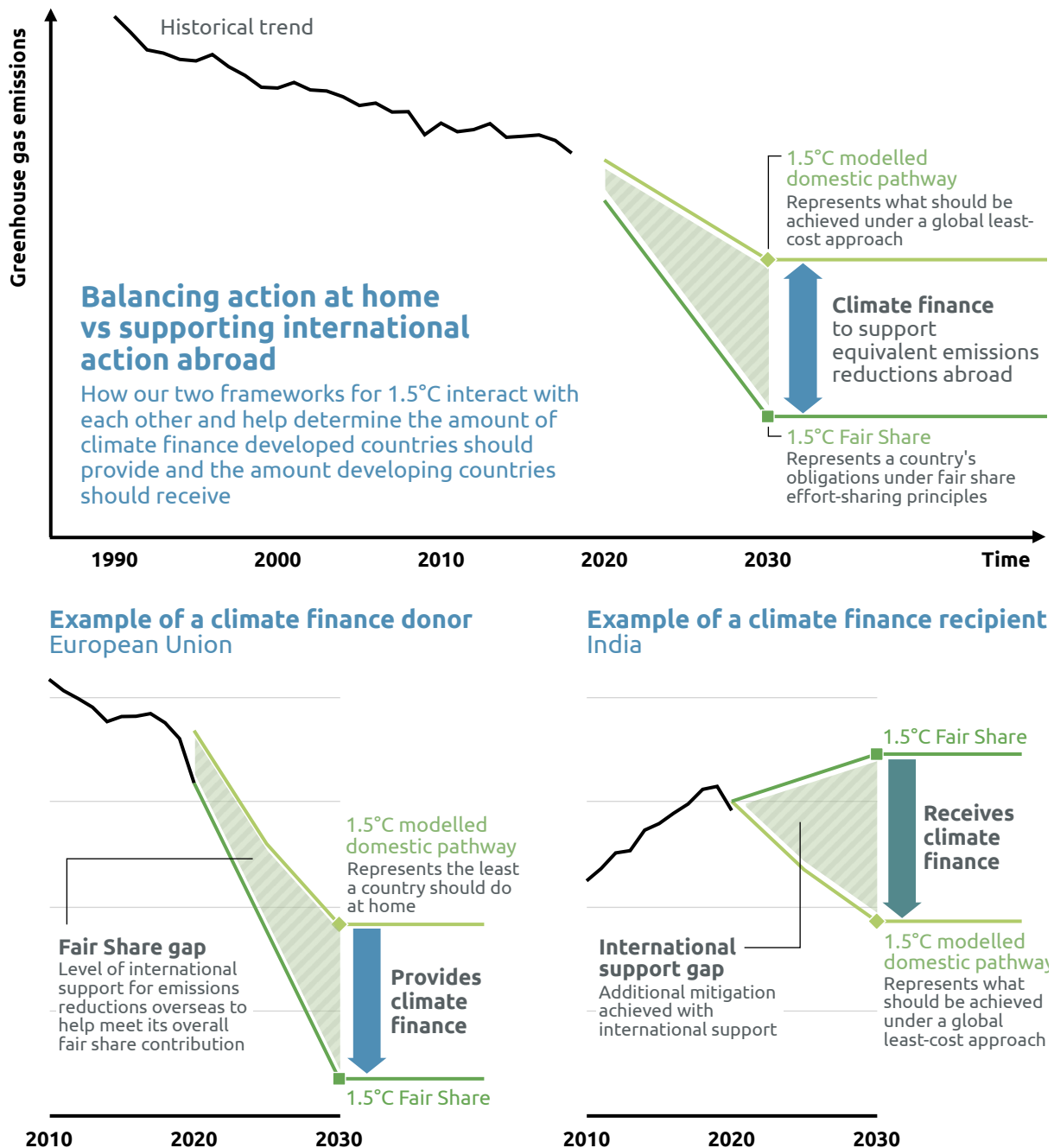


Figure 1 Additional mitigation obligation for developed countries to go beyond their modelled domestic pathway and meet their fair share through additional domestic mitigation and / or supporting others to reduce emissions.

The CAT now uses both perspectives – fair shares and modelled domestic pathways – to evaluate countries policies, actions, and targets in a more comprehensive manner.

