



CAP₂ Position



IPCC revises 1.5 degree mitigation path - A first look at the figures in the IPCC Synthesis Report

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CO₂ reduction paths slightly modified and marginally less ambitious

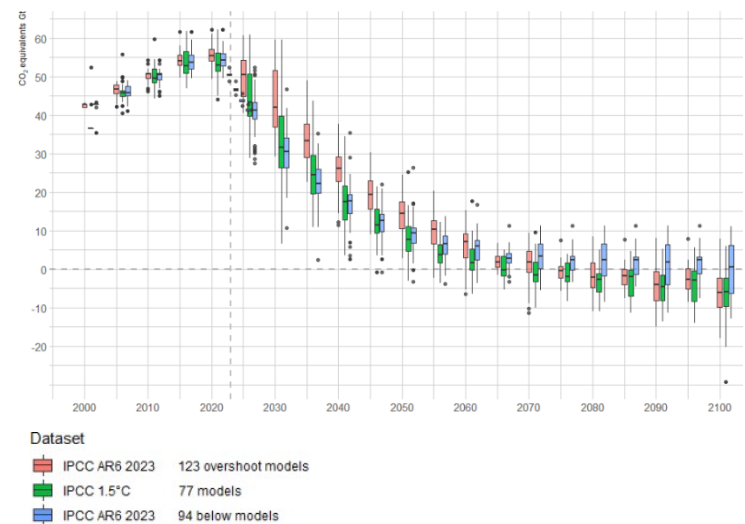
The Intergovernmental Panel on Climate Change has once again warned of the drastic effects of climate change in its recently published synthesis report and pointed out that there is a comparatively high probability that the 1.5 degree limit could be exceeded in the coming decade. In addition, it is reported that climate change has recently progressed somewhat faster than had previously been assumed in most projections.

In the reporting on the most recent publication of the Intergovernmental Panel on Climate Change, however, it was somewhat overlooked that it also included recalculations of the possible CO₂ reduction pathways that would lead to compliance with the 1.5 degree target in the long term. These paths are not only of academic significance - quite the contrary. From these paths it is possible to derive how large the residual budget of CO₂ equivalents is that would just be compatible with a warming of 1.5 degrees compared to the global reference temperature (average of the years 1850 to 1900). From this residual budget, policy-makers derive the climate policy action path for the coming decades. The truth is that there is no one "right" reduction path that is universally valid. In fact, the Intergovernmental Panel on Climate Change has more than 200 pathways and associated models, each of which shows a way to meet the 1.5 degree target. Each of these paths has a slightly different course and also assumes somewhat different CO₂ residual budgets.

The more than 200 pathways (the last IPCC report could only rely on 77 pathways and models) can be roughly divided into two groups. The first group consists of pathways that initially lead to a slight "overshoot". This means that emissions are initially not reduced ambitiously enough, resulting in too many emissions worldwide. Through negative net emissions in the last third of the century, however, the 1.5-degree target could still be achieved by 2100. The other group of models initially shows a particularly aggressive reduction path for the next few decades, but is then somewhat less ambitious for the last third of the century and still allows - at least on average for the model group - for a reduction towards the end of the century.

marginally positive net emissions. Thus, this second group of models is probably a little more relevant for practice according to the current state of the art. The good news is that the more than 200 models on average show a reduction path that is a little "easier" to achieve than what has been the state of the art so far.

Intergovernmental Panel on Climate Change: Comparison of 1.5-degree paths, own presentation



Source: IPCC 6th Assessment

This is no reason to sound the all-clear: even the emission reduction steps now demanded are so ambitious that they will be extremely difficult to achieve. In addition, the models assume on average that population growth will slow down, an assumption that could prove to be too optimistic. Furthermore, the models are based on the assumption that it will not be possible to achieve net zero emissions of greenhouse gases such as methane, which means that the annual reductions in CO₂ must be particularly significant. This is because the reporting often ignores the fact that the respective reduction paths refer to all greenhouse gases and are only expressed in so-called CO₂ equivalents for reasons of simplification.

This is how CAP2 uses the new reduction pathways

For CAP2, the publication of the new reduction paths results in the possibility and also the necessity to recalculate its own master reduction path and to adapt it according to the new findings from the studies published in the meantime. This master reduction path is

is needed to determine the extent to which companies' own CO₂ emissions deviate from a path that would be compatible with the 1.5 degree target. The CAP2 master path is calculated in a slightly simplified way as follows: With the help of an optimiser, a kind of non-linear regression path is inserted into the set of over 200 individual reduction paths, which corresponds as best as possible to the statistical properties of all individual paths on average and at the same time leads to a residual CO₂ budget, which in turn corresponds to the median of all IPCC 1.5-degree paths. This master path also shows a much more steady development than the individual paths and is free of the jumps of some individual paths, which sometimes show a rather arbitrary character in the course. From this master reduction path, the percentage reduction in CO₂ emissions can be derived for each year, which we also expect from companies in order to be 1.5 degree compatible.

Differences between company-specific reduction paths and the master path can also be expressed concretely in CO₂ tonnes. Assuming a company is responsible for 1,000 tonnes of CO₂ emissions in year T₀, and the master reduction path requires a 10% reduction in emissions in year T₁ compared to T₀, then this company must reduce its CO₂ emissions by 100 tonnes in the period in order to be compatible with the 1.5 degree climate target.

CO₂ reduction through the decommissioning of EUAs

If, in this example, the actual reduction of the company concerned were only 50 tonnes, this would result in a "gap" of 50 tonnes to keep up with the global reduction path to be compatible. This is where CAP2 comes in

Game: The difference is "closed" by purchasing the reduction capacity of 50 tonnes of CO₂ on the market for European emission rights (EUAs). Rights for the emission of 50 tonnes of CO₂ equivalents are purchased on the secondary market from an EUA seller and donated to a German climate foundation for perpetual safekeeping. This removes the rights from the market forever. Since the rights would otherwise have been used to legitimise emissions, the reduction of emissions is the logical consequence.



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