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RESEARCH

Compliance of the Parties to the Kyoto Protocol in the first commitment period

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Abstract

This article provides an ex post analysis of the compliance of the Parties to the Kyoto Protocol during the first commitment period (2008–2012) based on the final data for national GHG emissions and exchanges in carbon units that became available at the end of 2015. On the domestic level, among the 36 countries that fully participated in the Kyoto Protocol, only nine countries emitted higher levels of GHGs than committed and therefore had to resort to flexibility mechanisms. On the international level – i.e. after the use of flexibility mechanisms – all Annex B Parties are in compliance. Countries implemented different compliance strategies: purchasing carbon units abroad, stimulating the domestic use of carbon credits by the private sector and incentivizing domestic emission reductions through climate policies.

Overall, the countries party to the Protocol surpassed their aggregate commitment by an average 2.4 $GtCO_2e\ yr^{-1}$. Of the possible explanations for this overachievement, 'hot-air' was estimated at 2.2 $GtCO_2e\ yr^{-1}$, while accounting rules for land use, land-use change and forestry (LULUCF) further removed 0.4 $GtCO_2e\ yr^{-1}$ from the net result excluding LULUCF. The hypothetical participation of the US and Canada would have reduced this overachievement by a net 1 $GtCO_2e\ yr^{-1}$. None of these factors – some of which may be deemed illegitimate – would therefore on its own have led to global non-compliance, even without use of the 0.3 $GtCO_2e$ of annual emissions reductions generated by the Clean Development Mechanism. The impact of domestic policies and 'carbon leakage' – neither of which is quantitatively assessed here – should not be neglected either.

Policy relevance

Given the ongoing evolution of the international climate regime and the adoption of the Paris Agreement in December 2015, we believe that there is a need to evaluate the results of the first commitment period of the Kyoto Protocol. To our knowledge there has been no overarching quantitative ex post assessment of the Kyoto Protocol based on the final emissions data for 2008–2012, which became available in late 2015. This article attempts to fill this gap, focusing on the domestic and international compliance of the Parties to the Kyoto Protocol in the first commitment period.

KEYWORDS:

Carbon accounting | carbon emissions trading | compliance | GHG emissions | Kyoto Protocol

Correction Statement

This article has been republished with minor changes. These changes do not impact the academic content of the article.

Notes

1. See Appendix 1 for a detailed list of countries.

2. For example, Poland's target was −6%, and its average annual aggregated GHG emissions in 2008–2012 were 29.7% below base year. It therefore overreached its target by 29.7–6 = 23.7%.

Related Research Data

Pricing Carbon
Source: Unknown Repository
Rapid growth in CO2 emissions after the 2008–2009 global financial crisis
Source: Nature Climate Change
National greenhouse-gas accounting for effective climate policy on international trade
Source: Nature Climate Change
Can CDM monitoring requirements be reduced while maintaining environmental integrity?
Source: Climate Policy
The Kyoto Protocol: Hot air
Source: Nature
Policy MonitorEdited by Maureen CropperThe Clean Development Mechanism: History, Status, and Prospects
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