To complete the picture, we also look at the **support provided** by richer countries to those that need it. Under the **fair share rating**, many developed countries would need to achieve very stringent emissions reductions to be rated as Paris Agreement compatible, so stringent that these reductions are considered highly unlikely, or unviable.

On the other hand, other countries, such as The Gambia, Ethiopia, or Kenya, are given a good fair share rating despite continued, or rising, emissions that are inconsistent with the need to reduce global emissions rapidly. Those countries need support to reduce their emissions, but should nevertheless still be orienting their actions and targets toward full decarbonisation.

The CAT evaluates each of these components (policies, targets, and support) separately and then combines these into a single rating with an explanation of what the country needs to do to improve its rating.

4 Rating components

A country's climate action has many components; different types of targets and policies put in place, depending on the national circumstances and emissions sources. Combined with our two rating frameworks, this gives us several elements that make up our rating, providing a detailed overview of what is happening in each country.

In all cases we rate targets and policies, but we rate them slightly differently depending on whether – and how much – support is likely to be needed by a country to reach full decarbonisation.

4.1 Policies and action

Policies and action refer to what is actually happening in a country to reduce emissions – what emissions levels do we expect if all current policies are fully implemented? Policies and action are important because they tell us:

- ▶ If a government is following through on its promises
- ▶ Where emissions are actually heading
- ▶ If a country is already achieving its promises and could strengthen them further.

We rate a government's policies and action against the framework that is most favourable to it – fair share or modelled domestic pathways. We do this because those who can do more with their own resources should, but we don't expect countries to do more than their fair share without appropriate support.

4.2 Domestic and internationally supported targets

We evaluate targets for what countries want to achieve within their own borders, some with international support, against our modelled domestic pathways. Depending on whether a country needs support to fully decarbonise, we perform this evaluation slightly differently.

Domestic targets: For countries that should be supporting others, or can do it alone, we evaluate the domestic part – what the country will do on their own territory - of its Nationally Determined Contribution (NDC), submitted under the Paris Agreement. If an NDC doesn't specify that part of the emissions reduction target is to be achieved outside the country's own borders, we assume that the NDC target is domestic only.

Internationally supported targets: For countries that need to receive support to fully decarbonise, we evaluate the conditional NDC: what a government plans to do if it receives international support. Countries that don't have a conditional NDC are rated using their unconditional NDC and are encouraged to develop a conditional NDC, outlining the support they need.

The modelled domestic pathway-based target 'temperature' rating reflects the warming we would expect if all countries' targets fell on an emissions pathway consistent with limiting warming to that level in a globally cost-effective way. 'Globally least-cost' means that, in the model, emission reductions are achieved wherever they are cost effective to do so, in a way that minimises the total global cost of meeting a climate target using whatever metric is applied in specific models.

Global least-cost scenarios do not entail equal marginal or relative costs for all regions and countries (Bauer *et al.*, 2020). It's therefore important to also look at how countries can share costs and how they can do so fairly, taking into account measures such as capability and responsibility, which is what we do in our next step.

4.3 Fair share target

Here we evaluate a government's international target - what it has promised to do with its own resources within its own territory or outside – against our fair share pathways.

When a country's fair share 1.5 pathway is much more stringent than the modelled domestic pathway, usually the case for developed (Annex I) countries, it can be difficult for that country to reduce emissions fast enough to meet the 1.5 fair share target. If it can't meet the fair share goal within its own borders, it at least needs to meet a goal consistent with the 1.5 modelled domestic pathway. Then, to make up its fair share, it should fund and support emissions reductions elsewhere, either as an internationally achieved part of their target² or through direct financial transfers. If a country wants to go beyond its least cost domestic pathway at home and reduce its finance support obligations abroad, that may also work, but many countries are unlikely to be able to make the full emission reductions required for their fair share contribution in this way.

A government may choose to work with others through bilateral agreements to achieve emissions reductions jointly, or it can provide climate mitigation finance. Some governments have made promises to reduce emissions at home and pay for concrete emissions reductions elsewhere, to use towards their reduction targets. (e.g., a country wants to reduce 50%, of which 30 %-points are to be achieved at home and 20 %-points through bilateral agreements). We then rate these combined components against the fair share pathways. In the next step, we evaluate climate finance provided through direct financial transfer.

Many developing country government targets specify what it will do at home under its own resources, often referred to as an 'unconditional target'. We rate this target against the fair share pathways as this provides its fair contribution.

