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**Research Report**

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# What Comes after the Two-Degree Target?

The EU's Climate Policy Should Advocate for Flexible Benchmarks

*Oliver Geden*

**In the climate policy community, there is broad consensus regarding the target of limiting global warming levels to a maximum of two degrees Celsius above pre-industrial levels. Still, barring a breakthrough in UN negotiations in the near future and a reversal in current emissions trends, compliance with the two-degree target will be impossible. If this target is abandoned over the medium-term, the EU would have to make a fundamental strategic decision regarding the structure and stringency levels of a new climate goal. The approach, which has thus far proven dominant, of translating a global temperature cap into precise national emission budgets is hardly feasible from a political viewpoint. Looking ahead, the EU should therefore advocate dynamic formulas for setting targets, which are gauged against benchmarks oriented towards “climate neutrality”.**

The two-degree target is the primary point of reference for today's climate debate. A corresponding rise in the global mean temperature corresponds – according to Article 2 of the Framework Convention on Climate Change (UNFCCC) – to the limit beyond which the effects of climate change could take on dangerous proportions. It is noteworthy that politicians addressing climate policy constantly point out that this is a target set by the scientific community. While climate scientists are aware of the genuinely political nature of the target, active support for this target is only provided by some portions of the scientific community. Contrary to widespread belief, explicit appeals for the prominent target are not even voiced in documents such as the 4th

Assessment Report of the “Intergovernmental Panel on Climate Change” (IPCC). Still, there have been numerous statements from within the climate science research community pointing to the desirability of abiding by the two-degree target.

## **Two Functional Logics**

The two-degree target is characterized by a specified double-function. On a political level, it acts primarily as a catchy symbol and a point of orientation for an ambitious, but realistic – even if just barely – global climate agenda. From a scientific perspective, the target is also the point of departure for complex calculations that are used

in particular for determining the emissions reduction pathways that need to be followed in order to comply, with a sufficient degree of probability, with the two-degree target. These two functional logics have been supporting one another for more than a decade. Efforts to mainstream climate policy seemed legitimate from a scientific viewpoint; climate research on the other hand has been buoyed by a growing political consensus. Still, the longer a reversal in global emission trends takes, the less compatible the political/symbolic dimension of the two-degree target becomes with the scientific/calculative dimension.

The EU was the primary force pushing the target level on an international stage. Europe's Environment Ministers have been advocates of the target since 1996. In 2007, the two-degree target was even a central focus of the first EU Energy Strategy, where it was set down as a "strategic goal". Over the long term, it is said that following this strategy will not only ensure a sustainable energy supply for Europe, but also one that is secure and competitive. Ahead of the Copenhagen Climate Conference at the end of 2009, the EU succeeded in getting all relevant partners in the negotiations – including even China and the USA – to commit to the two-degree target. In the "Copenhagen Accord", the formula was finally recognized for the first time at the United Nations level. This framework was not used, however, to create any binding measures for achieving the goal.

While the two-degree target was establishing itself as a global climate policy objective, a parallel approach was asserting itself in the climate science community: the "budget approach". The scope of this economic instrument extends well beyond the previously dominant long-term reduction objectives. The budget approach is not solely aimed at the endpoints of the global and national reduction curves, but rather on the concrete courses they trace. This leads to a momentous shift in perspective. The focal point is no longer the reduction targets for 2050 like 50 percent worldwide

reduction or 80–95 percent reduction among industrialised nations (compared with 1990 as the base year). Instead, the budget approach calculates the maximum quantities of greenhouse gases that can still be emitted prior to the year 2050. This approach is not only considerably more appropriate to addressing the problem than merely focusing on long-term reduction levels; it also carries implications for the course emission curves follow over the medium-term. Climate budget studies that focus on compliance with the two-degree target make the assumption that while global greenhouse gas emissions will continue to rise over the coming years, they will peak relatively quickly and from that point will have to undergo major reductions. The later the peak year occurs, the more precipitous the subsequent yearly reduction rates will have to be as they approach 2050.

### **Decoupling Tendencies**

Soon after the disappointing climate conference in Copenhagen, the first cracks became apparent in the union of symbolic/political and scientific/calculative claims on the two-degree target. European politicians dealing with climate policy stressed how positive it was that the target was mentioned in the "Copenhagen Accord" and declared that the results of the summit were a "step in the right direction". There were devastating statements from climate scientists, however, that the national self-commitments agreed on in Copenhagen were far from sufficient to meet the two-degree target.

Since the quantities of greenhouse gases emitted thus far will raise temperatures by 1.5 degrees compared with pre-industrial times, major political actions would indeed be necessary for compliance with the two-degree target. The United Nations Environmental Programme (UNEP) assumes that the global emissions peak must be reached between 2015 and 2021 at the latest. Due to political as well as economic path depend-

encies, the maximum point will be calculable several years in advance. Currently, however, there is little to suggest that a reversal of today's trends will even become visible on the horizon in the next few years. Therefore there must be a point in the near future when a growing number of voices from the climate science community definitively reject the possibility of holding to the two-degree target. Today, however, there are even negotiations within the context of the UNFCCC about whether the global goal should be tightened to just 1.5 degrees. This only shows, however, that the political debate over the favoured temperature targets occasionally decouples from the state of research to retreat back into the territory of being just a symbolic act. In international climate policy, however, it is not possible to continue to follow an objective, which according to the consensus of the mainstream climate science community can no longer be realistically achieved.

