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Cicero

National climate ambition must match international targets

If the Paris climate agreement is to succeed in limiting warming to 1.5 °C, countries need to drastically increase their emissions pledges, says Steffen Kallbekken[2].

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After 21 years of negotiations, 195 countries have agreed to the first truly universal climate agreement. The decision received a standing ovation at the climate meeting in Paris, with global leaders hugging, and seasoned negotiators awkwardly asking for celebratory selfies with climate celebrities such as Al Gore. Is the agreement worth the jubilation?

The wisest move made in Paris was to acknowledge the limits of what international climate agreements can achieve.

More than 170 countries had already put forward climate mitigation and adaptation plans before the negotiations in Paris began. Many of the pledges represented substantial progress. Thus, the negotiators arrived in Paris with an unprecedented level of commitment already in the bag.

The most radical outcome of the meeting was a new global temperature target. The agreement aims to limit the increase in the global average temperature to "well below 2 °C above pre-industrial levels", and to pursue "efforts to limit the temperature increase to 1.5 °C".

This target is, however, extremely demanding. Climate researchers have explored only a few scenarios that limit warming to 1.5 °C. They show that global emissions of greenhouse gases must be between 70% and 95% lower in 2050 than they were in 2010. In the second half of the century, net emissions must become negative, meaning that overall, carbon is removed from the atmosphere. It is still unclear whether this is feasible even in theory: we don't yet know enough about the limits of negative-emission technologies with respect to, for example, the use of land and water (P. Smith *et al. Nature Clim. Change* http://doi.org/983; 2015).

The agreement would have been more credible if the ambitious temperature goal were matched by an equally ambitious plan for how to get there by reducing emissions. The stated aim is that global emissions should reach a peak "as soon as possible", then decline rapidly, before achieving a "balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century".

This is a general recipe that would bring the world to somewhere between 2 °C and 3 °C of warming. It does not reflect the best available science, which could have specified how quickly emissions need to be reduced if we are to limit warming to 1.5 °C; nor does it reflect that negative emissions are required. This undermines the credibility of the agreement, and offers little clear guidance for future pledges.

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Ultimately, countries cannot be forced to do what they are unwilling to do, nor made to comply with an agreement that they no longer find to be in their interest. The agreement recognizes these limitations. Every five years, there will be a global stocktake to assess progress towards the long-term goals. Two years later, countries will submit revised pledges, which must always represent progress. This five-year cycle, combined with an expert review of individual countries' implementation of their pledges, is intended to ramp up ambition over time. The stocktakes and reviews are supposed to provide civil society, businesses and researchers with opportunities to argue for more ambitious policy proposals, facilitating national debates.

This is not the first time that a climate agreement has been marketed as an insufficient first step towards what will eventually become an effective agreement. The 1997 Kyoto Protocol was presented in such a light. Rather than expanding, however, participation in that treaty declined.

History teaches us to be cautious about countries' willingness to increase their climate ambition over time. The approach taken in the new agreement is more realistic.

The Paris agreement is informed by science. There would be no agreement, indeed no process at all, if all countries did not recognize the importance of scientific findings on the causes and consequences of climate change. But the agreement is unlikely to be fair and efficient. The poorest people, who contribute the least to the problem, will still face the worst consequences of climatic changes, with insufficient funding from richer countries to pay for climate adaptation or to deal with loss and damage. The emerging complex of different national, local and sectoral policies and initiatives is a far cry from the uniform price on emissions for which economists have called.

Current national pledges to cut emissions are too weak, and the ramping up too vague, for us to conclude decisively that the Paris agreement will help us to avoid dangerous interference with the climate system. The agreement probably ensures that we can avoid 4 °C of warming, but it is a long way from what we need to limit warming to less than 2 °C. For the Paris agreement to deliver, the pressure is on for countries to ramp up their ambition.

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