The fair share 'temperature' rating reflects the warming we would expect if all countries were to meet targets with a similar level of effort as defined by the fair share pathways.

2 International allowance transfers or offsets would only be Paris compatible in the rare cases that they move the originating countries emissions well below what the country would have to achieve with own resources.

4.4 Climate finance

A government whose fair share obligations are difficult, or even impossible, to meet with its target is expected to meet its fair share internationally through funding and supporting emission reductions in other countries through direct financial resources. We include here only the direct financial transfers; the implied transfers accounted against the reduction target are already covered under the fair share target.

We assess four aspects of climate mitigation finance provided:

- ▶ Absolute contributions – how much finance has a government provided in relation to its fair share obligations?
- ▶ Contribution trends – are the government’s contributions increasing through time?
- ▶ Future commitments – has the government committed to providing (more) finance in the future?
- ▶ Overseas fossil fuel finance – has the government stopped investing in overseas fossil fuel projects?

Read more about our methods for rating climate finance and see detailed results [here](#).

As noted above, the CAT rating system evaluates mitigation actions only. It is essential that countries also provide adequate climate finance for adaptation and loss and damage, but we do not currently have a methodology for assessing that.

4.5 Net zero targets

Net zero targets are important – they can be used by governments to signal their intent to full decarbonisation. But, as always, the devil lies in the detail: a net zero target can range from being robust to just masquerading as ambition.

We provide an assessment of the comprehensiveness and transparency of governments’ net zero targets as part of their complete climate action efforts. We have developed a [ten-step ‘good practice’ evaluation methodology](#) that looks at the scope, architecture, robustness and transparency of government net zero targets.

However, a country’s net zero target doesn’t affect its overall CAT rating as it is near-term efforts that will be decisive in meeting the long-term goals. Without a strong near-term target, a country is highly unlikely to be able to meet its net zero target. 2030 is the key date.

4.6 Land use and forestry

The CAT doesn’t include land use and forestry in its main rating assessment. Emissions and removals from forestry are of very different nature, they are very volatile from one year to the next and the removals during biomass growth can be reversed into emissions through human activity, natural factors, and increasingly through the effects of climate change on forests and soil carbon via more extreme and frequent heat waves, drought and wildfire. We consider it is more important to make clear what’s happening with emissions from fossil fuels and industry rather than mixing targets with sinks through land use and forestry. Find more explanation on why we don’t include land and forest emissions [here](#).

However, reducing emissions from deforestation or land degradation is also important and, in some countries, land use and forestry are a major contributor to overall emissions. We flag countries whose land use and forestry emissions – or sinks – play a big role or might impact reaching their NDC.

We hope to provide a more detailed assessment of land use policies and targets in the future.

4.7 Example countries – Japan and Ethiopia

In the figures below you can see example analyses for two countries in quite different situations – Japan and Ethiopia.

Japan has a domestic target that we rate as “Almost sufficient”. Japan’s NDC doesn’t distinguish between efforts at home and abroad, so the same emissions level is assessed as its fair share target, where it is rated as “Insufficient”.

Japan’s policies and action are not yet enough to meet its 2030 target and so Japan needs to strengthen both its target, and its policies and action to at least meet the 1.5 modelled domestic pathway at home. Japan also needs to improve its climate finance (currently rated “Critically insufficient”) and / or work with other countries to reduce emissions abroad.

