

7,777 Views | 96 CrossRef citations to date | 111 Altmetric

RESEARCH

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

Igor Shishlov ✉, Romain Morel & Valentin Bellassen

Pages 768-782 | Published online: 10 Jun 2016

🗨️ Cite this article 🔗 <https://doi.org/10.1080/14693062.2016.1164658>



Sample our
Engineering & Technology
Journals
>> **Sign in here** to start your access
to the latest two volumes for 14 days

📄 Full Article 📊 Figures & data 📖 References 🗨️ Citations 📊 Metrics

📄 Reprints & Permissions

Read this article

🔗 Share

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 GtCO₂e yr⁻¹. Of the possible explanations for this overachievement, ‘hot-air’ was estimated at 2.2 GtCO₂e yr⁻¹, while accounting rules for land use, land-use change and forestry (LULUCF) further removed 0.4 GtCO₂e 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 GtCO₂e 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 GtCO₂e 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 Monitor](#) Edited by Maureen Cropper [The Clean Development Mechanism: History, Status, and Prospects](#)

Source: Review of Environmental Economics and Policy

[Review of the experience with monitoring uncertainty requirements in the Clean](#)

Related research

People also read

Recommended articles

Cited by
96

Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

Keep up to date

Register to receive personalised research and resources by email




Sign me up



Copyright © 2026 Informa UK Limited [Privacy policy](#)

[Cookies](#) [Terms & conditions](#) [Accessibility](#)

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG

 Taylor and Francis
Group