As soon as it becomes clear that the two-degree target is going to be missed, a newly formulated global benchmark must be set. In theory, one could then moderately raise the temperature level, for example to 2.5 degrees. EU policymakers, however, can hardly expect to succeed in communicating such an adjustment to the broader public without being accused of arbitrariness. It is therefore more advisable that a reduction in the ambitiousness of targets also be accompanied by a change in the target category – away from global mean temperature towards atmospheric concentration of greenhouse gases. In this case, the new global target would not be 2.5 degrees, but rather – according to current research – 500 ppm (parts per million) of CO<sub>2</sub> equivalents. A target linked to concentration levels would not only be met with fewer scientific uncertainties than a temperature limit, but the level of public credibility regarding the limit would no longer be shaken by a single cold winter.

If consensus grows in international climate policy that expectation levels need to be reduced, then this alone could place a

major strain on the symbiotic working relationship that has thus far existed between the climate science community and the EU as a leading force for climate policy. An equally critical possible breaking point, however, also lies embedded in the budget approach. Underlying this approach is a high degree of rigidity and governance optimism, which remain at odds with the structures of global as well as European climate policy. From a scientific perspective, it makes perfect sense to define global climatological thresholds and to use these as a basis for establishing a worldwide emissions budget through to the year 2050. The issue would also be well served by then embedding this emissions budget within the framework of a legally binding global climate agreement that is fair and equitable for all nations. Such an approach, however, is not feasible from a political standpoint. The instruments and institutions needed for establishing such a regime are currently lacking and will remain so for the foreseeable future. Even the EU, which characterizes its climate policy as “science-based”, will be unable to follow the budget approach in its strictest form. This is due not only to the fact that the EU would need to remain flexible in setting climate goals so as to take into account the basic tenets of international politics, conditions within the member states themselves and the interests of economic actors. In addition, the EU will not accept climate protection as the top political priority for the coming four decades as a result of strict budgetary mechanisms. Just one of the reasons that this is inconceivable is that every new IPCC assessment report would also result in adjustments to emissions budgets – most probably, downwards.

### **Paradigm Shift**

The expected breaking away from the two-degree target over the coming years in no way means that the EU should begin aggressively shying away from this target now or even go so far as to cease its efforts

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to achieve this goal altogether. Still, characterising the EU's energy and climate policies as "strategic" will only be justified when the EU begins taking into account the development track that is leading away from the two-degree target. If in the coming year the European Council approves the medium and long-term "Energy Strategy 2011-2020" and "Energy Roadmap 2050", it should therefore avoid designating the two-degree target as the primary, or even sole, starting point for Europe's climate protection efforts. In the medium-term, the EU will be unable to avoid having to make a fundamental decision regarding which revised global climate goal it will follow in a political context. The EU should not resort to simply championing a weaker temperature or concentration target, but should instead push for a paradigm shift.

According to the current paradigm, the global target is defined within scientific categories and understood as an absolute upper limit. Within the context of this top-down approach, all initial efforts have been focused on creating a global climate treaty. In practice, this climate policy leads to a heavy focus on global fora for negotiations while also neglecting concrete decarbonisation efforts in the economies of industrialised and newly-industrialised countries. This has resulted in the emergence of a wide range of stalemates, because the respective governments can always point to the inaction of their international partners. Even the EU has used this argument to justify its refusal to increase its reduction target for 2020 from 20 to 30 percent, although this would correspond to bearing an equitable burden on the path towards meeting the two-degree target.

An alternative paradigm would be faced with the challenge of combining climate policy realism with a positive global vision. In order to stimulate effective long-term changes, a new global target would need to first and foremost fulfil the criterion of paying heed of both the political/symbolic as well as the scientific functional logic. This can only be achieved by using a

dynamic target formula rather than a precisely calculated cumulative emission limit. One of the possible variations would be establishing "climate neutrality" on a UN-level as a long-term global objective – i.e. work to reduce net emissions of greenhouse gases to zero. Even if this objective were to be initially linked with a broadly defined timescale, it would establish the direction for action according to which all states would have to be measured.

According to such a framework, ambitious climate policy actors such as the EU would face the task of committing to exacting decarbonisation steps. They would need to muster evidence that the transformation to low carbon economies is technically feasible as well as economically profitable, yielding not only positive effects for the climate, but also for energy prices and security of supply. Self-interest would spur other industrialised and newly-industrialised countries to follow in the EU's steps if its actions prove successful. This type of bottom-up approach would lead to significant reductions in emissions. On the other hand, from today's perspective, it would be impossible to issue an accurate prediction as to what level of resultant temperature increase the world would have to bear. It is, however, questionable whether this would actually be different from the currently favoured top-down principle. Focusing climate policy efforts on flexible benchmarks such as "climate neutrality" would be more effective over the short-term and more promising over the long-term than holding to a strict temperature limit, which is not a politically viable option.