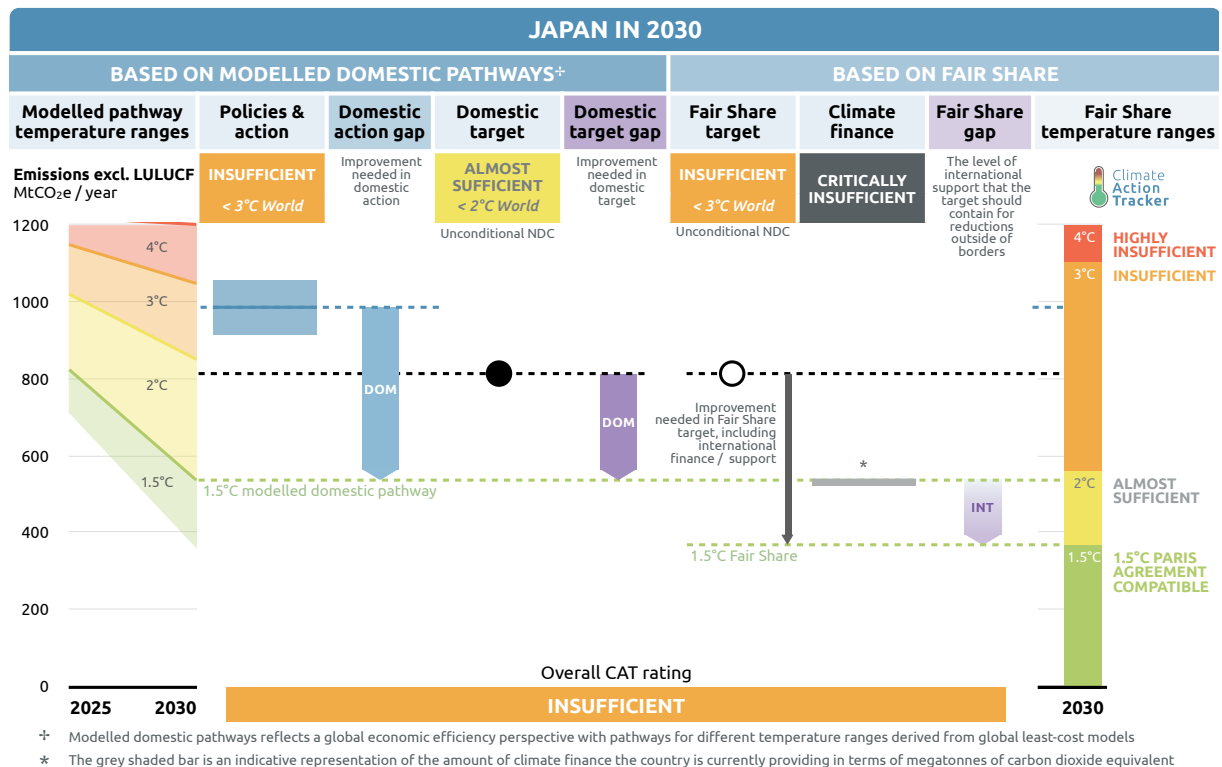


Figure 2 Countries like Japan need to reach their 1.5 modelled domestic pathway with domestic targets and policies. They then need to provide climate finance to meet their fair share.

With low responsibility for past emissions and limited capacity, Ethiopia’s emissions would not be limited in any way from a fair share perspective. Because of this, the fair share target and policies and action are rated as 1.5C Paris Agreement compatible.

However, under current policies, Ethiopia’s emissions would continue to increase, which is inconsistent with getting on track for full decarbonisation. Ethiopia needs international support to reduce its emissions and get its policies and action in line with the 1.5 modelled pathway. The government could put forward a stronger conditional NDC to improve its ‘internationally supported target’ rating.

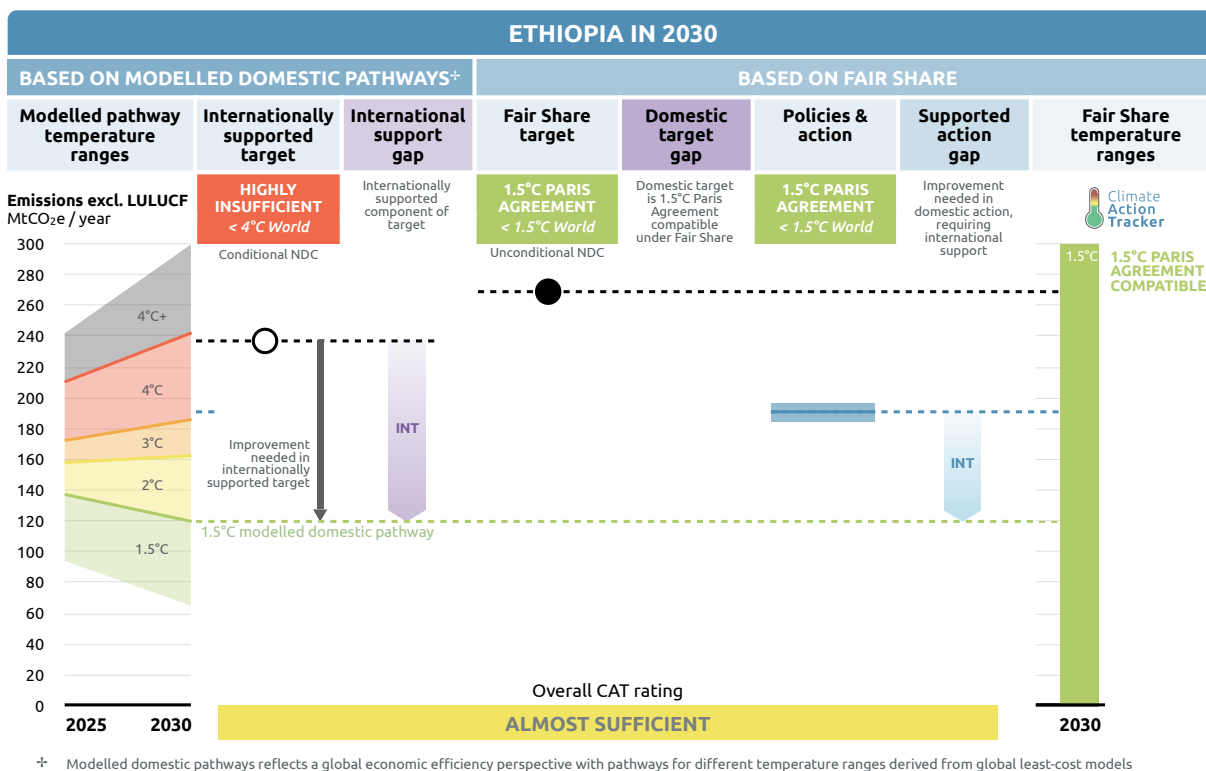


Figure 3 Countries like Ethiopia easily meet their 1.5 fair share with targets and policies but need to put forward a conditional target that outlines the additional support they need to fully decarbonise.

5 Combined rating

5.1 So, after all of the above, how do we determine an overall rating for a country?

All aspects of climate mitigation action are important – targets, policies, climate finance. So we rate them separately and then combine these components for all into a single ‘overall’ rating.

Some principles used for defining the final rating are:

- ▶ Both **Policies and action**, and **targets**, are important – governments must do well on both to get a good rating. Both are given equal weight.
- ▶ Both the fair-share and full decarbonisation perspectives are important – governments should do well in both spaces to provide their fair contribution and get on track toward full decarbonisation. Both spaces are given equal weight as far as possible when combining different elements.

A government’s **current policies** are rated against what we expect that country to do within its borders under its own resources. Some countries need support to advance their current policies and so we rate their current policies according to fair-share contributions. Others can reduce emissions without support from others and we rate those countries against what’s needed for full decarbonisation.

Country **targets** are rated as a package – we combine the two target ratings (domestic or internationally supported target and the fair share target) by averaging. For countries with a climate finance rating, we first combine the fair share target rating and climate finance rating – a good climate finance rating can help to improve the fair share target rating.

To get the **overall rating**, we combine these policies and targets ratings by averaging. Where a country falls between two categories, we take the poorer rating because countries need to be acting on all fronts to fully meet their climate contributions and get a good rating.

Finally, some countries have particular circumstances that we also take into account, such as not specifying an unconditional target. These considerations are explained or highlighted on the country page where relevant.

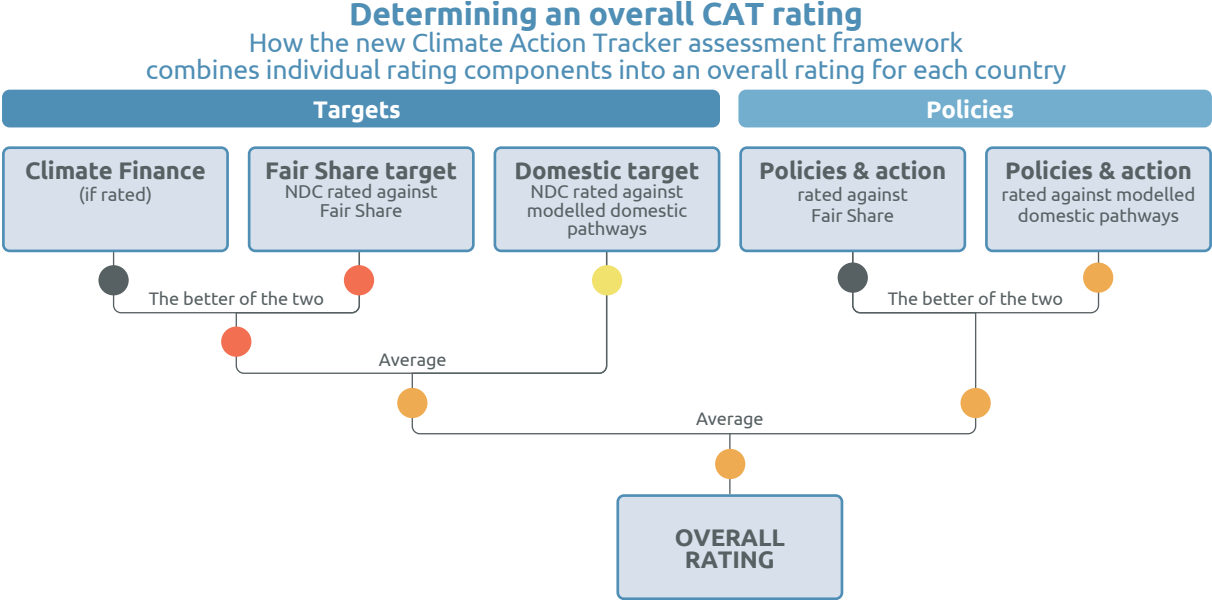


Figure 4 Method for determining the overall rating for a country.

5.2 What does it take for a country to get a '1.5°C Paris Agreement compatible' rating?

Countries whose fair-share rating means they need to be both ambitious at home and support others (usually developed countries) need to do just that. They need to:

- ▶ Set domestic targets consistent with at least the 1.5 global least cost pathways
- ▶ Implement policies that will meet those targets
- ▶ Work with other countries in achieving emissions reductions, either through bilateral agreements or through providing climate mitigation finance.

To achieve an overall 1.5°C Paris Agreement compatible rating, these governments need to achieve a Paris compatible rating on policies and action, domestic targets, and on international support.

Countries who will need support to fully decarbonise (usually developing countries) should:

- ▶ Put forward targets that put them on track to full decarbonisation
- ▶ Outline the support they need to meet those targets
- ▶ Put in place the policies that make sense within their own resources.

To achieve an overall 1.5°C Paris Agreement compatible rating, these countries need to do what they can using their own resources and make plans for what could be done additionally with support.

Some countries are in between the two categories, i.e., our method does not decisively determine if they should provide or receive support. In this case the two assessment frameworks (fair share and modelled domestic pathways) yield very similar results. These countries need to:

- ▶ Put forward targets that put them on track to full decarbonisation
- ▶ Put in place the policies that make sense within their own resources.



Bibliography

- Bauer, N., Bertram, C., Schultes, A., Klein, D., Luderer, G., Kriegler, E., Popp, A., & Edenhofer, O. (2020). Quantification of an efficiency–sovereignty trade-off in climate policy. *Nature*, 588(7837), 261–266. <https://doi.org/10.1038/s41586-020-2982-5>
- Clarke, L., Jiang, K., Akimoto, K., Babiker, M., Blanford, G., Fisher-Vanden, K., Hourcade, J., Krey, V., Kriegler, E., Löschel, A., McCollum, D., Paltsev, S., Rose, S., Shukla, P. R., Tavoni, M., van der Zwaan, B., van Vuuren, D. P., Böttcher, H. K. C., Daenzer, K., ... Zwickel, T. (2014). Assessing Transformation Pathways. In O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel, & J. C. Minx (Eds.), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press.
- Höhne, N., den Elzen, M., & Escalante, D. (2014). Regional GHG reduction targets based on effort sharing: a comparison of studies. *Climate Policy*, 14(1), 122–147. <https://doi.org/10.1080/14693062.2014.849452>



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The Climate Action Tracker (CAT) is an independent scientific analysis produced by two research organisations tracking climate action since 2009. We track progress towards the globally agreed aim of holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C.

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Climate Analytics is a non-profit climate science and policy institute based in Berlin, Germany with offices in New York, USA, Lomé, Togo and Perth, Australia, which brings together interdisciplinary expertise in the scientific and policy aspects of climate change. Climate Analytics aims to synthesise and advance scientific knowledge in the area of climate, and by linking scientific and policy analysis provide state-of-the-art solutions to global and national climate change policy challenges.

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